



East Pye Solar

Outline Landscape and Ecology Management Plan

Revision 2

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Appendices

- Appendix A – Figure 1: Hedgerow Removal Plans
Appendix B - Figure 2: Green Infrastructure Strategy

Schedule of Changes

Reference	Page	Description of Changes	Reason for Revision
Outline Landscape and Ecology Management Plan Revision 2	6	Additional detail provided regarding the LNRS.	Responding to Relevant Representation questions regarding the LNRS
	6	Clarification regarding BNG.	In response to Natural England's Relevant Representation NE-028.
	29	Added details on planting density.	Additional commitment to increase planting density in response to Relevant Representations SNC-024 and SDNC-033 from South Norfolk Council.
	37, 41	<i>Salix caprea</i> (goat willow) has been changed to <i>Cornus sanguinea</i> (dogwood) in Table 3.4. <i>Salix alba</i> (white willow) has been replaced by <i>Ilex aquifolium</i> (common holly), and <i>Cornus sanguinea</i> (dogwood) has been added to Table 3.5.	Responding to Relevant Representation SNC-081 on indicative hedgerow species.
	85	Amendment regarding sharing information with the relevant planning authority upon request	In response to SNTWN-PDA-012.

1 Introduction

1.1 Overview

- 1.1.1 This Outline Landscape and Ecology Management Plan (Outline LEMP) has been prepared on behalf of East Pye Solar Limited (the 'Applicant') in relation to an application for a Development Consent Order (DCO) (the 'DCO Application') for East Pye Solar (the Scheme), pursuant to the Planning Act 2008. It describes the proposed implementation, management and monitoring of the landscape and ecological measures and areas of habitat creation proposed for the Scheme, this concern works during the Construction Phase and Operational Phase of the Scheme.
- 1.1.2 The Scheme comprises the construction, operation and maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating station with a total capacity exceeding 100 megawatts (MW) and associated development including a Battery Energy Storage System (BESS), up to three 132kV and up to three 400kV Project Substations and Grid Connection Infrastructure including a new National Grid Substation. A description of the Scheme can be found in **ES Volume 1, Chapter 4 – The Scheme [EN0110014/APP/6.1.4]**.
- 1.1.3 The Scheme would be located within the Order Limits (shown on the **Location Plan [EN0110014/APP/2.1]** and **Works Plan [EN0110014/APP/2.3]** submitted as part of the DCO Application and secured by Article 3 of the **draft DCO [EN0110014/APP/3.1]**). The Order Limits contain all elements of the Scheme comprising the Solar PV Arrays, 132kV and 400kV Project Substations, the National Grid Substation, the BESS, Grid Connection Infrastructure, interconnecting cables within the Cable Route Corridor (CRC), Mitigation and Enhancement Areas and Highway Works.
- 1.1.4 The Order Limits are located entirely within the administrative boundary of South Norfolk Council (SNC) and Norfolk County Council (NCC). The Order Limits comprise ten land parcels referred to as Sites 1 to 10 (with some having associated sub-Sites), and the BESS Site, collectively referred to as the 'Sites'. The Sites would be connected by a Cable Route Corridor (CRC), which together would encompass approximately 1,212.3 hectares (ha) of land within the Order Limits (see **Location Plan [EN0110014/APP/2.1]**), of which 1,051.4ha relates to the Sites.
- 1.1.5 The Outline LEMP has been informed by a set of Island Green Powers (IGP) design principles which guide the project level design principles (PLDP); which are defined in the **Design Approach Document [EN0110014/APP/7.17]**. This Outline LEMP is to be read with the following documents:
- **ES Volume 1, Chapter 4 - The Scheme [EN0110014/APP/6.1.4]** – details specific offsets/buffers from existing landscape features embedded into the design.

- **ES Volume 2, Figure 4.1 - Indicative Masterplan [EN0110014/APP/6.2.4.1]** – this illustrates the extent of the proposed development and the indicative zones for Solar Photovoltaic (PV) Arrays, Battery Energy Storage System (BESS), Substations and the new National Grid Substation; including Grid Connection Infrastructure. It also shows proposed access.
- 1.1.6 This Outline LEMP is supported by the following figures, provided in Appendices A and B of this document:
- **Appendix A: Figure 1 Hedgerow Removal Plan** - illustrates the indicative location of vegetation that may be removed to accommodate the Cable Route Corridor (CRC) and new access points.
 - **Appendix B: Figure 2 Green Infrastructure Strategy** – provide further detail on the proposed landscape and ecological measures across the Scheme.
- 1.1.7 This is an Outline LEMP and is based on the preliminary design and measures set out in **Appendix B**. This Outline LEMP establishes a framework for the Scheme, with all details subject to further work and stakeholder engagement.
- 1.1.8 A LEMP will be created prior to implementation of the Scheme by, or on behalf of, the applicant, and will be approved by the relevant planning authority pursuant to a Requirement in **the Draft DCO [EN0110014/APP/3.1]**.
- 1.1.9 The purpose of the LEMP will be to set out:
- The detailed landscape proposal plans to identify the location, number, species, size, and planting density of any proposed landscape planting and ecological measures.
 - Landscape planting specification including, cultivation, importing of materials and other operations to ensure landscape planting establishment.
 - Implementation timetables for all landscape planting and ecological measures.
 - Management and maintenance timetables for all landscape planting and ecological measures
 - Monitoring prescriptions for all landscape planting and ecological measures.
 - Details of existing trees to be retained, with measures for their protection during the construction period outlined within a detailed Arboricultural Impact Assessment, Tree Protection Plan and Arboricultural Method Statement.

- 1.1.10 The LEMP will be substantially in accordance with this Outline LEMP, including the objectives, prescriptions and targets set out. The duration of management and monitoring for each landscape/ecology element created or enhanced will be in accordance with the Environment Act 2021 (to the extent applicable to the Scheme) and national and local policies, from completion of the construction, and the LEMP will define the long-term management requirements.
- 1.1.11 Post-decommissioning, the landowners would choose how the land is to be used and managed. The landowner may return all of the land to arable use, although it is anticipated that some areas of habitat and biodiversity mitigation and enhancement (woodland, trees, hedgerows, scrub) within the Sites may be left in-situ given they could contain protected species and so relevant licences at the time would need to be obtained for any changes.
- 1.1.12 In summary this Outline LEMP covers the following:
- An overview of how the Outline LEMP will be implemented, including roles and responsibilities of individual parties.
 - The objectives for creation and management of new landscape and ecology measures, prescriptions and targets for function/condition, and outline measures for management activities.
 - An outline management plan which includes timescale periods for management requirements during the establishment period (5 years).
 - Outline specifications for management activities and monitoring.

1.2 Aims

- 1.2.1 The overarching aim of this Outline LEMP is to set out prescriptions and the management for the proposed landscape and ecological measures and areas of habitat creation. This is to support its establishment, and the overall aim to provide ecological enhancement, strengthen the green infrastructure within the local area and support landscape and visual mitigation requirements as identified in **ES Volume 1, Chapter 7 - Landscape and Visual [EN0110014/APP/6.1.7]**.
- 1.2.2 The Outline LEMP takes into account the baseline habitats and species present within the local landscape (and as defined in **ES Volume 1, Chapter 8 - Ecology and Biodiversity [EN0110014/APP/6.1.8]** in order to inform the strategy.
- 1.2.3 Local conservation priorities have been considered when designing the detailed habitat enhancements. This includes:
- Norfolk Wildlife Trust South Norfolk Claylands (Ref 1), which includes the restoration and creation of ponds, new hedgerow and woodland planting, and diverse buffers, margins and meadows.

- Norfolk Local Nature Recovery Strategy (LNRS) (Ref 2), which aims to connect, expand and enhance areas of arable field margins, enhance and restore hedgerows and hedgerow trees, promote effective management techniques and controlled grazing regimes, incorporate mosaic features within habitats, and restore farmland ponds and improve riparian habitats.
 - Greater Norwich Green Infrastructure Strategy (Ref 3), which aims to address deficiencies in accessible greenspace, strengthen the network of greenways, increase green cover in the built environment, strengthen habitat connectivity and support urban nature recovery, and embed GI into new development.
- 1.2.4 Public amenity has also been considered when planning and considering the location and type of habitats to establish. This consideration has also included provision for new community accessible spaces and permissive paths.

1.3 Roles and Responsibilities

- 1.3.1 The purpose of this Outline LEMP is to set out planting, management and monitoring prescriptions to be followed by, or on behalf of, the Applicant who is responsible for delivery of the landscape and ecology measures and the management set out.
- 1.3.2 A suitably qualified person will be appointed to oversee the coordination of implementing the LEMP, including sourcing seed/plants, which will need to be considered at an early stage given the quantities required.
- 1.3.3 The LEMP (secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**) will set out the roles and responsibilities of those involved in creating, managing and monitoring the prescriptions within this document.

Management of National Grid Substation

- 1.3.4 The upkeep and management of all planting which surrounds the National Grid Substation will be the responsibility of National Grid and this will remain in place post decommissioning of the Scheme.

1.4 Invasive Species, Pests and Diseases

- 1.4.1 Common ash (*Fraxinus excelsior*) is present as a minor component of some woodlands within / adjacent to the Order limits, and as hedgerow trees as identified in **ES Volume 2, Appendix 7.10 - Preliminary Arboriculture Impact Assessment [EN0110014/APP/6.3.7.10]**. None appeared to be in a condition which could be expected to deteriorate significantly as a result of ash dieback, however removal of dead and dying ash trees (showing signs of Ash die-back) that lie within the Order Limits will be reviewed at the detail design stage. Removal identified within the future Arboricultural Impact

Assessment may be encouraged as a best practice and safety measure for the public and construction operatives.

- 1.4.2 If removal occurs any arisings will remain on Site and as close to the felling site as possible, to reduce the spread of the disease. Dependant on the nature of removal replacement planting of an appropriate species may be required (for areas where visual screening is the predominant function), however typically areas felled will be allowed to self-regenerate to aid biodiversity and promote a diverse and resilient woodland structure. Suitable species may be selected due to ecological similarities to ash and resistance to disease, rather than local provenance. Further detail will be provided as part of the detailed design and discharge of Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.
- 1.4.3 Local conservation priorities have been considered when designing the detailed habitat enhancements. This includes:
- Giant hogweed *Aesculus hippocastanum* is located in sub-Site 5a in five locations; and
 - Himalayan balsam *Impatiens glandulifera* is located along CRC07.

1.5 Biosecurity

- 1.5.1 To avoid risk to any species from the introduction of non-native species or pathogens during management operations, biosecurity measures will be implemented when carrying out any works. This will include disinfecting all equipment, personal protective equipment (PPE), and machinery with a broad-spectrum disinfectant. This treatment will be repeated whenever machinery, equipment, or PPE is transferred to another site.

1.6 Biodiversity Net Gain (BNG)

- 1.6.1 The Scheme will deliver a BNG of at least 10% for habitats, hedgerows and watercourses. For this current stage of the DCO process, Defra's Statutory Biodiversity Metric was used to assess the value of the baseline and proposed habitats and understand the net change in value of the Order limits based on **Appendix B: Figure 2 Green Infrastructure Strategy** of this OLEMP. The metric provides a separate assessment for habitat areas (referred to as habitat units), linear vegetated habitats (referred to as hedgerow units), and linear aquatic habitats (referred to as watercourse units). The results of this assessment are detailed in full in the **Biodiversity Net Gain Report [EN0110014/APP/7.23]** (and as informed by the **Biodiversity Net Gain Statutory Metric [EN0110014/APP/7.24]**, submitted with the Application.
- 1.6.2 This BNG assessment demonstrates that the Scheme will deliver at least a 10% BNG, delivering the following predicted change in biodiversity units:
- 37.42% (1128.63 units) gain for habitats;

- 31.35% (290.03 units) gain for hedgerows;
 - 16.08% (16.65 units) gain for watercourses.
- 1.6.3 Whilst there is currently no legislative requirement for the Scheme to provide Biodiversity Net Gain (BNG), the Applicant has included a commitment to a minimum of 10% BNG through Requirement 9 of the **Draft DCO [AS-032]**. This also includes the commitment to produce a BNG Strategy, to be substantially in accordance with the OLEMP, and to provide detail of:
- how the BNG will be secured; and
 - how the Scheme will achieve a minimum of 10% net gain for habitats, hedgerows and watercourses.

Norfolk Local Nature Recovery Strategy

- 1.6.4 Whilst the Scheme design evolution has progressed prior to the publication of the LNRS, the embedded design principles adopted and detailed within the **Design Principles, Parameters and Commitments [EN0110014/APP/7.18]** have been applied to retain, protect and enhance ecological assets.
- 1.6.5 Where possible, areas of land located within the Order Limits designated as 'areas that could become of particular importance' within the LNRS will be targeted with their suggested habitat type when developing the **ES Volume 2, Figure 4.1 - Indicative Masterplan [EN0110014/APP/6.2.4.1]**. This will not only contribute towards a quantifiable BNG, but also help to strengthen existing habitat networks and increase landscape connectivity. These measures are calculated within and inform both the **Biodiversity Net Gain Report [EN0110014/APP/7.23]** and **Biodiversity Net Gain Statutory Metric [EN0110014/APP/7.24]**.

2 Implementation

2.1 Environmental Measures Overview

2.1.1 **Appendix B: Figure 2 Green Infrastructure Strategy** provides an overview of the environmental mitigation measures, both proposed measures and locations including retained features for enhancement. For each measure the primary environmental function is defined as follows:

- Visual Screening: measures which provide a specific visual barrier to minimise and limit visibility of the Scheme and reduce effects on visual amenity from specific visual receptors.
- Landscape Integration: measures which respond to their surrounding natural environment.
- Nature Conservation and Biodiversity: measure to maintain and restore habitats (and features) to enhance ecosystem services such as habitat connectivity or through provision of measures to add structural diversity.

2.1.2 Proposed measures will be further detailed in the future iteration of the **Green Infrastructure Strategy** secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

2.1.3 **Table 2.1** provides an overview of the measures included within each of the Sites / Sub-Sites.

Table 2.1: Distribution of Environmental Measures within the Sites

Landscape / Ecological Measure	Sites										
	BESS Site	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
Broadleaf woodland	BESS	1a	2a	3	4b	5		7c, d, f, j, k, l	8	9	10c
Linear tree belts	BESS	1b	2b, c	3		5		7c, g			10a
Tree planting adjacent to existing hedgerow				3		5a		7a, e, g, h, l, J, K	8a		
Scrub		1a, b	2	3	4	5		7			10a, b, c
Native Hedgerows				3		5b		7a, d,	8	9	10a, b, c, e

Landscape / Ecological Measure	Sites										
	BESS Site	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
								e, l, k			
Native Hedgerow with trees						5b		7a, d, e, k	8a	9	10a
Native hedgerow planting adjacent to existing hedgerow			2b								10a, b, e
Instant Hedgerow					4a	5b		7d, e, g			
Arable Field Margins (Priority Habitat)				3	4b	5b	6	7c, e	8b	9	
Flower Rich Pollinator Species Grassland	BESS			3	4	5		7c, d, e, f			
Tussocky Grassland	BESS	1	2a, b	3	4	5a		7	8a		10a, b, c, e
Neutral Grassland		1a	2b, c		4b			7b, k, l	8b	9	10a
Modified Grassland		1	2	3	4	5		7	8	9	10
Skylark Mitigation				3	4b	5b	6	7c, e	8b	9	
Reinstated Ghost Pond				3		5b		7d, f	8a		
Reinforced Hedgerow		1a	2a		4a, b	5a, b		7c, d, f, g, h, k	8a, 8b		10b, c, e
Reinforced Hedgerow			2a, 2b	3	4b	5a, b		7a, d,	8a	9	10a

Landscape / Ecological Measure	Sites											
	BESS Site	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	
with Tree Planting								e, f, i, k				

2.2 General Planting Notes

- 2.2.1 The following provides an overview of best practice measures to be followed. It is not a detailed specification, and the requirement for an implementation specification will be secured through Requirement 7 of the **draft DCO [EN0110014/APP/3.1]** which requires a LEMP. This will be submitted to the relevant planning authority or their approval in writing, following consultation with the relevant consultees, and prior to implementation of the landscape and ecology measures.
- 2.2.2 All plants and planting operations are to comply with the requirements and recommendations of all current relevant British Standard specification, including:
- BS 8545: 2014: Trees: From Nursery to Independence in the Landscape (Ref 4);
 - BS 3936-1: 1992. Nursery stock. Specification for trees and shrubs (Ref 5);
 - BS 4428: 1989. Code of practice for general landscape operations (excluding hard surfaces) (AMD 6784) (Ref 6);
 - BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations (Ref 7); and
 - BS 3998: 2010: Tree Work – Recommendations (Ref 8).
- 2.2.3 All plants to be protected from wind exposure during storage prior to implementation. All plants to be soaked in water for several hours prior to planting and to be well watered in.
- 2.2.4 No planting or ground cultivation preparatory works to be carried out during poor weather conditions, i.e. when ground is frozen, waterlogged, or during droughts, hot sunshine or persistent dry or cold winds. All plant material to receive enough water to ensure healthy establishment.
- 2.2.5 The seed origin of all native shrub species for use on the Proposed Development shall be sourced, as far as reasonably practical, from the Forestry Commission Local Seed Zones 406 (Forestry Commission Practice Note 8: Using Local Stock for Planting Native Trees and Shrubs). Written evidence of provenance shall be provided.

- 2.2.6 The final tree planting species selection, included within the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**, will have regard to Historic England Guidance and a recent review on impacts of roots on archaeology produced by Oxford Archaeology for the Forestry Commission (2024) (Ref 9) including avoiding species with the potential to have acidifying impacts on the PH levels of soil.
- 2.2.7 Time of year for planting is November to March. Watering to be provided as appropriate and necessary.

2.3 Cultivation and Seeding

- 2.3.1 For areas of new planting, cultivate the existing soil for all proposed seeding by loosening, aerating and breaking up soil into particles 2-8mm to a minimum depth of 600mm. Topsoil specification for proposed planting areas within cultivated land will be to a minimum depth of 300mm and be in accordance with BS 3882:2015 (Ref 10) for multi-purpose use.
- 2.3.2 Areas of disturbed land to be seeded with wildflower or species rich mixes to be sown direct onto 150mm cultivated site-won subsoil in accordance with BS 8601: 2013 (Ref 11) in the first instance or imported low fertility topsoil BS 3882: 2015 Annex B (Ref 10) that has been brought to a fine tilth.
- 2.3.3 Areas of existing grassland may be overseeded to enrich and create the desired meadow and grassland type. In this instance seed could be directly sown into the grass sward after suitable preparation (i.e. grass mowing, and / or scarification). The existing grass will be checked for any perennial weeds, which will be physically removed. Once all weeds have been removed, the sward is to be mown short, to less than 40mm in height. The ground will then be raked or scarified to weaken the existing vegetation structure. Once the ground has been prepared, the seed is to be distributed over the area following best practice application guidelines.
- 2.3.4 An opportunity to create a grassland habitat which is unique to the local area can be established through the spread of locally sourced green hay, or locally sourced seed (including seed collected from the Roadside Nature Reserves). Should the opportunity arise to establish the meadow through the green hay method, then the following is to be undertaken:
- The green hay is to be spread over the area evenly.
 - The grass and the seed can then be turned to aid drying and distributed using a grass tedder or similar to disperse the seed more widely and evenly. This can be repeated until the grass has dried and dropped seed.
 - The sward can then be gathered and removed from the Order Limits.
- 2.3.5 In areas of existing grassland Yellow Rattle (*Rhinanthus Minor*) is to be included. Along with additional ecological benefits, Yellow Rattle also has meadow establishing properties, due to its semi parasitic nature to grasses. This allows the grasses to be compromised and allow other slower growing flowering species to establish. Yellow Rattle seed can be applied to the

Scheme as ripe, locally acquired seed, or as seed sourced from a reputable supplier. The seed is to be applied at a similar time to the hay following advised sowing rates (typically 2g per m²). This allows the seed opportunity to lie. Germination is often slow and erratic, typically the following early spring. Following the dispersal of all seed, ground is to be rolled to ensure good seed-soil contact.

2.4 Planting

2.4.1 Tree planting (standard and heavy standard) shall be undertaken, as follows:

- All trees in pits, with depth and width of 600mm for Standard and 750mm for Heavy Standard trees.
- The base of each pit to be broken up to ~200mm with all backfill material thoroughly broken up from the carefully excavated material, and any soil additives and/or ameliorants added in accordance with best practice, prior to backfilling.
- Backfill material to comprise 300mm topsoil and 300-450mm sub soil.
- Trees shall be secured in position using round, chamfered topped timber stakes (top diameter of 50-75 mm). Stakes for all trees shall be firmly driven and positioned into the tree planting pit before planting to a minimum depth of 300 mm below the bottom of the pit.
- The stake shall be positioned off centre on the prevailing windward side of the tree as near to the tree as possible but shall not interfere with the free movement of the branches and shall cause no rubbing.
- All tree and shrub stock is to be protected by tree guards.

2.4.2 Tree and Shrub planting (whips and transplants) shall be undertaken, as follows:

- Plants shall be notch-planted upright, with surface vegetation cleared and arising removed.
- Do not plough or cultivate within the root spread of trees to be retained, otherwise soils will comprise a minimum 300mm topsoil, on 450-600mm ripped subsoil.
- Cut and upturn a turf of minimum 300mm square.
- Make a vertical 'I', 'L', 'T' or 'H' notch with a special spade or mattock, deep enough to accommodate full depth of roots.
- Plant tree, close the notch with the root collar at ground level and firm the soil.
- Surrounding soil shall be firmed back after planting.

- Setting out of planting areas at centres as defined for the landscape measure, in random groups of no less than 3 or more than 7 of the same species, ensuring that no three plants are aligned in any one direction.
- All species supplied as transplant, cell-grown or container grown stock are to be of the most local provenance available.
- All whip and transplant plants are to be dipped in a mycorrhizal fungal solution or dusted with mycorrhizal powder.
- Trees are to be protected from damage by tree guards, to be fitted after planting.

2.4.3 Hedgerow planting shall be undertaken as follows:

- Where existing hedgerows are to be infilled including where part of enhancements, pits excavated for individual plants shall be a minimum 300mm x 300mm x 300mm deep. The subsoil in the pit base shall be broken up to 150mm below the base of the pit.
- Trenches excavated for new hedgerows shall be a minimum 600mm wide by 300mm deep. The subsoil in the pit base shall be broken up to 150mm below the base of the trench.
- All hedgerow planting shall be set out centrally within the trench or hedge line with the individual plants arranged in two parallel rows which are 300mm apart and staggered between the rows: with an overall 6 plants per linear metre.
- Hedge stock shall be planted as bare root whips where practicable, sourced with the most local provenance. Bare root stock is to be soaked in water and treated with mycorrhizal root dip prior to planting.
- Native mixed hedgerow shall comprise of non-repeating species groupings of odd numbers, no less than 3 and no more than 9. Trees are to be protected from damage by biodegradable tree guards, to be fitted after planting.

2.5 Mulch and Compost Materials

- 2.5.1 All new planting areas to have a mulched base to aid establishment, retain soil moisture levels and inhibit weed growth.
- 2.5.2 Generally, to be free from toxins, pathogens, or other extraneous substances harmful to plant, water, animal or human life. Submit certification of source, analysis, suitability for purpose and absence of harmful substances.
- 2.5.3 Mulch to be chipped natural British forest biomass containing minimum of 70% wood content of particle size 35-45mm. The mulch shall be free of pest, disease or weed contamination for handover, as indicated below:
- Purity: Free of pests, disease, fungus, and weeds.

- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: mulch to 75mm depth to standard trees, in an area of 0.5m diameter around each tree or shrub.
- Finished level of mulch: 30 mm below adjacent grassed or area.
- All products to be peat-free.

2.6 Planting Protection

- 2.6.1 Where planting is taking place in the vicinity of grazing stock or where grazing activity is to occur at a future period during the plant's establishment, all new planting needs to be protected to facilitate its establishment. Where practicable this will seek to minimise use of plastic protective tree guards. Alternative solutions such as temporary post and wire fence for large planting plots and / or biodegradable tree guards will be explored as part of the future detail design.
- 2.6.2 If no suitable alternative solution is achievable then all individual plants shall be protected with protective tubes to the sizes set out in following **Table 2.2**. The size of the supporting stakes and the fixings shall be in accordance with the protective tube manufacturer's recommendations.

Table 2.2: Protective tube specification

Plant Size	Tube Height/Diameter
Whip planting: 60 to 80cm BR	75cm height x 20cm diameter
Standard/Heavy Standard Tree Planting	150cm height x 12cm diameter

3 Environmental Measures

Existing Vegetation

- 3.1.0 In accordance with the **Design Principles, Parameters, and Commitments [EN0110014/APP/7.18]**, landscape and ecological features across the Order Limits, including woodland, hedgerows and ponds will be retained and enhanced where practicable. In addition further habitats will be retained in part including arable farmland that will be utilised for species mitigation (namely skylarks), modified grassland, and other neutral grassland. Existing features are identified in **Appendix B** and further detail on their condition is set out in the **ES Volume 2, Appendix 8.1 - Ecological Desk Study and Extended Habitat Survey [EN0110014/APP/6.3.8.1]**. Retained features will be set alongside new planting of trees and hedgerows as part of the wider landscape proposals.

3.1 Ancient Woodland

- 3.1.1 **ES Volume 2, Appendix 7.10 - Preliminary Arboriculture Impact Assessment (AIA) [EN0110014/APP/6.2.7.10]** identifies the existing tree resource within and adjacent to the Order Limits. This includes the identification of important features i.e. Veteran and/Ancient Trees. No Veteran Trees or Ancient Woodland are proposed to be removed as part of the Scheme.
- 3.1.2 Where necessary, individual management plans will be put in place for veteran trees in order to ensure appropriate management and secure long-term health. This may include soil amelioration and pruning is considered necessary to prevent failures.

3.2 Trees and Woodland

- 3.2.1 ES Volume 2, Appendix 7.10 - Preliminary Arboriculture Impact Assessment (AIA) [EN0110014/APP/6.2.7.10] identifies the existing tree resource within and adjacent to the Order Limits.
- 3.2.2 Within the Order Limits tree cover as individual trees, tree groups and hedgerow trees are widespread. Woodland groups are limited to 1 in Sub-Site 4B and 1 in Sub-Site 7D.
- 3.2.3 In accordance with the **Design Principles, Parameters, and Commitments [EN0110014/APP/7.18]** generally tree removals within the Order Limits has been avoided wherever possible. A 15m offset has been applied to all trees and woodland. However, to facilitate construction and implementation of the Scheme select and targeted tree removals are identified within **ES Volume 2, Appendix 7.10 - Preliminary Arboriculture Impact Assessment [EN0110014/APP/6.3.7.10]**.
- 3.2.4 Construction works will consider the following to ensure protection of these features:

- RPAs and canopies in which construction works, or related activities, will be avoided where practicable to minimise the potential for harm to the root systems and canopies of retained trees during development construction exclusion zones will be required throughout the Order Limits. This will need to be detailed as part of a tree protection drawing (to be undertaken at detailed design).
 - Trees which are to be retained may require remedial pruning. All tree pruning works will be detailed as part of an Arboricultural Method Statement (to be undertaken at detailed design) and completed in accordance with the current best practice guidance set out within BS3998:2010 “Tree Work – Recommendations” (Ref 8) by suitably competent, qualified Arboricultural contractor.
 - In addition, any works required within the Root Protection Areas and beneath the canopy spreads of retained trees shall be detailed as part of an Arboricultural Method Statement.
- 3.2.5 Existing trees and woodland will be reassessed prior to construction, and this will help inform the measures in the LEMP, secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**. Trees will then be assessed every 5 years following by an arboricultural specialist, to identify any required pruning or maintenance which will be carried out as necessary. Maintenance works could include:
- Pruning where appropriate to maintain health and vigour
 - Appropriate removal of any identified invasive species
 - Removal of diseased trees / timber
 - Appropriate disposal of trees infected with ash dieback and replacement with an agreed alternative species
 - Thinning / Coppicing
- 3.2.6 Any future tree pruning works will be completed in accordance with current best practice guidance. All tree works will be undertaken by a qualified arboriculturist or tree surgeon. Works are to comply with BS3998 ‘Tree Work – Recommendations’ (Ref 8), and HSE Forestry and Arboricultural safety leaflets.

3.3 Hedgerows

Context and Locations

- 3.3.1 The Scheme interacts with a number of existing hedgerows as a characteristic feature of the rural landscape. Existing hedgerows throughout the Order Limits are of mixed quality and status. Further detail on the hedgerows, their condition and status is set out in **ES Volume 2, Appendix 8.1 - Ecological Desk Study and Extended Habitat Survey**

- [EN0110014/APP/6.3.8.1].** Important Hedgerows are also identified and set out on the **Hedgerow and Tree Protection Order Plans [EN0110014/APP/2.12].**
- 3.3.2 The Scheme offers opportunity for enhancement of site wide vegetation, strengthening links of local vegetation networks into the wider landscape, positively contributing to local green infrastructure.
- 3.3.3 In general, the siting of infrastructure has sought to minimise effects on this landscape resource, with the Scheme taking a precautionary approach through the application of buffers from the features as set out in **Design Principles, Parameters and Commitments [EN0110014/APP/7.18].**
- 3.3.4 The management of historic hedgerows will be undertaken in accordance with the Hedgerow Removal Plan at **Appendix A**. Where removal is required, no more than 10m will be removed in accordance with the requirements set out within this OLEMP.
- 3.3.5 The Scheme will ensure the retention and incorporation of the majority of hedgerows identified within the Order Limits. These retained features will be set alongside new measures delivered as part of the wider landscape mitigation proposals, as shown on **Appendix B**.

Objectives

- 3.3.6 Objectives associated with existing hedgerows within the Order Limits include:
- To minimise vegetation loss through identification of the features and retain the characteristics of existing green infrastructure.
 - To maintain the integrity of the existing features through minimising impacts to hedgerow features, including roots.
 - To enhance existing hedgerows and their structure through enrichment and infill planting, (and / or hedgerow laying / coppicing as appropriate) positively responding to the landscape character and providing a high-quality visual appearance (see further detail below).
 - To maintain and improve the habitat resource and its value supporting connectivity across the landscape.
 - To support visual screening at identified locations of views of and across the wider Scheme.

Enhancement Measures – Hedgerow Infill Planting

- 3.3.7 As part of the hedgerow reinforcement works, areas for hedgerow improvements have been identified in **Appendix B**.
- 3.3.8 Where parts of hedgerows have been lost, or existing hedgerows are gappy, additional underplanting / infill planting will be undertaken utilising the

species mix set out in section 3.9, to improve species diversity, and to provide additional year-round food sources for wildlife.

- 3.3.9 Existing hedgerows will be reassessed prior to construction, and this will help inform the production of the measures in the LEMP, secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Enhancement Measures – Hedgerow Tree Planting (within and adjacent)

- 3.3.10 As part of the hedgerow reinforcement works, areas for hedgerow tree planting are identified in **Appendix B**.
- 3.3.11 This measure includes provisions for hedgerow infill planting where appropriate (as set out previously) and both tree planting within the existing hedgerows and adjacent. This latter scenario is included at locations where the existing hedgerows may fall on the boundary of, or outside the Order Limits. In these instances, works to the existing hedgerow would not be achievable and therefore tree planting adjacent to the existing hedgerow is provided as an alternative form of mitigation.
- 3.3.12 Tree species will be selected to be appropriate for growing to maturity alongside active Sites with minimal management intervention. Linear tree belts require an appropriate offset from solar panels to ensure shading or leaf litter do not impede function of the solar panels. Planting is to be carried out in accordance with the detailed landscape proposal plans secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**, which will be prepared prior to implementation of the Scheme.
- 3.3.13 When planting trees into existing hedgerow, typically this will occur in suitable gaps and breaks in the hedgerow, or in combination with other management practices such as coppicing or hedge laying. The location of individual tree planting will be determined based on accessibility and reducing risk of unsympathetic management to the existing hedgerow. Nursery stock to be used will standard and feathered trees utilising the tree species identified in Section 3.7.
- 3.3.14 When planting trees adjacent to existing hedgerows, Heavy Standard stock will be utilised, and planting will be randomly spaced along the length of planting identified at between 5 and 10m centres. On occasions where visual receptors are likely to see visual effects in proximity, denser tree planting at ~3 m centres may be adopted to provide more instant screening effects. Where this occurs, species will be appropriately mixed to ensure large species trees are intermittently mixed with smaller species trees to ensure suitable growing conditions in perpetuity. Trees will be planted appropriately to suit stock sizes in accordance with the outline implementation recommendations in Section 2, utilising the tree species identified in Section 3.7.
- 3.3.15 Any trees planted in or alongside hedgerows as part of the proposed hedgerows enhancements, are to be planted with a 1.5 m tall white tipped

marker post. This will allow locations of newly planted trees to be noticeable to operators of flails during maintenance periods.

Enhancement Measures – Hedgerow Planting adjacent to Existing Hedge

- 3.3.16 As part of the hedgerow reinforcement works, areas for hedgerow planting adjacent to existing hedge are identified in **Appendix B**.
- 3.3.17 This includes planting adjacent to the existing hedgerow which is included at locations where the existing hedgerows may fall on the boundary of, or outside the Order Limits. In these instances, hedgerow reinforcement planting through new hedgerow planting has been proposed.
- 3.3.18 The measures and approach set out below in Section 3.9 apply and over time it is considered the new hedgerow will assimilate with the existing to provide a feature with improved structure and robustness.

Enhancement Measures – Hedgerow laying / Coppicing opportunities

- 3.3.19 As part of the hedgerow reinforcement works, areas for hedgerow improvements have been identified in **Appendix B**.
- 3.3.20 This includes a commitment underplanting / infill planting of existing hedgerows, alongside wider measures (coppicing and hedge laying) which will be further defined as part of the detailed landscape proposal plans secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.
- 3.3.21 Coppicing and hedge laying techniques offer additional management opportunities for the renovation and improvement of the structure and growth pattern of existing hedgerow, and the long-term successful management. These management techniques would offer opportunities for hedge to rejuvenate and strengthen growth and structure and provide new habitat and food sources.

Hedgerow Coppicing

- 3.3.22 Where appropriate coppicing of hedgerows will:
- Be undertaken when the hedge is dormant between October and March.
 - Avoid and retain all existing hedgerow trees.
 - Remove bramble, clematis and other scrambling plants.
 - Cut stems down to ground level (less than 10 cm) to encourage vigorous re-growth from the base of the hedgerow.
 - Include ongoing trimming commitments for 3 years after coppicing, allowing the hedge to become taller and wider at each cut.

Hedge Laying

3.3.23 Where appropriate hedge laying will:

- Be undertaken when the hedge is dormant between October and March.
- Remove all fencing and wire that could get tangled in hedge plants to be laid.
- Remove bramble, clematis and other scrambling plants.
- Cut out elder plants and prevent re-growth of stumps.
- Partially cut through stems of existing hedge stock at around 10cm above ground level, laying the pleachers (the cut stems, at an angle approximately 35 to 45 degrees from the horizontal, removing the uncut heel from each pleacher).
- Secure pleachers in position by bending and staking or staking and binding, depending on preferred style.
- Avoid and retain all existing hedgerow trees.
- Remove all cut material arisings from the immediate Site. Cut material can be retained within the Scheme in the form of habitat piles or dead hedges.
- Include monitoring of and removal of weeds during the first growing season after laying.
- Include ongoing trimming commitments for 3 years after laying, allowing the hedge to become taller and wider at each cut.

Management approach

- 3.3.24 Protection measures will be employed during the construction period, when works are taking place within the proximity of existing hedgerows. These will include the use of clearly defined stand-offs (secured with temporary protective fencing), managing the structure and integrity of the retained vegetation and the soil upon which it relies, and undertaking any pruning outside of the bird breeding season.
- 3.3.25 Where excavation works are within the Root Protection Area (RPA) of hedgerow to be retained, works will be undertaken under a watching brief by an arboriculturist to ensure agreed methodologies are fully implemented, to record any root pruning and to recommend further arboricultural remedial works where required to ensure the successful retention and longevity of the existing vegetation.
- 3.3.26 Existing hedgerows will be managed in accordance with best practice. This will comprise of appropriate management applications undertaken on a rotational basis, outside of bird nesting season, including infill planting,

supplementary hedgerow tree planting, coppicing, hedge laying, and seasonal cutting. This will include:

- An annual inspection of the enhancement measures during the establishment period.
- Maintain the clear stem of trees within hedgerow, to ensure hedgerow trees are easily distinguishable. White post markers will be checked, straightened and replaced so hedgerow trees are easily recognisable to machine operators.
- Infill planting and hedgerow trees will be well watered throughout the first summer and periods of continued dry weather in the first five years.
- Physical removal of annual and perennial weeds and reapplication of slow-release fertiliser and mulch during the first 5 years.
- Shrub and tree guards are to be monitored and resecured accordingly. Any impeding weed growth is to be physically removed from around and within the guards to prevent competing vegetation.

3.3.27 Long term management of the enhanced hedgerows across the Scheme will be defined and secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**. It is assumed to include:

- Monitoring checks for signs of disease or failure. Checks will take place when hedgerows are in leaf, monitoring for signs of stresses, disease or failure. Checks will not disturb any potential nesting bird sites. Lengths of hedgerow will be monitored accordingly. Sections of diseased or dead hedge shall be removed and replaced with healthy, robust hedge stock within the next growing season. Removals will not take place during the bird nesting season.
- Tree and shrub guards for any new planting are to be checked, resecured or replaced as required periodically. Any encroaching vegetation within the guards is to be removed.
- Hedgerow cuts on rotation every 2-3 years, to promote bushy regrowth. Hedgerows will be cut, likely using tractor mounted strimmer's with a cutting blade and not a rotary drum. Cutting will occur after the flowering season and once fruiting species have dropped fruit. Management will not occur when grassland at hedgerow bases is in flower or setting seed.

Approach to Access / Cable Routes through Existing Hedgerows

3.3.28 Indicative locations of these minor hedgerow works relating to access points and the CRC are shown in **Appendix A**. These plans show both the temporary hedgerow works (pruning or removal) required during the construction phase for accesses, and also the removals that will be in place for the full operational lifetime of the Scheme.

- 3.3.29 Temporary removals are required along the CRC only, and these will be replanted/reinstated once the cable installation is complete. *(For the purposes of Biodiversity Metric calculations, these removals are considered, however taking a precautionary approach the replacement is not factored into the metric).* The length of individual instances of temporary hedgerow removal required for access and the CRC have been assumed to be a maximum of 10m in length to accommodate a maximum arrangement of the cable trench, a haul route and a passing bay. The exact location of removal will be defined at detail design stage, which will be located within the CRC.
- 3.3.30 Permanent removals for the duration of the operational period of the Scheme are required to accommodate the maintenance tracks, which will facilitate ongoing maintenance access and will remain in place for the full lifetime of the Scheme. The length of individual instances of permanent hedgerow removal during the operational period for the Scheme vary up to a maximum of 10m, considering vehicle visibility splays as appropriate.
- 3.3.31 Within the Sites themselves, the installation of cabling will also utilise existing field accesses to minimise hedgerow removal. Where installation of cabling requires crossing existing field boundaries, these routes will follow the maintenance tracks so that hedgerow loss is limited and coordinated to focused sections of the hedgerow.
- 3.3.32 The approach for reinstatement/replanting of hedgerows is discussed within the Outline LEMP below and will be detailed further within the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.
- 3.3.33 Further outline details on the methodology to be followed during the minor hedgerow works as well as the reinstatement/replanting of temporarily affected hedgerows is set out below.
- 3.3.34 **Appendix A** does not identify locations of possible hedgerow works (pruning and/or removal) which may be required to accommodate AIL movements as it is not known at this stage whether or how hedgerows will be affected. The exact extent of these minor hedgerow works (pruning and removal), and widenings of existing gaps will be confirmed post DCO consent. No hedgerow works (pruning and removal) can take place until a LEMP has been approved by the relevant planning authority, as secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**. All minor hedgerow works (pruning and removal) will be carried out in accordance with the final, approved version(s) of the LEMP.

3.4 Scrub

Context and Locations

- 3.4.1 Existing expanses of scrub are present throughout the Order Limits and the wider rural landscape as identified within **Appendix B**. The scrub is of mixed quality, size and status.

- 3.4.2 The Scheme offers opportunity for considerable enhancement of site wide vegetation, strengthening links of local vegetation networks into the wider landscape, positively contributing to local green infrastructure.

Management approach

Existing Scrub

- 3.4.3 During the construction period within the proximity of existing retained scrub, protective measures will be utilised. These will include the use of clearly defined stand-offs (secured with temporary protective fencing), managing the structure and integrity of the retained vegetation and the soil upon which it relies, and undertaking any pruning outside of the bird breeding season.
- 3.4.4 Existing scrub will be reassessed prior to construction, and this will help inform the production of the measures in the LEMP, secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.
- 3.4.5 Where appropriate existing scrub will be subject to formative cutting management on a rotational basis. Small areas will be identified and cleared on a rotational basis, to encourage regeneration and structural diversity of the habitat. Regrowth and regeneration after clearance will be allowed to mature before repeating clearance approximately every five to seven years. The exact area and location will alternate with each clearance operation. This will create a mosaic within the scrub areas, with some cut and some mature patches, creating valuable habitat. The exact frequency of cuts will be prescribed in the Management Prescription timetable to be provided in the LEMP, secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

3.5 Grassland

Context and Locations

- 3.5.1 There are some small, limited and fragmented areas of existing grassland within the Order Limits. The Scheme is largely agricultural land laid down to arable cropping.
- 3.5.2 The Scheme offers opportunity for enhancement of the existing grassland, through the adoption of new management opportunities and linkage to wider areas of varied grassland throughout the Order Limits and wider landscape through the establishment of new grassland seeding as described above.
- 3.5.3 Areas of retained grassland are identified on **Appendix B**.
- 3.5.4 Existing grassland across the Scheme is to be managed in accordance with the management aims for the Scheme, to maximise biodiversity in line with the grassland baseline conditions. Management will be undertaken for the existing retained grassland as part of a wider cohesive management strategy and be further detailed in the LEMP secured by Requirement 7 of the **draft**

DCO [EN0110014/APP/3.1]. This will involve the adoption of a mowing regime as part of the identified grassland typology.

Management approach

- 3.5.5 Protection measures will be employed during the construction period, when works are taking place within the proximity of existing habitat to minimise damage. Some areas of existing grassland may be affected by construction works or associated traffic. Areas impacted are to be made good, through the levelling and raking of the area and application of infill spot seeding, if required. In some cases, it may be deemed beneficial to allow for natural regeneration. Following construction the following management regime will be adopted:
- A relaxed management mowing regime will be adopted, aiming to enhance the sward diversity through lowering the nutrient levels to allow for slower growing less competitive species opportunity to establish.
 - The main grass sward will be managed with a biannual mowing strategy. The first cut shall be undertaken in early spring prior to May, weather conditions permitting. This will be a light mow to knock back more vigorous grass species, allowing slower growing species opportunity to flower without being smothered. Mowing will not be undertaken later than April, to allow flowering species opportunity to grow, flower and set seed. Mowing is not to be undertaken in wet, muddy conditions, to ensure there is no poaching or sward damage. Arisings are to be removed from Site and disposed of accordingly to ensure there is no nutrient enrichment to the soil.
 - The main cut “hay cut” is to be undertaken between August and September. The sward shall be cut and left to lie prior to removal, to allow opportunity for seed to drop. Cut material shall then be collected and removed to minimise nutrient build up in the soil which stifles species diversity.
 - Where grassland becomes too long and shading of panels becomes a problem, a “shade cut” can be undertaken along the edges of the panels in a strip no more than 1m wide in order to reduce the sward height during the late summer months.
 - Annual weeds and perennial weeds are to be monitored routinely and physically removed from the Scheme. Weeds will be removed prior to mowing to prevent their wider dispersal.

Landscape Measures

- 3.5.6 Proposed landscape and ecology measures are located within Work No 10 as set out in Schedule 1 of the **draft DCO [EN0110014/APP/3.1]** which identifies all the green infrastructure and landscape and ecology mitigation areas. However, provision for landscape and ecology measures is also included in Work No 7 to allow for future flexibility during detail design to

include additional measures. Work No 7 and 10 overlap with the adopted highway, however the proposed measures as set out in Appendix B do not, and it is not the intention to implement measures within the adopted highway, as the highway authority owns the land and will be responsible for maintaining vegetation within it.

3.6 Broadleaf Woodland

Context and Locations

- 3.6.1 Broadleaf woodland has been proposed in various locations across the Order Limits, as identified in **Appendix B**. Woodland has been proposed to meet ecological and visual screening functions, and provide ecological habitat connectivity across the wider landscape.
- 3.6.2 As part of the LEMP further detail will be provided as to the species composition with lower growing species planted adjacent to the proposed Solar PV Array areas to avoid overshadowing. Detailed landscape proposals plans will include planting specification and schedules and identify locations of all proposed planting. This will be secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.6.3 Where appropriate, the Broadleaf woodland will:
- Provide screening functions for visual receptors within the local vicinity of the Order Limits.
 - Facilitate and improve the green infrastructure network and connections across the landscape.
 - Integrate with existing and retained woodland and other vegetation.
 - Improve biodiversity through provision of areas of shelter and increased habitat provision for breeding and foraging by a range of species.

Prescriptions and Targets

- 3.6.4 The prescriptions and targets for the proposed Broadleaf woodland are:
- Ensure that vegetation establishes in similar species groupings and includes an appropriate mix of tree species with resilience to disease and climate change. Indicative species listed in **Table 3.1** below. Species will be selected and outlined in accordance with those prominent in the local area.
 - Target that 'Mixed Deciduous Woodland' and primary species are present 15 years following implementation including: *Quercus robur* (Oak), *Alnus glutinosa* (Alder), and *Acer campestre* (Field Maple).

- Trees would be planted in random formation, to support natural colonisation. (It may be desirable to plant species not identified in the local area which are ecologically similar to identified species and are resistant to both disease and climate change).
- Provide a form and overall height which reflects those in the vicinity to integrate with the local vegetation structure. Planting will consist of a range of pioneer, successional and long-lived tree species to create the appearance of a multilayered, naturally evolving woodland.
- Vegetative coverage of the planting areas is to be a minimum of 75% by the end of the establishment period.
- Broadleaf woodland is to be of a mixed composition to reflect that of a naturally occurring woodland. Planting stock will be of 70% trees, of which 40% will be standard, 30% feathered. The remainder of the woodland planting stock will be shrub planting (30%). Of which, 20% will be whips, 10% will be feathered stock.
- Planting to be undertaken at 1.5 m centres.
- Create woodland which will provide effective visual screening by year 15.
- In accordance with the BNG metric, achieve 'Moderate' target condition.

Table 3.1: Indicative Proposed Broadleaf Woodland Species for Planting within the Scheme

Latin Name	Common Name	Indicative Stock Size and Specification
<i>Alnus glutinosa</i>	Common alder	175-200cm BR, 2x, feathered, 3 breaks
<i>Acer campestre</i>	Field Maple	100-125cm BR, branched, 3 breaks
<i>Quercus robur</i>	English Oak	250-300cm, BR, 2x standard, clear stem 150-175cm, 3 breaks / 80-100cm BR
<i>Betula pendula</i>	Silver Birch	80-100cm BR
<i>Ulmus 'New Horizon'</i>	Elm 'New Horizon'	250-300cm, BR, 2x standard, clear stem 175-200cm
<i>Salix fragilis</i>	Crack Willow	80-100cm BR
<i>Tilia cordata</i>	Small leaved Lime	250-300cm, BR, 2x standard, clear stem 150-175cm

Latin Name	Common Name	Indicative Stock Size and Specification
<i>Carpinus betulus</i>	Hornbeam	200-250cm BR, 2x standard, clear stem 150-175cm, 3 breaks
<i>Populus nigra</i>	Black Poplar	200-250cm BR, 2x feathered, 5 breaks
<i>Crataegus laevigata</i>	Midland Hawthorn	175-200cm, BR, 2x feathered, 5 breaks

Management approach

- 3.6.5 The management of the landscape measures will be the responsibility of the applicant or their appointed managing agent. All trees and shrubs will be regularly watered in the first summer and as required thereafter to ensure successful establishment. Bark mulch will be maintained at a depth of 75 mm, and 0.5m in diameter around each tree or shrub as required to suppress weeds and retain soil moisture.
- 3.6.6 Vigorous and persistent weeds will be monitored and physically removed through hand pulling or digging. If weeds are more widespread, treatment with a spot herbicide will be undertaken where appropriate.
- 3.6.7 New woodland will undergo establishment period management for a duration of 5 years. During the establishment period, tree and shrub planting will be monitored in August, when trees are in leaf for signs of stresses, disease or failure.
- 3.6.8 Dead wood within woodland will be left in situ and not disturbed as much as possible to provide habitat for invertebrates. All tree guards and stakes will be subject to routine monitoring. Guards will be resecured and replaced as necessary. Staking will be checked and resecured as required routinely. Tree ties will be checked and loosened as required so as to not impede healthy growth.
- 3.6.9 Long term management of the established Broadleaf woodland across the Scheme will be defined at the detail design stage but will include:
- Management to ensure healthy growth of canopy and understorey layers, providing effective visual screening to local visual receptors.
 - New woodland will be managed to maintain a dense low canopy that provides effective visual screening to sensitive receptors. A scrub / shrub layer within the woodland would be encouraged through inclusion of scrub / shrub species.
 - Cyclical thinning. Varied management on a rotational basis will be undertaken to create areas of habitat enrichment and regenerative growth to provide light to ground flora and bushy re-growth of canopy and

understorey woodland layers. Typically, this would require the removal of no more than 15% of trees with areas left untouched during any one rotation for ecological benefit. Management prescriptions can include coppicing or pollarding, undertaken outside of growing season and outside of bird nesting season, thinning shall be carried out manually through direct selection and chainsaw. Weak, damaged, or irregular growth trees shall be prioritised for removal. Any mature or veteran trees within these plots shall be protected and retained.

- Thinning, pollarding, or coppicing operations are balanced with the objective of ensuring visual screening function remains appropriate for visual receptors.
- Trees will be assessed every 5 years by an arboricultural specialist, and any required pruning or maintenance (such as removal of guards) will be carried out as necessary. Tree pruning works will be completed in accordance with current best practice guidance. All tree works will be undertaken by a qualified arboriculturist or tree surgeon. Works are to comply with BS3998 'Tree Work – Recommendations' (Ref 8), and HSE Forestry and Arboricultural safety leaflets.

3.6.10 The targets for the Order Limits for this habitat are outlined below.

3.6.11 To maximise biodiversity and ecological value, Woodland should match the habitat condition to achieve 'Moderate' target condition for woodlands in accordance with BNG metric, by scoring between 26 and 32 out of 39 on the condition assessment criteria. The likely pitfalls for failure or scoring below the maximum 3 points per criteria are Criteria e, f, g, h, i, j and k, as follows:

- a) Age distribution of trees – Likely to score 3 of 3 - No significant browsing damage evident in woodland.
- b) Wild, domestic and feral herbivore damage - Likely to score 3 of 3 - No invasive species present in woodland.
- c) Invasive plant species - Likely to score 3 of 3 - Five or more native tree or shrub species found across woodland parcel.
- d) Number of native tree species - Likely to score 3 of 3 - >80% of canopy trees and >80% of understory shrubs are native.
- e) Cover of native tree and shrub species - Likely to score 3 of 3 - 10 - 20% of woodland has areas of temporary open space. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted
- f) Open space within woodland - Likely to score 2 of 3 - 21 - 40% of woodland has areas of temporary open space.
- g) Woodland regeneration - Likely to score 2 of 3 - One or two classes only present in woodland.

- h) Tree health - Likely to score 2 of 3 - 11% to 25% tree mortality and or crown dieback or low-risk pest or disease present.
- i) Vegetation and ground flora - Likely to score 2 of 3 - Recognisable woodland NVC plant community at ground layer present.
- j) Woodland vertical structure - Likely to score 2 of 2 - Two storeys across all survey plots.
- k) Veteran trees - Likely to score 1 of 3 - No veteran trees present in woodland.
- l) Amount of deadwood - Likely to score 1 of 3 - Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities.
- m) Woodland disturbance - Likely to score 3 of 3 - No nutrient enrichment or damaged ground evident.

3.7 Linear Tree Belts and Individual Trees

Context and Locations

- 3.7.1 Corridors of proposed linear tree belts are identified in **Appendix B**.
- 3.7.2 As part of the LEMP further detail will be provided as to the species composition with lower growing species planted adjacent to the proposed Solar PV Array areas to avoid overshadowing. Detailed landscape proposals plans will include planting specification and schedules and identify locations of all proposed planting. This will be secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.7.3 The proposed linear tree belts will create new features and bolster existing individual and small groups of trees at field boundaries to augment visual screening. Inclusion of these measures will also bolster the green infrastructure resource across the Scheme providing a range of environmental benefits including habitat creation and improved connectivity across the wider landscape. This will positively contribute to habitat and biodiversity value.

Prescriptions and Targets

- 3.7.4 The prescriptions and targets for proposed linear tree belts are as follows:
 - Ensure that vegetation establishes in similar species groupings and includes an appropriate mix of tree species with resilience to disease and climate change. Indicative species listed in **Table 3.2** below. Species will

be selected and outlined in accordance with those prominent in the local area.

- Provide suitable habitat with primary target species (small trees) in keeping with local vegetation to be present 15 years following implementation including *Betula pendula* (Silver Birch), *Acer campestre* (Field Maple), and *Tilia cordata* (Small leaved Lime) by the end of the establishment period.
- Trees would be planted in random formation, to support natural colonisation. (It may be desirable to plant species not identified in the local area which are ecologically similar to identified species and are resistant to both disease and climate change).
- Provide a form which integrates with the local vegetation structure. Planting will consist of a range of pioneer, successional and long-lived tree species.
- Successful establishment of a minimum of 80% of the planted stock by the end of the establishment period.
- Linear tree belts will comprise of a suitable range of tree stock to meet with the objectives of this planting type. Tree belts will include 40% standard, 40% feathered and 20% whips.
- Linear tree belts planting to be undertaken at 2 m centres. Linear tree belts in Site 9 to be undertaken at 1.5 m centres to reflect the woodland plantation characteristics of the landscape. Linear tree belts in the BESS Site to be undertaken at 1.5 m centres to enhance mitigation of acoustic fencing.
- Trees will be planted appropriately to suit stock sizes in accordance with the outline implementation recommendations in Section 2.

Table 3.2: Indicative Proposed Linear Tree Belts for Planting within the Scheme

Latin Name	Common Name	Indicative Stock Size and Specification
<i>Alnus glutinosa</i>	Common alder	175-200cm, BR, 2x, feathered, 3 breaks and BR Whip
<i>Acer campestre</i>	Field Maple	200-250cm BR, 2x standard, clear stem 150-175cm, 3 breaks and BR Whip
<i>Quercus robur</i>	English Oak	250-300cm, BR, 2x standard, clear stem 150-

Latin Name	Common Name	Indicative Stock Size and Specification
		175cm, 3 breaks and BR Whip
<i>Betula pendula</i>	Silver Birch	175-200cm, BR, 2x, feathered, 5 breaks and BR Whip
<i>Ulmus 'New Horizon'</i>	Elm 'New Horizon'	200-250cm BR, 2x standard, clear stem 150-175cm, 3 breaks
<i>Tilia cordata</i>	Small leaved Lime	200-250cm BR, 2x standard, clear stem 150-175cm, 3 breaks
<i>Populus nigra</i>	Black Poplar	175-200cm, BR, 2x feathered, 3 breaks

- Individual trees will comprise of a suitable range of tree stock and be 100% heavy standard, utilising species listed in Table 3.2.
- Create a structure which will provide effective visual screening by year 15.
- In accordance with the BNG metric, achieve 'Moderate' target condition.

Management approach

Linear Tree Belts

- 3.7.5 The management of the landscape measures will be the responsibility of the applicant or their appointed managing agent. All trees and shrubs will be regularly watered in the first summer and as required thereafter (including throughout periods of dry weather) to ensure successful establishment. Bark mulch will be maintained and reapplied annually at a depth of 75 mm, and 0.5m in diameter around each tree or shrub as required to suppress weeds and retain soil moisture.
- 3.7.6 New planting will undergo establishment period management for a duration of 5 years. A light formative trim will be undertaken, outside of growing season, to encourage new buds and growth. During the establishment period, tree and planting will be monitored in August, when trees are in leaf for signs of stresses, disease or failure.
- 3.7.7 Long term management of the established linear tree belts across the Scheme will be defined at the detail design stage but is assumed to include:
- Management to ensure healthy growth at the canopy layer, to provide effective visual screening to visual receptors.

- Inspection regularly outside of growing season and outside of bird nesting season, and dead, diseased or failing material is to be physically removed.
 - Thinning is to be carried on a cyclical basis through direct selection and chainsaw. Any retained mature or veteran trees within these plots shall be protected and retained.
 - Management prescriptions to encourage denser growth for visual screening and include coppicing or pollarding on rotation.
 - Trees will be assessed every 5 years by an arboricultural specialist, and any required pruning or maintenance (such as removal of guards) will be carried out as necessary. Tree pruning works will be completed in accordance with current best practice guidance. All tree works will be undertaken by a qualified arboriculturist or tree surgeon. Works are to comply with BS3998 'Tree Work – Recommendations' (Ref 8), and HSE Forestry and Arboricultural safety leaflets.
 - Tree ties will be checked and loosened as required so as to not impede healthy growth. Stakes and guards are to be checked and resecured as required.
- 3.7.8 The targets for the Order Limits for this habitat are outlined below.
- 3.7.9 To maximise biodiversity and ecological value, Woodland should match the habitat condition to achieve 'Moderate' target condition for woodlands in accordance with BNG metric, by scoring between 26 and 32 out of 39 on the condition assessment criteria. The likely pitfalls for failure or scoring below the maximum 3 points per criteria are Criteria e, f, g, h, i, j and k, as follows:
- a) Age distribution of trees – Likely to score 3 of 3 - *No significant browsing damage evident in woodland.*
 - b) Wild, domestic and feral herbivore damage - Likely to score 3 of 3 - No invasive species present in woodland.
 - c) Invasive plant species - Likely to score 3 of 3 - Five or more native tree or shrub species found across woodland parcel.
 - d) Number of native tree species - Likely to score 3 of 3 - *>80% of canopy trees and >80% of understory shrubs are native.*
 - e) *Cover of native tree and shrub species - Likely to score 3 of 3 - 10 - 20% of woodland has areas of temporary open space. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted*
 - f) Open space within woodland - Likely to score 2 of 3 - 21 - 40% of woodland has areas of temporary open space.
 - g) Woodland regeneration - Likely to score 2 of 3 - *One or two classes only present in woodland.*

- h) Tree health - Likely to score 2 of 3 - *11% to 25% tree mortality and or crown dieback or low-risk pest or disease present.*
- i) Vegetation and ground flora - Likely to score 1 of 3 - *No recognisable woodland NVC plant community at ground layer present.*
- j) Woodland vertical structure - Likely to score 2 of 2 - *Two storeys across all survey plots.*
- k) Veteran trees - Likely to score 1 of 3 - *No veteran trees present in woodland.*
- l) Amount of deadwood - Likely to score 1 of 3 - *Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities.*
- m) Woodland disturbance - Likely to score 3 of 3 - *No nutrient enrichment or damaged ground evident.*

Individual trees

- 3.7.10 Individual trees will also be planted within the Order Limits, and the same planting and management prescriptions will be taken as with trees associated with the tree belts and other broadleaved woodland creation.
- 3.7.11 The targets for the Order Limits for this habitat are outlined below.
- 3.7.12 To maximise biodiversity and ecological value, individual trees should match the habitat condition to achieve 'Moderate' target condition for Rural Trees in accordance with BNG metric, by scoring passing three or four of the six condition assessment criteria:
 - a) The tree is a native species (or at least 70% within the block are native species) - Anticipated Criteria Pass
 - b) The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion) - Anticipated Criteria Pass
 - c) The tree is mature (or more than 50% within the block are mature) - Anticipated Criteria Fail
 - d) There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height - Anticipated Criteria Pass

- e) Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark - Anticipated Criteria Fail
- f) More than 20% of the tree canopy area is oversailing vegetation beneath - Anticipated Criteria Pass

3.8 Scrub

Context and Locations

- 3.8.1 The Scheme offers opportunity for creation of scrub planting as a habitat creation measure which strengthens linkages between existing vegetation and improves networks and connectivity into the wider landscape, positively contributing to local green infrastructure.
- 3.8.2 Scrub has been proposed in various locations across the Sites, as identified in **Appendix B**.
- 3.8.3 Planting will be carried out in accordance with the detailed landscape proposal plans which will be prepared prior to implementation of the Scheme. Scrub species will be selected as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.8.4 Where appropriate, the proposed scrub planted across the Scheme will:
 - Provide a landscape buffer to existing and proposed features and throughout the Scheme.
 - Improve biodiversity and green infrastructure through creation of diverse native species habitat and structures that link to existing wildlife corridors and provide opportunities for shelter and foraging for a range of species.
 - Provide additional sources of native flowering and fruiting shrubs to enhance invertebrate populations and provide a food source to support local wildlife.

Prescriptions and Targets

- 3.8.5 The prescriptions and targets for the proposed scrub vegetation are:
 - Ensure that vegetation establishes in similar species groupings and includes an appropriate mix of species with resilience to disease and climate change. Indicative species listed in **Table 3.3** below. Species will be selected and outlined in accordance with those prominent in the local area.
 - Provide suitable habitat with primary target species (small trees) in keeping with local vegetation to be present 15 years following

implementation including *Corylus avellana* (Hazel), *Crataegus monogyna* (Hawthorn), and *Lonicera periclymenum* (Honeysuckle) by the end of the establishment period.

- Manage the landscape element to achieve area coverage of a minimum of 75% by the end of the establishment period.
- Nursery stock to be used: 100% transplants typically BRT stock 40-60cm height.
- Planting to be undertaken at 2 m centres.
- To maximise biodiversity and habitat value. Achieve 'Moderate' target condition in accordance with BNG metric for new areas of scrub

Table 3.3: Indicative Proposed Scrub for Planting within the Scheme

Latin Name	Common Name	Indicative Stock Size and Specification
<i>Cornus sanguinea</i>	Common Dog Wood	80-100cm, BR, branched, 5 breaks
<i>Ligustrum vulgare</i>	Wild Privet	60-80cm, BR, branched, 3 breaks
<i>Salix caprea</i>	Goat Willow	80-100cm, BR, branched, 3 breaks
<i>Rosa arvensis</i>	Field Rose	40-60cm BR, branched, 2 breaks
<i>Corylus avellana</i>	Common Hazel	80-100cm, BR, branched, 4 breaks
<i>Rosa canina</i>	Dog Rose	60-80cm, BR, branched, 3 breaks

Management approach

- 3.8.6 The management of the landscape measures will be the responsibility of the applicant or their appointed managing agent. All trees and shrubs will be regularly watered in the first summer and as required thereafter (including throughout periods of dry weather) to ensure successful establishment. Bark mulch will be maintained and reapplied annually at a depth of 75 mm, and 0.5m in diameter around each tree or shrub as required to suppress weeds and retain soil moisture.
- 3.8.7 New planting will undergo establishment period management for a duration of 5 years. Coppicing would commence 5 years after the scrub planting has established and matured to ensure succession to woodland is controlled and managed. A maximum of 30% of the total planted area would be cut in any one year to ensure dense growth is always present with some shrubs able to produce berries.

- 3.8.8 If required areas of scrub shall be trimmed, to encourage bushy new basal growth rejuvenate plants, and promote good flowering.
- 3.8.9 Management of scrub will be undertaken in accordance with best practice guidelines to prevent impacts to species such as nesting birds.
- 3.8.10 Long term management of the established areas of scrub across the Scheme will be defined at the detail design stage but is assumed to include:
- Inspection regularly outside of growing season and outside of bird nesting season, and dead, diseased or failing material is to be physically removed.
 - Whilst vegetative colonisation is to be promoted, annual and perennial weeds are to be physically removed.
 - Coppicing and thinning is to be carried on a cyclical basis every 5-7 years through direct selection and chainsaw. A maximum of 30% of the total planted area would be cut in any one year with the total area being cleared in a cycle over a period of 15 years to ensure dense growth is always present.
 - Tree pruning works will be completed in accordance with current best practice guidance. All tree works will be undertaken by a qualified arboriculturist or tree surgeon. Works are to comply with BS3998 'Tree Work – Recommendations' (Ref 8), and HSE Forestry and Arboricultural safety leaflets.
- 3.8.11 The targets for the Order Limits for this habitat are outlined as follows:
- To maximise biodiversity and ecological value, Mixed Scrub should match the habitat condition of Scrub and to achieve 'Moderate' target condition for scrub habitats in accordance with BNG metric, by passing three or four of the five condition assessment criteria:
 - a) The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).
 - At least 80% of scrub is native,
 - There are at least three native woody species,
 - No single species comprises more than 75% of the cover (except hazel, common juniper, sea buckthorn, or box, which can be up to 100% cover). – Anticipated Criteria Pass.
 - b) Seedlings, saplings, young shrubs and mature (or ancient or veteran³) shrubs are all present. – Anticipated Criteria Pass.
 - c) There is an absence of invasive non-native plant species⁴ (as listed on Schedule 9 of WCA5) and species indicative of suboptimal condition⁶ make up less than 5% of ground cover. – Anticipated Criteria Pass.

- d) The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat. – Anticipated Criteria Pass.
- e) There are clearings, glades or rides present within the scrub, providing sheltered edges. – Anticipated Criteria Fail.

3.9 Native Hedgerows

Context and Locations

- 3.9.1 Native hedgerow has been proposed in various locations across the Sites, as identified in **Appendix B**.
- 3.9.2 Hedgerows have been proposed to meet ecological and visual screening functions and provide ecological habitat connectivity across the wider landscape.
- 3.9.3 Planting will be carried out in accordance with the detailed landscape proposal plans which will be prepared prior to implementation of the Scheme. Hedgerow species will be selected as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.9.4 Where appropriate, proposed hedgerows planted across the Scheme will:
 - Provide connections between new and existing woodland and scrub planting.
 - Provide supplementary visual screening of the Scheme and ‘break up’ blanket visibility of solar arrays.
 - Improve biodiversity through habitat creation and planting structures that link to existing wildlife corridors and provide opportunities for shelter and foraging for a range of species, in particular breeding birds and foraging bats.
 - Provide additional sources of native flowering and fruiting shrubs to enhance invertebrate populations and provide a food source to support local wildlife.

Prescriptions and Targets

- 3.9.5 The Scheme’s targets for existing and proposed hedgerow are outlined as follows:
 - Ensure that vegetation establishes in similar species groupings and includes an appropriate mix of species with resilience to disease and climate change. Indicative species listed in **Table 3.4** below. Species will

be selected and outlined in accordance with those prominent in the local area.

- Establish hedgerows with a typical height of 3m with a range of native woody species with similarities to local hedgerows by the end of the initial establishment period. Primary target species include *Crataegus monogyna* (hawthorn), *Corylus avellana* (hazel) and *Acer campestre* (field maple).
- Manage the hedgerow landscape features to achieve 85% coverage by the end of the initial establishment period and ensure that new hedgerows have no gaps and provide an intact linear element.
- Nursery stock to be used: 100% transplants typically BRT stock 40-60cm height.
- New hedgerow planting will be undertaken at a density of five plants per linear metre, planted in a double staggered hedgerow with 0.4m offset, with plants at 0.4m centres.
- Achieve 'Moderate' target condition in accordance with BNG metric for newly created hedgerows.

Table 3.4: Indicative Proposed Native Hedgerow for Planting within the Order Limits

Latin Name	Common Name	Indicative Stock Size and Specification
<i>Prunus spinosa</i>	Blackthorn	80-100cm, BR, branched, 5 breaks
<i>Ilex aquifolium</i>	Common Holly	60-80cm, 5L, leader with laterals
<i>Crataegus monogyna</i>	Common Hawthorn	80-100cm, BR, branched, 4 breaks
<i>Crataegus laevigata</i>	Midland Hawthorn	80-100cm, BR, branched, 4 breaks
<i>Carpinus betulus</i>	Hornbeam	80-100cm, BR, transplant, seed raised
<i>Acer campestre</i>	Field Maple	80-100cm, BR, transplant, seed raised
<i>Corylus avellana</i>	Common Hazel	80-100cm, BR, branched, 4 breaks
<i>Cornus sanguinea</i>	Dogwood	80-100cm, BR, branched, 2 breaks

Management approach

- 3.9.6 The management of the landscape measures will be the responsibility of the applicant or their appointed managing agent.
- 3.9.7 All hedgerow management will follow best practice and will limit impacts during the nesting bird season, generally taken as March to August inclusive.
- 3.9.8 Hedge stock is to be well watered throughout the first summer and periods of continued dry weather.
- 3.9.9 Monitoring checks will be undertaken during the first growing season, when the hedgerow is in leaf for signs of stresses, disease or failure. Any hedge stock or sections of hedge stock showing signs of disease or failure is to be physically removed from the Scheme and disposed of accordingly, in accordance with biosecurity best practice to prevent disease spread. Failed stock will be replaced like for like, or with an alternative at the advice of the associated ecologist and landscape architect.
- 3.9.10 Annual and perennial weeds within growing area of hedgerow will be physically removed.
- 3.9.11 Following their establishment, hedgerows will undergo thinning as required, then trimmed on rotation every 2-3 years, to promote bushy regrowth. In relation to hedgerow management, any existing mature trees located within hedgerows, or trees with features suitable for roosting bats, or with deadwood suitable for invertebrates, will be retained and not removed, pollarded, or coppiced.
- 3.9.12 Hedgerows will be cut, likely using tractor mounted strimmer's with a cutting blade and not a rotary drum. Cutting will occur after the flowering season and once fruiting species have dropped fruit. Management will also not occur when grassland at hedgerow bases is in flower or setting seed.
- 3.9.13 Long term management of the established hedgerows across the Scheme will be defined at the detail design stage but is assumed to include:
- Monitoring checks will take place after establishment for signs of disease or failure. Checks will take place when hedgerows are in leaf, monitoring for signs of stresses, disease or failure. Checks will not disturb any potential nesting bird sites. Lengths of hedgerow will be monitored accordingly. Sections of diseased or dead hedge shall be removed and replaced with healthy, robust hedge stock within the next growing season. Removals will not take place during the bird nesting season.
 - Tree and shrub guards are to be checked, resecured or replaced as required periodically. Any encroaching vegetation within the guards is to be removed.
 - Hedgerow cut on rotation every 2-3 years, to promote bushy regrowth.

- Hedgerows will be cut, likely using tractor mounted strimmer's with a cutting blade and not a rotary drum. Cutting will occur after the flowering season and once fruiting species have dropped fruit. Management will not occur when grassland at hedgerow bases is in flower or setting seed.

3.9.14 The targets for the Order Limits for this habitat are outlined as follows:

- To maximise biodiversity and ecological value, native hedgerows should match the habitat condition of Native hedgerow and to achieve 'Moderate' target condition for hedgerows in accordance with BNG metric, by having no more than four failures and no failure of a functional group e.g. a1 and a2 in more than one group:
 - a1) Height - >1.5 m average along length – Anticipated Criteria Pass
 - a2) Width - >1.5 m average along length - Anticipated Criteria Pass
 - b1) Gap - hedge base - Gap between ground and base of canopy <0.5 m for >90% of length - Anticipated Criteria Fail
 - b2) Gap - hedge canopy continuity - "Gaps make up <10% of total length; and No canopy gaps >5 m" - Anticipated Criteria Fail
 - c1) Undisturbed ground and perennial vegetation - ">1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length:
 - Measured from outer edge of hedgerow; and
 - Is present on one side of the hedgerow (at least)." - Anticipated Criteria Pass
 - c2) Nutrient-enriched perennial vegetation - Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground. - Anticipated Criteria Fail
 - d1) Invasive and neophyte species - >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA3) and recently introduced species. - Anticipated Criteria Pass
 - d2) Current damage - >90% of the hedgerow or undisturbed ground is free of damage caused by human activities. - Anticipated Criteria Pass

3.10 Native Hedgerow with Trees

Context and Locations

- 3.10.1 Native hedgerow planting with trees has been proposed in various locations across the Sites, as identified in **Appendix B**.
- 3.10.2 In addition to supporting ecological needs and aiding habitat connectivity across the wider landscape, hedgerow planting with trees is proposed where there is a specific visual screening requirement.

- 3.10.3 Planting will be carried out in accordance with the detailed landscape proposal plans which will be prepared prior to implementation of the Scheme. Scrub species will be selected as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.10.4 Where appropriate the Native Hedgerow with Trees will:
- Provide a landscape feature which supports visual screening.
 - Include trees within the new hedgerow which allows them space to mature and develop an open crown.
 - Provide connections between new and existing woodland and scrub planting.
 - Improve biodiversity through creation of diverse habitat and planting structures that link to existing wildlife corridors and provide opportunities for shelter and foraging for a range of species, in particular breeding birds and foraging bats.
 - Provide additional sources of native flowering and fruiting shrubs to enhance invertebrate populations and provide a food source to support local wildlife.

Prescriptions and Targets

- 3.10.5 The Scheme's targets for proposed hedgerow are outlined as follows:
- Ensure that vegetation establishes in similar species groupings and includes an appropriate mix of species with resilience to disease and climate change. Indicative species listed in **Table 3.5** below. Species will be selected and outlined in accordance with those prominent in the local area.
 - Establish hedgerows with a typical height of 3m with a range of native woody species with similarities to local hedgerows by the end of the initial establishment period. Primary target species include *Crataegus monogyna* (hawthorn), *Corylus avellana* (hazel) and *Acer campestre* (field maple).
 - Manage the hedgerow landscape features to achieve 85% coverage by the end of the initial establishment period and ensure that new hedgerows have no gaps and provide an intact linear element.
 - Nursery stock to be used: 100% transplants typically BRT stock 40-60cm height for the hedgerow and 100% Heavy Standard for the hedgerow trees.
 - New hedgerow planting will be undertaken at a density of five plants per linear metre, planted in a double staggered hedgerow with 0.4m offset,

with plants at 0.4m centres. Trees randomly spaced between 5–15 m centres. On occasions where visual receptors are likely to see visual effects in close proximity, denser tree planting of between 2–3 m centres may be adopted to provide more instant screening effects. Where this occurs, species will be appropriately mixed to ensure large species trees are intermittently mixed with smaller species trees to ensure suitable growing conditions in perpetuity.

- Any trees planted, are to be planted with a 1.5 m tall white tipped marker post. This will allow locations of newly planted trees to be noticeable to operators of flails during maintenance periods.
- Planting of trees will focus on those capable of making a long-term contribution, to support development and continuity of habitat.
- Achieve 'Moderate' target condition in accordance with BNG metric for newly created hedgerows.

Table 3.5: Indicative Proposed Native Hedgerow with Trees for Planting within the Scheme

Latin Name	Common Name	Indicative Stock Size and Specification
<i>Prunus spinosa</i>	Blackthorn	80-100cm, BR, branched, 5 breaks
<i>Crataegus monogyna</i>	Common Hawthorn	80-100cm, BR, branched, 4 breaks
<i>Crataegus laevigata</i>	Midland Hawthorn	80-100cm, BR, branched, 4 breaks
<i>Carpinus betulus</i>	Hornbeam	80-100cm, BR, transplant, seed raised
<i>Acer campestre</i>	Field Maple	100-125cm, BR, transplant, seed raised
<i>Corylus avellana</i>	Common Hazel	80-100cm, BR, branched, 4 breaks
<i>Ilex aquifolium</i>	Common Holly	60-80cm, 5L, leader with laterals
<i>Cornus sanguinea</i>	Dogwood	80-100cm, BR, branched, 2 breaks
<i>Ulmus 'New Horizon'</i>	Elm 'New Horizon'	200-250cm BR, 2x standard, clear stem 150-175cm, 3 breaks
<i>Betula pendula</i>	Silver Birch	175-200cm BR, feathered 2X, 3 breaks
<i>Quercus robur</i>	English Oak	250-300cm, BR, 2x standard, clear stem 150-175cm, 3 breaks

Latin Name	Common Name	Indicative Stock Size and Specification
<i>Malus sylvestris</i>	European Crab Apple	100-125cm, BR, branched

Management approach

- 3.10.6 The management of the landscape measures will be the responsibility of the applicant or their appointed managing agent. The management approaches outlined in Section 3.9 apply here. In addition to the measures set out following the establishment period, individual hedgerow trees will be assessed every 5 years by an arboricultural specialist, and any required pruning or maintenance (such as removal of guards) will be carried out as necessary.
- 3.10.7 The targets for the Order Limits for this habitat are outlined as follows:
- To maximise biodiversity and ecological value, hedgerows with trees should match the habitat condition of species-rich native hedgerow with trees and to achieve 'Moderate' target condition for hedgerows with trees in accordance with BNG metric, by having no more than five failures and no failure of a functional group e.g. a1 and a2 in more than one group:
 - a1) Height - >1.5 m average along length – Anticipated Criteria Pass
 - a2) Width - >1.5 m average along length - Anticipated Criteria Pass
 - b1) Gap - hedge base - Gap between ground and base of canopy <0.5 m for >90% of length - Anticipated Criteria Fail
 - b2) Gap - hedge canopy continuity - "Gaps make up <10% of total length; and No canopy gaps >5 m" - Anticipated Criteria Fail
 - c1) Undisturbed ground and perennial vegetation - ">1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length:
 - Measured from outer edge of hedgerow; and
 - Is present on one side of the hedgerow (at least)." - Anticipated Criteria Pass
 - c2) Nutrient-enriched perennial vegetation - Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground. - Anticipated Criteria Fail
 - d1) Invasive and neophyte species - >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA3) and recently introduced species. - Anticipated Criteria Pass

- d2) Current damage - >90% of the hedgerow or undisturbed ground is free of damage caused by human activities. - Anticipated Criteria Pass
- e1) Tree class - There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient8), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow. - Anticipated Criteria Pass
- e2) Tree health - At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity. - Anticipated Criteria Fail

3.11 Instant Hedgerow

Context and Locations

- 3.11.1 Instant hedgerow has been proposed in various locations across the Sites, as identified in **Appendix B**.
- 3.11.2 Planting will be carried out in accordance with the detailed landscape proposal plans which will be prepared prior to implementation of the Scheme. Species will be selected as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.11.3 Instant hedgerow planting will be installed where a specific glint and glare effect has been identified, and an immediate visual screening barrier is required to mitigate. The following section outlines the approach for an instant hedgerow.
- 3.11.4 An alternative solution of a temporary close boarded fence with standard hedgerow planting adjacent could be considered if an instant hedgerow was not available. In this instance the measures identified in Section 3.9 would apply in combination with a close boarded timber fence. Once the hedgerow is established to provide the visual screening function the temporary fence could be removed.

Prescriptions and Targets

- 3.11.5 Instant Hedging is at greater risk of failure during the establishment period than typical hedgerow planting stock, therefore considered preparation and monitoring will be undertaken during the establishment and monitoring period.

- 3.11.6 Instant Hedging will be planted immediately on delivery, with minimal handling and following supplier instructions. Therefore, ground preparation works need to be undertaken in a timely manner.
- 3.11.7 The hedge will be delivered in 2 metre sections, and the planting trench will need to be 0.5m longer than the completed length of hedgerow at either end. The trench will be dug as a continuous run, a minimum of 0.6m wide and no more than 0.4m deep. Topsoil and subsoil are to be kept separate for backfilling.
- 3.11.8 Weeds, roots and rocks are to be removed from the bottom of the trench, which shall be worked to a fine, loose tilth and a Mycorrhizal powder applied. The pit is to be backfilled and firmed in with the topsoil and quality compost before mulching and watering in. The hedge will be lightly trimmed to encourage uniform growth, provided no prolonged periods of extreme weather are forecast.
- 3.11.9 Stake and wire netting will be required to provide a barrier to protect against damage from rabbits or pests.
- 3.11.10 The following pre grown hedging sections are readily available from reputable nursery growers. The species mixes have been identified as appropriate for use within the Scheme. These have been selected due to their ecological benefits and cohesion with existing vegetation across the Scheme and wider landscape. The instant hedging is available in pre grown mixed species segments from Ready Hedge or similar reputable nursery growers. The species mixes are as follows:

Table 3.6: Indicative Proposed Instant Hedgerow (Mix 1 available from Ready Hedge)

Latin Name	Common Name
<i>Prunus spinosa</i>	Blackthorn
<i>Crataegus monogyna</i>	Common Hawthorn
<i>Crataegus laevigata</i>	Midland Hawthorn
<i>Carpinus betulus</i>	Hornbeam
<i>Acer campestre</i>	Field Maple
<i>Corylus avellana</i>	Common Hazel

Table 3.7: Indicative Proposed Instant Hedgerow (Mix 2 available from Best 4 Hedging)

Latin Name	Common Name
<i>Prunus spinosa</i>	Blackthorn
<i>Crataegus monogyna</i>	Common Hawthorn
<i>Crataegus laevigata</i>	Midland Hawthorn
<i>Acer campestre</i>	Field Maple
<i>Corylus avellana</i>	Common Hazel
<i>Viburnum opulus</i>	Guelder opulus
<i>Viburnum lanata</i>	Wayfaring Tree
<i>Euonymus europaeus</i>	European Spindle Tree
<i>Ilex aquifolium</i>	Common Holly
<i>Rhamnus cathartica</i>	Purging Buckthorn
<i>Malus sylvestris</i>	European Crab Apple

Management approach

- 3.11.11 The management of the landscape measures will be the responsibility of the applicant or their appointed managing agent. During the first year following installation water thoroughly weekly during the growing season and more frequently in prolonged periods of hot dry weather to ensure successful establishment. Bark mulch will be maintained and reapplied annually at a depth of 75 mm, and 0.5m in diameter around each tree or shrub as required to suppress weeds and retain soil moisture. If required weed monthly to remove annual and perennial weeds.
- 3.11.12 Hedgerow sections will be monitored for signs of stresses or failure during the first growing season. Sections which are subject to stresses will be subject to a more vigorous management regime temporarily to aid recovery. This is to involve cutting back hard and watering in thoroughly. No cutting back is to be undertaken without careful checks for nesting bird activity. Any active nests will not be disturbed and hedgerow failed stock will be replaced and replanted in the next planting season.
- 3.11.13 Long term management of the established hedgerow will be defined at the detail design stage but is assumed to include:
- Monitoring checks will take place after establishment for signs of disease or failure. Checks will take place when hedgerows are in leaf, monitoring for signs of stresses, disease or failure. Checks will not disturb any potential nesting bird sites. Lengths of hedgerow will be monitored accordingly. Sections of diseased or dead hedge shall be removed and replaced with healthy, robust hedge stock within the next growing season. Removals will not take place during the bird nesting season.

- Tree and shrub guards are to be checked, resecured or replaced as required periodically. Any encroaching vegetation within the guards is to be removed.
- Hedgerow cut on rotation every 2-3 years, to promote bushy regrowth.
- Hedgerows will be cut, likely using tractor mounted strimmer's with a cutting blade and not a rotary drum. Cutting will occur after the flowering season and once fruiting species have dropped fruit. Management will not occur when grassland at hedgerow bases is in flower or setting seed.
- (if appropriate removal of temporary fencing following successful establishment of a native hedgerow)

3.11.14 The targets for the Order Limits for this habitat are outlined as follows:

- To maximise biodiversity and ecological value, instant hedgerows should match the habitat condition of Native hedgerow and to achieve 'Moderate' target condition for hedgerows in accordance with BNG metric, by having no more than four failures and no failure of a functional group e.g. a1 and a2 in more than one group:
 - a1) Height - >1.5 m average along length – Anticipated Criteria Pass
 - a2) Width - >1.5 m average along length - Anticipated Criteria Pass
 - b1) Gap - hedge base - Gap between ground and base of canopy <0.5 m for >90% of length - Anticipated Criteria Fail
 - b2) Gap - hedge canopy continuity - "Gaps make up <10% of total length; and No canopy gaps >5 m" - Anticipated Criteria Fail
 - c1) Undisturbed ground and perennial vegetation - ">1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length:
 - Measured from outer edge of hedgerow; and
 - Is present on one side of the hedgerow (at least)." - Anticipated Criteria Pass
 - c2) Nutrient-enriched perennial vegetation - Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground. - Anticipated Criteria Fail
 - d1) Invasive and neophyte species - >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA3) and recently introduced species. - Anticipated Criteria Pass
 - d2) Current damage - >90% of the hedgerow or undisturbed ground is free of damage caused by human activities. - Anticipated Criteria Pass

3.12 Flower Rich Pollinator

Context and Locations

- 3.12.1 Flower Rich Pollinator seeding is proposed in various locations across the Order Limits, as identified in **Appendix B**.
- 3.12.2 A range of grassland typologies have been identified across the Sites. This has been informed by the ecological surveys and UK habitat classifications, targeting habitat creation of select typologies in areas where they are likely to thrive.
- 3.12.3 Areas of flower rich pollinator will provide a floristically rich habitat of wildflower grassland which will have a benefit for pollinating insects, therefore boosting invertebrate numbers which are currently in decline and providing ecosystem services for the adjacent arable land. This would also benefit species such as farmland birds, amphibians and reptiles.
- 3.12.4 Grassland creation will be carried out in accordance with the detailed landscape proposal plans which will be prepared prior to implementation of the Scheme. Grassland species will be selected as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.12.5 Where appropriate, the Flower Rich Pollinator habitat will:
- Enrich pollinator food sources and create shelter.
 - Improve biodiversity and green infrastructure through creation of diverse native species habitat and structures that link to existing wildlife corridors.

Prescriptions and Targets

- 3.12.6 Diverse grassland can take time to develop on previously arable land which has been fertilised and ploughed. However, with an appropriate seed mix selected and correct habitat management implemented, wildflower meadows can be successfully established. The preparation of the fields before reversion to grassland will be key and must aim to minimise the impact of competition between desirable, sown species and unsown agricultural weeds and cereals
- 3.12.7 Prior to finalisation of the LEMP, soil investigations will be essential to ensure appropriateness of seed mix/establishment techniques and promote a high likelihood of success. The seed mixes will be selected to reflect the soil type, pH and nutrient levels in order to ensure that they establish successfully.

- 3.12.8 Seeding methods can include the spread of locally sourced green hay or locally collected seed. The local seed is to be distributed over the area following best practice application guidelines.
- 3.12.9 Should the opportunity to establish the meadow through the green hay method arise, (restricted by green hay availability, suitability of donor sites and construction phase timescale) then the following will be applied. The green hay is to be sourced of high quality, from local nature reserve or similar and as weed free as possible and spread over the area evenly. The grass and the seed can then be turned to aid drying and distributed using a grass tedder or similar to disperse the seed more widely and evenly. This will be repeated until the grass has dried and dropped seed. The sward can then be gathered and removed from within the Order Limits.
- 3.12.10 In addition, a high percentage of Yellow Rattle (*Rhinanthus Minor*) will be included. Along with additional ecological benefits, Yellow Rattle also has meadow establishing properties. This allows slower growing flowering species to establish. Yellow Rattle seed can be applied to the Scheme as ripe, locally acquired seed, or as seed sourced from a reputable plant nursery. The seed is to be applied at a similar time to the hay. This allows the seed opportunity to lie.
- 3.12.11 Germination is often slow and erratic, typically the following early spring. Following the dispersal of all seed, ground is to be rolled to ensure good seed- soil contact. The seed or hay can be spread over well prepared, lightly cultivated bare ground, or over patches of existing grass sward. These areas are to have been prepared to allow for successful establishment. The existing grass is to be checked for perennial weeds, which are to be removed through spot spraying or hand digging.
- 3.12.12 Alternatively, a proprietary seed mixture such as Emorsgate EM3 Special General Purpose Meadow Mixture, or similar could be used (subject to further soil surveys). Autumn sowing is preferable, with the seed sown as soon as practicable subsequent to construction to avoid a flush of unwanted species such as annual plants and injurious weeds.
- 3.12.13 The targets for this habitat are to maximise biodiversity and ecological value. Grassland will match the habitat condition of Other neutral grassland and achieve 'Moderate' target condition for non-acid grassland in accordance with BNG metric, by passing three to five of the condition assessment criteria including the essential criterion (a):
- a) The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (other neutral grassland) – Anticipated criteria pass
 - b) Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm – Anticipated criteria pass
 - c) Cover of bare ground is between 1% and 5%, including localised areas e.g. rabbit warrens – Anticipated criteria pass

- d) Cover of bracken *Pteridium aquilium* is less than 20% and cover of scrub (including bramble *Rubus fruticosus agg*) is less than 5% - Anticipated criteria pass
 - e) Combined cover of species indicative of suboptimal conditions and physical damage (such as excessive poaching, damage from machinery use or storage) account for less than 5% of total area – Anticipated criteria pass
 - f) There are 10 or more vascular plant species per m² present including forbs that are characteristic of the habitat type (Criteria essential for achieving Good condition for non-acid grasslands) – Anticipated criteria fail
- 3.12.14 Inclusion of this habitat will contribute to provision of a diverse makeup of habitats across the Sites which responds to local conditions and characteristics.

Management approach

- 3.12.15 The management of the landscape measures will be the responsibility of the applicant or their appointed managing agent. Management during the first year is critical, with more regular cutting taking place to tackle annual or agricultural plants and injurious weeds. Herbicide application may be necessary where there is an abundance of injurious weeds.
- 3.12.16 After Year 1, and once the habitat is established, management would be in the form of a “haycut” between late July and September and/or grazing by sheep (aftermath grazing) to avoid impacts on nesting birds, with arisings removed. No grazing or cutting between April and late July to allow the flowering species to grow, flower and set seed
- 3.12.17 Annual weed growth will be monitored in order to prevent out competing the establishing sward. Some annual weed growth provides a level of foraging habitat opportunity and shelter for the establishing seedlings. Weeds will be cut back and removed in summer, prior to setting seed, to prevent a weed seed bank from establishing. Perennial weeds are to be physically dug and removed where allowable. The established meadow will be lightly mown throughout the growing season in the first year, in order to encourage growth and vigour.

3.13 Tussocky Grassland

Context and Locations

- 3.13.1 Tussocky Grassland creation is proposed in various locations across the Order Limits, as identified in **Appendix B**.
- 3.13.2 A range of grassland typologies have been identified across the Scheme in order to create and enhance habitat typologies across the Scheme. These have been informed by the ecological surveys and UK habitat classifications.

- 3.13.3 Areas of tussocky grassland will provide a range of benefits and ecosystem services for birds, small mammals, insects and invertebrates across the Scheme, including foraging, nesting, shelter and crucially important winter shelter opportunities.
- 3.13.4 Grassland creation will be carried out in accordance with the detailed landscape proposal plans which will be prepared prior to implementation of the Scheme. Grassland species will be selected as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.13.5 Where appropriate proposed tussocky grassland will:
- Bolster biodiversity and ecological connectivity across the Scheme.
 - Provide an extended season of food, shelter and nesting sites across the Scheme for insects, small mammals, birds, amphibians and reptiles.
 - Improve biodiversity and green infrastructure through creation of diverse native species habitat and structures that link to existing wildlife corridors and provide opportunities for shelter for a range of species.

Prescriptions and Targets

- 3.13.6 The prescriptions outlined in Section 3.12 above for creation through green hay methods are applicable for the creation of Tussocky Grassland. However, a proprietary seed mix such as Emorsgate EM10 Tussock Meadow Mixture, or similar will be used as an alternative if green hay or local seed is unavailable.
- 3.13.7 The targets for this habitat are to maximise biodiversity and ecological value. Grassland will match the habitat condition of Other neutral grassland and to achieve 'Moderate' target condition for non-acid grassland in accordance with BNG metric, by passing three to five of the condition assessment criteria including the essential criterion (a):
- a) The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (other neutral grassland) – Anticipated criteria pass
 - b) Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm – Anticipated criteria pass
 - c) Cover of bare ground is between 1% and 5%, including localised areas e.g. rabbit warrens – Anticipated criteria pass
 - d) Cover of bracken is less than 20% and cover of scrub (including bramble) is less than 5% - Anticipated criteria pass

- e) Combined cover of species indicative of suboptimal conditions and physical damage (such as excessive poaching, damage from machinery use or storage) account for less than 5% of total area – Anticipated criteria pass
 - f) There are 10 or more vascular plant species per m² present including forbs that are characteristic of the habitat type (Criteria essential for achieving Good condition for non-acid grasslands) – Anticipated criteria fail
- 3.13.8 Inclusion of this habitat will contribute to provision of a diverse makeup of habitats across the Sites which responds to local conditions and characteristics.

Management approach

- 3.13.9 The management of the landscape measures will be the responsibility of the applicant or their appointed managing agent. During the first year, management is crucial to successful sward establishment. Annual weed growth will be monitored in order to prevent out competing the establishing sward. Excessive annual weeds will be cut back during regular cuttings and removed in summer, prior to setting seed, to prevent a weed seed bank from establishing. Perennial weeds are to be physically dug and removed where allowable. Herbicide application may be necessary if there is an abundance of injurious weeds. The established meadow will be lightly mown or sheep grazed throughout the growing season in the first year, in order to encourage growth and vigour.
- 3.13.10 Once areas of tussocky grassland have been established, a relaxed mowing regime shall be adopted for tussocky grassland, which requires minimal intervention. Unwanted annual and perennial weeds shall be physically removed through digging and hand pulling. More pernicious weeds in wider spread groupings may require spot spraying for removal.
- 3.13.11 Rotational cutting of areas of the tussocky grassland can be undertaken on a 2–3-year programme, between October and February to control scrub and bramble encroachment. Areas of sward will be left uncut in each seasonal cut, to ensure vegetative cover and associated ecological benefits are retained. The sward shall be cut and left to lie to allow the seed to drop, before physically removing all cut material from the Sites and disposed of accordingly. Seeding dropping allows for natural regeneration of the grassland.

3.14 Neutral Grassland

Context and Locations

- 3.14.1 Neutral Grassland creation is proposed in various locations across the Sites, as identified in **Appendix B**.

- 3.14.2 A variety of grassland types have been recognised across the Order Limits to support and enhance habitat typologies and ecosystem services across the Sites. These have been informed by UK habitat classifications and ecological surveys.
- 3.14.3 Areas of neutral grassland will provide a range of grassland and floristic meadow benefits and ecosystem services for a variety of wildlife types present across the Order Limits. The grassland also provides a range of benefit to species found in the neighbouring arable farmland.
- 3.14.4 Grassland creation will be carried out in accordance with the detailed landscape proposal plans which will be prepared prior to implementation of the Scheme. Grassland species will be selected as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.14.5 Where appropriate neutral grassland will:
- Enrich pollinator food sources and create shelter.
 - Improve biodiversity and green infrastructure through creation of diverse native species habitat and structures that link to existing wildlife corridors.

Prescriptions and Targets

- 3.14.6 The prescriptions outlined in Section 3.12 above for creation through green hay methods are applicable for the creation of Neutral Grassland. However a proprietary seed mix such as Emorsgate EM1 Basic General-Purpose Meadow Mixture, or similar will be used as an alternative if green hay or local seed is unavailable.
- 3.14.7 The targets for this habitat are to maximise biodiversity and ecological value. Grassland will match the habitat condition Other neutral grassland and to achieve 'Moderate' target condition for non-acid grassland in accordance with BNG metric, by passing three to five of the condition assessment criteria including the essential criterion (a):
- a) The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (other neutral grassland) – Anticipated criteria pass
 - b) Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm – Anticipated criteria pass
 - c) Cover of bare ground is between 1% and 5%, including localised areas e.g. rabbit warrens – Anticipated criteria pass
 - d) Cover of bracken is less than 20% and cover of scrub (including bramble) is less than 5% - Anticipated criteria pass

- e) Combined cover of species indicative of suboptimal conditions and physical damage (such as excessive poaching, damage from machinery use or storage) account for less than 5% of total area – Anticipated criteria pass
 - f) There are 10 or more vascular plant species per m² present including forbs that are characteristic of the habitat type (Criteria essential for achieving Good condition for non-acid grasslands) – Anticipated criteria fail
- 3.14.8 Inclusion of this habitat will contribute to provision of a diverse makeup of habitats across the Sites which responds to local conditions and characteristics.

Management Approach

- 3.14.9 The approach outlined in Section 3.12 above is considered valid for the creation of Neutral Grassland.

3.15 Modified Grassland

Context and Locations

- 3.15.1 Modified Grassland seeding is proposed across areas of solar activity throughout the Scheme, vegetating under and around the panels, as identified in **Appendix B**.
- 3.15.2 Areas of modified grassland will provide a floristically rich habitat of wildflower grassland which will have a benefit for pollinating insects, therefore boosting invertebrate numbers which are currently in decline and providing ecosystem services for the adjacent arable land. This would also benefit species such as farmland birds, amphibians and reptiles.
- 3.15.3 Grassland creation will be carried out in accordance with the detailed landscape proposal plans which will be prepared prior to implementation of the Scheme. Grassland species will be selected as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Objectives

- 3.15.4 Where appropriate modified grassland will:
- Establish a practical, easily managed vegetative ground cover between the Solar PV Arrays.
 - Provide more open habitat and foraging opportunities.
 - Improve biodiversity and green infrastructure through creation of diverse native species habitat that links to existing wildlife corridors

Prescriptions and Targets

- 3.15.5 Prior to finalisation of the LEMP, soil investigations will be undertaken, to ensure appropriateness of seed mix/establishment techniques and promote a high likelihood of success. The seed mixes will be selected to reflect the soil type, pH and nutrient levels in order to ensure that they establish successfully.
- 3.15.6 Excessive annual weed growth is to be monitored, to prevent out shading out the establishing sward. Annual weeds will be cut back and removed in summer, prior to setting seed, to prevent a weed seed bank from establishing throughout the Scheme. Perennial weeds are to be physically dug and removed where allowable. The established meadow will be lightly mown throughout the growing season in the first year, in order to encourage growth and vigour.
- 3.15.7 A proprietary seeding mix will be used containing a diverse mixture of grasses and flowering species, selected for their low growing qualities and their responsiveness to a formative trim through a frequent, light mowing regime. The suggested seed complete mix is Emorsgate EM1 Flowering Lawn Mix, or similar and approved. Following the dispersal of all seed, ground is to be rolled to ensure good seed- soil contact.
- 3.15.8 The targets for this habitat are to maximise biodiversity and ecological value. Grassland will be managed to maximise the potential value of the grassland and be managed with the intention to achieve Moderate target condition, however it is generally accepted that grassland underneath the solar panels are unlikely to score higher than 'Poor' condition by failing essential Criteria (a). Created Modified Grassland habitats within the Statutory Biodiversity Metric have been assigned as 'Poor', but will be managed with the intention of maximising this where possible. To achieve 'Moderate' target condition in accordance with BNG metric, the habitat must pass four of the five condition assessment criteria including the essential criterion (a):
- a) There are 6-8 vascular plant species per m² including at least two forbs (essential criteria for achieving Moderate or Good condition) – Anticipated criteria pass
 - b) Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm – Anticipated criteria fail
 - c) Any scrub present accounts for less than 20% of the total grassland area. – Anticipated criteria pass
 - d) Physical damage is evident in less than 5% of total grassland area – Anticipated criteria pass
 - e) Cover of bare ground is between 1% and 10%, including localised areas – Anticipated criteria fail.
 - f) Cover of bracken is less than 20% – Anticipated criteria pass

- g) There is an absence of invasive non-native plant species – Anticipated criteria pass
- 3.15.9 Inclusion of this habitat will contribute to provision of a diverse makeup of habitats across the Sites which responds to local conditions and characteristics.

Management Approach

- 3.15.10 A regular mowing regime will be adopted during the establishment of the modified grassland. This will cut the sward to a height of 40-60mm. This will encourage dense, bushy sward development and structure. Attention will be paid to any signs of ground nesting bird activity. No cutting will be undertaken if there are any signs of active nesting sites. Attention will be paid to around the panels to reduce the need for shade checks and cuts.
- 3.15.11 Weeds are to be monitored and physically removed from the Scheme through hand pulling and digging. In areas where there is excessive weed growth, spot spraying of herbicide may be a more appropriate management approach.
- 3.15.12 Following successful establishment, a more relaxed management regime will be implemented. This can involve sheep grazing on a rotational basis, allowing the sward a break from grazing through May and June to allow flowering species to set seed. Grazing can be used alongside mowing or as a standalone management practice.
- 3.15.13 The adopted mowing regime will be modified from the management prescriptions to ensure a practicable mowing regime which best considers the vegetation growth, sward height and solar functionality.
- 3.15.14 Shade checks and cuts will be undertaken periodically in the growing season to prevent vegetation shading out the panels. Should vegetation be growing above the panels, a shade cut of no more than 1 metre in width will be undertaken along the leading edge of the panels. Attention will be paid to any signs of ground nesting bird activity. No cutting will be undertaken if there are any signs of active nesting sites. As with all cutting activity within the Scheme, all arisings are to be removed and disposed of accordingly to allow for natural regeneration of a varied sward.

Ecology Measures

3.16 Habitat Boxes and Wildlife Enhancement Features

- 3.16.1 Habitat boxes can be a useful tool for monitoring and can provide nesting/roosting opportunities where there is a lack of natural features within the landscape. The exact locations and specifications for bat and bird boxes will be finalised as part of the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.

Bird Boxes

- 3.16.2 Bird boxes that mimic cavities will be installed within the Order limits where there is a lack of mature trees which may naturally provide these features. Boxes can be installed according to the species which have been identified during the breeding bird surveys and their distribution. House sparrow *Passer domesticus* and wren *Troglodytes troglodytes* are species of conservation concern identified within the Order limits which may benefit from the provision of suitable bird boxes.
- 3.16.3 Barn Owl *Tyto alba* boxes are known to be particularly successful on solar sites especially when placed close to areas of rough grassland where there will be an abundance of small mammals. Where no mature trees are present, Barn Owl boxes can be post mounted (although trees are preferable). Barn Owl is identified as a priority species within the Norfolk BAP and has been recorded breeding within the Order limits.
- 3.16.4 Additional raptor species recorded within the Order limits which may benefit from boxes or other enhancements include Kestrel *Falco tinnunculus* and Tawny Owl *Strix aluco*. If required, consultation with relevant stakeholders and local wildlife groups can help shape any targeted measures for raptors that are known to be present within the Order Limits and wider area.
- 3.16.5 All bird boxes will be installed out of direct sunlight, facing away from prevailing wind (northerly, north-westerly or north-easterly preferably). Boxes will also be placed clear of vegetation and away from ivy growth. All boxes will be placed at least 3 m off the ground, or as otherwise specified.

Bat Boxes

- 3.16.6 As with bird boxes, bat boxes can be particularly useful where natural cavities are limited. The installation of boxes suitable for crevice-dwelling bat species, such as Common Pipistrelle *Pipistrellus pipistrellus*, may act as an enhancement and could also provide an important monitoring tool. Monitoring of bat species within the Order limits may be particularly beneficial, in particular Barbastelle *Barbastella barbastellus*, which have been recorded within the Order limits and have been recorded as breeding within and adjacent to the Order limits. Barbastelle are also a priority species within the Norfolk BAP.
- 3.16.7 Boxes could be installed in a variety of places including hedgerow trees, woodland or post mounted. Double panel bat boxes may be more desirable in some cases, as these prevent birds from nesting within the boxes. Bat boxes will be placed in sunny locations without obscuring vegetation and away from ivy growth. Boxes will be placed at least 3 m from the ground and on south facing mature tree trunks.

Management Approach

- 3.16.8 The wildlife boxes will be monitored by an appropriately qualified ecologist, by visually checking the boxes (externally), ensuring they are still intact and secured, and replaced if necessary. Internal checks will be undertaken after

five years (and every five years thereafter) by an appropriately bat and dormouse licensed (or accredited agent) ecologist, and if boxes are full of old unused nesting material / debris then this will be carefully removed in order to allow the continued use of the box.

Amphibian and Reptile Habitat Piles

3.16.9 Fourteen hibernacula will be created within the species-rich tussocky and pollinator grassland in relatively close proximity to seven newly created ghost pond habitats (two piles per habitat pond). The design of the hibernacula will follow that set out in the Great Crested Newt Mitigation Guidelines (English Nature 2001) (see Plate 1 below). Each individual hibernaculum will consist of mainly inert rubble material and wooden logs, covered with soil and/or turf (sourced from pond excavations) and will be at least circa 1 x 2 metres in diameter.

3.16.10 The hibernacula will provide additional terrestrial habitats for foraging and hibernating amphibians and reptile species and will also encourage a more diverse invertebrate population within the grassland habitats.

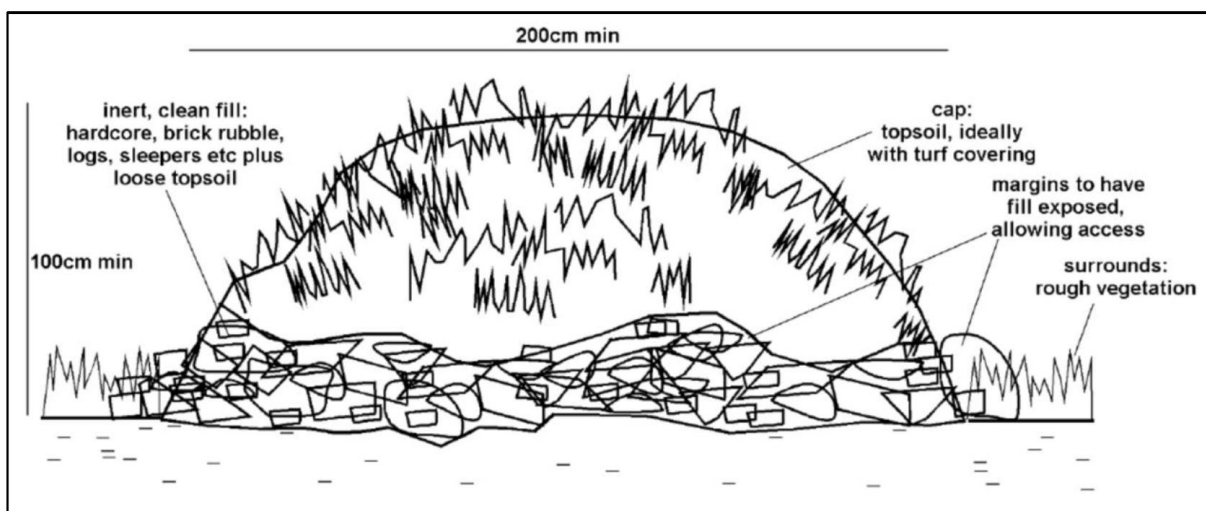


Plate 1: Hibernaculum design

Management Approach

3.16.11 Any wood and grass removed during habitat management or other work operations will be kept in habitat piles, in order to provide valuable invertebrate habitat and shelter for other wildlife, including small mammals/amphibians/reptiles.

3.16.12 Following from the construction of the proposed development appropriate areas will be designated for habitat piles; in agreement with a consultant Ecologist and the appointed Landscape Management contractor. Habitat piles will be located along existing hedgerows, woodland belts and other habitats features, and will not be placed in close proximity to existing/newly created ponds or upon steep slopes; in order to avoid nutrients enrichment of newly created habitats and existing watercourses/ditches. The same

location will be used on an annual basis, however if there is an excessive build-up of vegetation, new locations suitable will be agreed upon.

Hedgehogs

- 3.16.13 The Order Limits are mostly open arable farmland and opportunities for sheltering and hibernating hedgehog are limited, although there is favourable habitat within the Order Limits include hedge, scrub and woodland. As a precaution, vegetation clearance will be mindful of the potential presence of hedgehogs and a pre-commencement check will be carried out concurrently whilst searching for reptiles such as common lizard and grass snake, and common species of amphibian.
- 3.16.14 Any stockpiled materials or brash on site will also be searched for hedgehog, before being removed.
- 3.16.15 If any hedgehog (of any weight) are found between April and August, or during October or November weighing over 600 g, they will be moved to a safe area.
- 3.16.16 Hedgehogs found during October and November weighing less than 600g, or if found during the period December to March inclusive (of any weight), will be taken to an animal rescue centre for care and will be released during the Spring (April or May) when weighing at least 600g and being sufficiently robust.
- 3.16.17 To increase the nesting potential of the development, the provision of nesting boxes will be included within the Order Limits to provide a safe location for breeding. These can also be used to help monitor breeding populations if required. As such, ten hedgehog houses (one per Site) will be placed along a field boundary with suitable bordering mature hedgerow or scrub/woodland edge within the Order Limits.

Invertebrate towers

- 3.16.18 The Order Limits are mostly open arable farmland and opportunities for invertebrate populations are largely limited, although there is favourable habitat within the Order Limits include hedge, scrub and woodland.
- 3.16.19 To increase the invertebrate nesting potential of the development, the provision of Invertebrate Towers will be included within the Order Limits to provide increased nesting habitat. These can also be used to help monitor breeding populations if required. As such, one tower (one per Site) will be placed along a field boundary with suitable bordering mature hedgerow or scrub/woodland edge within the Order Limits.

Otter Holt

Context and Location

- 3.16.20 Otters have the potential to use the watercourses within and adjacent to the Order Limits, with particular focus on the Hempnall Beck as this offers the highest level of suitable habitat within the Order limits.
- 3.16.21 A section of the Hempnall Beck runs along the southern edge of sub-Site 7B and the northern bank offers a potential suitable habitat for otters to make a holt. This is also located within the Order Limits and could be actively managed as part of management works associated with the Green Infrastructure. A single artificial holt be created as part of the landscaping and ecological enhancement works.

Commitments of holt creation

- 3.16.22 Once a location has been chosen to create the otter hold, work will start to grade a small section of the bank to create a flat area to house chambers. The chambers and holt are then formed through the following measures:
- Logs of up to 1m long and 25-40cm in diameter to form a holt roughly 3m in diameter with two chambers of 1m² and a smaller chamber of around 50cm²;
 - Once logs are in position, peg them down with pointed willow poles to keep them in place;
 - Create an entrance gap facing the water's edge with a second entrance at the rear;
 - Lay long poles over the structure to form a roof over the chambers and thinner poles, brash and clay on top to create a dark and dry space.
- 3.16.23 Saplings of blackthorn and/or willow can also be planted around the holt to enable scrub to establish. This will conceal the holt and ensure there is minimum disturbance.

Management and monitoring

- 3.16.24 Management of the otter holt will be the responsibility of the applicant or their appointed managing agent. Sporadic trimming back of the establishing blackthorn/willow scrub planted closer to the entrance will ensure that there is a clear path from the holt to the watercourse.
- 3.16.25 If otters are suspected to be using the holt, no management works will take place for the subsequent year to reduce the potential for illegal disturbance. Establishing whether otters are using the holts can be important in monitoring the effectiveness of the enhancement and also reducing the risk of disturbance. Only once it is suspected that otters are no longer using the holt will management works recommence following consultation with an appropriately licensed ecologist.

- 3.16.26 To help identify presence of otters, large flat-topped rocks will be placed nearby to the entrance along the water's edge to be used by otters to spraint and mark territory. This can provide an indication that otters are using the section of watercourse and could be used as an early indicator of their presence.
- 3.16.27 An approach to monitoring the presence of otters can be the use of a patch of sand at the entrance to the holts can also indicate whether otters are actually entering the holt with evidence of footprints, however a camera trap can also be used. A suitably licensed ecologist will carry out the monitoring of the otter holt. No specific monitoring methods are committed to and the ecologist should follow the latest otter monitoring methodology guidelines at the time of survey.

3.17 Skylark Mitigation

Context and Locations

- 3.17.1 The opportunity to provide skylark mitigation plots has been identified across multiple agricultural fields across the Order Limits in combination with areas of retained agricultural land, as identified in Figure 2 Green Infrastructure Strategy at **Appendix B**.

Objectives

- 3.17.2 Objectives associated with the land parcels allocated for Skylark mitigation are as follows:
- Favourable management of grassland margins and associated habitats which will provide increased foraging value and therefore raised carrying capacity across the site as a whole for these species; and
 - Incorporation of skylark plots within arable land located outside of the solar development areas.

Prescriptions and Targets

- 3.17.3 In order to reflect cropping rotations whilst ensuring skylark plots are provided within the most suitable areas, the precise locations of plots would necessarily vary from year to year, such that a larger area within the landholding of 75ha has been identified, within which at least 40ha arable land will be managed to include Skylark plots on a rotational basis.
- 3.17.4 In order to provide an approximate guide as to the likely levels of skylark plot provision to provide appropriate levels of compensation in regard to displaced territories, the proposals have been assessed following the methodology proposed by Fox, H. (2022) *Blithe Spirit: Are Skylarks Being Overlooked in Impact Assessment? In Practice (CIEEM) Issue 117* (2022) to provide a guide in regard to the appropriate levels for Skylark plot provision. The proposed methodology does not represent adopted policy or guidance,

- albeit provides the only currently published method available for assessing quantifiable levels of compensation in regard to Skylark populations.
- 3.17.5 The methodology and subsequent calculation to determine to require compensation area is detailed in **ES Volume 3, Appendix 8.10 Protected Species Mitigation Strategy [EN0110014/APP/6.3.8.10]**, however, an expected 0.28 pairs per hectare density within the proposed natural grassland as stated in Fox, 2022, will see an area of 40-60 ha of arable land for skylark mitigation used throughout the life of the solar development.
- 3.17.6 In order to reflect cropping rotations (acknowledging that some unsuitable crops such as oil seed rape, maize, and beans will be grown in some field compartments on an annual rotation) whilst ensuring Skylark plots are provided within the most suitable areas, the precise locations of plots would necessarily vary from year to year. A larger area within the Scheme has therefore been identified resulting in an annual commitment to manage at least 40ha of the 65ha retained arable land with Skylark plots on a rotational basis.
- 3.17.7 Accordingly, the Applicant will provide additional compensation through the inclusion of Skylark plots (at a frequency of 2 plots per hectare in line with standard guidance) across an area of 40-65ha arable farmland for the life of the proposed Scheme. Post-decommissioning, the landowners would choose how the land is to be used and managed. The landowner may return all of the land to arable use, although it is anticipated that some areas of habitat and biodiversity mitigation and enhancement within the Sites may be left in-situ given they could contain protected species and so relevant licences at the time would need to be obtained for any changes. However, the majority of the Sites would be returned to its original use after decommissioning.

Management Approach

Skylark plots and associated arable fields

- 3.17.8 Skylark plots will be created within the mitigation area at a density of 1 plot per 0.5 ha.
- 3.17.9 Each Skylark plot will cover an area of 16 m² as a minimum and will not be located within existing trackways within the field (i.e. created away from any area where vehicles regularly pass).
- 3.17.10 Within the compensation area, 16 m² undrilled plots will be created by either (i) not being drilled during the winter and therefore creating a matrix of low vegetation and bare ground suitable for foraging; or (ii) leaving the 16 m² plots fallow over the winter period and then retaining the 16 m² plots as undrilled during the spring. The option of sowing the crop as normal and spraying with herbicide to create the plot by 31st December was not considered as appropriate due to the environmental impacts of using herbicides such as glyphosate.

- 3.17.11 Harvesting of any crop sown within the mitigation areas will not take place before 1 August to avoid any risk of destroying nests, or killing or injuring fledglings or adults breeding within the mitigation area. It is considered that this measure will increase breeding success and improve the genetic diversity and resilience of local Skylark populations.

3.18 Ghost Pond Restoration

Context and Locations

- 3.18.1 A Ghost pond is an old pond, the location of which is still visible as a depression in the topography of the Scheme but has been physically filled in or lost to natural processes. There are 7 ghost ponds identified for restoration across the Scheme. These are located within Subsite 3 within the northern field boundary; to the south east of Subsite 5A within field boundary; at the field boundaries between Subsite 7D and 7F and to the northeast of Subsite 8A.

Objectives

- 3.18.2 Objectives associated with the restoration of the Ghost ponds identified across the Order Limits are as follows:
- Allow for natural recovery and regionally sensitive regeneration of aquatic wildlife and vegetation;
 - Improve the existing structure of vegetation throughout the Sites;
 - Retain the characteristics of existing green infrastructure;
 - Boost aquatic, and marginal wetland diversity opportunities across the Order Limits and the wider connecting landscape;
 - Promote opportunities for ecologically varied and regionally important aquatic vegetation and organisms to regenerate, enriching biodiversity.
 - To maximise biodiversity and habitat value;
 - Retain the characteristics of existing green infrastructure;
 - To improve water availability across the Sites and the wider connecting landscape;
 - To maintain a high-quality visual appearance overall;
 - To enhance ecological value and green infrastructure networks throughout.

Prescriptions and Targets

- 3.18.3 Ghost ponds will be restored to their original size and depth. This will be undertaken in late summer to early winter, in dry, favourable weather conditions to minimise soil disturbance and poaching. All surrounding ground will be made good during disturbance caused by works traffic.
- 3.18.4 Digging will be carried out with careful inspection of the soil layers. A test trench will be dug in the identified centre of the ghost pond, to establish the layers, and then each layer will be removed from here. Digging will cease when the pond sediment layers is reached. This sediment layer is distinguishable through its composition of fine dark silt, mixed with lighter, coarser sediment and some visible layers of aquatic vegetation. This layer will hold a seed bank which once resurrected will enable natural regeneration. All cut material can be spread on site, in a thin layer around the pond, not creating berms or embankments. The natural regeneration of the aquatic and marginal vegetation from the soil seedbed is the preferred approach for the reinstatement of the Ghost ponds, but small swathes of embankment aquatic and marginal planting will also be introduced for additional enhancement. A 2-metre width buffer around the ghost pond shall be created, in which no seeding or vegetative planting not associated with the pond shall take place. This will ensure natural regeneration of the pond through historic and localised soil seedbanks, without being outcompeted by introduced vegetation. Any connecting field drains will be disconnected or broken, to ensure that water is not draining away from that area.
- 3.18.5 Where existing mature or veteran trees are in situ in close proximity to the ghost pond, a qualified arboriculturist will be consulted prior to the commencement of any digging works to establish root protection zones and best practice for digging within root areas.
- 3.18.6 Risk to aquatic and riparian species through the accidental introduction of non- native species or pathogens is to be minimised through the implementation of biosecurity measures during works. This will include disinfection of equipment, machinery personal protective equipment (PPE) with a broad-spectrum disinfectant which is not harmful to aquatic life. These measures will be repeated as appropriate throughout works.
- 3.18.7 Ghost ponds which contain a level of water, but are filled with sediment, leaf litter and overhanging scrub and vegetation will be opened up. Dense, overgrowing vegetation, including that of overhanging trees, is to be cut back hard to open up the pond, minimising leaf litter and shading. This management practice is in line with the objectives of increasing aquatic habitat and water sources across the Scheme and wider landscape. Sediment and leaf litter is to be manually removed from the pond in rotational segments. No material is to be removed before the consideration of the presence of reptiles, amphibians and other notable species. Works are then to be undertaken under the guidance of a suitably qualified ecologist. The arisings will be removed by hand with care and placed on the pond banks to allow for wildlife opportunity to re-enter the water. Arisings can then be removed after a suitable period of time.

Management approach

- 3.18.8 The management approach of the reinstated Ghosts ponds is to be in line with the objectives for the landscape feature. To create and manage a high quality network of aquatic and wetland features and allow for natural recovery. A 5-year establishment period will be adopted, with twice yearly monitoring to confirm that water levels are establishing as intended. Pond levels will likely fluctuate in early establishment period due to surface water and rain fall, so a summer and winter inspection will be appropriate. Checks for debris, litter and sediment build up will be undertaken accordingly.
- 3.18.9 Newly planted marginal embankment vegetation is to be subject to weekly watering for the first growing season once weekly, or more frequently in prolonged periods of hot weather.
- 3.18.10 Weeding of newly planted marginal embankment vegetation. A monthly inspection and physical removal of annual and perennial weeds to reduce competition to the newly planted vegetation. Weeds will be hand pulled and dug to remove roots where appropriate.
- 3.18.11 Inspection of the areas of bare ground for regeneration of the wetland area embankments, removing pernicious weeds which can out compete the marginal planting. Weeds will be hand pulled and dug, being physically removed and disposed of accordingly.
- 3.18.12 A rotational clearance programme will be adopted to keep the water open and reduce shading and leaf litter hindering water quality. This will involve the cutting back sections of mature embankment marginal vegetation to ensure that areas of open water habitat are not shaded out. This will be undertaken every 5 years, outside of bird nesting season in late summer, early autumn, weather conditions permitting. Some sections of the embankment vegetation will be left for overwintering invertebrates and foraging and habitat for ground nesting and overwintering birds.
- 3.18.13 Annual inspection by a qualified ecologist appointed by the Applicant is to be undertaken for sedimentation, pollution and litter.
- 3.18.14 Removal of encroaching scrub, shrub, brambles and overhanging tree branches to the embankments in rotational sections. This will reduce leaf litter and silt build up in the pond. This will be undertaken during the winter months, on a 5 year basis using handheld tools.
- 3.18.15 Removal of sediment and leaf litter, on rotation. This work is to be carried out in late summer, once breeding seasons have finished and prior to winter hibernation. Sediment and leaf litter is to be manually removed by hand from the pond in rotational segments. No material is to be removed before the consideration of the presence of reptiles, amphibians and other notable species. Works are then to be overseen by a suitably qualified ecologist. The arisings will be removed by hand with care and placed on the pond banks to allow for wildlife opportunity to re-enter the water. Arisings can then be removed after a suitable period of time. One third of the sediment and leaf

litter is to remain undisturbed during each annual clearance. The same area will not be included the following year.

3.18.16 The targets for this habitat are to maximise biodiversity and ecological value. Ghost ponds will match the habitat condition Pond (priority habitat) and to achieve 'Moderate' target condition for non-woodland ponds in accordance with BNG metric, by passing six to eight of the nine condition assessment criteria:

- a) The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock. – Anticipated Criteria Pass
- b) There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter. – Anticipated Criteria Pass
- c) Less than 10% of the water surface is covered with duckweed *Lemna* spp. or filamentous algae. – Anticipated Criteria Pass
- d) The pond is not artificially connected to other waterbodies, such as agricultural ditches or artificial pipework. – Anticipated Criteria Pass
- e) Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams, pumps or pipework. – Anticipated Criteria Pass
- f) There is an absence of listed non-native plant and animal species. – Anticipated Criteria Pass
- g) The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities. – Anticipated Criteria Pass
- h) Emergent, submerged or floating plants (excluding duckweed) cover at least 50% of the pond area which is less than 3 m deep. – Anticipated Criteria Fail
- i) The pond surface is no more than 50% shaded by adjacent trees and scrub. – Anticipated Criteria Pass

3.19 Arable Field Margins (Priority Habitat)

Context and Locations

3.19.1 Arable field margins have been proposed in various locations across the Order Limits in combination with areas of retained agricultural land, as identified in **Appendix B**.

Objectives

3.19.2 Objectives associated with proposed Priority Habitat arable field margins across the Order Limits include the following:

- To bolster biodiversity and ecological connectivity in identified locations;
- To contribute to a varied mosaic of habitat across the Order Limits; and
- To be managed specifically for the benefit of identified wildlife species and the habitat type.

Prescriptions and Targets

3.19.3 The targets for proposed arable field margins within the Order Limits are outlined as follows:

- To maximise biodiversity and habitat value;
- Improve the existing structure of vegetation throughout the Sites;
- Retain the characteristics of existing green infrastructure;
- To maintain a high-quality visual appearance overall;
- To provide visual screening at identified locations of views of and across the wider Order Limits;
- To enhance ecological value throughout the Order Limits and green infrastructure networks;
- In accordance with the UKBAP Priority Habitat description, the arable field margins must include the following attributes:
 - a) Cultivated, low-input margins. These are areas within arable fields that are cultivated periodically, usually annually or biennially, but are not sprayed with spring/summer insecticides and not normally sprayed with herbicides (except for the control of injurious weeds or problem grasses such as creeping thistle, black grass, sterile brome or wild oat). Cultivated, low-input margins include conservation headlands and land managed specifically to create habitat for annual arable plants.
 - b) Margins sown to provide seed for wild birds. These are margins or blocks sown with plants that are allowed to set seed and which remain in place over the winter. They may be sown with cereals and/or small-seeded broad-leaved plants or grasses but areas sown with maize are excluded as they are of lower value for wild birds.
 - c) Margins sown with wild flowers or agricultural legumes and managed to allow flowering to provide pollen and nectar resources for invertebrates.

- d) Margins providing permanent, grass strips with mixtures of tussocky and fine-leaved grasses. Areas of grass established as cross compliance requirements (see below) are excluded from this definition, but all other strips of grassland created by sowing or natural regeneration, such as field margins or beetle banks, are included.

- In accordance with the BNG metric, no condition assessment is required.

Management approach

- 3.19.4 Management will be minimal and low input, carried out to afford opportunities for the establishment of less common wildflower species associated with arable cropping, and to prevent the establishment of overly lush, permanent herbaceous ground cover. Cultivation and reseeding will align with arable crop rotations, typically on an annual or biannual basis. Field margins will be excluded from the spraying regimes of the wider arable field. Herbicides shall only be used in circumstances where direct removal of problem and encroaching weed and grass species is ineffective. These shall be applied through direct spot treatment or weed wiping, so as to restrict damage to wider sward.
- 3.19.5 Once established, a seasonal rotational mowing regime will be adopted. This will require 3 cuts per year to be undertaken, to best promote and strengthen the sward and its diversity. Margins will be cut in rotational portions of each plot at different, staggered, times through spring (first cut) summer (main cut) and autumn (final cut). Cutting in rotational portions will prolong the flowering season and minimise disturbance as some vegetation will remain standing over winter, to provide overwintering shelter. Ecological considerations to make prior to management interventions are as follows:
 - Check for ground nesting birds and delay mowing if active nests found.
 - Work logically along a section from one side to another, to avoid confining wildlife within close proximity to the mower.
- 3.19.6 Spring and autumn cuts will be a light mow weather conditions permitting, cutting back more vigorous species and affording slower growing species opportunity to not be out competed. All arisings will be removed.
- 3.19.7 The main summer cut, will be treated as a hay cut, allowing seed to drop and a soil seed bank to build up. The cut foliage will then be collected, once seed has dropped, to prevent excessive nutrient enrichment to the soil.
- 3.19.8 Annual weeds and perennial weeds will be monitored routinely and physically removed from the Scheme, through hand pulling, physical digging or if applicable in larger areas, weed wiping. Weeds will be removed prior to mowing to prevent their wider dispersal. As a last resort, spot treatment of herbicides can be used on targeted patches of persistent pernicious weeds.
- 3.19.9 Areas of bare ground, slow to establish or failed seeding will be made good. Soil shall be levelled; the top layer lightly cultivated infill spot seeding shall be applied prior to raking and rolling to ensure good soil – seed contact

Other Measures

3.20 Community Accessible Spaces

Context and Locations

- 3.20.1 Opportunities for community accessible spaces have been identified as shown in **Appendix B**. These are within Sub-Sites 4B and 7F.
- 3.20.2 Indicative proposals have been made for opportunities within community accessible spaces. These will be confirmed during the detailed design stages in accordance with the detailed design, with further detailed management approaches confirmed within the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.
- 3.20.3 Sub-Site 4B has potential opportunities for archaeological educational interaction. There is existing public access through the existing PRoW network crossing this Sub-Site, which provides capacity for interpretation signage boards, and connecting educational spaces which could be used by local walking and community groups and provide a local educational feature to nearby schools.
- 3.20.4 Sub-Site 7F have been identified as an opportunity for an amenity space which could include dog walking. Within Sub-Site 7F opportunities for ecological enhancements also exist by diverting footfall from the existing PRoW away from the neighbouring SSSI through the creation of permitted paths through grassland.

Objectives

- 3.20.5 The high-level objectives associated with the identified community accessible spaces will be developed further during detailed design stages and confirmed in future management plans. However, the community accessible spaces will:
- Create high quality, well vegetated community accessible spaces which allow for informal amenity use and engagement with the immediate landscape.
 - Create spaces which have the potential to be adopted by local community groups and educational facilities.
 - Where appropriate to its function provide educational offering through the provision of interpretation signage boards.
 - Uphold a high standard of visual amenity.

Prescriptions and Targets

- 3.20.6 The rationale behind the management style for the community accessible spaces is to uphold the objectives of a high-quality space, well vegetated spaces which contribute to the green infrastructure of the immediate and wider landscape, as well as offering well maintained informal amenity features. Educational opportunities will be included in identified locations within Sub Site 4B. These will be confirmed in more detail within the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.
- 3.20.7 In addition to the typical management practices of the proposed landscape features, management and monitoring will also ensure that there are no vegetation failings. Particularly failures caused by wear and tear due to footfall, that any damages are repaired and that all litter is removed.

Management approach

- 3.20.8 During the establishment period, management will require monitoring of the newly established grassland which the permissive paths and community accessible spaces cross. These will be managed in accordance with the grassland type outlined in sections 3.12 - 3.15. In addition, inspections will be undertaken for seeding failures and wear and tear on the newly established sward caused by footfall. In areas where seeding is worn or failing, spot reseeding will be applied. This is best carried out in autumn but can be done in spring if conditions are unfavourable. Areas will need to be cordoned off for one growing season to allow for sward root structures to establish.
- 3.20.9 For the areas where the sward is dense and well established, weed monthly to remove perennial and annual weeds. Weeding will be undertaken prior to mowing to prevent further weed dispersal. Weeds will be dug, and hand pulled where feasible. In areas of widespread, pernicious weeds, spot spraying may be a more appropriate management technique to adopt.
- 3.20.10 Community accessible spaces will be checked for any litter, graffiti and damages as a result of public access. All litter is to be handpicked, bagged and removed from the Scheme and disposed of appropriately. No mowing will take place prior to a litter pick, to prevent the dispersal of rubbish around the Scheme.
- 3.20.11 An ad hoc mowing regime shall be adopted to make any community accessible spaces clear and permissive paths easily passible, clear and well maintained. Paths will be mown to a width of 1.5 metres to allow for ease of access. All cut material shall be collected and removed to minimise nutrient build up in the soil which stifles species diversity.

3.21 Permissive Paths

Context and Locations

- 3.21.1 Opportunities for permissive paths have been identified as shown in **Appendix B**. These are located within Sub-Sites 7F, 8B, and 10B.
- 3.21.2 These paths provide connectivity opportunities to the existing PRow, positively contributing to amenity and recreational opportunities within the immediate and wider landscape.

Objectives

- 3.21.3 These permissive routes will:
- allow recreational users to travel along dedicated routes and allow for informal use.
 - Create opportunities to allow additional access and engagement with the landscape.
 - Uphold a high level of visual amenity.

Prescriptions and Targets

- 3.21.4 Management prescriptions for permissive paths are to ensure the maintenance of a high-quality space which encourages receptors to engage with the immediate and wider landscape through the access to the local green infrastructure network. The paths routes and to remain clear and passable all year, through the adoption of a low maintenance management approach.

Management approach

- 3.21.5 The management practices will be influenced by the proposed landscape features which they cross. Where the paths cross grassland, a more frequent mowing regime will be adopted, to keep path routes demarcated and passable.
- 3.21.6 Management operations will be undertaken to ensure that there are no vegetation failings caused by wear and tear due to footfall, that any damages are repaired and that all litter is removed. Management operations will ensure that the permissive routes are clearly demarcated and passable.
- 3.21.7 If required, areas of grassland which are worn or failed due to footfall will be made good in line with the original design intentions and grassland type of the area. These are defined in sections 3.12 - 3.15. Any reparatory works will be carried out ideally in autumn should the conditions be favourable. If conditions are not allowable, then works can be undertaken in spring. Areas of failed seeding will be made good through spot seeding. A light cultivation

of the ground will be carried out, and the seed will be evenly dispersed over the area. The seeding will then be rolled or trodden in to ensure good seed/soil contact. The area will then be watered in well. Irrigation will not be required, unless there are unseasonably long periods of dry weather. Areas will be cordoned off for one growing season whilst the seeding establishes a strong root system which can resist the wear and tear of footfall.

- 3.21.8 In the long term, management operations will consist of ad hoc monitoring and clearance to ensure the permissive path routes are clearly demarcated and passable.
- 3.21.9 Where permissive paths cross from field to field through a hedgerow field boundary, routes will be checked to ensure that there is no hedgerow encroachment onto the path. Where hedgerows begin to grow across the permissive path, making the route narrower or impassable, the hedgerow will be “faced up” where it is pruned back to create a straight definitive edge. This work will be undertaken outside of bird nesting season, and checks will be done for active nesting locations.
- 3.21.10 Monitoring will be made of the permissive path routes to ensure there is no scrub encroachment onto the paths. Scrub and brambles will be cut back hard and cleared from the paths. Works will be undertaken outside of nesting bird season. Checks will be made for any active nesting sites or other habitat disturbance prior to any clearance.
- 3.21.11 Litter will be checked for and suitably bagged and disposed of offsite prior to any mowing or strimming works, to avoid the further dispersal of rubbish across the Scheme.
- 3.21.12 The routes will be managed in accordance with their associative grassland type but will be checked routinely to ensure they are navigable. Additional mowing of path strips may be required during the growing season to keep path routes clearly demarcated and passable. Paths will be mown to keep the sward between 40-60mm in height, at a path width of 1.5m. Mowing will need to be undertaken more frequently over the growing season, with a final cut to tidy the sward prior to winter being undertaken in late October, should weather conditions allow.
- 3.21.13 Checking of gates and styles at crossing of field boundaries will be undertaken on an annual basis. These will ensure that styles are secure and in good condition and easily passable. Any damaged or rotten wood is to be replaced like for like. Any gates will be checked for ease of opening and closing, and hinges oiled as required.

3.22 Retained Agricultural Land

Context and Locations

- 3.22.1 The Scheme includes areas of retained agricultural land as shown in **Appendix B**. Some of these areas form part of the Skylark mitigation plots as set out in Section 3.17 above. For areas of retained agricultural land

beyond these plots, the land use following construction of the Scheme will continue as agricultural.

4 Outline Management Specification and Schedule

4.1 Introduction

- 4.1.1 The following section provides a summary of the proposed management specification and schedules for the proposed landscape and ecology measures for the Scheme.
- 4.1.2 Generally, the applicant will be responsible for management of the landscape and ecology measures prescriptions set out. Management of the landscape and ecology measures associated with the National Grid substation will be the responsibility of National Grid, which include the measures set out in Section 5.

4.2 Outline Management Schedule

4.2.1 **Table 4.1** provides an indicative outline of the anticipated management schedule for the landscape and ecology measures set out in Section 3.

Table 4.1: Outline Management Schedule

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
Existing Trees and Woodland								
Tree to be assessed by qualified arboricultural specialist, in accordance with best practice: BS3998 'Tree Work – Recommendations' (Ref 8), and HSE Forestry and Arboricultural safety leaflets	Every 5 years							Every 5 years
Pruning where appropriate to maintain health and vigour	Annually	October-February						
Appropriate removal of any identified invasive species	Annually	October-February						
Removal of diseased trees / timber	Annually	October-February						
Appropriate disposal of trees infected with ash dieback and replacement with an agreed alternative species	Annually	October-February						
Thinning / Coppicing	Every 5 years	October-February						Every 5 years
Broadleaf Woodland								
Maintain a weed free planting area through physically removal or weeds or through spot	Annually	April-August						

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
spray application of herbicide (for newly planted area)								
Regular watering through summer and prolonged periods of dry weather (for newly planted area)	Weekly (during dry conditions)	April-August						
Check and resecure tree ties, stakes and guards (for newly planted area)	Annually	April-August						
Check for signs of stresses, disease or failure (for newly planted areas)	Annually	April-August						Preferably August, when trees are in leaf
Replace any failures (dead planting).	Annually at next planting season	October-February						
Replace significant extents of failed planting.	Annually at next planting season	October-February						Ongoing
Tree growth to be assessed by qualified arboricultural specialist, in accordance with best practice: BS3998 'Tree Work – Recommendations' (Ref 8) and HSE Forestry and Arboricultural safety leaflets.	Every 5 years							Year 10 onwards. Every 5 years
Rotational thinning, coppicing or pollarding (as appropriate), to create a well-managed varied canopy structure and to open sections of canopy allowing lower storeys and ground flora to establish, in alignment with habitat objective.	Every 5 years.	October-February						Year 10 onwards. 5 year rotational programme
Linear Tree Belts and Individual Trees								

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
Watering during summer and periods of prolonged dry weather (for newly planted area)	Weekly (during dry conditions)	April-August						
Maintain a weed free planting area through physically removal of weeds or through spot spray application of herbicide (for newly planted area)	Annually	April-August						
Check and resecure tree ties, stakes and guards	Annually	April-August						
Replace any failures (dead planting)	Annually at next planting season	October-February						
Check for signs of stresses, disease or failure	Annually	April-August						Preferably August, when trees are in leaf
Replace significant extents of failed planting	Annually at next planting season	October-February						Ongoing
Tree growth to be assessed by qualified arboricultural specialist, in accordance with best practice: BS3998 'Tree Work – Recommendations' (Ref 8), and HSE Forestry and Arboricultural safety leaflets	Every 5 years							Year 10 onwards. Every 5 years
Existing and Proposed Scrub								
Watering during summer and periods of prolonged dry weather (for newly planted areas)	Weekly (during dry conditions)	April-August						
Maintain a weed free planting area through physically removal of weeds or through spot	Annually	April-August						

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
spray application of herbicide (for newly planted area)								
Formative trim to encourage bushy growth	Annually	October-February						
Check for signs of stresses, disease or failure	Annually	April-August						
Replace any failures (dead planting)	Annually at next planting season	October-February						
Replace significant extents of failed planting	Annually at next planting season	October-February						Ongoing, opportunity to inform rotational coppicing / thinning works
Rotational coppicing / thinning of the whole area in a cycle to ensure dense growth is always present. To create a well-managed varied canopy structure in alignment with habitat objective	Every 5-7 years.	October-February						Year 5 onwards 5-7 Year rotation
Existing and Proposed Native Hedgerow and Native Hedgerow with Trees								
Watering during summer and periods of prolonged dry weather (for newly planted area)	Weekly (during dry conditions)	April-August						
Maintain a weed free planting area through physically removal of weeds or through spot spray application of herbicide (for newly planted area)	Annually	April-August						

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
Check, resecure or replace any shrub or tree guards, rabbit proof fencing (for newly planted area)	Annually	April-August						
Check for signs of stresses, disease or failure (for newly planted area)	Annually	April-August						
Replace any failures (dead planting)	Annually at next planting season	October-February						
Formative trim to encourage bushy growth (for newly planted area)	Annually	October-February						
Mechanical flail cutting (for existing hedgerows, and for proposed hedgerows once established (year 3 onwards))	Rotational management prescription every 2-3 years.	October-February						
Check of white tipped markers or tags for hedgerow trees during establishment	Annually during establishment							
Review of hedgerow trees by arboricultural specialist. Pruning or maintenance to be carried out as necessary	Every 5 years	October-February						Year 5 onwards
Replace significant extents of failed planting	Annually at next planting season	October-February						Ongoing
Instant Hedgerow								
Watering during summer and periods of prolonged dry weather	Weekly	April – August						

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
Maintain a weed free planting area through physically removal or weeds or through spot spray application of herbicide	Annually	April-August						
Monitor for signs of stresses. Vigorous management to aid recovery can be undertaken – cutting back hard (if practicable following checks in bird nesting season) and water thoroughly.	Annually	April – August						
Formative trim to encourage bushy growth	Annually	October-February						
Replant sections of failed hedge stock	Annually at next planting season	October-February						
Stake and wire rabbit proof fencing to be checked, re-firmed or replaced as required	Annually							
Mechanical flail cutting	Rotational management prescription every 2-3 years.	October-February						
Flower Rich Pollinator								
Rotational light mowing of 3 cuts per year during growing season. To promote good, bushy sward.	Year 1 (and 2 if slow to establish) - 3 times per year. Spring – autumn							Leave staggered areas uncut at each mowing and some vegetation stood for overwintering
Areas of bare ground, failed or slow to establish seeding, made good	Annually	Next seed establishment						

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
		season Autumn – Spring						
Monitoring and management of weeds. Physical removal of perennial weeds, or application of spot spray herbicide where needed	Annually	April – October						
“Hay cut” management. To allow seed to settle for natural regeneration of the meadow, all arisings to be removed	Annually from year 2 (or 3 if slow to establish)	Late July – September						
Tussocky Grassland								
Rotational light mowing of 3 cuts per year during growing season. To promote good, bushy sward.	Year 1 (and 2 if slow to establish) - 3 times per year. Spring – autumn							
Areas of bare ground, failed or slow to establish seeding are to be made good	Annually	Next seed establishment season – Autumn – Spring						
Monitoring and management of weeds. Physical removal of perennial and pernicious weeds, or application of spot spray herbicide where needed	Annually	April – October						
Relaxed, rotational cut mowing regime is to be adopted. Minimal management,	Annually from year 2 (or 3 if slow to establish)	October – February						

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
grassland cut on a 2-3 yr. rotation leaving 50% of the area uncut in any one season								
Monitoring of growth around panels, and shade cuts are to take place as required		April – October						
Neutral Grassland								
Mowing during establishment to promote good, sward development during the growing season	Year 1 (and 2 if slow to establish) - 3 times per year. Spring – autumn	April – October						
Areas of bare ground, failed or slow to establish seeding are to be made good	Annually	Next seed establishment season – Autumn to spring						
Monitoring and management of weeds. Physical removal of perennial weeds, or application of spot spray herbicide where needed	Annually	April – October						
“Hay cut” management. Timed to allow seed to settle for natural regeneration of the meadow, all arisings to be removed	Annually from year 2 (or 3 if slow to establish)	Late July – September						
Modified Grassland								
Regular mowing regime is to be implemented, to ensure vegetation does not impede panel functionality	3 times per growing season. Spring – autumn	April – October						

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
Areas of bare ground failed or slow to establish seeding are to be made good	Annually	Next seed establishment season Autumn-Spring						
Monitoring and management of weeds. Physical removal of perennial weeds, or application of spot spray herbicide where needed	Annually	April – October						
Monitoring for vegetation growth around panels. Additional shade cuts of 1m width around the panels to be undertaken on an adhoc basis as required	Annually	As required through growing season						
Habitat Boxes: Bird Boxes (Ecological Measure)								
Install boxes	Year 1	January-December						
Inspect condition and clean out boxes (excluding barn owl boxes)	Annually after year 1							Ongoing
Habitat Boxes: Bat Boxes (Ecological Measure)								
Install boxes	Year 1	January-December						
Inspect condition and clean out boxes (excluding barn owl boxes)	Annually after year 1							Ongoing
Skylark Mitigation (Ecological Measure)								
Leaving plots undrilled or allowing to be turned into fallow and leaving until the following harvest season	Annually	August-December						Ongoing

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
		(Skylark plots only)						
Ghost Pond Restoration (Ecological Measure)								
Establishment monitoring of water levels, debris and sediment build up. Debris and litter to be removed as required	Twice yearly	Winter and summer inspection						
Marginal vegetation to areas of embankments to be checked and watered	Once weekly or more frequently if required	Growing season – April – October						
Failed planting to be replaced	Annually through establishment	Next growing season						
Checks and removal of pernicious weeds. Weeds to be hand dug and pulled where possible. Spot spraying in close proximity to a water source is to be avoided	Twice yearly during establishment. As required from year 5	Growing season – April – October						
Rotational clearance of encroaching embankment vegetation, scrub, brambles and tree branches to keep water open to light and free from leaf litter	Every 5 years	October – February						Year 5 onwards
Rotational manual removal of leaf litter and sediment, to be overseen by qualified ecologist	Every 5 years	September-October						Year 5 onwards
Arable Field Margins								
Rotational mowing during growing season. Leaving staggered areas uncut at each	1-2 times per year. Early-Spring – autumn	February/March and late-August to October						

Operation Management Prescription	Frequency	Season	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
mowing and some vegetation stood for overwintering								
Arable field margins - Tussocky grassland to be cut less later to reduce woody growth	Once annually	November to February						
Annual and perennial weeds are to be monitored and removed through appropriate management technique (digging, spot spray or weed wiping)	Annually	April – October						
Areas of bare ground, failed or slow to establish seeding are to be made good	Annually	Next seed establishment season Autumn – Spring						

4.3 Monitoring

- 4.3.1 This section outlines the monitoring approach used to assess progress towards the commitments defined within the Outline LEMP. The exact monitoring specifications will be detailed in the LEMP (secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**) and updated as appropriate in subsequent iterations, to be reviewed and updated every five years.
- 4.3.2 The applicant will appoint a suitably qualified person to oversee the monitoring activities during the operational phase of the Scheme, which will be undertaken to determine:
- Whether measures have been implemented as agreed.
 - The relative success / effectiveness of the measures reporting progress towards vegetation establishment and towards habitat condition targets.
 - Whether maintenance operations have been undertaken and if remedial actions are required providing details on how to remedy the situation if any of the measures fail.
- 4.3.3 Suitably qualified persons in each defined field (i.e. Arboriculturist, Landscape Management Consultant, Ecologist etc) will be appointed by the Applicant (or National Grid Electrical Transmission (NGET) for the National Grid Substation (see section 5 below)).
- 4.3.4 Monitoring will be undertaken following habitat enhancement or creation in accordance with the LEMP.
- 4.3.5 Monitoring for establishment of the proposed landscape elements will follow the specifications produced during detailed design stages and defined in the LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**.
- 4.3.6 The LEMP secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]** will establish regular monitoring activities and adoption of robust landscape management and ecological records being kept. These findings will support any future LEMP updates and will be shared with the relevant planning authority upon request.
- 4.3.7 Monitoring activities will document any establishment failures and any replacements required in accordance to meet the required landscape feature or habitat typology. Failed planting requiring replacement during the establishment period will be undertaken in accordance with best practices and with establishment measures set out in the Outline LEMP and LEMP (i.e. planting will occur in the next available planting season, typically autumn or spring, after the failure has occurred).

5 Management of National Grid Substation

- 5.1.1 The upkeep and management of all planting which surrounds the National Grid Substation within Sub-Site 1b as indicated in **Appendix B** of this document, will be the responsibility of NGET and this will remain in place post decommissioning of the Scheme.
- 5.1.2 The relevant landscape measures include:
- Existing Hedgerows and hedgerow trees located along Narrowgate Way to the west of Sub-Site 1B, and to the east of the National Grid Substation.
 - Broadleaf Woodland located to the north of the National Grid Substation (S1b-2).
 - Linear Tree Belts located to the north of Sub-Site 1B (part of S1b-3).
 - Native Hedgerow with Trees located to the south of the National Grid Substation (S1b-1a, and S1b-1b).
 - Flower Rich Pollinator Grassland located to the perimeter of the National Grid Substation and field boundary vegetation.
- 5.1.3 The proposed measures, objectives, prescriptions and management for each landscape measure are detailed previously within this Outline LEMP above. Details on Existing Hedgerows are located in Section 3.4, Broadleaf Woodland in Section 3.7, Linear tree belts in Section 3.8, Native Hedgerow with Trees in Section 3.11, and Flower Rich Pollinator Grassland in Section 3.12.
- 5.1.4 The LEMP (secured by Requirement 7 of the **draft DCO [EN0110014/APP/3.1]**) will set out the roles and responsibilities of those involved in creating, managing and monitoring the prescriptions within this document including National Grid, and will provide further details in relation to the proposed landscape measures set out for the National Grid Substation above.

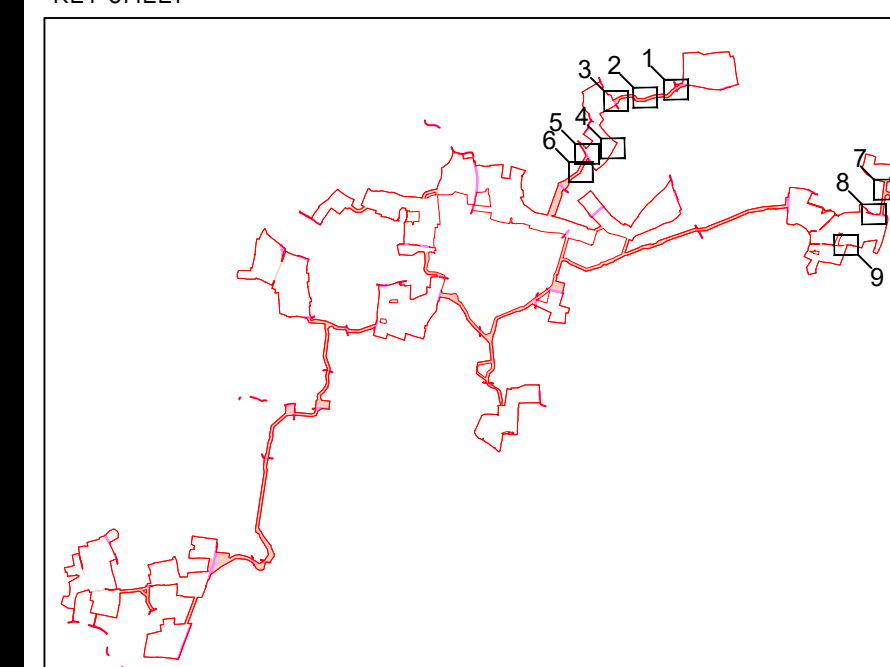
6 References

- Ref 1. Norfolk Wildlife Trust (2023) Claylands Wilder Connections. Available at: <https://www.norfolkwildlifetrust.org.uk/claylands-wilder-connections>. Accessed 06/01/2026
- Ref 2. Norfolk County Council (2025) Norfolk Local Nature Recovery Strategy. Available at: Local Nature Recovery Strategy - What a Local Nature Recovery Strategy is - Norfolk County Council. Accessed 06/01/2026
- Ref 3. Greater Norwich Growth Board (2025) Greater Norwich Green Infrastructure Strategy. Available at: <https://www.greaternorwichgrowth.org.uk/article/67059/Green-Infrastructure-Strategy>. Accessed 06/01/2026.
- Ref 4. BS 8545: 2014: Trees: From Nursery to Independence in the Landscape
- Ref 5. BS 3936-1: 1992. Nursery stock. Specification for trees and shrubs
- Ref 6. BS 4428: 1989. Code of practice for general landscape operations (excluding hard surfaces) (AMD 6784)
- Ref 7. BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations
- Ref 8. BS 3998: 2010: Tree Work – Recommendations
- Ref 9. Assessing the Impact of Tree Roots on Archaeology Oxford Archaeology project report for the Forestry Commission. Available at: Library. Accessed 17/02/26
- Ref 10. BS 3882: 2015 Annex B Specification for topsoil
- Ref 11. BS 8601: 2013 Specification for subsoil and requirements for use

Appendix A – Figure 1: Hedgerow Removal Plans

1 - No vegetation removal is proposed within avoidance areas. Further details are provided in the Outline Cable Route Construction Statement [APP/7.21]

KEY SHEET



Refer to Figure 1.1 ES Volume 2 Site Location Plan for Sub-Site boundaries

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Client/Project

East Pye Solar

Title
Figure 1
Hedgerow Removal Plan
Sheet 1

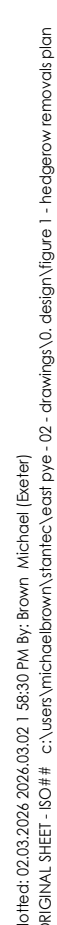
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333101211

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Drawing No.

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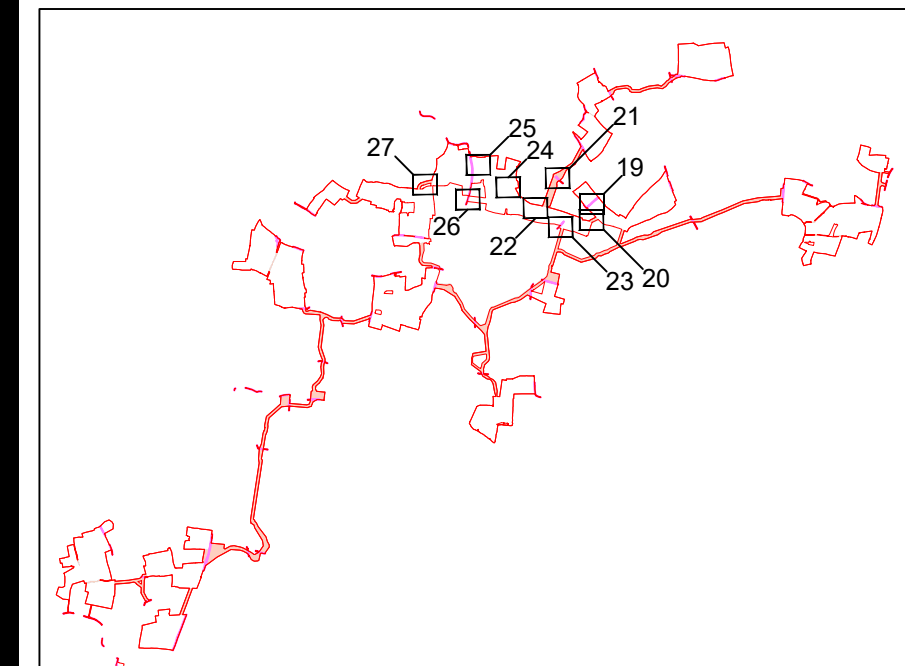




- LEGEND
- Order Limits
 - Cable Route Corridor
 - Indicative access routes (permanent for maintenance)
 - Indicative Cable Route
 - Existing Hedgerow
 - Hedgerow Removed: Associated With Cable Route
 - Hedgerow Removed: Associated With Haulage Routes
 - Hedgerow Removal Also Required for the Haulage Route Construction
 - Highway Works Area
 - Indicative Haulage Routes for Construction
 - Avoidance Areas *1
 - Existing Vegetation Cover
 - Hedgerow Removed: Associated With Access Track

1 - No vegetation removal is proposed within avoidance areas. Further details are provided in the Outline Cable Route Construction Statement [APP7.21]

KEY SHEET



Refer to Figure 1.1 ES Volume 2 Site Location Plan for Sub-Site boundaries

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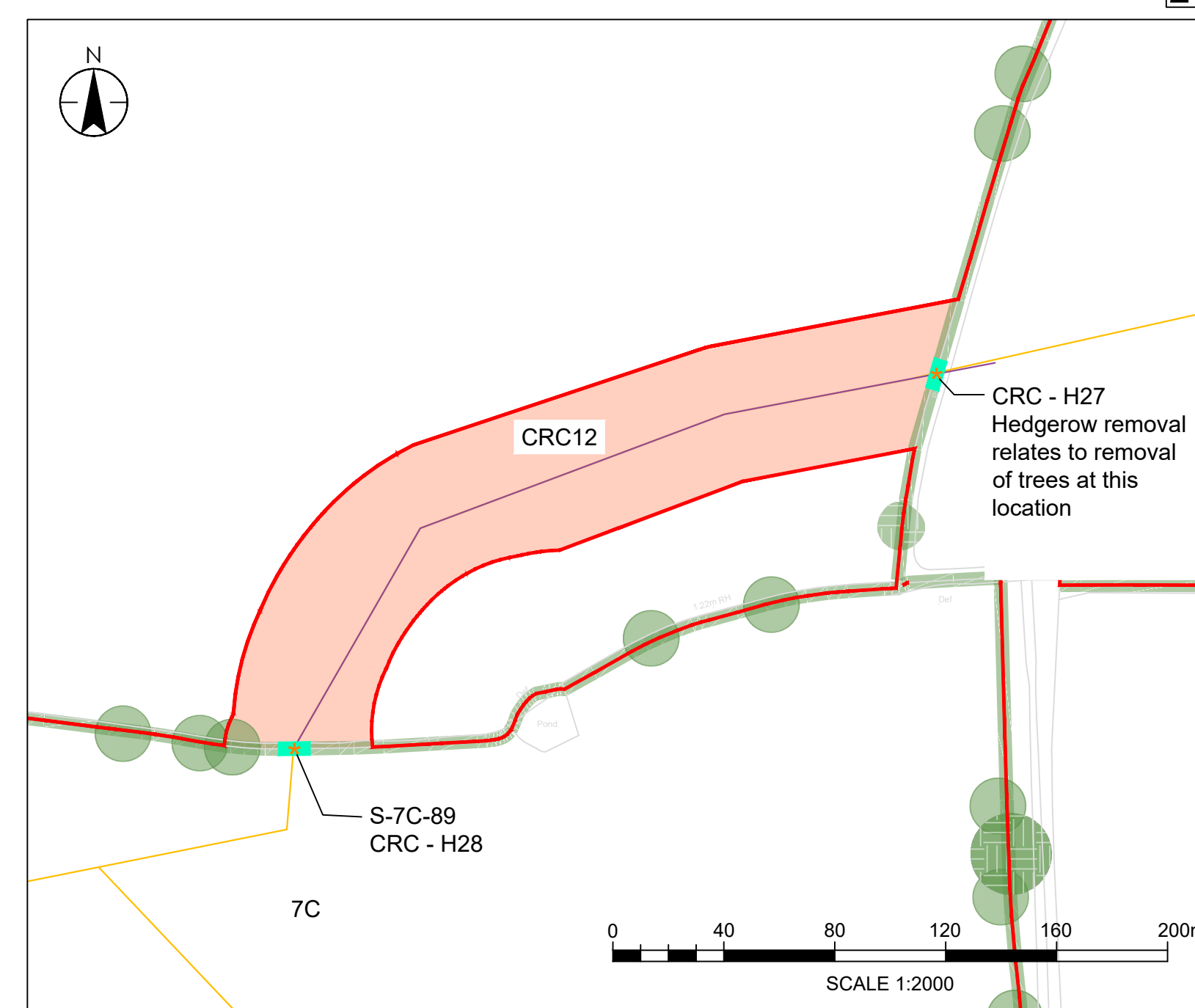
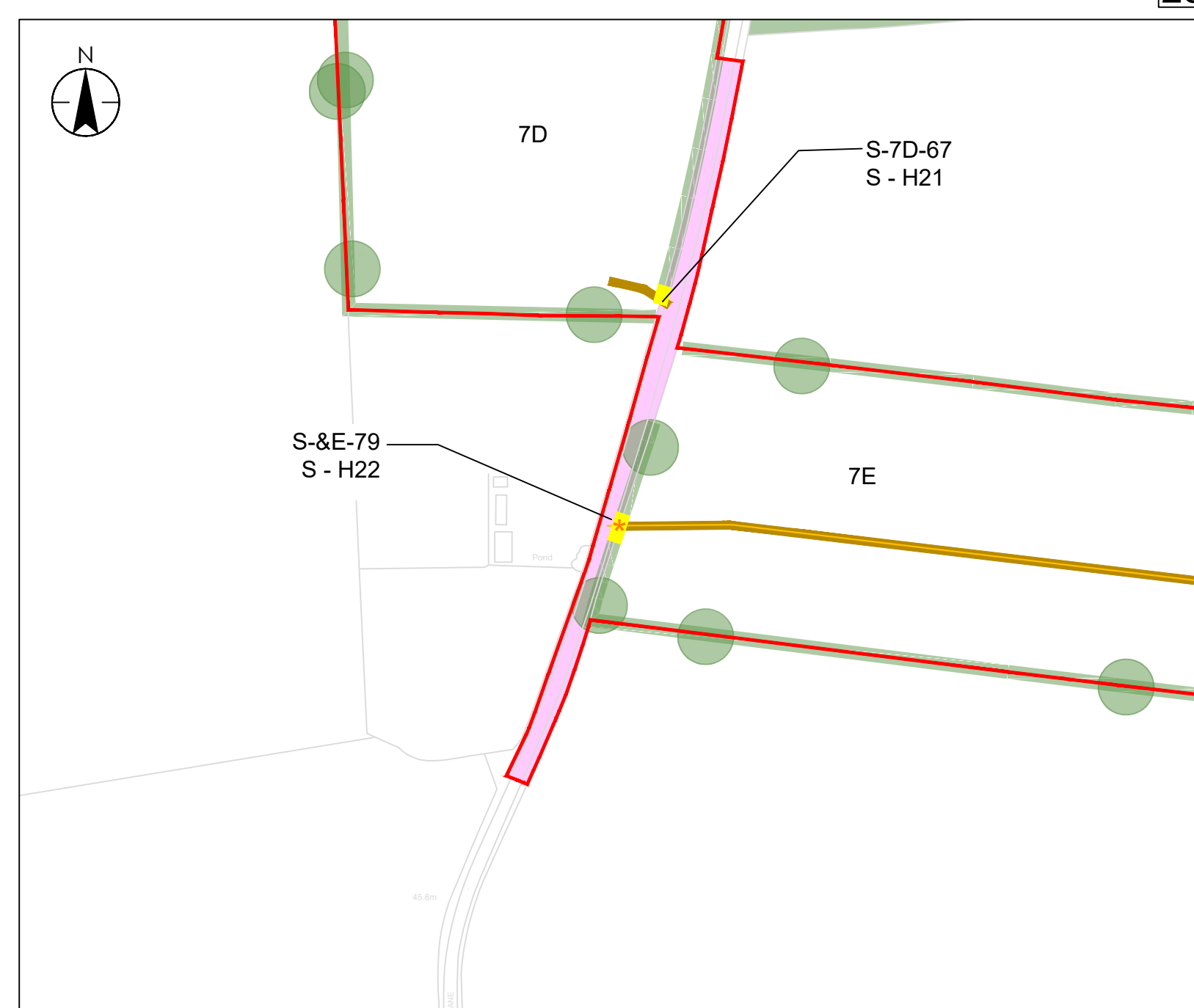
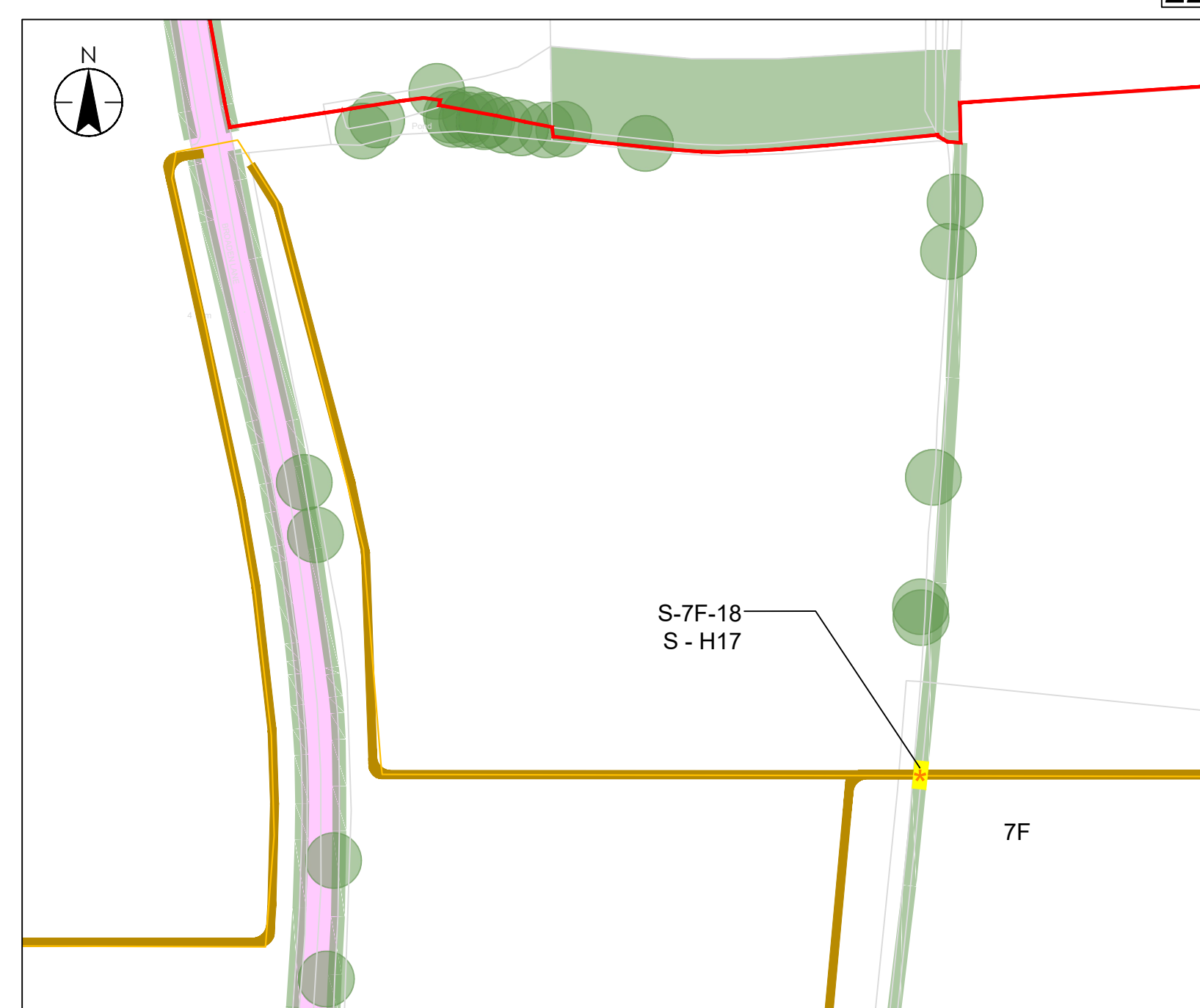
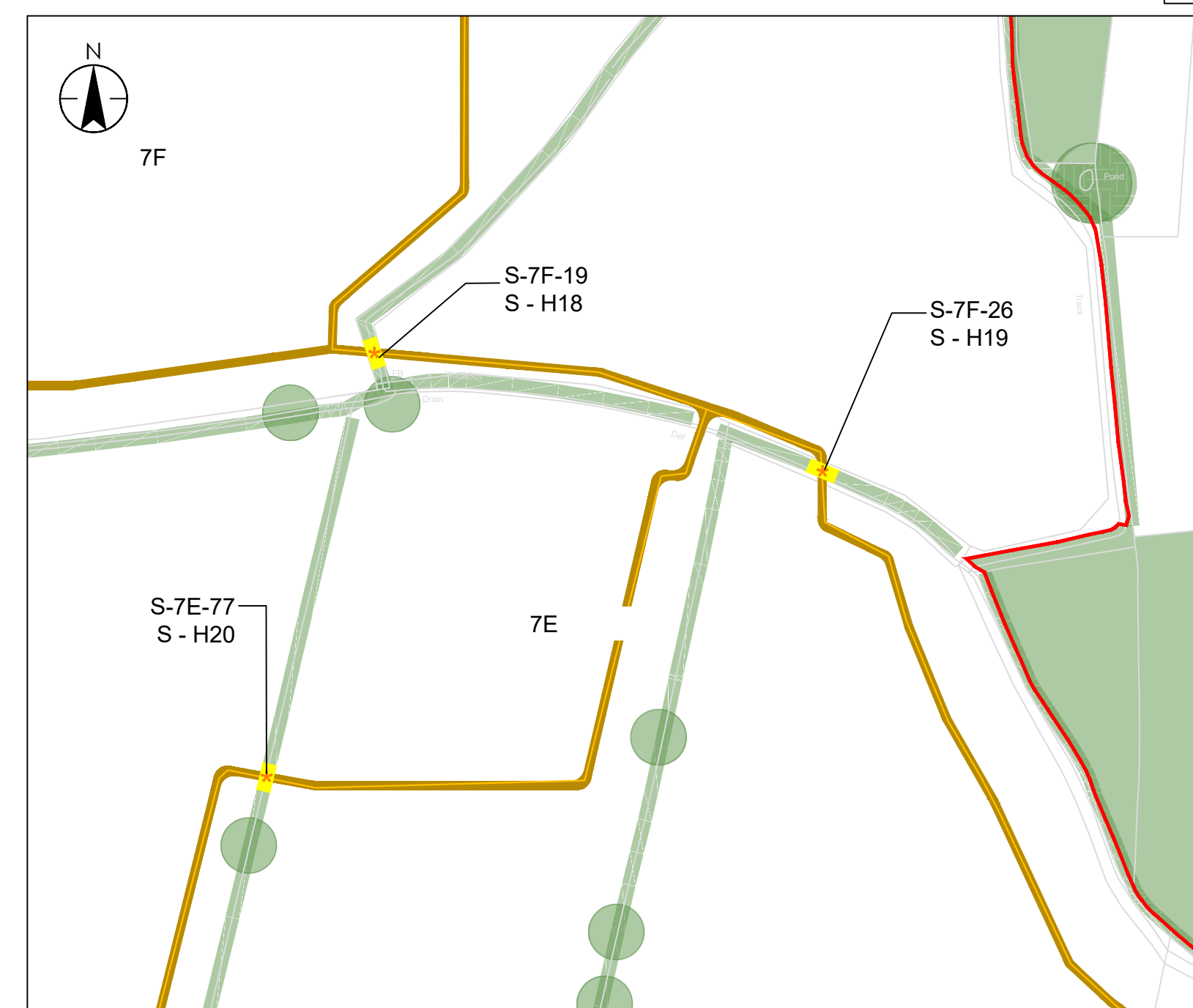
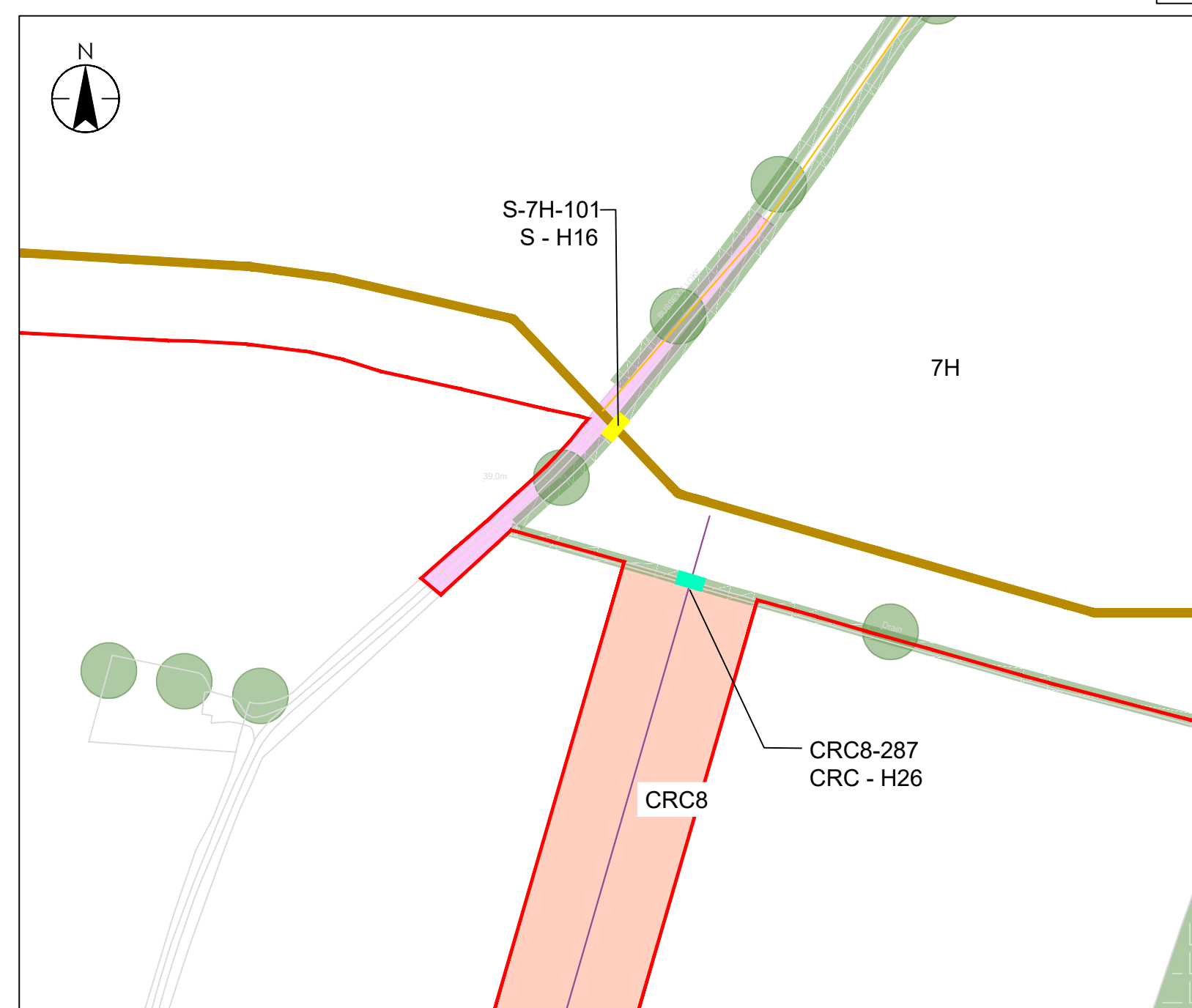
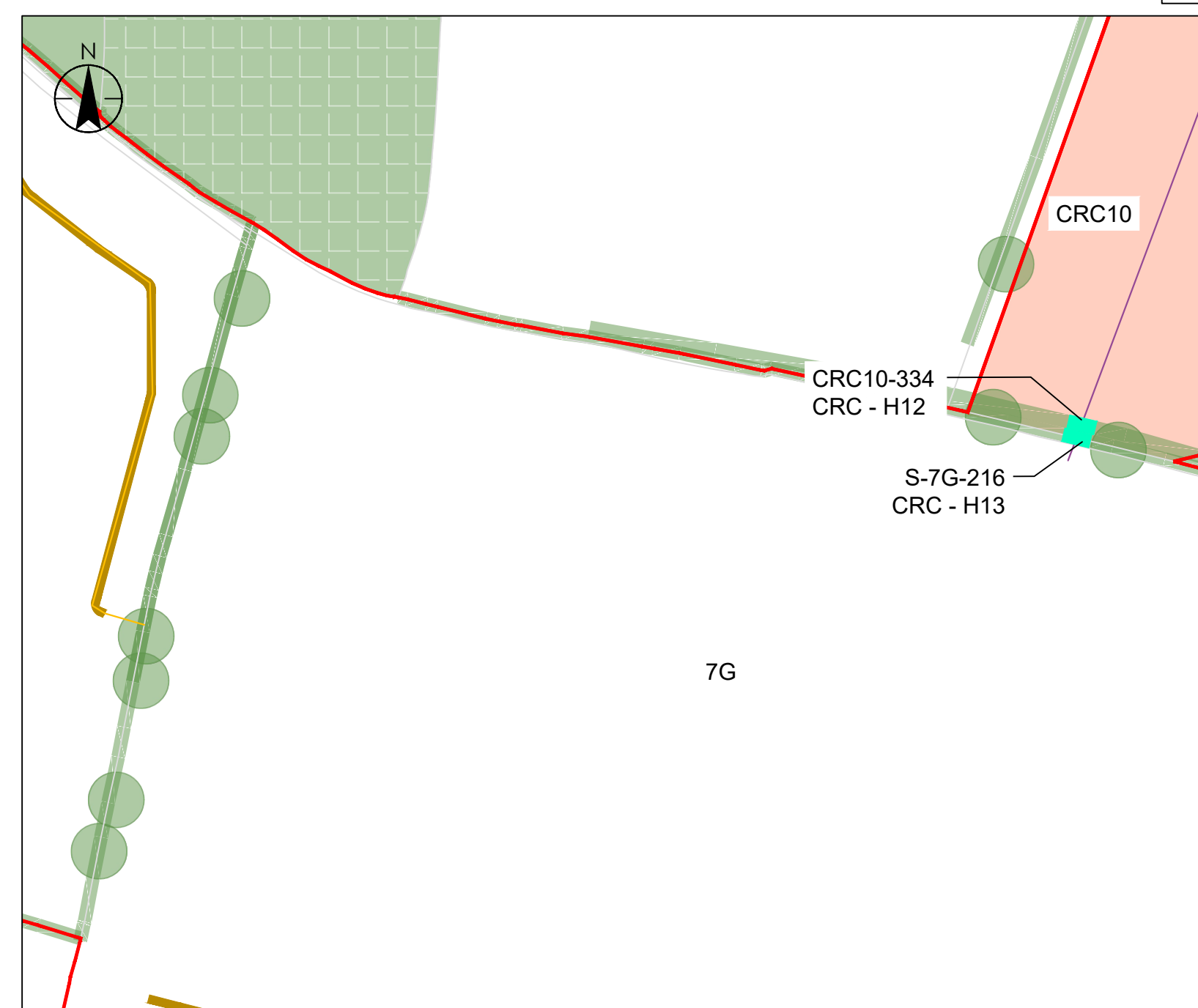
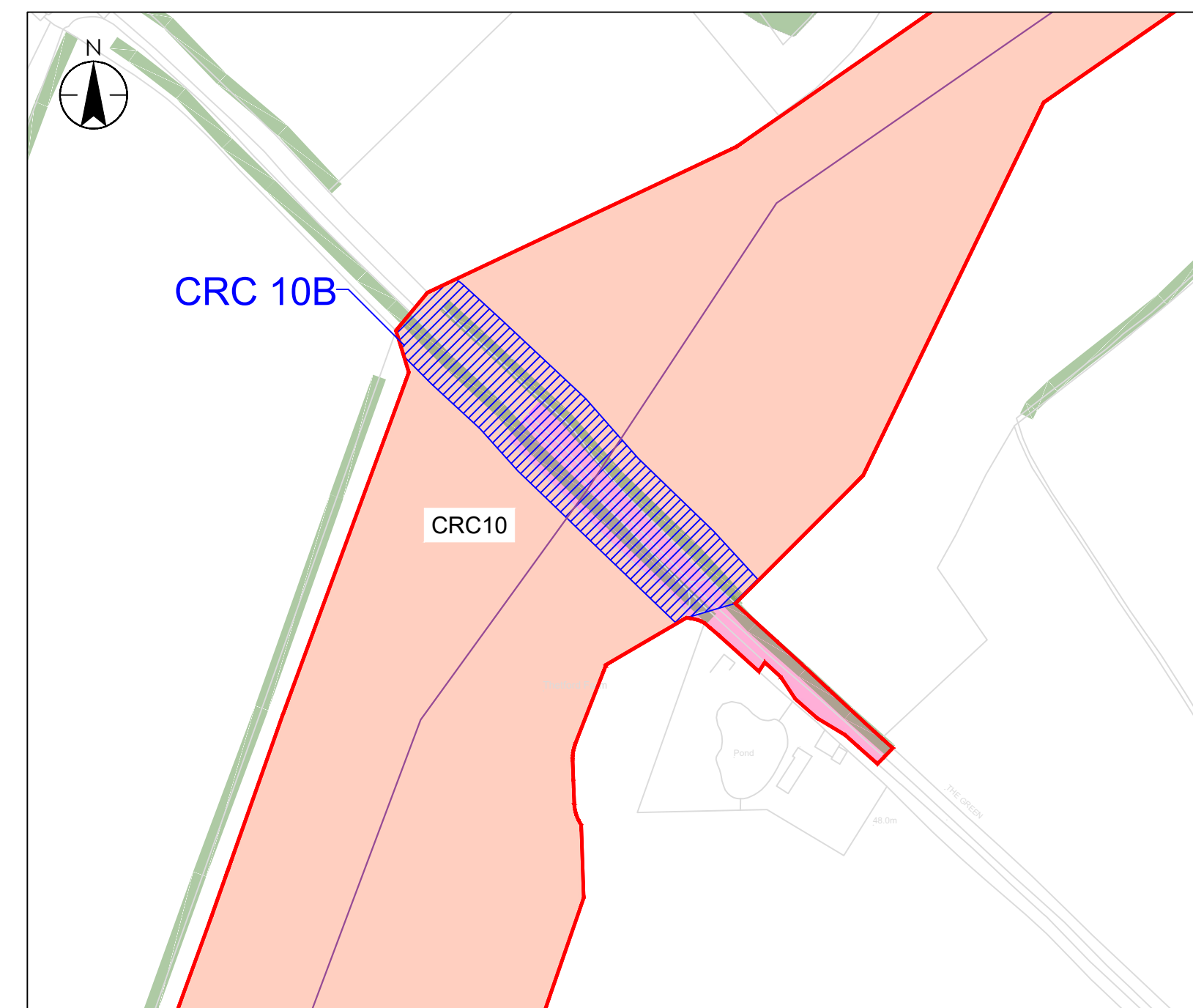
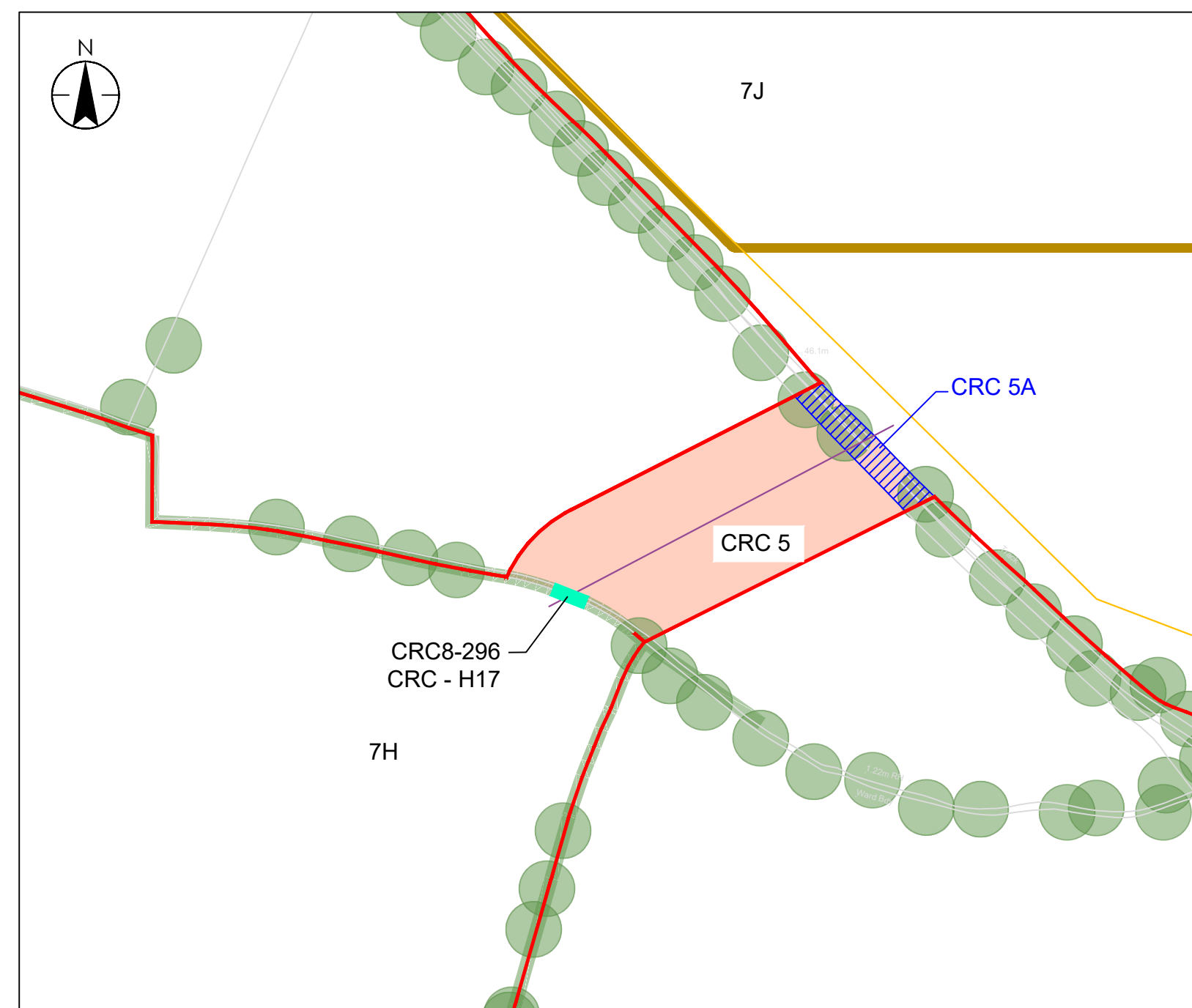
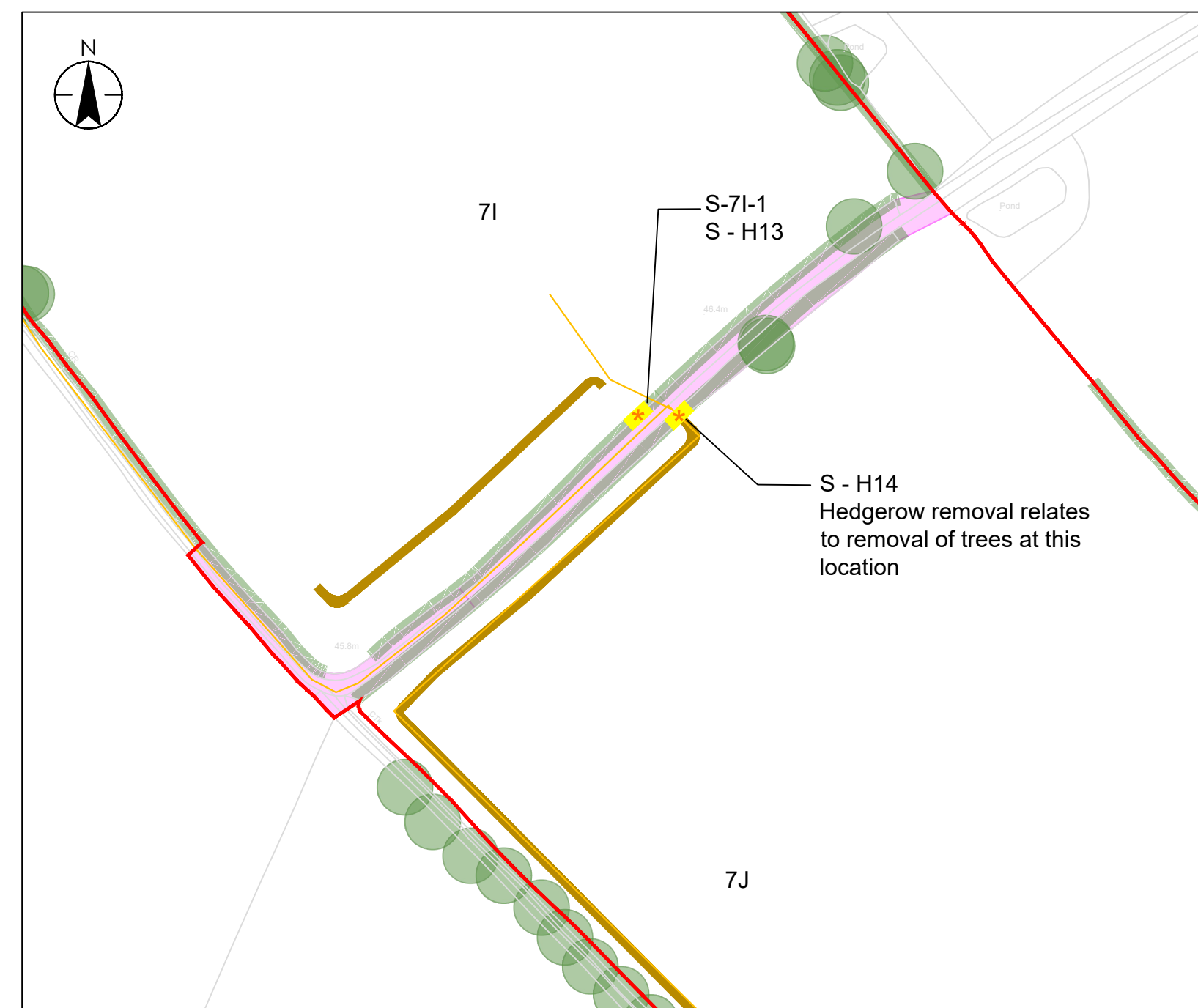
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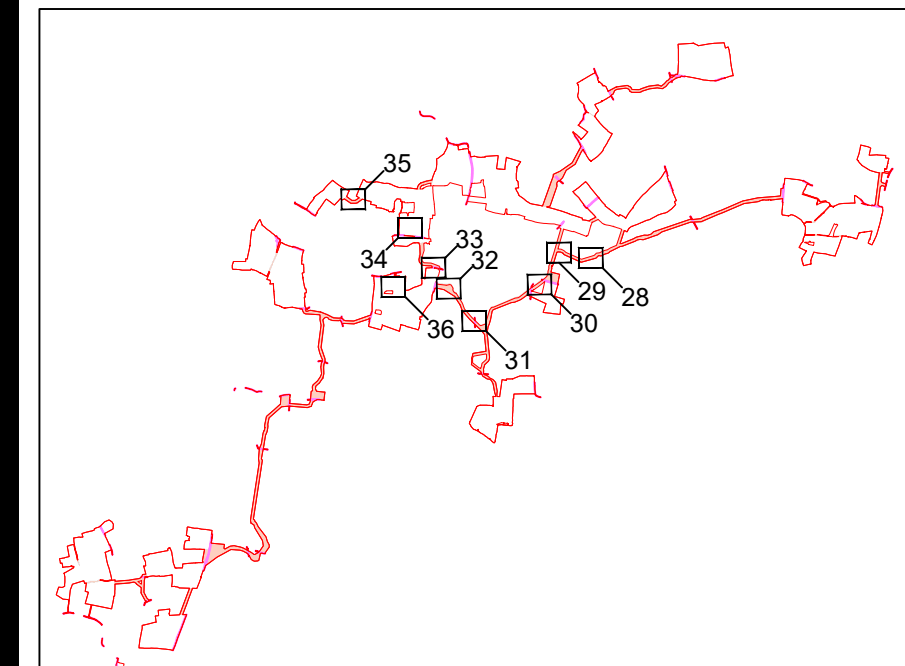


LEGEND

- Order Limits
- Cable Route Corridor
- Indicative access routes (permanent for maintenance)
- Indicative Cable Route
- Existing Hedgerow
- Hedgerow Removed: Associated With Cable Route
- Hedgerow Removed: Associated With Haulage Routes
- Hedgerow Removal Also Required for the Haulage Route Construction
- Highway Works Area
- Indicative Haulage Routes for Construction
- Avoidance Areas *1
- Existing Vegetation Cover
- Hedgerow Removed: Associated With Access Track

1 - No vegetation removal is proposed within avoidance areas. Further details are provided in the Outline Cable Route Construction Statement [APP7.21]

KEY SHEET



Refer to Figure 1.1 ES Volume 2 Site Location Plan for Sub-Site boundaries

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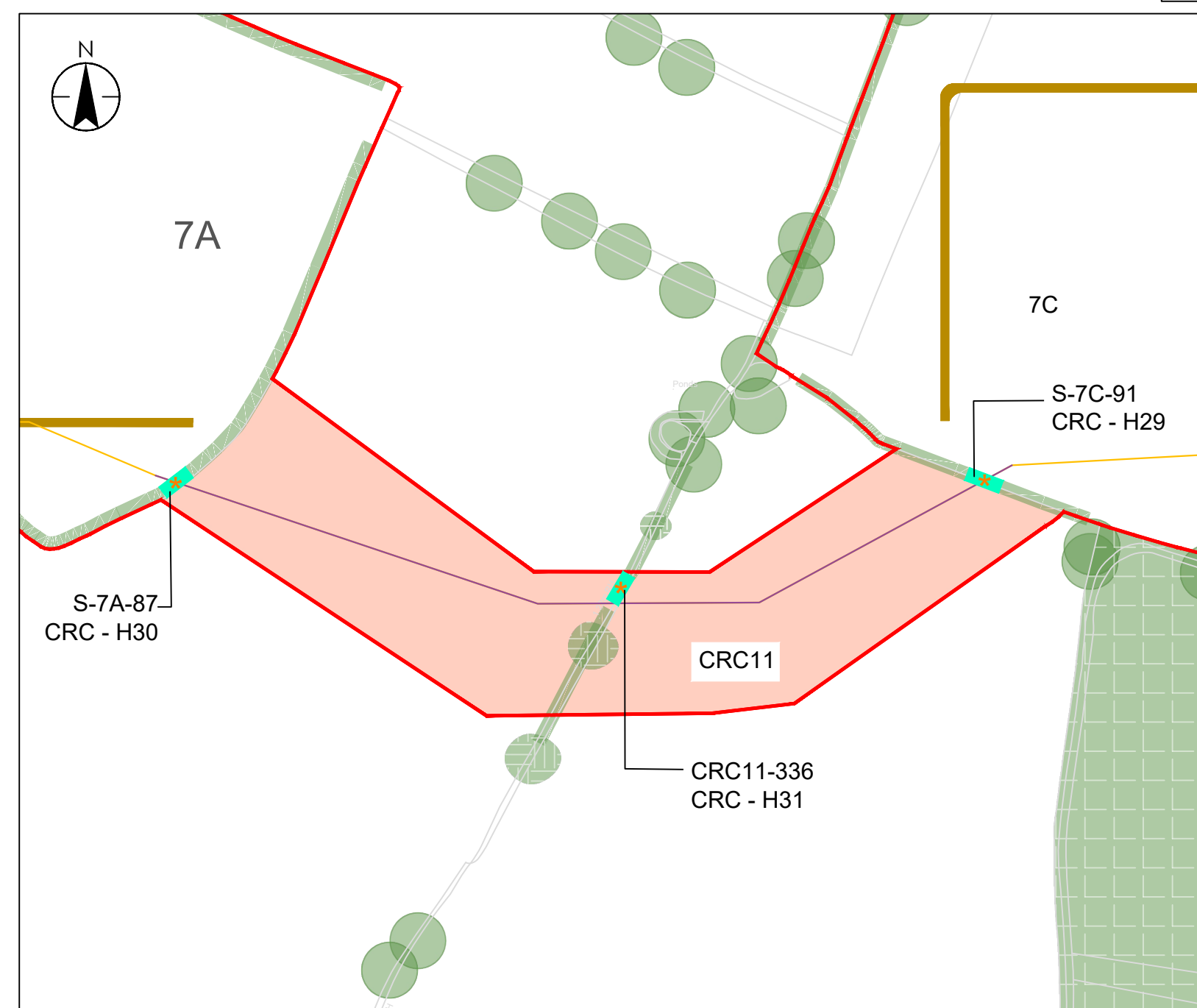
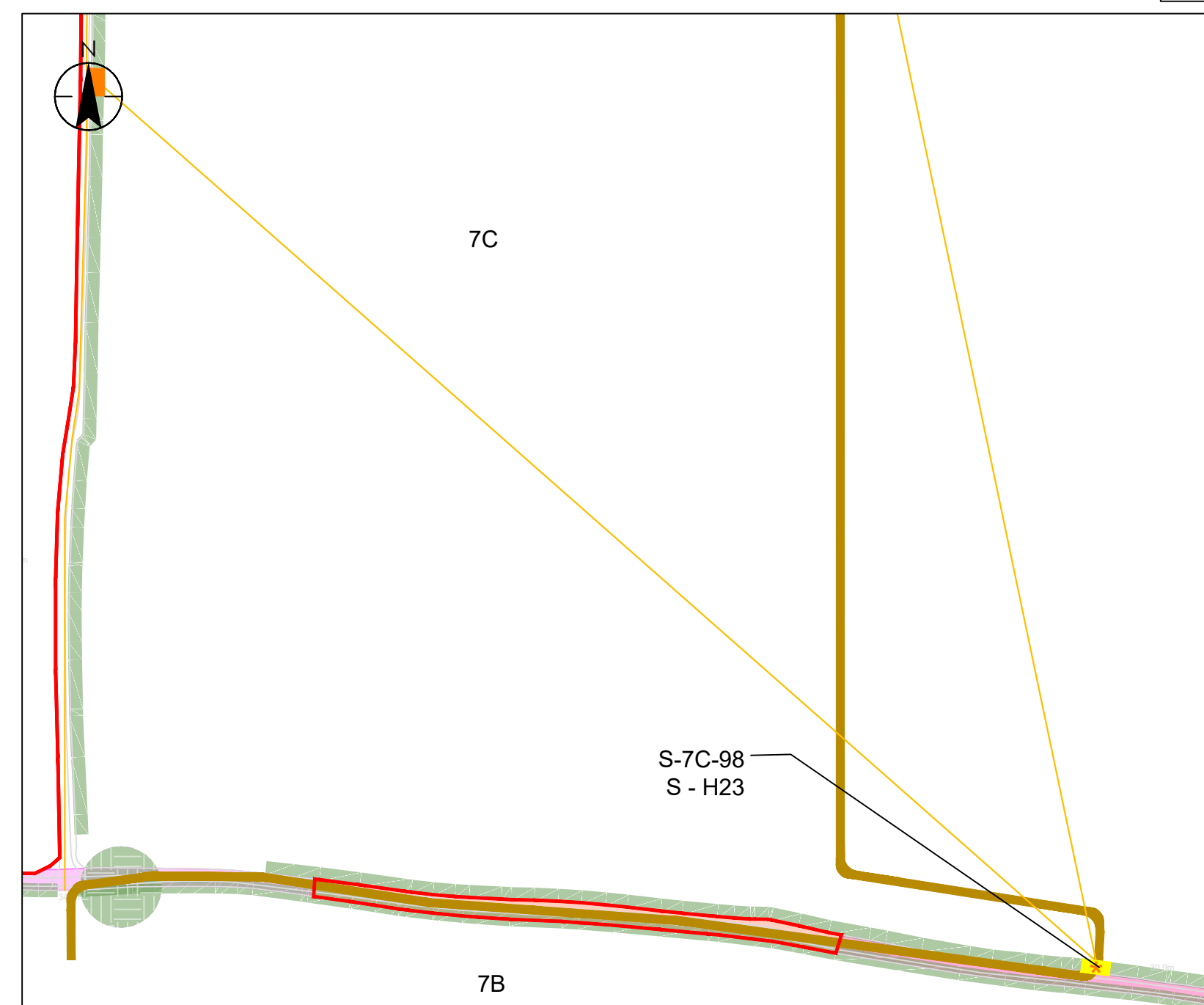
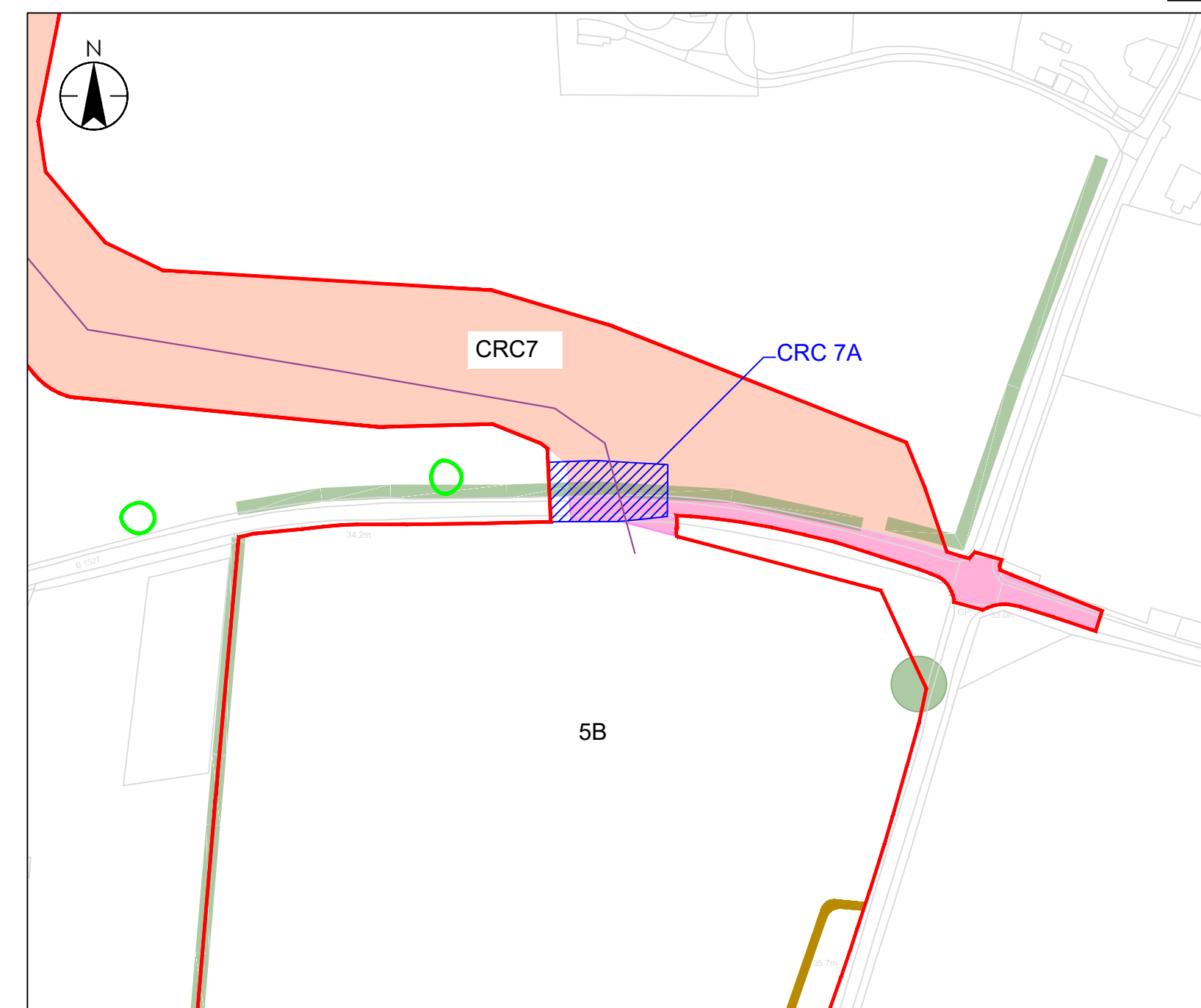
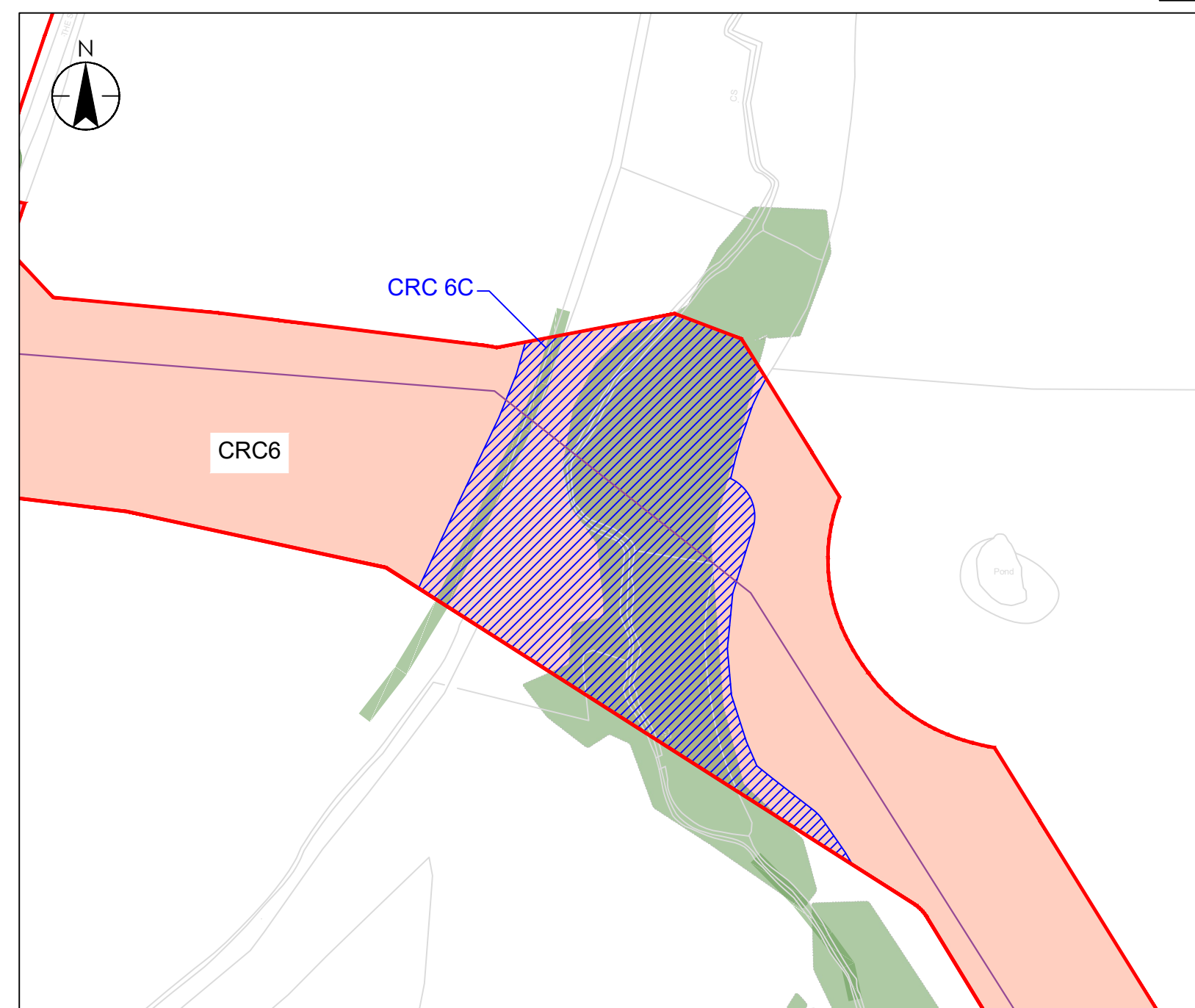
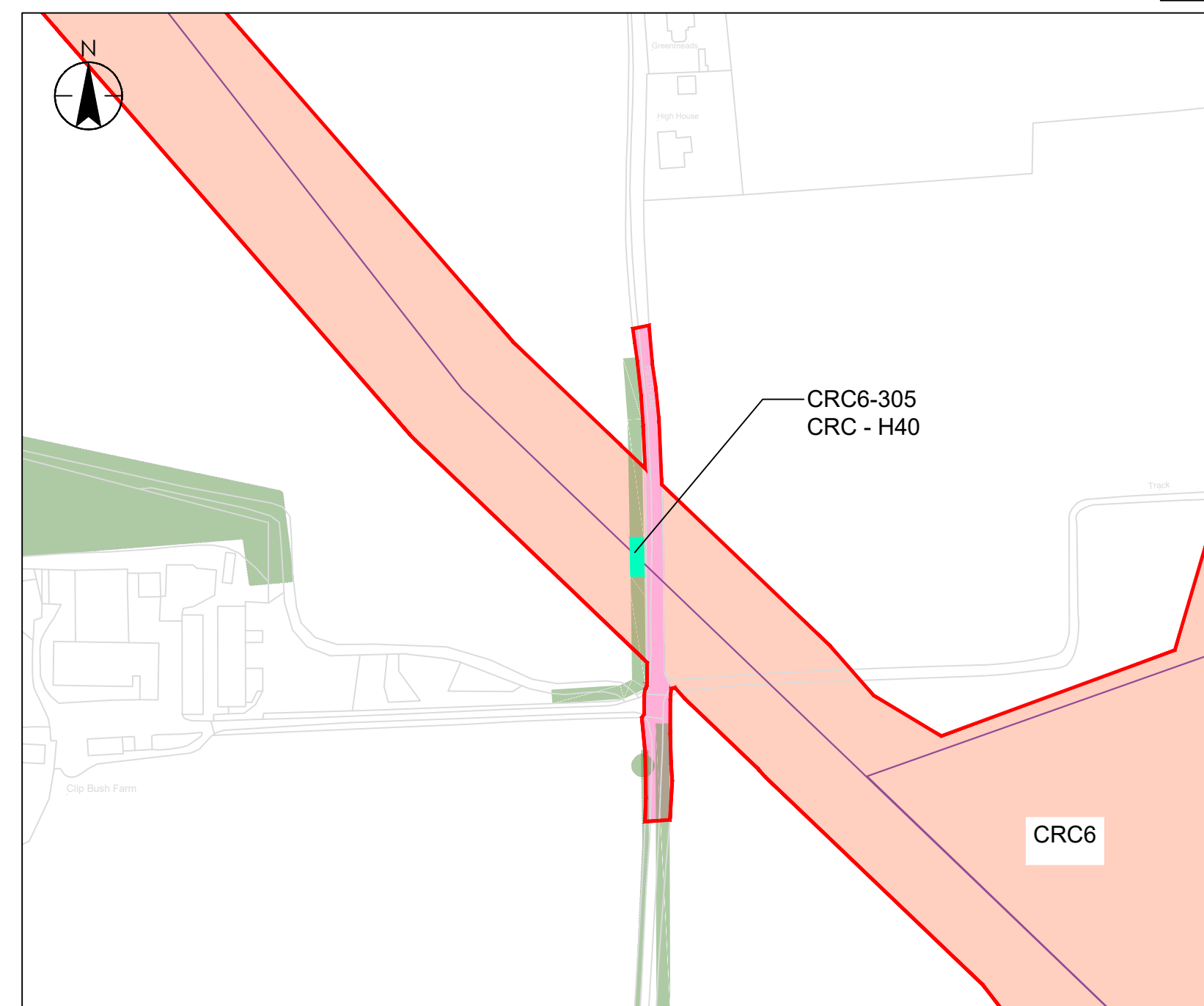
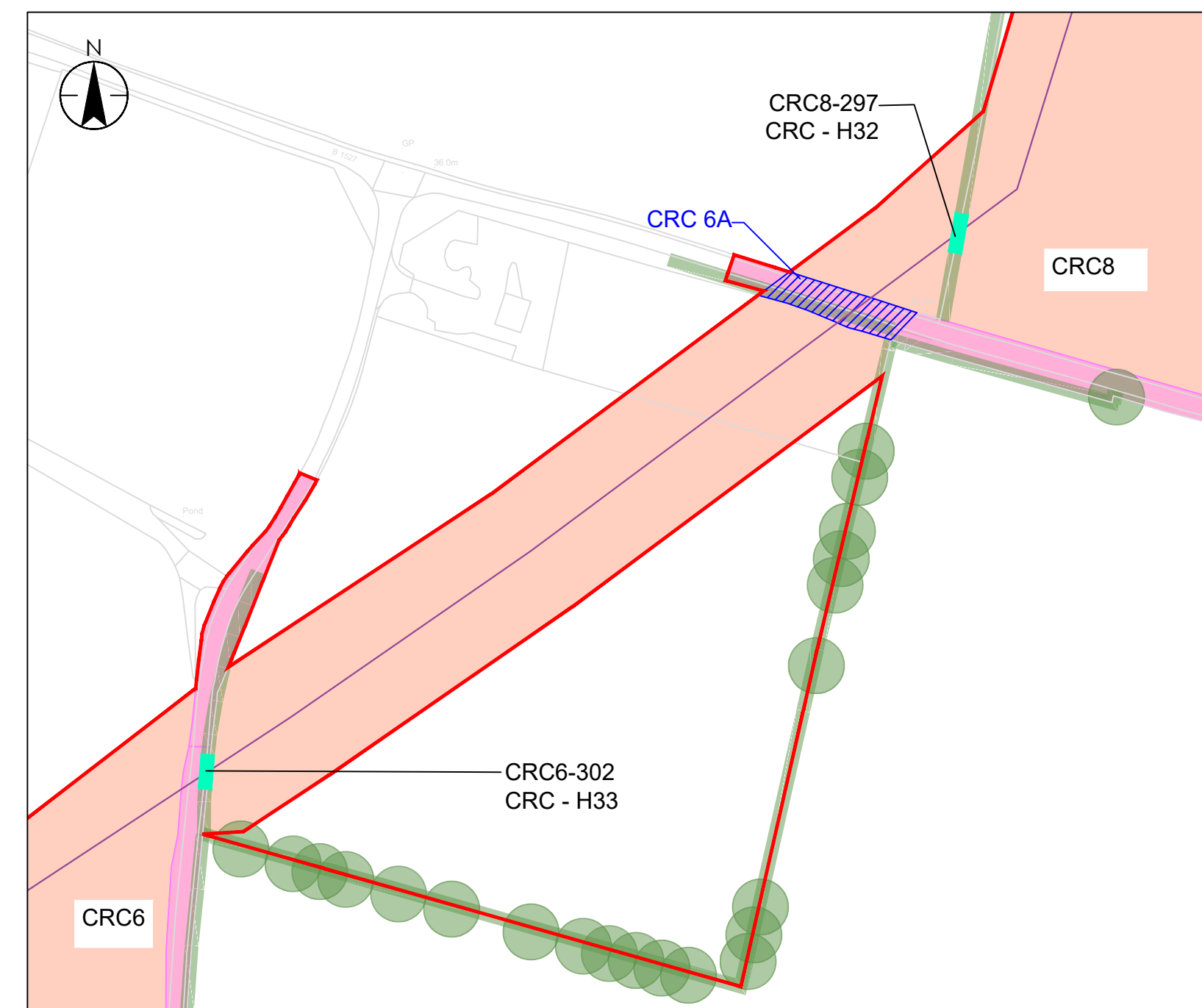
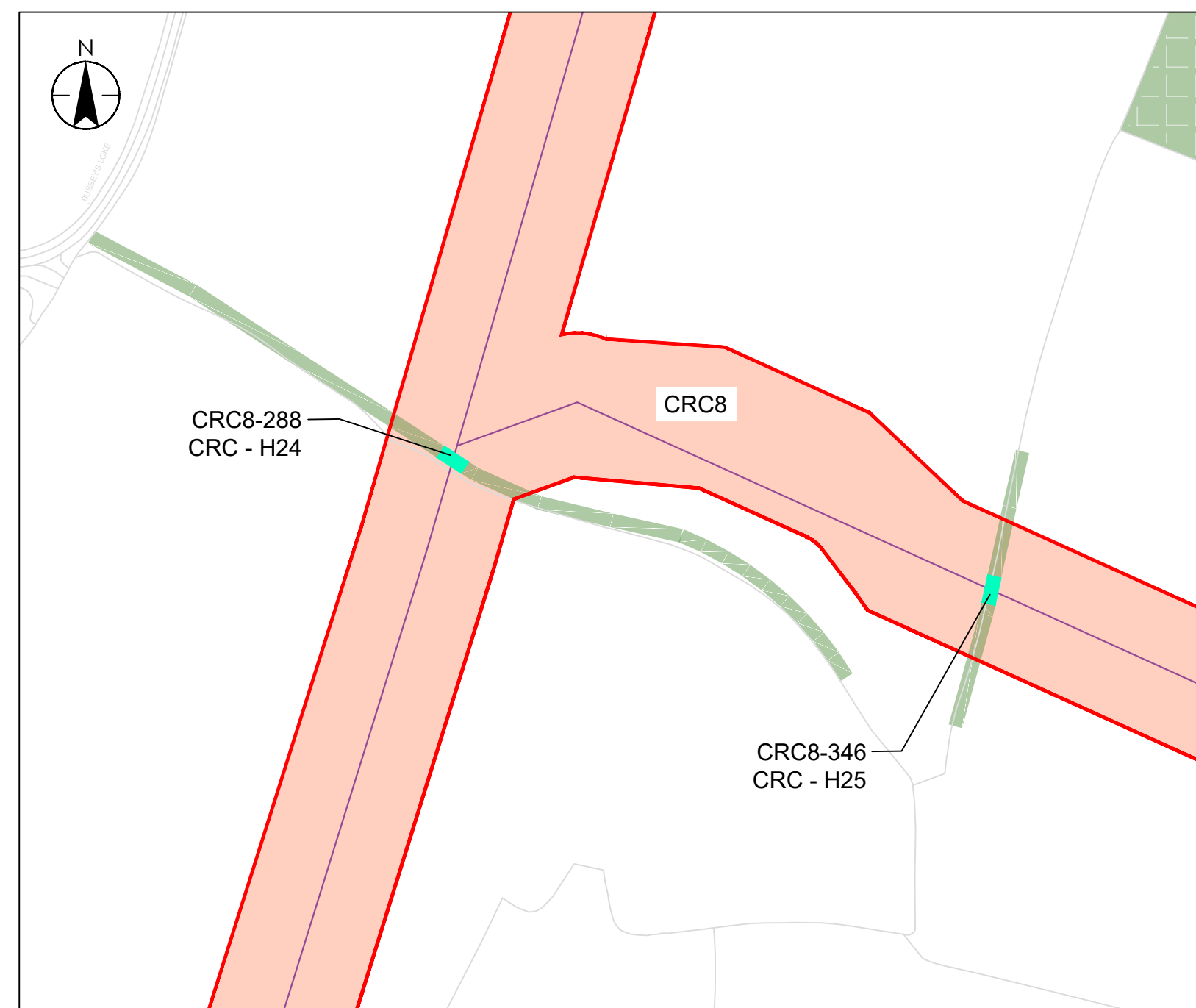
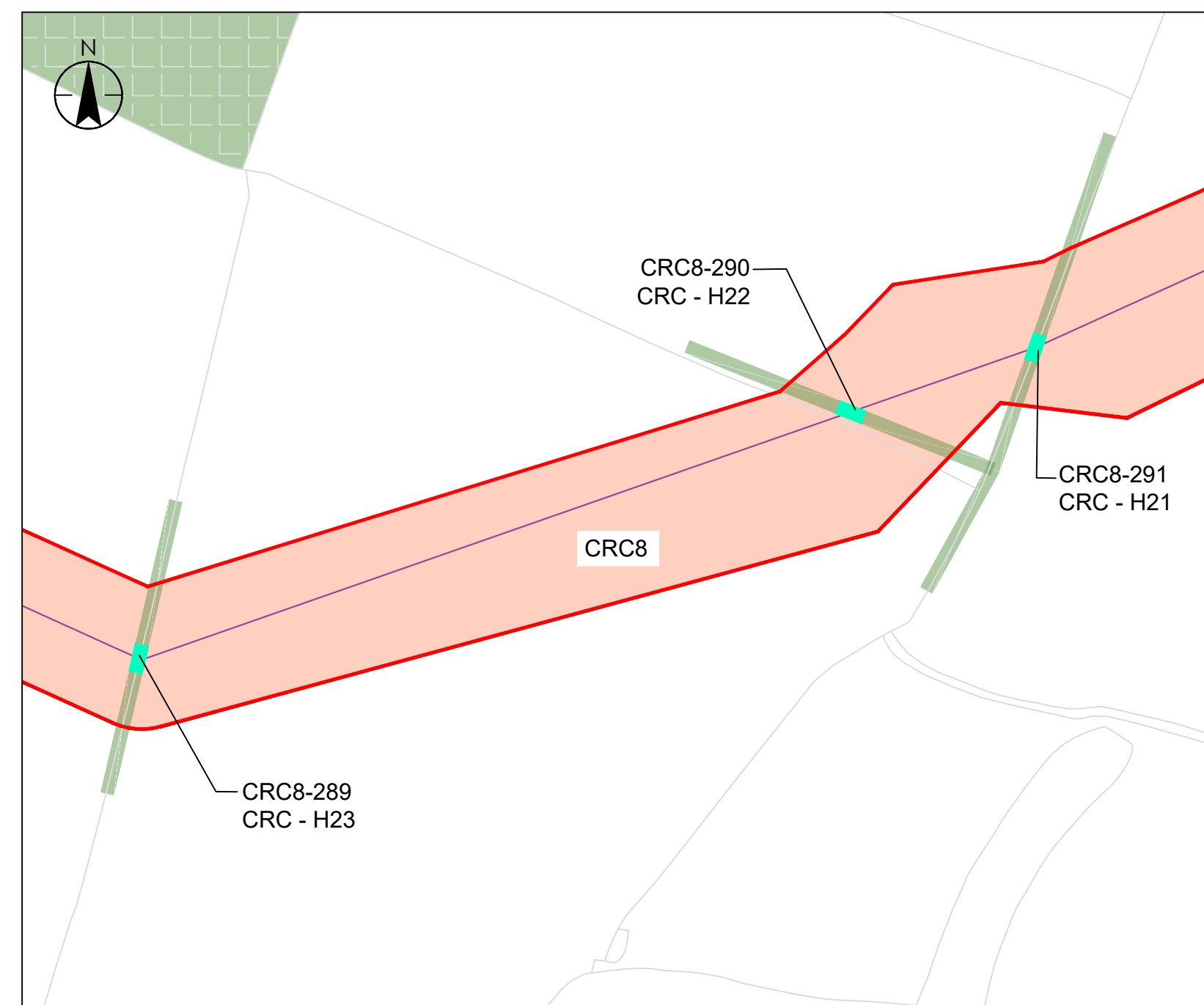
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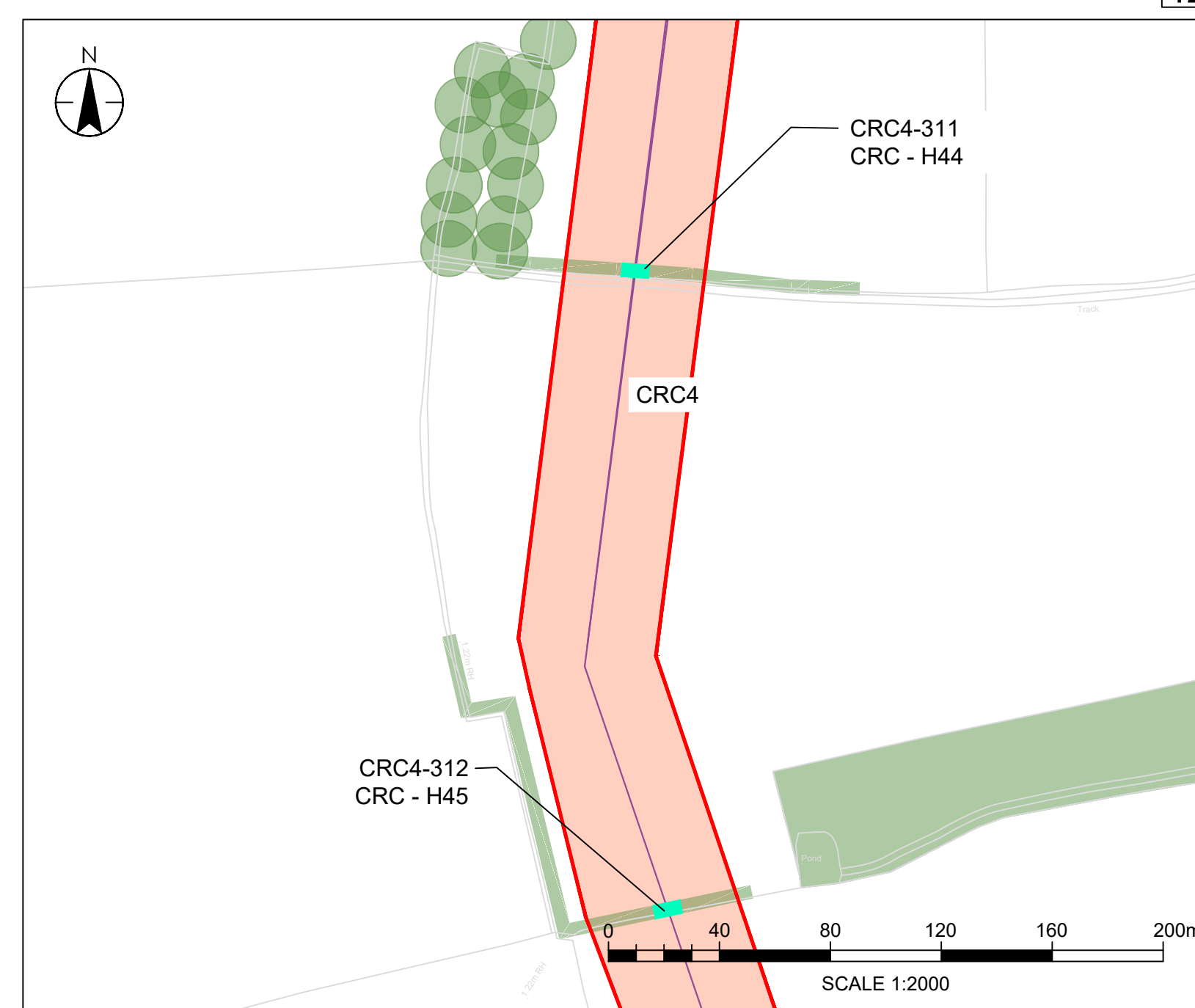
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Figure 1





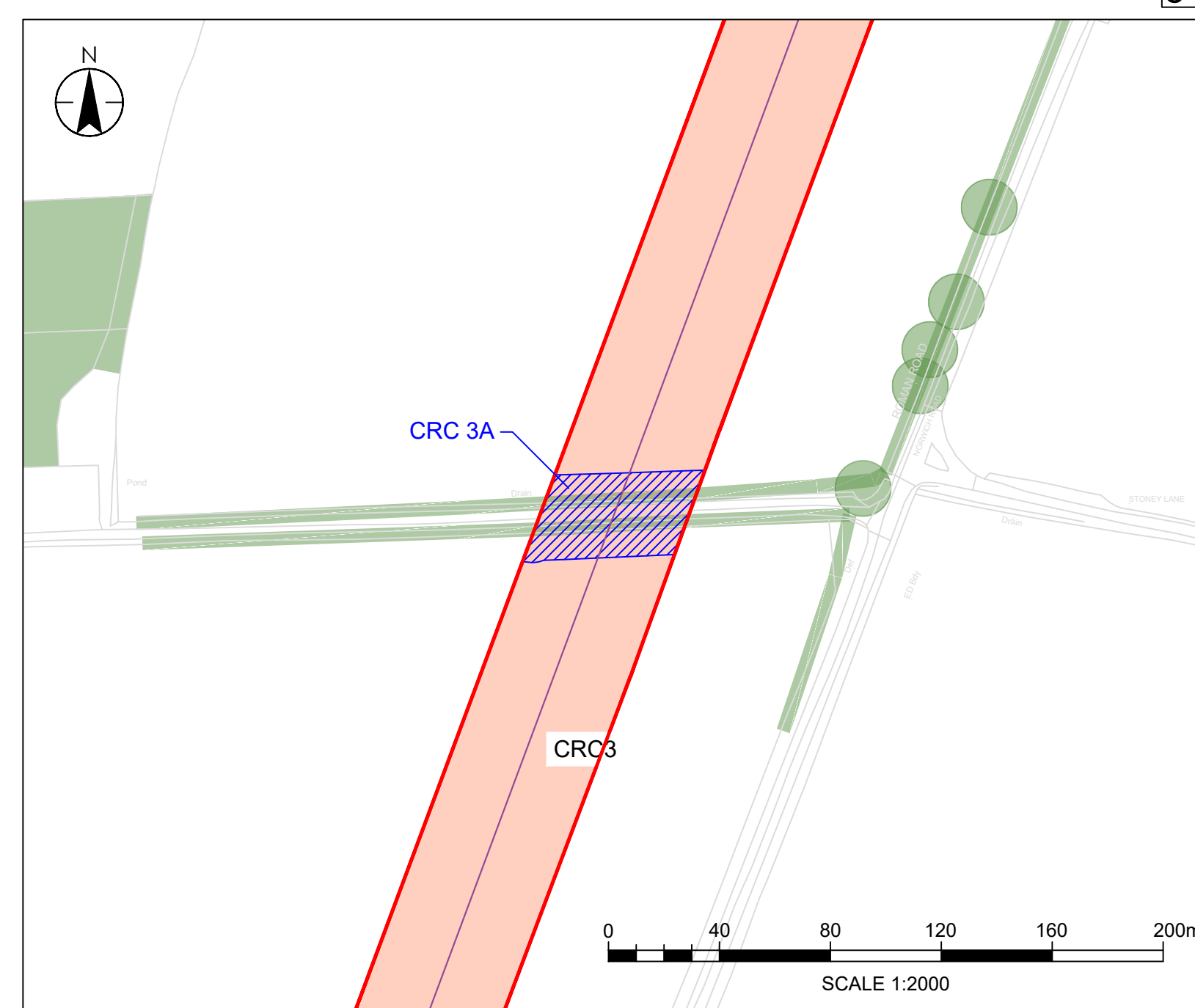
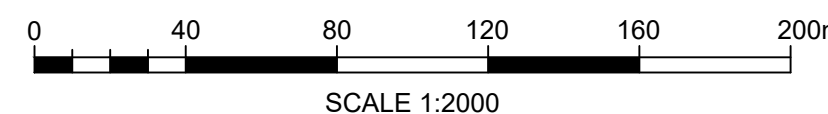


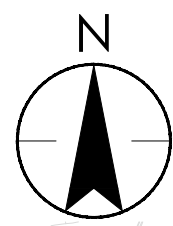
Figure 1

Refer to Figure 1.1 ES Volume 2 Site Location Plan for Sub-Site boundaries

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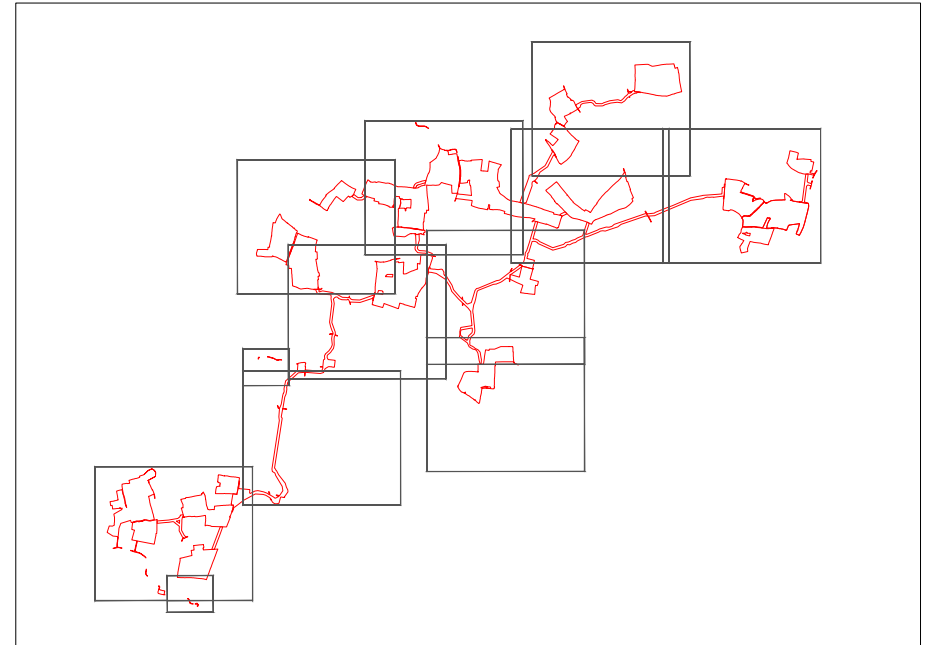
Appendix B - Figure 2: Green Infrastructure Strategy



LEGEND

- Order Limits
- Proposed Infrastructure**
 - Battery Energy Storage System (BESS)
 - 132kv Substation
 - 400kv Substation
 - Indicative access routes (permanent for maintenance)
 - National Grid Substation
 - Cable Route Corridor
 - Highway Works Area
- Existing Features**
 - Retained Agricultural Land
 - Retained Woodland Vegetation (within site boundary)
 - Retained Scrub
 - Retained Grassland
 - Existing Pond
 - Existing Vegetation Cover
 - Ancient Woodland
- Proposed Planting, Ecological Mitigation and Enhancement**
 - Proposed Tree/Woodland Planting**
 - Individual Trees
 - Native Linear Tree Belt
 - Native Broadleaf Woodland
 - Proposed Ecology Measures**
 - Arable Field Margins (Priority Habitat)
 - Skyllark Mitigation
 - Proposed Ghost Pond restoration
 - Proposed Scrub**
 - Native Scrub
 - Proposed Grassland**
 - Flower Rich Pollinator Mix
 - Tussocky Grass Mix
 - Neutral Grassland
 - Modified Grassland
 - Proposed Community Measures**
 - Permissive Path
 - Community Space
 - Proposed Hedgerow**
 - Native Hedgerow
 - Native Hedgerow With Trees
 - Existing Hedgerow Measures / Improvements**
 - Infill Planting within Existing Hedge
 - Infill Planting / Opportunity for Hedge Laying / Coppicing of Existing Hedge
 - Native Hedgerow Planting adjacent to Existing Hedge
 - Tree Planting within Existing Hedge
 - Tree Planting Adjacent to Existing Hedge

KEY SHEET



Refer to Figure 1.1 ES Volume 2 Site Location Plan for Sub-Site boundaries

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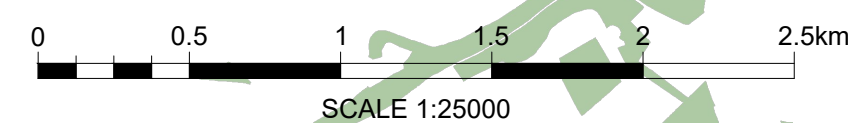
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Green Infrastructure Strategy
Index Plan

Project No.	333101211	Scale	1:25,000
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LEGEND

Order Limits

Proposed Infrastructure

Battery Energy Storage System (BESS)
132kv Substation
400kv Substation
National Grid Substation

Existing Features

Retained Agricultural Land
Retained Woodland Vegetation (within site boundary)
Retained Scrub
Retained Grassland

Proposed Planting, Ecological Mitigation and Enhancement

Proposed Tree/Woodland Planting

Individual Trees
Native Linear Tree Belt
Native Broadleaf Woodland

Proposed Scrub

Native Scrub

Proposed Community Measures

Permissive Path
Community Space

Proposed Hedgerow

Native Hedgerow
Native Hedgerow With Trees

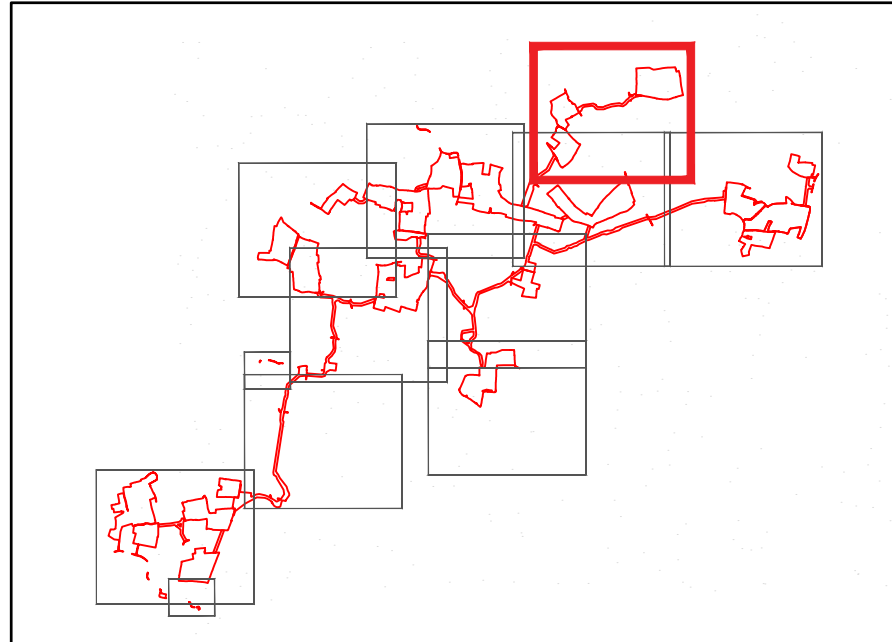
Existing Hedgerow Measures / Improvements

Infill Planting within Existing Hedge
Infill Planting / Opportunity for Hedge Laying / Coppicing of Existing Hedge
Native Hedgerow Planting adjacent to Existing Hedge

Environmental Measure Labelling

Environmental Function
VS: Visual Screening
LI: Landscape Integration
NCB: Nature Conservation and Biodiversity
Environmental Measure ID
Refer to Outline Landscape and Ecological Management Plan EN0110014/APP/7.4

KEY SHEET



Refer to Figure 1.1 ES Volume 2 Site Location Plan for Sub-Site boundaries

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Green Infrastructure Strategy
Sheet 1

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Drawing No. EN0110014/APP/2.13

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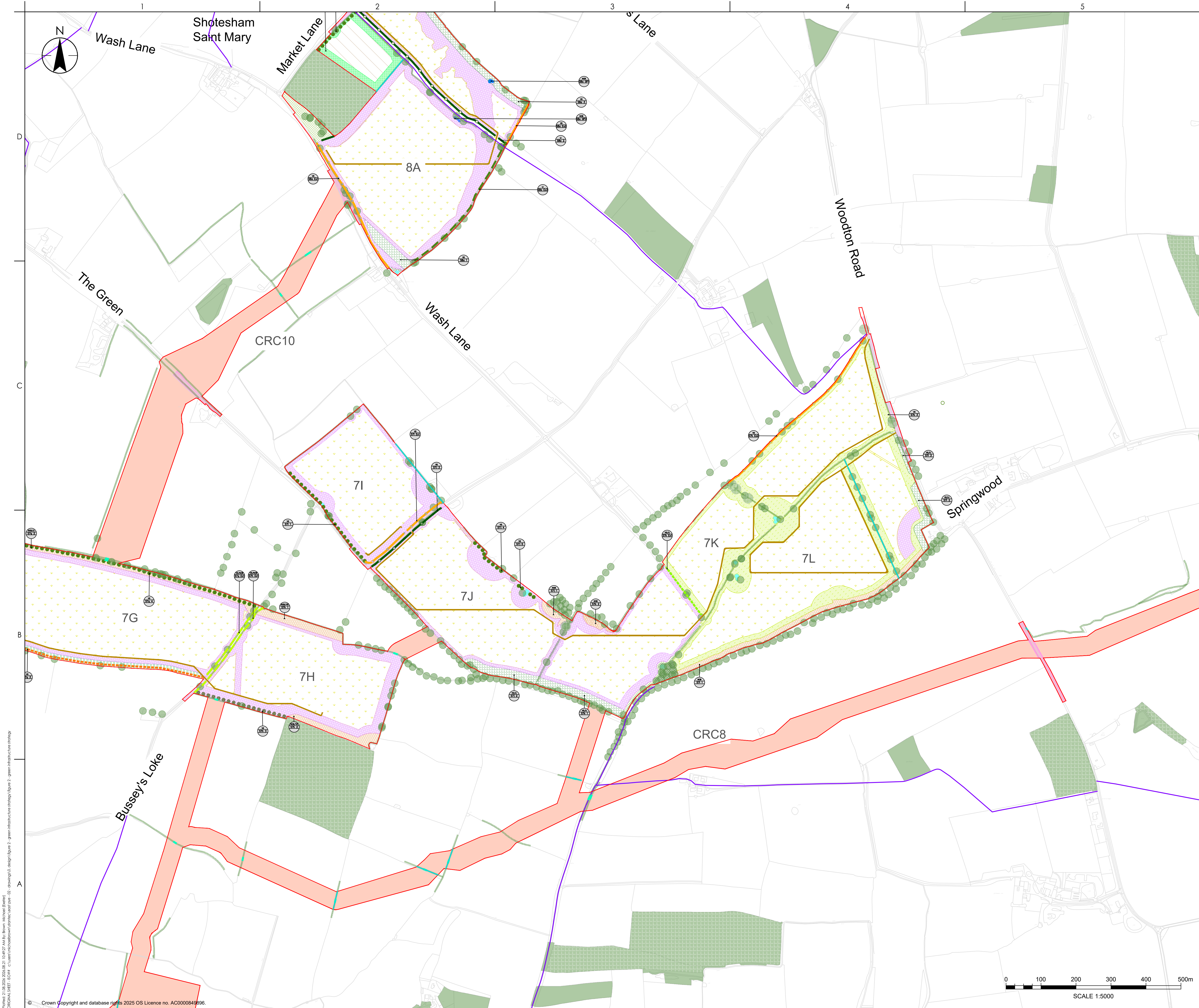
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Title
Green Infrastructure Strategy
Sheet 2

Project No.	Scale
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Revision Drawing No.
V2 EN0110014/APP/2.13



East Pye

SOLAR

LEGEND

Order Limits

Battery Energy Storage System (BESS)

132kv Substation

400kv Substation

National Grid Substation

Public Rights of Way (PRoW)

A140 Long Stratton Bypass Side Roads Order (2022) PRoW Alignment

Cable Route Corridor

Highway Works Area

Indicative access routes (permanent for maintenance)

Proposed Infrastructure

Retained Agricultural Land

Retained Woodland Vegetation (within site boundary)

Retained Scrub

Retained Grassland

Existing Pond

Existing Vegetation Cover

Ancient Woodland

Veteran Trees

Existing Features

Proposed Planting, Ecological Mitigation and Enhancement

Proposed Tree/Woodland Planting

Individual Trees

Native Linear Tree Belt

Native Broadleaf Woodland

Proposed Scrub

Native Scrub

Proposed Community Measures

Permissive Path

Community Space

Proposed Hedgerow

Native Hedgerow

Native Hedgerow With Trees

Proposed Ecology Measures

Arable Field Margins (Priority Habitat)

Skylark Mitigation

Proposed Ghost Pond restoration

Proposed Grassland

Flower Rich Pollinator Mix

Tussocky Grass Mix

Neutral Grassland

Modified Grassland

Existing Hedgerow Measures / Improvements

Infill Planting within Existing Hedge

Infill Planting / Opportunity for Hedge Laying / Coppicing of Existing Hedge

Native Hedgerow Planting adjacent to Existing Hedge

Tree Planting within Existing Hedge

Tree Planting Adjacent to Existing Hedge

Hedgerow replanting (removed for construction)

Environmental Measure Labelling

Environmental Function
VS: Visual Screening
LI: Landscape Integration
NCB: Nature Conservation and Biodiversity

Environmental Measure ID
Refer to Outline Landscape and Ecological Management Plan EN0110014/APP/7.4

KEY SHEET

Refer to Figure 1.1 ES Volume 2 Site Location Plan for Sub-Site boundaries

S5 - FOR REVIEW AND ACCEPTANCE

V2	OS MAP & PLANTING UPDATED	MB	AC	2026.08.21	
V1	FIRST ISSUE	MB	AC	2026.03.02	
Issued/Revision		By	Appd	YYYY.MM.DD	
		MB	AC	2026.03.02	
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Client/Project

East Pye Solar

Title

Green Infrastructure Strategy

Sheet 3

Project No. 333101211

Scale 1:5,000

Revision

Drawing No.

V2

EN0110014/APP/2.13

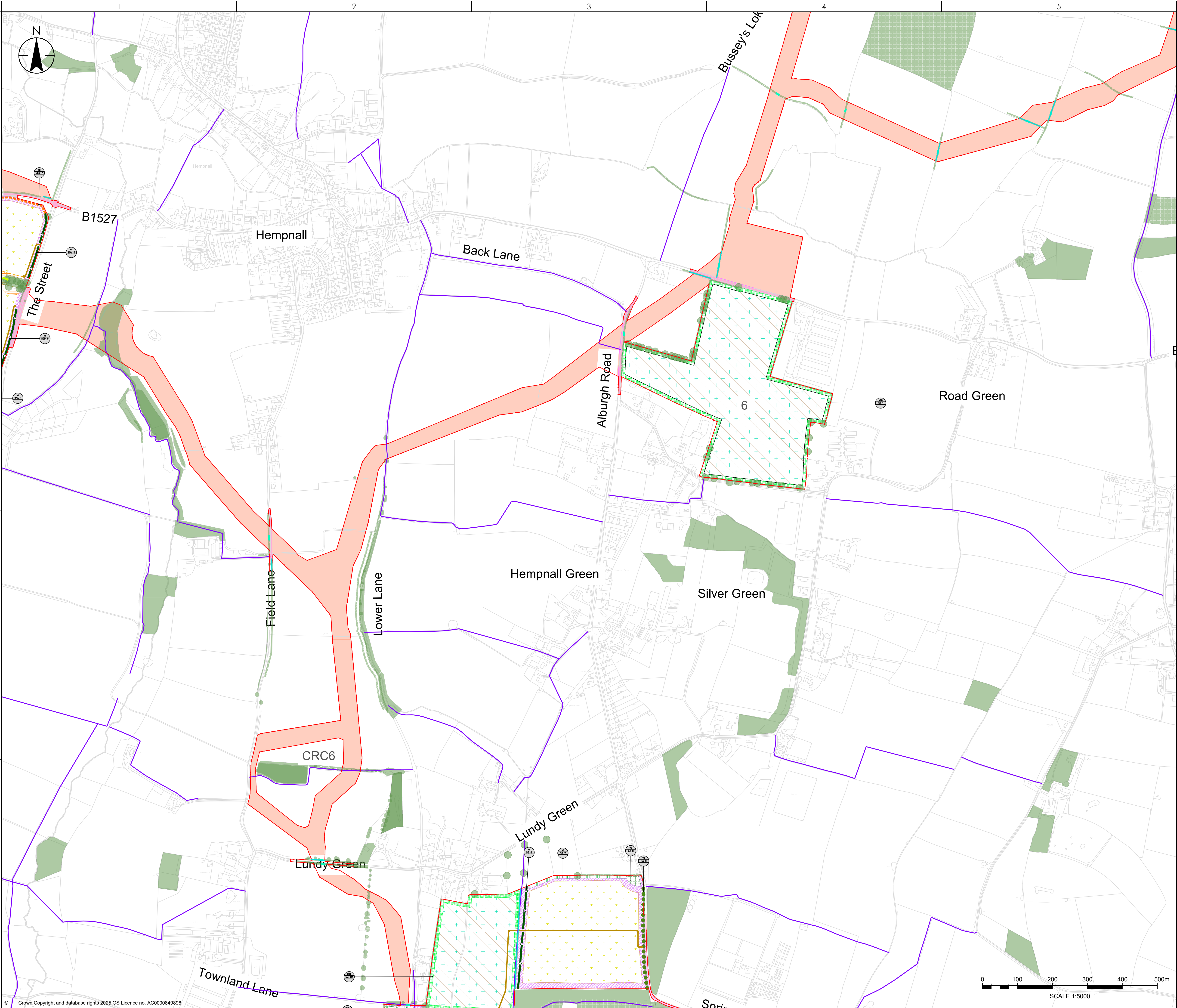
Project: 01 Design (S5) 01.10.2024 East Pye Solar - Volume 2
ORIGINAL SHEET: S044 - Green Infrastructure Strategy - Design - 02 - Drawings
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Revision	Drawing No.
V2	EN0110014/APP/2.13

Project: 21/08/2022 20:06:03 104931 A4 By: Bowen Michael (Baker)
Drawing: 1/2/22 10:24 104931 A4 By: Bowen Michael (Baker)
Drawing: 1/2/22 10:24 104931 A4 By: Bowen Michael (Baker)



East Pye

SOLAR

LEGEND

Order Limits

Battery Energy Storage System (BESS)

132kv Substation

400kv Substation

National Grid Substation

Public Rights of Way (PRoW)

A140 Long Stratton Bypass Side Roads Order (2022) PRoW Alignment

Cable Route Corridor

Highway Works Area

Indicative access routes (permanent for maintenance)

Proposed Infrastructure

Battery Energy Storage System (BESS)

132kv Substation

400kv Substation

National Grid Substation

Existing Features

Retained Agricultural Land

Retained Woodland Vegetation (within site boundary)

Retained Scrub

Retained Grassland

Existing Pond

Existing Vegetation Cover

Ancient Woodland

Veteran Trees

Proposed Planting, Ecological Mitigation and Enhancement

Proposed Tree/Woodland Planting

Individual Trees

Native Linear Tree Belt

Native Broadleaf Woodland

Proposed Scrub

Native Scrub

Proposed Community Measures

Permissive Path

Community Space

Proposed Ecology Measures

Arable Field Margins (Priority Habitat)

Skylark Mitigation

Proposed Ghost Pond restoration

Proposed Grassland

Flower Rich Pollinator Mix

Tussocky Grass Mix

Neutral Grassland

Modified Grassland

Proposed Hedgerow

Native Hedgerow

Native Hedgerow With Trees

Existing Hedgerow Measures / Improvements

Infill Planting within Existing Hedge

Infill Planting / Opportunity for Hedge Laying / Coppicing of Existing Hedge

Native Hedgerow Planting adjacent to Existing Hedge

Proposed Ecology Measures

Tree Planting within Existing Hedge

Tree Planting Adjacent to Existing Hedge

Hedgerow replanting (removed for construction)

Proposed Grassland

Instant Hedgerow (For Glint and Glare)

Environmental Measure Labelling

Environmental Function
VS: Visual Screening
LI: Landscape Integration
NCB: Nature Conservation and Biodiversity

Environmental Measure ID
Refer to Outline Landscape and Ecological Management Plan EN0110014/APP/7.4

KEY SHEET

Refer to Figure 1.1 ES Volume 2 Site Location Plan for Sub-Site boundaries

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	MB	AC	KF
	Dwn.	Dsgn.	Chkd.
			YYYY.MM.DD

Client/Project

East Pye Solar

Title

Green Infrastructure Strategy
Sheet 6

Project No.
333101211

Scale
1:5000

Revision
V2

Drawing No.
EN0110014/APP/2.13

