



**East Pye Solar
Environmental Statement
Non-Technical Summary**

**Revision 1
March 2026**

Planning Inspectorate Reference: EN0110014

Document Reference: APP/6.4

APFP Regulation 5(2)(a)

- 1 Introduction..... 1**
 - 1.1 Overview..... 1
 - 1.2 The Applicant..... 1
 - 1.3 The Order Limits..... 2
 - 1.4 The Purpose of the ES and NTS..... 2
- 2 EIA Process and Methodology..... 3**
 - 2.2 Overview..... 3
 - 2.3 Consultation..... 5
 - 2.4 Rochdale Envelope 8
- 3 The Order Limits..... 9**
 - 3.1 Introduction 9
 - 3.2 Environmental Context 10
- 4 The Scheme 12**
 - 4.1 Description of the Scheme 12
 - 4.2 Components of the Scheme..... 12
 - 4.3 Construction 15
 - 4.4 Operation..... 17
 - 4.5 Decommissioning 20
- 5 Reasonable Alternatives and Design Evolution..... 22**
 - 5.1 Site Evaluation..... 22
 - 5.2 Development Area and Alternative Layouts 23
 - 5.3 Alternatives Considered 24
- 6 Climate Change 25**
 - 6.2 Overview..... 25
 - 6.3 Baseline Conditions..... 25
 - 6.4 Embedded Mitigation:..... 26
 - 6.5 Construction Effects 26
 - 6.6 Operation Effects..... 28
 - 6.7 Decommissioning Effects 29
 - 6.8 Additional Mitigation 30
- 7 Landscape and Visual..... 31**
 - 7.1 Overview..... 31
 - 7.2 Baseline Conditions..... 31
 - 7.3 Embedded Mitigation..... 32
 - 7.4 Construction Effects 33
 - 7.5 Operation Effects..... 34
 - 7.6 Decommissioning Effects 35
 - 7.7 Additional Mitigation 36
- 8 Ecology and Biodiversity 37**

8.1	Overview.....	37
8.2	Baseline Conditions.....	37
8.3	Embedded Mitigation.....	37
8.4	Construction Effects	38
8.5	Operation Effects.....	39
8.6	Decommissioning Effects	40
9	Water Environment.....	41
9.1	Overview.....	41
9.2	Baseline Conditions.....	41
9.3	Embedded Mitigation.....	42
9.4	Construction and Decommissioning Effects.....	43
9.5	Operation Effects.....	43
9.6	Additional Mitigation	44
10	Cultural Heritage.....	45
10.1	Overview.....	45
10.2	Baseline Conditions.....	45
10.3	Embedded Mitigation.....	45
10.4	Construction Effects	46
10.5	Operation Effects.....	47
10.6	Decommissioning Effects	47
10.7	Additional mitigation	48
11	Transport and Access.....	49
11.1	Overview.....	49
11.2	Baseline Conditions.....	49
11.3	Embedded Mitigation.....	49
11.4	Construction Effects	51
11.5	Operation Effects.....	52
11.6	Decommissioning Effects	52
11.7	Additional Mitigation	52
12	Noise and Vibration.....	53
12.1	Overview.....	53
12.2	Baseline Conditions.....	53
12.3	Embedded Mitigation.....	53
12.4	Construction Effects	54
12.5	Operation Effects.....	55
12.6	Decommissioning Effects	56
12.7	Additional Mitigation	56
13	Air Quality	58
13.1	Overview.....	58
13.2	Baseline Conditions.....	58

13.3	Embedded Mitigation	58
13.4	Construction Effects	59
13.5	Operation Effects	60
13.6	Decommissioning Effects	60
13.7	Additional Mitigation	61
14	Socio-Economics	62
14.1	Overview	62
14.2	Baseline Conditions	62
14.3	Embedded Mitigation	63
14.4	Construction Effects	64
14.5	Operation Effects	65
14.6	Decommissioning Effects	65
14.7	Additional Mitigation	65
15	Soils and Agricultural Land	66
15.1	Overview	66
15.2	Baseline Conditions	66
15.3	Embedded Mitigation	67
15.4	Construction Effects	68
15.5	Operation Effects	69
15.6	Decommissioning Effects	70
15.7	Additional Mitigation	71
16	Ground Conditions	72
16.1	Overview	72
16.2	Baseline Conditions	72
16.3	Embedded Mitigation	74
16.4	Construction Effects	75
16.5	Operation Effects	76
16.6	Decommissioning Effects	77
16.7	Additional Mitigation	77
17	Electromagnetic Fields	78
17.1	Overview	78
17.2	Baseline Conditions	78
17.3	Embedded Mitigation	78
17.4	Construction Effects	78
17.5	Operation Effects	79
17.6	Decommissioning Effects	79
17.7	Additional Mitigation	79
18	Other Environmental Matters	80
18.1	Overview	80
18.2	Major Accidents and Disasters	80

18.3	Telecommunications, Utilities and Television	81
18.4	Glint and Glare	82
18.5	Waste and Materials.....	84
18.6	Human Health.....	86
19	Cumulative and In-Combination Effects	91
19.1	Introduction.....	91
19.2	Cumulative Effects Assessment.....	91
19.3	In-Combination Effects Assessment	92
20	Summary of Residual Effects	94

Tables

Table 6.1 Construction GHG Emissions.....	27
Table 6.2 Operational GHG Emissions	28
Table 6.3 Decommissioning GHG Emissions	29

Appendices

Appendix A - Figure 1 Site Location Plan

Appendix B Figure 4.1 Indicative Masterplan

1 Introduction

1.1 Overview

- 1.1.1 This document has been prepared on behalf of East Pye Solar Limited ('the Applicant') and provides a Non-Technical Summary (NTS) of the Environmental Statement (ES) for East Pye Solar (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 132 kV Project Substations and up to three 400kV Project Substations, Grid Connection Infrastructure and a new National Grid Substation.
- 1.1.3 The Scheme is a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008 (**Error! Reference source not found.**), as it will have the capacity to generate more than 100 (MW) of electricity. Under the Planning Act 2008, a type of planning consent called a Development Consent Order (DCO) is required to build and operate an NSIP. The DCO application is submitted to the Planning Inspectorate, with the decision whether to grant the DCO being made by the Secretary of State for the Department of Energy Security and Net Zero.
- 1.1.4 A glossary for terms within the ES can be found at **ES: Chapter 0 Glossary [EN0110014/APP/6.1.0]**.

1.2 The Applicant

- 1.2.1 The Scheme is being developed by East Pye Solar Limited, a 100% owned subsidiary of Island Green Power (IGP) UK Projects Limited, which is in turn a 100% subsidiary of IGP's UK group holding company, IGP Ltd. The Applicant is part of IGP, who are a leading international developer of utility scale solar projects and battery storage systems, established in 2013.
- 1.2.2 IGP has delivered nearly 40 solar projects worldwide, with a total generating capacity of more than 3 gigawatts (GW). This includes 21 solar projects in the UK. These range size from below 5 MW to NSIPs such as Cottam Solar Project, currently the UK's largest consented solar project. Cottam will generate 600 MW of clean, renewable and secure electricity and includes 600 MW of Battery Storage that will store then release energy as needed.
- 1.2.3 IGP's mission is to deliver renewable energy solutions that create lasting value for the communities they serve, protecting the environment while fostering economic growth and energy independence.

1.3 The Order Limits

- 1.3.1 The Order Limits means the area within which the works for the Scheme may be carried out and land acquired or used for the construction, operation and maintenance, and decommissioning phases of the Scheme. The Order Limits comprise a total area of 1,212.3 ha of land located within the administrative areas of South Norfolk Council (SNC) and Norfolk County Council (NCC). The Sites and BESS Site comprise an area of approximately 1,051.4 ha. The area and National Grid Reference (NGR) for each of the individual Sites / Sub-Sites is outlined in **ES Volume 1, Chapter 3: The Order Limits [EN0110114/APP/6.1.3]**
- 1.3.2 The Cable Route Corridor (CRC) runs between the 10 Sites (where the solar arrays and associated works will be), and the BESS Site (where the battery storage works will be) within which the underground 33 kV, 132 kV and 400 kV cables will be laid, interconnecting between the Sites and Sub-Sites. This CRC covers an area of approximately 158.9ha. 14 total CRCs are proposed between the Sites, BESS Site, and Sub-Sites. The land within the CRC is predominantly agricultural. The Sites and CRC are shown on **Appendix A: Figure 1.1 Site Location Plan**.
- 1.3.3 Highway Works for the Scheme cover an area of approximately 2 ha and are shown on the **Works Plan [EN0110014/APP/2.3]**. There are a total of seven Highway Works within the Order Limits.

1.4 The Purpose of the ES and NTS

- 1.4.1 An Environmental Statement (ES) has been prepared by the Applicant to present the findings of the Environmental Impact Assessment (EIA) conducted for the Scheme.
- 1.4.2 The Scheme is considered to be 'EIA development' as defined by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations') (**Error! Reference source not found.**), and as such requires an EIA to be undertaken. The ES is submitted as part of the DCO application and presents the findings of the EIA undertaken for the Scheme in accordance with the EIA Regulations and the Planning Act 2008.
- 1.4.3 The purpose of this NTS is to provide a summary of the ES in non-technical language. The full ES is presented as **[EN0110114/APP/6.1]**.

2 EIA Process and Methodology

- 2.1.1 The approach the EIA has taken to assessing impacts associated with the Scheme, including the significance criteria against which impacts have been assessed, is described within **ES: Chapter 2 EIA Methodology [EN0110114/APP/6.1.2]**.

2.2 Overview

- 2.2.1 EIA is the process of compiling, evaluating and presenting the likely significant environmental effects of a project and identifying measures to mitigate or manage any adverse effects.
- 2.2.2 The EIA has been informed by consultation with statutory consultees, other interested bodies, and members of the public. The purpose of identifying significant effects is to ensure decision makers are able to make an informed judgement on the environmental impacts of the Scheme.
- 2.2.3 The assessment considers the environmental impacts of the Scheme at key stages in its construction, and operation and maintenance phases, and as far as practicable, its decommissioning phase. The process of identifying environmental effects is both iterative and cyclical, running in tandem with the iterative design process.

Determining Baseline Conditions

- 2.2.4 The Baseline Conditions consist of the existing conditions prior to the Scheme, describing the relevant baseline characteristics of the Order Limits and the relevant Study Area. Detailed environmental baseline information has been collected from various sources, including digital resources, data searches, baseline surveys and environmental information submitted in support of other planning applications in the vicinity of the Scheme.
- 2.2.5 This baseline against which environmental effects will be assessed is the 'existing baseline'. The 'existing baseline' year for the ES will either be 2024 or 2025 depending on the time when the baseline for individual environmental topics was established through baseline studies. Where relevant, a future baseline will be considered for assessments where conditions are anticipated to prevail at a certain point in the future.

The Reasonable 'Worst-Case' Scenario

- 2.2.6 The assessment of construction, operation and maintenance, and decommissioning effects have been undertaken based on existing knowledge, techniques, and equipment. A 'reasonable worst-case' scenario has been used with respect to the construction and decommissioning methods, location (proximity to sensitive receptors), phasing and timing of

activities as defined in **ES: Chapter 4 The Scheme [EN0110114/APP/6.1.4]**.

Determining Significance

- 2.2.7 The evaluation of the significance is important as it is the significance that determines the resources that should be deployed in avoiding or mitigating a significant adverse effect, or conversely, the actual value of a beneficial effect. Where mitigation measures are identified to eliminate, mitigate or reduce adverse impacts, these have either been incorporated into the design, translated into construction commitments, and / or operational or managerial standards / procedures.
- 2.2.8 The criteria for determining significance is presented in **Table 2.2: Methodology for Assessing Sensitivity, Table 2.3: Methodology for Assessing Magnitude of Impact** and **Table 2.4: Effect Significance Matrix** in **ES: Chapter 2 EIA Methodology [EN0110114/APP/6.1.2]**. Generic definitions for the classification of effects are provided in **Table 2.5 Significance of Effect Definitions** in **ES: Chapter 2 EIA Methodology [EN0110114/APP/6.1.2]**. This chapter defines the sensitivity and magnitude criteria which determine the degree of significance of an effect. For example, a high magnitude of impact / change on a high sensitivity receptor will result in an effect that is classed as major (which is considered significant in EIA terms).

Determining Residual Effects

- 2.2.9 The significance of residual effects is determined by reference to criteria for each assessment. Specific effect significance criteria for each technical chapter have been developed. The ES identifies 'residual effects' which remain following the implementation of suitable mitigation measures and classify these in accordance with the effect classification terminology listed in **Table 2.5: Significance of Effect Definitions** in **ES: Chapter 2 EIA Methodology [EN0110114/APP/6.1.2]**.

Cumulative Effects

- 2.2.10 In accordance with Schedule 4, Paragraph 5 of the EIA Regulations, an assessment of 'cumulative effects' has also been considered in the ES. These effects result from incremental changes cause by other past, present, or reasonably foreseeable action cumulatively with the Scheme. For the cumulative impact assessment presented in the ES, two types of effect are considered:
- In-Combination effects: these are the combined effect of individual impacts from the Scheme, such as someone being impacted by both construction noise and traffic; and

- Cumulative effects: these are the combined effects of other development scheme(s) which may interact with the effects of the Scheme. The effects of these schemes may be insignificant on an individual basis, but cumulatively with the Scheme have a new or different likely significant effect.

2.3 Consultation

2.3.1 The process of consultation is critical to the development of the Scheme design as well as informing the development of a comprehensive and balanced ES. The Scheme has a wide range of stakeholders (including landowners, statutory consultees, local communities and special interest groups) with potentially differing interests. Consultation activities have been designed to be accessible and to allow differing stakeholders the ability to engage with the Scheme in a way that is appropriate to them. Where appropriate, the design of the Scheme has been updated to incorporate amendments suggested through the consultation process.

Scoping Consultation

- 2.3.2 The aim of the EIA Scoping process is to identify key environmental issues at an early stage, to determine the scope and likely significant effects of the Scheme on the environment. The scoping guides the establishment of survey extents and assessment requirements of the EIA.
- 2.3.3 The issues to be addressed within the ES were identified in the EIA Scoping Report, which was submitted to the Planning Inspectorate on 15 January 2025. The EIA Scoping report concluded that several topics did not require a full chapter within the ES. The Planning Inspectorate reviewed and consulted on the EIA Scoping Report and adopted a Scoping Opinion on 25 February 2025, which included formal responses received from consultees.
- 2.3.4 In response to the Scoping Opinion, the EIA includes assessment of the following environmental topics:
- Chapter 6: Climate Change
 - Chapter 7: Landscape and Visual
 - Chapter 8: Ecology and Biodiversity
 - Chapter 9: Water Environment
 - Chapter 10: Cultural Heritage
 - Chapter 11: Transport and Access
 - Chapter 12: Noise and Vibration

- Chapter 13: Air Quality
 - Chapter 14: Socio-Economics
 - Chapter 15: Soils and Agricultural Land
 - Chapter 16: Ground Conditions
 - Chapter 17: Electromagnetic Fields
 - Chapter 18: Other Environmental Matters (which includes Major Accidents and Disasters / Telecommunications, Utilities, and Television / Glint and Glare / Waste and Materials / Human Health)
- 2.3.5 The proportional approach described in the EIA Scoping Report was mostly accepted by the Planning Inspectorate within the Scoping Opinion. As such effects in relation to Major Accidents and Disasters; Telecommunications, Utilities and Television; Glint and Glare; Waste and Materials; and Human Health are presented in **ES Chapter 18: Other Environmental Matters [EN0110114/APP/6.1.18]**. The inclusion of chapter 18 in addition to technical chapters 6 - 17 of the ES ensures the EIA meets paragraph 4 of Schedule 4 of the EIA Regulations.

DCO Consultation Requirements

- 2.3.6 The Planning Act 2008 sets out the statutory requirements for consultation when preparing an application for development consent. The Planning Act 2008 requires applicants to carry out statutory consultation on their proposals ahead of submission of a DCO application. The stages of consultation the Applicant undertook in accordance with the Planning Act 2008 are:

Phase One Non-Statutory Consultation.

- 2.3.7 The Applicant undertook a first stage of non-statutory consultation from 23 October to 6 December 2024. Consultation activities included engaging with parish, district and county councillors across South Norfolk, distributing Scheme information postcards to over 7,000 addresses, hosting six in person community consultation events and one webinar, and collating feedback.
- 2.3.8 A **Consultation Report [EN0110114/APP/5.1]** has been produced and provides a summary of the consultation methodology and extent of engagement and participation over the consultation period, along with an overview of the issues raised in feedback submitted during consultation, and that the Applicant has had regard to consultation responses including any responses to the feedback.

Phase Two Statutory Consultation

- 2.3.9 The Applicant undertook a second stage of statutory consultation from 18 June to 6 August 2025.
- 2.3.10 A Preliminary Environmental Information Report (PEIR) was prepared and published in June 2025 to satisfy the requirement of the EIA Regulations. ‘Preliminary environmental information’ is defined in Regulation 12(2) of the EIA Regulations as information “*which (a) has been compiled by the applicant; and (b) is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)*”.
- 2.3.11 In order to enable consultees to understand the likely environmental effects of the Scheme, the PEIR presented preliminary findings of the environmental assessments undertaken at the point of writing. Together with ongoing discussion and meetings, this Phase Two statutory consultation allowed consultees to develop an informed view of the likely significant effects of the Scheme and provide a response prior to the finalisation of the DCO Application and the EIA. The Applicant sought the views of consultees on the information contained within the PEIR, and there was an opportunity within the process up to submission of the DCO Application for both the EIA and the project design to have regard to comments received.

Targeted Consultation

- 2.3.12 A further round of targeted consultation was undertaken between 22 October and 26 November 2025 following further design work and due diligence, ongoing consideration of consultee feedback, and findings from the ongoing environmental assessments. In summary, the changes to the Scheme boundary that were consulted on were are:
- Small additional parcels of land have been included adjacent and to the northeast of Site 1; and to the southwest of Site 1 associated with the works connecting the National Grid Substation to the existing overhead transmission electric lines;
 - Additional small areas of land throughout the Scheme associated with updates to highway visibility splays have been included;
 - Additional small areas of land throughout the Scheme to accommodate abnormal indivisible loads (AIL) that could result in highway works, temporary removal of street furniture and/or vegetation removal, have been included;
 - Confirmation that the Applicant intends to place the new National Grid substation within site 1B, and will not be pursuing the additional option to the south (that was consulted upon at the statutory consultation stage);

- Confirmation of the location and size of the substation in Site 1B (which is proposed to increase from 132kv to 400kv); and
 - An area within Site 7D where additional solar PV panels have been included.
- 2.3.13 Details of all feedback received throughout the consultation period are set out in the **Consultation Report [EN0110114/APP/5.1]**

2.4 Rochdale Envelope

- 2.4.1 In order to maintain flexibility in the design and layout included in the DCO Application, address any potential uncertainties in the Scheme design and allow for advancements in technology from now to the time of construction, the Scheme has adopted the Rochdale Envelope approach.
- 2.4.2 This approach allows for a project to be assessed on the basis of maximum parameters (which have been considered in detail by technical authors in the ES), i.e. to ensure the realistic worst-case effects of the Scheme have been assessed for each potential receptor. This ensures that the environmental conclusions are sufficiently robust to be representative of the effects that may arise from the delivery of the Scheme within those maximum parameters.
- 2.4.3 In order to establish parameters for assessment within the Rochdale Envelope, a set of maximum parameters and Design Principles have been established and are presented in the **Design Principles, Parameters and Commitments [EN0110114/APP/7.18]**.

3 The Order Limits

3.1 Introduction

3.1.1 The land for which DCO consent is being sought is referred to as the 'Order Limits' and comprises approximately 1,212.3 hectares (ha) of land located within the administrative areas of Norfolk County Council and South Norfolk Council. The project is south of Norwich and north of Harleston, with the Sites concentrated east of Long Stratton, with an additional cluster located south of Great Moulton, approximately 6.5 km to the southwest of the solar Sites around Long Stratton. The Sites are near to the villages of Pulham Market, Hempnall, Tasburgh, Silver Green, Saxlingham Nethergate, Woodton, Brooke and Seething. The Order Limits are shown on **Figure 1.1 Site Location Plan** in **Annex A** of this NTS.

3.1.2 The Order Limits comprise the following elements:

- Sites, which consist of approximately 1,028.5 ha of land parcels for Solar PV Panels, associated infrastructure, landscaping, heritage, surface water and biodiversity mitigation areas. The Sites are grouped into Sites 1 through 10, with some of these Sites comprising Sub-Sites:
 - East Pye Solar 1 (sub-Sites A-D);
 - East Pye Solar 2 (sub-Sites A-C);
 - East Pye Solar 3 (sub-Sites A-B);
 - East Pye Solar 4 (sub-Sites A-B);
 - East Pye Solar 5 (sub-Sites A-B);
 - East Pye Solar 6 (this excludes Solar PV Panels and is given over entirely to biodiversity mitigation);
 - East Pye Solar 7 (sub-Sites A-L);
 - East Pye Solar 8 (sub-Sites A-B);
 - East Pye Solar 9; and
 - East Pye Solar 10 (sub-Sites A-E).
- BESS Site, which is the area of land within which the BESS would be located for the storage, import and export of energy to the National Grid. The BESS Site is 22.9 ha.

- Up to 400 kV Project Substation – the areas within which up to 400 kV Substation infrastructure would be located are:
 - Project Substation in BESS Site;
 - Project Substation in Sub-Site 5A; and
 - Project Substation in Sub-Site 1B.
 - Up to 132 kV Substation – the Sub-Sites within which up to 132 kV Substation infrastructure would be located are:
 - Project Substation in Sub-Site 4B;
 - Project Substation in Sub-Site 7F; and
 - Project Substation in Sub-Site 10C.
 - National Grid Substation – the area within which the new National Grid Substation infrastructure (owned and operated by the National Grid) would be located, within Sub-Site 1B.
 - Cable Route Corridor – the area of land identified for the proposed underground cables between the Sites, Sub-Sites and BESS Grid Connection Infrastructure.
 - Underground and/or overhead lines including new pylons between the National Grid Substation and the Point of Connection will be located within Sub-Sites 1A – D; and
 - Highway Works – the areas within which improvements to sections of the existing highway network will be completed to facilitate access to the Scheme, such as improvements to road edge and traffic management.
- 3.1.3 A description of the physical characteristics of the Scheme and the land-use requirements during the construction, operation and maintenance, and decommissioning phases are presented in Section 4 of this NTS.

3.2 Environmental Context

- 3.2.1 There are no statutory landscape designations covering the Sites, nor are there any within 5 km of the Sites. The Broads National Park is located 3.9 km south of sub-Site 10A.
- 3.2.2 There are no international / European designated sites for nature conservation, nor national or local statutory designated sites for nature conservation present within the Sites. The closest designated sites are:
- Aslacton Parish Land Site of Special Scientific Interest (SSSI), located 2.4 km north of sub-Site 1B;

- Forncett Meadows SSSI located 2.8km north of sub-Site 1B;
 - Pulham Market Big Wood SSSI located 1.2km east of sub-Site 2C;
 - Norfolk Valley Fens SAC located 2.3km north-west of sub-Site 4A;
 - Fritton Common SSSI located 600m south of sub-Site 5B;
 - Shotesham-Woodton Hornbeam Woods SSSI located adjacent to sub-Sites 7F, 7G and 7H. Additionally, the SSSI is located 140m west of sub-Site 8B and 730m north-east of Site 6;
 - Smockhill Common Local Nature Reserve (LNR) located 2km north west of sub-Site 7D; and
 - Shotesham Common SSSI located 1.8km north-west of sub-Site 8B.
- 3.2.3 The majority of the Order Limits fall within Flood Zone 1. Some small / narrow areas of Flood Zone 2 and Flood Zone 3 are located just within or adjacent to the boundary of some sub-Sites. Most of the Order Limits are at a very low risk of surface water flooding, with some pockets of medium and high risk of surface water flooding and a very low risk of river and sea flooding.
- 3.2.4 Two main rivers, Hempnall Beck and The River Tas, and several ordinary watercourses flow along or adjacent to the Sites. Other smaller ordinary watercourses / field boundary ditches are present within several of the sub-Sites.

4 The Scheme

4.1 Description of the Scheme

The Scheme

- 4.1.1 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 132 kV Project Substations and up to three 400kV Project Substations, Grid Connection Infrastructure and a new National Grid Substation.
- 4.1.2 The Solar PV electricity generating stations are located across Sites 1, 2, 3, 4, 5, 7, 8, 9 and 10 of the Scheme. Site 6 does not contain an electricity generation station, instead being retained for habitat management (**Appendix B: Figure 4.1 Indicative Masterplan**).
- 4.1.3 Cable Route Corridors 1-14 are the areas in which export connection cables would be located to connect the Sites to the new National Grid Substation.
- 4.1.4 Highway Works are sections of the highway network that will contain localised improvements, such as improvements to deteriorated road edges or temporary highway and traffic works required to safely accommodate the Abnormal Indivisible Load (AIL) deliveries to construct the Scheme (**Appendix B: Figure 4.1 Indicative Masterplan**). These areas will support the movement of construction vehicles on narrower sections of the local highway networks within parts of the construction vehicle routes to the Order Limits (**ES: Chapter 11 Transport and Access [EN0110014/APP/6.1.11]**).

4.2 Components of the Scheme

- 4.2.1 The Scheme consists of principal infrastructure as outlined below. Further detail is available in **ES: Chapter 4 The Scheme [EN0110014/APP/6.1.4]**.
- 4.2.2 The Scheme is comprised of:
- Solar PV Panels made up of bifacial panels which convert sunlight into direct current (DC) electricity from both sides of the Solar PV Panel;
 - Solar PV Mounting Structure that will either be single-axis tracker panels (Option A) (**Image 4.1**) or fixed south-facing panels (Option B) (**Image 4.2**);
 - Conversion Units, which incorporate Inverters, Transformers and Switchgear, needed to manage the electricity generated by the Solar PV Panels. These are often housed ('integrated') into one container, or left

as standalone equipment. Inverters convert DC electricity collected by the Solar PV Panels into alternating current (AC) to be exported to the National Grid.

- 33 kV Sub-distribution Switch Rooms will be located throughout the Scheme to collect the generated power and manage its delivery to the substation;
- Up to three 132 kV Project Substations will be located across the Scheme, which will collect energy from the Solar PV Arrays and convert the energy to 132 kV;
- Up to three 400 kV Project Substations will be located within the Scheme, with one located within the southern extent of the Scheme, within the BESS Site, one in the central extent of the Scheme, within Site 5A, and one in the east of the National Grid Substation, within sub-Site 1B. These Project Substations will comprise electrical infrastructure such as transformers, switchgear and control equipment to export electricity to the new National Grid Substation;
- A new National Grid Substation, with associated Grid Connection Infrastructure will be required at the Point of Connection (PoC) (within sub-Site 1B) to connect the 400 kV Substation to the 400 kV overhead line. The National Grid Substation will monitor and manage the export of electricity and will be operated by National Grid Electricity Transmission plc. The National Grid Substation is likely to contain Switchgear, a control building housing equipment and car parking;
- Up to four new pylons (of which three would be associated with the repositioning of existing pylons and up to 1 new pylon);
- On-Site cabling to transfer electricity between Solar PV Arrays and the Conversion Units / 33 kV Sub-distribution Switch Rooms, within a Cable Route Corridor (CRC);
- The BESS is proposed to be located at the BESS Site. The BESS will collect energy produced by the Solar PV Panels and store the energy using battery storage technology;
- Fencing and security measures (e.g. CCTV) around the perimeter and within the Order Limits;
- Motion sensing lighting in the National Grid Substation, 400 kV Substations and BESS and other critical electrical infrastructure;
- Access points into each of the Sites or sub-Site and access tracks to facilitate access within the Sites;

- Ecological mitigation and enhancement such as grassland, new landscape planting and new woodland belts and tree planting; and
- Surface water drainage measures to manage surface water drainage within the Sites.



Image 4.1: Typical Single Access Tracker Panels



Image 4.2: Fixed South Facing PV Arrays

4.3 Construction

Construction Programme

- 4.3.1 Subject to being granted consent, the construction of the Scheme is anticipated to commence in 2028 for a period of approximately 24 months. On this basis, it is expected that the Scheme could be completed by 2030 and energised in 2031. However, the construction period will vary depending on detailed layout design and potential environmental constraints on the timing of construction activities.

Construction Activities

- 4.3.2 The core construction working hours during which construction activities would be completed for the Scheme (not including start-up and shut-down works) are defined as:
- Monday to Friday from 07:00 to 18:00 (daylight hours permitting)
 - Saturday from 08:00 to 13:30 (daylight hours permitting); and
 - No Sunday or Bank Holiday working unless crucial to construction (for example, for trenchless crossings which must be continuous activity and the arrival and departures of workers and the delivery of AIL) or in an emergency.

- 4.3.3 Where practicable, construction deliveries would be co-ordinated to avoid HGV movements during the traditional peak morning (08:00-09:00) and peak afternoon (17:00-18:00) hours.
- 4.3.4 Some activities may be required outside of these times such as the delivery of ALL, concrete pours for foundations, night working for cable construction works in public highways and/or trenchless crossing activities.
- 4.3.5 Construction activities within the Solar PV Sites would broadly include:
- Construction of Grid Connection Infrastructure;
 - Post-Diversion Works;
 - Tower Construction;
 - Conductor Stringing;
 - Site Preparation and Enabling / Civil Engineering works;
 - Installation of Solar PV Panels;
 - Construction of Electrical Cables;
 - Energy Storage (BESS) Construction;
 - Installation of fencing, security and lighting; and
 - Construction of the Cable Route Corridor.

Construction Staff

- 4.3.6 For the purposes of assessment, it is assumed that the construction of the Scheme elements could happen concurrently, maximising the estimated potential numbers of construction staff working on the Scheme.
- 4.3.7 Based on the phasing assumptions and the Applicant's experience of other similar sized solar projects, it is currently estimated that the Scheme would support an average of 278 workers per day, which is equivalent to 233 full-time equivalent (FTE) jobs during the construction phase. The size of the workforce is based on the activities required and would fluctuate during the construction phase.

Construction Traffic and Site Access

- 4.3.8 Construction traffic and access to the Order Limits is discussed further in **ES: Chapter 11 Transport and Access [EN0110014/APP/6.1.11]**.

- 4.3.9 The construction traffic associated with the Scheme will be subject to measures and procedures defined within a Construction Traffic Management Plan (CTMP). This will be secured by a requirement in Schedule 2 of the DCO and prepared substantially in accordance with an **Outline CTMP [EN0110014/APP/7.6]**. This defines information such as the routes that construction traffic must take and the measures that will be implemented to reduce the effect of the traffic on the local highway network.
- 4.3.10 A Construction Worker Travel Plan (CWTP) will be contained within the CTMP and set out proposed measures, including establishing a car share scheme and shuttlebuses for construction workers, identifying cycle and bus routes to the Order Limits, and appointing a Travel Plan Coordinator. Construction workers will also be encouraged to travel outside of peak highway network hours and use electric vehicles, where practicable. This aims to minimise the impact on the strategic and local highway network.
- 4.3.11 To prevent nuisance and potential obstruction / restriction of free traffic flows caused by vehicles parked around the Order Limits, car parking to accommodate construction staff would be provided within the Order Limits. Parking on public roads within a defined radius of the Order Limits would not be permitted. These measures are secured in the **Outline CTMP [EN0110014/APP/7.6]**.

Construction Controls

- 4.3.12 The Construction Phase would be subject to a suite of management documents which will limit and control activities. The outline documentation that has been prepared to support the DCO Application includes:
- **Outline Construction Environmental Management Plan (CEMP) [EN0110014/APP/7.1];**
 - **Outline Landscape Ecological Management Plan (LEMP) [EN0110014/APP/7.4];**
 - **Outline Construction Traffic Management Plan (CTMP) [EN0110014/APP/7.6];**
 - **Outline Public Rights of Way and Permissive Paths Management Plan (PRoWPPMP) [EN0110014/APP/7.8]; and**
 - **Outline Soil Resources Management Plan (SRMP) [EN0110014/APP/7.9];**

4.4 Operation

- 4.4.1 The Scheme is anticipated to have an operational life of 60 years, which will start from the date of the final commissioning phase of the Scheme.

4.4.2 During the operational Phase, two scenarios have been considered within the ES:

- General operational maintenance activities; and
- Programme of replacement activities.

Operation Activities

4.4.3 During operation, other than in the context of a programme of replacement, activity on the Sites would be restricted principally to vegetation management, equipment maintenance and servicing, ad hoc replacement of any components that fail or reach the end of their lifespan, periodic fence inspection, vegetation management along accesses, premises paths and landscape ecological mitigation maintenance, and monitoring to ensure the continued effective operation of the Scheme.

4.4.4 Along the Grid Connection Infrastructure, operational activity may consist of routine inspections and any reactive maintenance from National Grid.

Programme of Replacement activities

4.4.5 During the anticipated 60-year operational life of the Scheme, it is expected that there will be a requirement for the periodic replacement of some of the electrical infrastructure. It is not expected that an extensive replacement of all components will be required across the entirety of the Scheme during one period. The programme for replacement of equipment across the Scheme is anticipated to be staged to maintain the electrical export to the National Grid Substation.

4.4.6 The following assumptions have been made for the programme of replacement activities:

- It is assumed that the operational life of Solar PV Panels is 40 years and that all Solar PV Panels will be replaced once during the operational phase and this will take a maximum period of 24 months. This is separate to the ad-hoc replacement of Solar PV Panels that may occasionally be required due to damage, for example;
- It is expected that the BESS could be replaced up to five times during the operational phase;
- Access to the Sites will be via the access routes defined for the construction phase. If any Abnormal Indivisible Loads (AILs) are required for replacement of equipment, consultation will be carried out and approvals will be sought from the relevant local planning and highway authorities;

- Components such as Solar PV Mounting Structures, 132kV Project Substations, 400kV Project Substations, National Grid Substation and BESS Compound buildings are not anticipated to be replaced during the operational phase. No intrusive ground works are anticipated in the replacement of Solar PV Panels or BESS Containers; and
 - Transformers are assumed to have a design life of 30 years and as such may require replacement once during the lifetime of the Scheme, however replacement will only be carried out if required for performance or health and safety reasons.
- 4.4.7 The assessment in the ES has considered a reasonable worst-case scenario for operational replacement with regard to frequency and duration of replacement activities. Where a shorter or longer operational replacement programme is anticipated to result in a greater level of likely significant effects in respect of a particular EIA topic, the worst-case programme has been assumed for the purposes of the assessment of that topic in accordance with best practice for the respective topic areas.

Operation Traffic and Site Access

- 4.4.8 During operation, other than the operational replacement of Solar PV Panels, there will be a small number of daily vehicle trips, with additional staff attending when required for maintenance and cleaning activities.
- 4.4.9 Those arriving to undertake general operational maintenance would be expected to travel by car, with up to five visits per month to any of the Sites. HGVs may be required for the ad-hoc replacement of batteries, inverters and transformers associated with the substations and BESS.

Operational Staff

- 4.4.10 No permanent on-Site staff will be required to operate the Scheme. There will be limited staff facilities located in the control room associated with the 132 kV and 400 kV Substations. Equipment for monitoring the Sites will be located in the Relay and Control Rooms. Whilst this would typically be accessed remotely, it would be available for occasional physical access during routine visits. If a full replacement of all of the solar panels were required an average of 129 workers, with a peak of 240 workers at any one time with further ad hoc limited maintenance roles are anticipated to be required during this 12-24 month replacement period. Operational Traffic and Access to the Order Limits
- 4.4.11 During operation, other than the operational replacement of Solar PV Panels, there will be a small number of daily vehicle trips, with additional staff attending when required for maintenance and cleaning activities.

- 4.4.12 Those arriving to undertake general operational maintenance activities would generally be expected to travel by car, approximate 4x4 type vehicle or light van. The frequency of maintenance visits would reasonably be expected to be up to five visits per month to any of the Sites. HGVs may be required for the ad-hoc replacement of batteries, inverters and transformers associated with the Project Substations and the National Grid Substation and BESS..

Operation and Maintenance Controls

- 4.4.13 The operational phase would be subject to management documents which will manage and control activities. The outline documentation that has been prepared to support the DCO Application to mitigate effects associated with this phase includes:
- **Outline Operational Transport Management Plan (OTMP) [EN0110014/APP/7.7]**
 - **Outline Operational Environmental Management Plan (OEMP) [EN0110014/APP/7.2]; and**
 - **Outline Battery Storage Safety Management Plan (BSMP) [EN0110014/APP/7.5].**

4.5 Decommissioning

- 4.5.1 Decommissioning is expected to occur after the 60-year design life of the Scheme in 2091 and take between 12 and 24 months. A requirement to decommission the Scheme is secured via a requirement in the **draft DCO [EN0110013/APP/3.1]**.
- 4.5.2 When the operation and maintenance phase ends, the Solar PV Sites apart from the National Grid Substation and the Grid Connection Infrastructure (and potentially underground cabling as explained at paragraph 4.5.5) would be decommissioned and the land returned to the landowner. All Solar PV Panels, Mounting structures, above ground cabling, Conversion Units / 33 kV sub-distribution Switch Rooms, 132 kV Substations, 400 kV substations and BESS would be removed from within the Sites and recycled or disposed of in accordance with good practice and market conditions at that time. This will include areas of agricultural land where the soil health, quality and structure may have improved. Foundations and other below ground infrastructure will be cut to 1.2 m below the surface to enable future ploughing. Any piles would be removed.
- 4.5.3 The National Grid Substation and the Grid Connection Infrastructure would remain in situ. Mitigation planting specifically required to support the location of the National Grid Substation would be handed over to National Grid who would be responsible for its maintenance and management.

- 4.5.4 Post-decommissioning, the landowners would choose how the land is to be used and managed. Permissive paths would be removed during decommissioning, with the precise timing to be determined by the contractor(s) and communicated to Norfolk County Council in accordance with the **Outline Decommissioning Environmental Management Plan (DEMP) [EN0110014/APP/7.3]**.
- 4.5.5 Currently, leaving the cables in situ is seen as the most environmentally acceptable option as it avoids disturbance to overlying land, habitats and neighbouring communities. Alternatively, the cables can be removed by opening up the ground at regular intervals and pulling the cable through the extraction point, leaving the ducting and jointing bays in place. This would avoid the need to open up the entire length of the cable route. The mode of removing the cabling would be dependent upon government policy and good practice at the time.
- 4.5.6 The effects of decommissioning are assumed to be similar or of a lesser magnitude than construction effects and are considered in the relevant sections of the ES.

5 Reasonable Alternatives and Design Evolution

5.1 Site Evaluation

- 5.1.1 There is no standard approach for selecting sites for solar energy generating stations; however, paragraphs 2.10.10 to 2.10.40 of the National Policy Statement for renewable energy infrastructure (EN-3), 2025 sets out factors influencing site selection and design. Amongst those, is 'network connection' and the recognition that the capacity of the local grid network to accept the likely output from a proposed solar farm is critical to the technical and commercial feasibility of a development proposal. Therefore, a viable grid connection is a central consideration for proceeding with development and is instrumental in defining the search area.

National Grid Substation Site Selection

- 5.1.2 The Applicant engaged with National Grid Company plc (NGC) in 2022 to discuss available capacity within its transmission network within the Norfolk area for integrating a 500 MW solar utility-scale solar generating project.
- 5.1.3 A Point of Connection (PoC) was initially considered at the existing Norwich Main Substation, however, it was determined there was neither sufficient existing capacity, nor an opportunity to expand this existing substation. Following this, National Grid identified the available capacity along the Bramford to Norwich 400 kV line between Diss and Norwich, and that a new National Grid Substation would be required to connect the Scheme to the grid.
- 5.1.4 Possible locations for the new National Grid Substation were studied, with an area to the south of Great Moulton, off Station Road and beneath the Bramford to Norwich 400 kV line deemed the most viable. The area identified had close proximity to the 400 kV overhead line and to the A140, together with highway visibility and the ability for the roads to accommodate Abnormal Indivisible Loads. The potential site location as also preferable from a landscape and visual perspective owing to the opportunity for screening provided by boundary vegetation in the north western part of Sub-Site 1B.

Solar Development Site Selection

- 5.1.5 The Applicant initially identified a 20 km search radius from the Norwich Main Substation for sites to be included in the Scheme. The Applicant conducted a search exercise within this radius for landowners who wished to participate in the Scheme.

- 5.1.6 According to paragraph 2.10.9 in NPS EN-3, “along with associated infrastructure, a solar farm currently requires between 1.6 and 2.25 hectares (4-5.6 acres) for each MW of output. However, this will vary significantly depending on the site, with some being larger and some being smaller.” Based on this, to meet the 500MW of the Grid Connection Agreement, an area of approximately between 500ha to 810ha was a starting point to accommodate the panels itself. The Applicant searched for an area of approximately 1,100ha to accommodate the Solar PV Array, along with associated infrastructure such as substations, Battery Energy Storage System (BESS), access, landscaping and biodiversity measures, together with a Cable Route Corridor (CRC). The Applicant’s search for sites yielded the requisite amount of land needed and voluntary agreements were secured with those landowners, to include their land in the Scheme. This land, referred to as the Sites, is the subject of the DCO application. The full detail of the approach to site selection is set out in both the **Site Selection Assessment [EN0110014/APP/7.3]** and **ES: Chapter 5 Reasonable Alternatives and Design Evolution**.
- 5.1.7 In accordance with paragraphs 2.10.10 to 2.10.40 of EN-3, the site evaluation involved a balance of factors including:
- **Irradiance and site topography** – Preference for south-facing aspect and/or flatter topography;
 - **Network connection** – Proximity to existing electricity transmission infrastructure;
 - **Proximity of site to dwellings** – Avoidance of close proximity to residential dwellings or where it would not be possible to mitigate visual amenity, glint and glare appropriately;
 - **Environmental considerations** – Avoidance of environmental constraints, such as those containing Sites of Special Scientific Interest (SSSIs), Nature Reserves, Ramsar Sites, Special Area of Conservation (SAC), and Special Protection Areas (SPA);
 - **Agricultural land classification and land type** – Minimise the impact on the best and most versatile agricultural land; and
 - **Accessibility** – Suitability of the access routes both during construction and operation.

5.2 Development Area and Alternative Layouts

- 5.2.1 The design, layout and extent of the Scheme have been subject to an iterative process informed by environmental surveys, the environmental assessment process and consultation feedback.
- 5.2.2 The Key stages of design evolution have been summarised below:

- **Stage 1:** Project inception up to non-statutory consultation;
- **Stage 2:** Non-statutory consultation up to statutory consultation; and
- **Stage 3:** Post-statutory consultation, including targeted consultation, up to DCO submission.

5.2.3 **Appendix A: Figure 1.1 Site Location Plan** shows the exact locations for Sites and Sub-Sites.

5.2.4 The **Design Approach Document [EN0110014/APP/7.17]**, and the **Design Principles, Parameters and Commitments [EN0110014/APP/7.18]** demonstrate how ‘good design’ is embedded into the Scheme and how the Design Principles have informed the design evolution of the Scheme to ensure suitable controls and mitigation are in place.

5.3 Alternatives Considered

5.3.1 Considering policy and legal requirements along with the iterative approach to the design, the following alternatives have been considered for the Scheme:

- Alternative Generation Technologies;
- Point of Connection (POC) and National Grid Substation Site Selection;
- Solar Site Selection; and
- Design evolution, including the BESS, Cable Route Corridor, Green Infrastructure, Access etc.

5.3.2 A ‘no development’ scenario as an alternative to the Scheme has not been considered further in line with EN-1 paragraph 4.3.23. This is because ‘no development’ is not considered to be a reasonable alternative to the Scheme as it would have no prospect, realistic or otherwise, of delivering the additional electricity generation and energy storage proposed. A smaller development in terms of energy-generating capacity has not been considered further as an alternative to the Scheme, in the context of both EN-1 paragraph 4.3.23 and 4.3.27.

5.3.3 The overarching need for the Scheme is set out in brief in the **Statement of Need [EN0110014/APP/7.11]** addressing the need for large-scale solar assets.

6 Climate Change

6.1.1 Sections 6-18 summarise the ES findings for each technical discipline

6.2 Overview

6.2.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Climate Change. The full climate change assessment is included in **ES: Chapter 6 Climate Change [EN0110014/APP/6.1.6]**

6.3 Baseline Conditions

6.3.1 Consideration has been given to the following aspects of climate change assessment:

- Greenhouse Gas (GHG) Impact Assessment – the impact of GHG emissions arising from the Scheme on the climate over its lifetime; and
- Climate Change Risk (CCR) Resilience Assessment – the resilience of the Scheme to climate change impacts.

GHG Impact Assessment

6.3.2 The Order Limits predominantly consist of large, open arable fields. Baseline GHG emissions are dependent on the soil and vegetation types present, and the fuel used for the operation of any plant and machinery on the Order Limits. The baseline is assumed to be 'business as usual' scenario, where the Scheme is not implemented. A conservative approach has been taken for the assessment, with baseline activities assumed to be generating zero emissions of CO₂e.

6.3.3 Without the Scheme in place, it is considered that there will be no change to the future baseline for climate change.

Climate Change Risk Resilience Assessment

6.3.4 The historic climate data for the Order Limits was collected from the closest Met Office Station to the Scheme (Morely St Botolph) and outlines the climatic data for the period from 1991 – 2020 (**Error! Reference source not found.**). The average annual maximum daily temperature is 14.28°C, with mean annual rainfall of 676.29 mm.

6.3.5 The future baseline for CCR will be different from the current present-day baseline, due to changes in climate. The Study area of a 25 km² grid square has been used to analyse future predictions for average climate. Mean air temperature is expected to increase by 3.64°C by 2099, and the precipitation rate is anticipated to decrease by 3.50% by 2099.

6.4 Embedded Mitigation:

6.4.1 The Scheme has included some embedded measures in the design process to avoid and reduce the impacts and effects on Climate Change, and to increase Climate Change resilience. These measures include:

Construction

- Adopting the Considerate Constructors Scheme (CCS) to assist in reducing pollution by employing good industry practice measures such as recycling;
- Conducting regular maintenance of the construction plant and machinery to optimise efficiency; and
- Retaining existing vegetation as far as practicable; and
- Reducing vehicle emissions.

Operation

6.4.2 Embedded mitigation measures will be in place for operation, as secured through the **Outline OEMP [EN0110014/APP/7.2]**, these include:

- Using equipment's cooling systems where necessary/adapting working practices and equipment used based on current weather conditions.
- Protecting workers and resources from extreme weather conditions through appropriate PPE and working practices as secured through the OEMP.
- Monitoring weather forecasts and the news for Environment Agency flood warnings, relevant weather warnings, and water levels of the local waterways.
- BESS systems would include HVAC systems and these would be contained within the individual equipment containers as well as other measures outlined in the **Outline BSMP [EN0110014/APP/7.5]**.
- Operational measures relating drainage and surface water management are set out within the **Outline OEMP [EN0110014/APP/7.2]**.

6.5 Construction Effects

GHG Impact Assessment

6.5.1 The Construction Phase is anticipated to take place over 24 months, commencing in 2028. The Construction Phase of the Scheme may cause impacts from the manufacturing and extraction processes, energy

consumption on-site, transportation of construction materials and workers, waste produced and water usage.

- 6.5.2 The estimated totals of embodied carbon emitted by each component of the Construction Phase are outlined in **Table 6.1**, with the largest emissions coming from the BESS.

Table 6.1 Construction GHG Emissions

Emissions Source	Emissions (tCO ₂ e)	% Construction Emissions
Products (BESS)	200,000	57.5
Products (PV arrays including mounting)	87,445	25.2
Transportation of Materials by Sea	23,229	6.7
Products (Inverters)	18,346	5.3
Worker Transportation & Delivery Vehicles	9,669	2.8
Products (Transformers)	5,906	1.7
Products (Cables)	1,714	0.5
Pylons	820	0.2
Waste	452	0.1
Packaging	88	0.0
Water Usage	3	0.0
Total	347,673	100.0

- 6.5.3 In a worst case scenario, GHG emissions from the Construction Phase will equate to 347,673 tCO₂e, over the course of 24 months. When compared to the relevant annual carbon budget (**Error! Reference source not found.**), the annual emissions from the Scheme do not contribute to equal to or more than 0.05% of the 5th carbon budget, and less than 1% each year of the total electricity supply sector budget. Therefore, the GHG emissions from the construction of the Scheme are considered to have a **Minor Adverse** effect on the climate.

- 6.5.4 On average, the Operational Phase of the Scheme accounts for 0.54% of the 2028-2030 Electricity Carbon budgets. However, the majority of manufactured components in this Scheme are manufactured overseas and imported to the UK, therefore these are not accounted for in the UK grid projection factors.

Climate Change Risk Resilience Assessment – Construction Phase

- 6.5.5 Climate risks from the construction phase may occur from extreme weather events such as increased temperatures, heatwaves and rainfall events. These may impact the buildings and infrastructure of the Scheme, as well as have human health impacts on construction workers.
- 6.5.6 The Construction Phase will take place in the early stages of the 2020-2039 range of climate scenarios, as such, any anticipated changes will likely be mitigated through measures secured within the CEMP. All potential impacts on the Scheme **are not significant**.

6.6 Operation Effects

GHG Impact Assessment

- 6.6.1 The Operational Phase of the Scheme is anticipated to last 60 years, and may produce emissions from Scheme maintenance, transportation of operational workers, material replacement and water use on site.
- 6.6.2 The estimated totals of embodied carbon emitted by each component of the Construction Phase are outlined in **Table 6.2**, with the largest emissions coming from the BESS replacement.

Table 6.2 Operational GHG Emissions

Emissions Source	Total Embodied Carbon Emissions (tCO ₂ e)
BESS Replacement (including transportation)	1,034,103
PV modules Replacement (including transportation)	52,079
Replacement of transformers (including transportation)	7,185
Worker Transportation	471
Packaging	65
Water Usage	59
Operational Waste	3
Energy Use	Scoped Out
Total	1,104,918

- 6.6.3 The BESS is estimated to deliver a carbon saving of approximately 957,849 tCO₂e over the Scheme’s lifespan. However, to avoid double counting of emissions savings, these additional carbon savings have not been factored into the overall assessment.
- 6.6.4 Once operational, the Scheme will achieve emissions reductions compared to the without-project baseline when comparing the energy intensity of the Scheme with the grid intensity for the earliest year of operation

- 6.6.5 The Scheme will prove downstream emissions reduction effects. The production of an estimated 667,760 MWh of energy per year will provide the capacity to power up to 546,806 Electric Vehicles (EV) per year, resulting in an annual emissions saving of 43,404 tCO₂e for EV. The energy generated by the Scheme per year could also replace the use of natural gas in 58,066 homes annually, resulting in an annual emissions saving of 122,173 tCO₂e.
- 6.6.6 Overall, based on downstream emissions reduction, as well as emissions generated by all phases, the GHG impact of the Scheme is **Beneficial** and **Significant**. The Scheme achieves emissions mitigation that goes substantially beyond the reduction trajectory and is playing a part in achieving the rate of transition required by nationally set policy commitments.

Climate Change Risk Resilience Assessment – Operation and Maintenance Phase

- 6.6.7 Climate risks from the operation and maintenance phase of the Scheme may occur from increased frequency of severe weather events, and increased summer and winter temperatures. These may impact both the buildings and infrastructure of the Scheme, and the human health of workers. All potential impacts on the Scheme are not significant.

6.7 Decommissioning Effects

GHG Impact Assessment

- 6.7.1 The Decommissioning Phase is anticipated to take place over two years, assumed in this assessment to be from 2091-2093. GHG emissions during decommissioning may occur from the energy consumption of on-site vehicles and generators, removal and transportation of waste materials and transportation of workers.
- 6.7.2 Decommissioning activities will occur more than 60 years in the future so estimating GHG emissions is uncertain. The estimated embodied carbon emissions from each component of the Decommissioning Phase are outlined in **Table 6.3**.

Table 6.3 Decommissioning GHG Emissions

Emissions Source	Total Embodied Carbon Emissions (tCO ₂ e)
Removal of onsite products and materials	3,868
Worker Transportation	2,066
Waste	454
Water Usage	2

Emissions Source	Total Embodied Carbon Emissions (tCO ₂ e)
Total	6,390

6.7.3 The GHG emissions from the decommissioning of the Scheme are considered to have a **Minor Adverse** on the climate.

Climate Change Risk Resilience Assessment – Decommissioning Phase

6.7.4 Climate risks for the decommissioning phase are anticipated to be the same as those in the construction phase. However, the impacts of climate change are anticipated to worsen and increase based on the currently available projections. All potential impacts on the Scheme are not significant.

6.8 Additional Mitigation

6.8.1 As no significant effects have been identified above for receptors during any phase of the Scheme once embedded mitigation is taken into account, no additional mitigation measures for the Scheme are required.

7 Landscape and Visual

7.1 Overview

7.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Landscape and Visual Effects. The full landscape and visual assessment is included in **ES: Chapter 7 Landscape and Visual [EN0110014/APP/6.1.7]**.

7.2 Baseline Conditions

7.2.1 Baseline data has been collected from a combination of desk-based assessment, a walkover of the Order Limits undertaken in 2024, and further detailed site surveys in 2025. A 3 km Study Area has been used for the National Grid Substation and Grid Connection Infrastructure and the 400 kV Substation elements. A 2 km Study area was used for the BESS Site and for Sites 1 to 10, and a 1 km Study Area was used for the Cable Route Corridor (CRC).

Landscape

7.2.2 The Order Limits are not located within any national designated landscape or local landscape designations. The Scheme is located within one National Character Area (NCA), and across six district Landscape Character Areas (LCAs).

7.2.3 The Order Limits and Study Areas contain:

- Heritage assets (Conservation Areas, Scheduled Monuments, RPGs and Listed Buildings);
- Recreational Assets (Long Distance Trails, PRoWs, Open Access Land); and
- Protected Trees and Hedgerows (Ancient Woodland, Ancient and Veteran Trees, Tree Preservation Orders and Important Hedgerows).

7.2.4 The overall landscape character comprises a predominantly flat plateau, cut by several small-scale wooded river valleys. It is predominantly arable, with some pasture and horse grazing present. Tall communications masts and high voltage overhead transmission lines are present, along with a diverse network of highways, other local roads, PRoW and recreational routes. Boudicca Way and Via Beata are both Long Distance Trails and Recreational Routes which interact with the Order Limits and Sites in multiple locations.

Visual

- 7.2.5 Given the broad geographical area of the Order Limits, the visual characteristics vary. Generally, the southerly areas of the Order Limits lie within a large-scale open and exposed landscape, with expansive skies, distant views and sparse hedgerows.
- 7.2.6 The north of the Order Limits experiences more framed views as a result of deciduous woodland blocks which create a series of wooded horizons. Where the Order Limits interact with the wooded valleys of the River Tas Tributaries there is more enclosure due to a combination of topographical variation and vegetation.

Future Baseline

- 7.2.7 The identified baseline may also evolve through changes to vegetation due to climate change.

7.3 Embedded Mitigation

- 7.3.1 Embedded mitigation measures have been incorporated into the Scheme's design, including:
- Implementation of an **Outline Construction and Environmental Management Plan (C)**;
 - Standard construction practices will be adopted, including:
 - Retention of existing trees where possible;
 - Use of visual screening;
 - Ensuring a tidy and neat working environment;
 - Design of temporary lighting to avoid light spill beyond the Sites;
 - Dust-creating construction works will be kept to a minimum within proximity to existing pedestrian routes and residential properties, and dust prevention measures will be undertaken;
 - Vegetation disturbance will be minimised as much as possible, with any bare ground from construction being re-seeded; and
 - Hedgerow removal should be minimised, and restored and replanted following the work.
 - The **Design Approach Document [EN0110014/APP/7.17]** sets out Project Level Design Principles for the Operational Phase, including several mitigation measures such as retention and restoration of

vegetation and habitats, integration of the Scheme into the natural environment and sets out minimum offsets and buffers for existing features;

- An **Outline LEMP [EN0110014/APP/7.4]** will be implemented, and will include details on hedgerow removal and replacement;
- An **Outline PRowPPMP [EN0110014/APP/7.8]** will be implemented to manage routes throughout the Scheme;
- A **Lighting Strategy [EN0110014/APP/6.3.7.11]** will provide the strategy for control and minimising the effects of lighting s during construction and operation of the Scheme. The Lighting Strategy is secured by the The Lighting Strategy is secured by the **Outline OEMP [EN0110014/APP/7.3]** and **Outline OEMP [EN0110014/APP/7.3]**; and
- An **Outline DEMP [EN0110014/APP/7.3]** has been prepared which will ensure potential decommissioning effects are suitably mitigated.

7.4 Construction Effects

Landscape

- 7.4.1 During construction, the landscape will change due to the construction of the Scheme which will introduce new elements into the landscape including construction compounds, vehicle movements (within and beyond the Order Limits), small scale vegetation loss, and activity associated with construction of the solar PV arrays, fencing, substations, BESS, access tracks, National Grid Substation, pylons and overhead lines. A **Major Adverse (Significant)** effect is anticipated for Landscape Character Area (LCA) B1 Tas Tributary Farmland, LCA E2 Great Moulton Plateau Farmland and the landscape character and features of the BESS Site, Site 1, Site 7 (including CRC5, CRC8, CRC10, CRC11, and CRC12) and Site 8. A **Moderate Adverse (Significant)** effect is expected for NCA 83: South Norfolk and High Suffolk Claylands, the Via Beata Recreational Routes, LCA A1 Tas Rural River Valley, LCA B5 Chet Tributary Farmland, LCA C2 Thurlton Tributary Farmland with Parkland and the landscape character and features of Site 2 (including CRC3), Site 3, Site 4, Site 5, Site 9, Site 10 (including CRC14) and CRC4.

Visual

- 7.4.2 Across the BESS Site, associated Sites and the CRC visual effects range from **Negligible** or **No change** to **Major** or **Major to Substantial (Significant)**. Significant effects are generally confined to receptors in closest proximity to the development. The BESS Site and Sites 1, 7, 8 and 9 are predicted to experience impacts up to **Major to Substantial**

(Significant), while Sites 2, 3, 4, 5, 10 and the CRC may experience results up to **Major (Significant)**. Site 6 is expected to only have **Minor** effects.

7.5 Operation Effects

7.5.1 Generally, the level of effect would reduce during operation given that activity associated with the construction of the Scheme would have ceased, and any temporary construction compounds would be removed, leaving only the built form elements of the Scheme.

Year 1 Landscape

7.5.2 During the first year of operation, landscape effects are expected to range from **Negligible** to **Minor Adverse**. **Major Adverse (Significant)** effects are expected at the BESS Site (including CRC1 and CRC2), Site 1 and Site 8. **Moderate Adverse (Significant)** effects are expected across LCA C2 Thurlton Tributary Farmland with Parkland, LCA B1 Tas Tributary Farmland, LCA E2 Great Moulton Plateau, and landscape character and features of Site 2 (including CRC3), Site 3, Site 4, Site 5, Site 7 (including CRC5, CRC8, CRC10, CRC11 and CRC12), Site 9, and Site 10 (including CRC14). **Minor to Negligible** effects are expected for the NCA 83: South Norfolk and High Suffolk Claylands, Boudicca Way Recreational Route, |Via Beata Recreational Route, LCA A1 Tas Rural River Valley, LCA B5 Chet Tributary Farmland, and the CRC after restoration of agricultural fields.

Year 1 Visual

7.5.3 Visual effects for the first year of operation are predicted to range from **Negligible** or **No Change**, to **Moderate**, **Major** or **Major to Substantial (Significant)**. The BESS Site will experience effects up to **Moderate** and **Major (Significant)**, and the Sites will experience effects up to **Major to Substantial (Significant)**. The CRC views will generally experience **Negligible** to **Minor** effects, with one view predicted to experience a **Major (Significant)** effect.

Year 15 Landscape

7.5.4 Following the establishment of landscape mitigation, the magnitude of effect for the landscape receptor will generally decrease, with significant effects becoming more limited. A **Major (Significant)** effect is predicted to remain at Site 1. Effects at the BESS Site (including CRC1 and CRC2), LCA B1 Tas Tributary Farmland, LCA E2 Great Moulton Plateau Farmland, and the landscape character and features at Site 7 (including CRC8, CRC10, CRC11 and CRC12) and Site 8 are expected to be **Moderate (Significant)**. LCA C2 Thurlton Tributary Farmland with Parkland, and the landscape character and features at Site 2 (including CRC3), Site 3, Site 4, Site 5, Site 9 and Site 10

(including CRC14) are predicted to reduce to **Minor** effects. All remaining landscape receptors are expected to experience **Not Significant** results.

Year 15 Visual

- 7.5.5 At the BESS Site, most receptors will experience **Minor to Negligible** effects, with one receptor experiencing a **Moderate (Significant)** effect. **Moderate (Significant)** effects will impact some receptors on Sites 1, 3, 4, 7, 8 and 9, with other receptors anticipated to have **Minor to Negligible** impacts. Sites 2, 5, 6 and 10 will not experience any significant impacts. Along the CRC, only one view will experience a **Moderate (Significant)** effect, with the rest of the views experiencing no significant effects.

7.6 Decommissioning Effects

- 7.6.1 A similar scale of activities to that of the construction stage is expected to occur, but generally in reverse with the removal of the Scheme elements. The National Grid Substation and the Grid Connections Scheme elements will remain in situ along with the established landscape mitigation planting (woodland, trees, and hedgerows) which will continue to provide screening benefits when compared to the baseline scenario.
- 7.6.2 Overall, during the decommissioning phase, the visual effects may increase for some receptors compared to Year 15 of Operation as there will be a higher level of activity, but the overall effects will remain lower than during the Construction Phase.

Landscape

- 7.6.3 A **Major (Significant)** effect is expected for the landscape character and features of Site 1. LCA B1 Tas Tributary Farmland, LCA E2 Great Moulton Plateau, NCA 83: South Norfolk and High Suffolk Claylands, and the landscape character and features of Site 4, 5, 7 (including CRC8, CRC10, CRC11 and CRC12), 8, 9 and Site 10 (including CRC14) will experience a **Moderate (Significant)** impact. The remaining landscape receptors will experience **Not Significant** effects.

Visual

- 7.6.4 At the BESS Site, two viewpoints are predicted to experience **Moderate (Significant)** effects, with remaining views having a **Minor to Negligible** effect. Sites 1 to 5 and 7 to 10 will experience **Moderate (Significant)** and **Minor to Negligible** effects, with Site 6 not experiencing any significant effects. Along the CRC, visual effects will range from experience **Moderate (Significant)** and **Minor to Negligible**.

7.7 Additional Mitigation

- 7.7.1 No additional landscape and visual mitigation and enhancement measures have been identified as necessary as achievable mitigation within the Scheme has already been included within the embedded mitigation.

8 Ecology and Biodiversity

8.1 Overview

- 8.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Ecology and Biodiversity. The full ecology and biodiversity assessment is included in **ES: Chapter 8: Ecology and Biodiversity [EN0110014/APP/6.1.8]**.

8.2 Baseline Conditions

- 8.2.1 There are no international/European designated sites present within or adjoining the Order Limits. There are also no national or local statutory designated sites for nature conservation within the Site. Two County Wildlife Sites (CWS) are located partially within the Order Limits or the CRC, these being: Lower Spring Wood CWS located within CRC9 and Fritton Grange Meadows CWS which is located within CRC7. There are also four Roadside Nature Reserves (RNR) located partially within the Order Limits, these being; Bussey's Loke RNR (Sub-Site 7G), Market Lane RNR (Sub-Site 8A), Parkers Lane RNR (Area 1) (CRC4) and Parkers Lane RNR (Area 2) (CRC4). Areas of lowland fen habitat are located in CRC7.
- 8.2.2 A number of habitat and species surveys have been undertaken to inform the assessment of effects on protected species, such as breeding birds, great crested newts and bats.

8.3 Embedded Mitigation

- 8.3.1 Embedded mitigation measures have been incorporated into the Scheme's design, including:

Construction

- Standard good construction and environmental working practices as detailed within the **Outline CEMP [EN0110014/APP/7.1]**;
- Landscape and ecology mitigation and enhancement detailed in the **Outline LEMP [EN0110014/APP/7.4]**;
- Any impacts on species (and associated habitats) through killing/injury, damage, pollution and disturbance will be mitigated through the **Outline Protected Species Mitigation Strategy [EN0110014/ APP/6.3.8.10]**;
- Habitats around main watercourses and drainage features will be protected by buffer zones, implementation of surface water management measures and the use of trenchless installation (HDD) beneath sensitive watercourses;

- Temporary construction lighting, where required, will be positioned to avoid light spillage. Requirement for lighting outside standard working hours will be set out in the **Lighting Strategy [EN0110014/APP/6.3.7.11]**; and
- Veteran trees will be retained and protected throughout construction.

Operation and Maintenance

- Long-term habitat and biodiversity enhancement, management and monitoring, as set out in the **Outline LEMP [EN0110014/APP/7.4]**;
- Protective buffer zones will be implemented around receptors such as woodland, as set out in the **Outline OEMP [EN0110014/APP/7.2]**;

Decommissioning

- Buffer zones from Construction and Operation will be retained
- Appropriate guidance will be followed for decommissioning works surrounding immediately adjacent woodland/trees; and
- Embedded avoidance and mitigation measures will be implemented through the Decommissioning Environmental Management Plan (DEMP), in accordance with the **Outline DEMP [EN0110014/APP/7.3]**.

8.4 Construction Effects

Statutory and Non-Statutory Designated Sites

- 8.4.1 An assessment has been undertaken of the hydrological connectivity and air quality degradation to International/European Designated sites and the Order limits and finds no impact pathways and therefore a **Negligible** effect which is not significant on the Norfolk Valley Fens Special Area of Conservation (SAC), the Broads SAC and Broadland Ramsar site.
- 8.4.2 An assessment was undertaken for a number of Sites of Special Scientific Interest (SSSIs) in the area which were identified as being hydrologically connected to the Order Limits. The findings were that following the implementation of embedded mitigation described above, a **Negligible** effect is anticipated for nationally designated sites, which is not significant.
- 8.4.3 Fritton Grange Meadows CWS and Lower Spring Wood CWS have been assessed and impacts during construction are identified as being **Negligible** effect which is not significant. This is because the CRC route will use trenchless techniques (a method known as Horizontal Directional Drilling) that will go under the CWS to avoid habitat fragmentation, degradation and habitat loss. There will also be buffer zones and standard pollution control measure implemented as per the embedded mitigations section above. **Negligible** effects are also identified for CWS located up to 2 km from the

Order Limits and Local Nature Reserves within and surrounding the Order Limits.

Habitats

- 8.4.4 Following the implementation of embedded mitigation, **Negligible** and not significant effects have been identified for lowland fen, ancient woodland, ancient/veteran trees, arable field margins, native hedgerows, ponds, rivers, lowland deciduous woodland, floodplain grazing marsh, traditional orchard, scrub, other neutral grassland, ditches and common and widespread habitats of low sensitivity and/or ecological interest.

Species

- 8.4.5 Effects on fauna during the construction phase may occur from species injury/mortality, disturbance, species fragmentation and habitat degradation. However, following the implementation of embedded mitigation measures, **Negligible** impacts are expected during the construction phase. These impacts are expected for all species assessed, including terrestrial invertebrates, aquatic invertebrates, white clawed crayfish, freshwater fish, Great Crested Newt, reptiles, breeding birds, skylark, roosting bats, foraging and commuting bats, badger, water vole and otter, priority mammal species and invasive non-native species.

8.5 Operation Effects

Statutory and Non-Statutory Designated Sites

- 8.5.1 No direct impacts are anticipated on International/European Designated therefore a **Negligible** effect which is **not significant** is anticipated for the Norfolk Valley Fens SAC, the Broads SAC and Broadland Ramsar site.
- 8.5.2 Given that embedded mitigation measures will be incorporated into the Scheme to avoid impacts on surrounding designated sites during the operational phase and the cessation of agricultural activities within the Order Limits, a **Negligible** effect is anticipated for nationally designated sites, which is **not significant**.
- 8.5.3 There will be active underground cabling beneath Fritton Grange Meadows CWS and Lower Spring Wood CWS during operation. Embedded mitigation measures will be incorporated into the Scheme to avoid operational activities impacting on the CWS. **Negligible** effects are also identified for CWS located up to 2 km from the Order Limits and Local Nature Reserves within and surrounding the Order Limits.

Habitats

- 8.5.4 Following the implementation of embedded mitigation, **Negligible** and **not significant** effects have been identified for lowland fen, ancient woodland, ancient/veteran trees, and traditional orchard.
- 8.5.5 **Low beneficial (not significant)** effects have been identified for arable field margins and floodplain grazing marsh. **Moderate beneficial (Significant at the local level)** effects have been identified for native trees and hedgerow, ponds, rivers, lowland deciduous woodland, scrub, other neutral grassland, ditches and common and widespread habitats of low sensitivity and/or ecological interest. This is due to long-term habitat enhancements and management informed by the **Outline LEMP [EN0110014/APP/7.4]**.

Species

- 8.5.6 Following implementation of embedded mitigation as outlined above, **Negligible** effects are expected for aquatic invertebrates, white-clawed crayfish and invasive non-native species. A **Low Beneficial** effect is anticipated for freshwater fish.
- 8.5.7 **Moderate Beneficial (Significant at a local level)** effects are anticipated for skylark, roosting bats, foraging and commuting bats, badger, water vole and otter. These effects are due to the habitat creation and enhancement provided by the Scheme.

8.6 Decommissioning Effects

- 8.6.1 Based on the decommissioning phase is not being anticipated to exceed the impact or duration of the Construction Phase, following from the provision of embedded mitigation measures, no significant negative effects are considered likely to occur.

9 Water Environment

9.1 Overview

- 9.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to the Water Environment. The full Water Environment assessment is included in **ES: Chapter 9 Water Environment [EN0110014/APP/6.1.9]**.

9.2 Baseline Conditions

- 9.2.1 Baseline data was collected from a desk-based assessment. The Study Area in relation to the assessment of water quality on receptors is 2 km around the Order Limits. The Study area for the impacts in relation to water resources is 5 km around the Order Limits.

Hydrological

- 9.2.2 There are four principal watercourses within the Order Limits and Study Area. There are Hempnall Beck, River Tas, Broome Beck and Little Beck. There are other smaller ordinary watercourses / field boundary ditches present within several of the Sub-Sites.

Water Quality

- 9.2.3 The Order Limits lie within the Anglian River Basin District, located within the Yare Operational Catchment and the Waveney Operational Catchment. The surface water quality over the Order Limits and the receiving Water Framework Directive (WFD) watercourses are considered to be of 'poor' to 'moderate' quality.

Water Resources – Water Supply and Demand

- 9.2.4 The East Anglia region was classified by the Environmental Agency (EA) as 'seriously water stressed' in 2021 (**Error! Reference source not found.**). The current water supply and demand for the Order Limits is low and in line with typical agricultural practices, due to it being agricultural land. There are no lakes, water storage facilities, canals or surface water transfer systems in the vicinity of the Order Limits. The northern part of the Order limits is located within a Groundwater Source Protection Zone (SPZ).
- 9.2.5 The future baseline of the Study Area without the implementation of the Scheme would be unlikely to change substantially. There would be some potential for increases in peak river flow and peak rainfall intensity as a result of climate change, which would increase flood risk within the Order Limits and Study Area.

9.3 Embedded Mitigation

9.3.1 Likely environmental effects will be avoided, minimised, mitigated or reduced through design measures and / or management of the Scheme. These embedded mitigation measures include:

Construction

- Limitation of Heavy Goods Vehicles (HGV) movements to minimise impacts on traffic on the local roads;
- Management of runoff and pollution in temporary construction compounds;
- All reasonably practicable measures will be taken to prevent pollution and deposition of sediment in any watercourse;
- Management of cable works as outlined in the **ES Appendix 7.1 Outline CEMP [EN0110014/APP/7.1]**;
- Containment of foul water within sealed systems and tankering from the Order Limits; and
- Prioritisation of water neutrality options such as rainwater harvesting, on-site water storage and water tankering where practicable.

Operation and Maintenance

- A flood risk sequential approach to locating infrastructure outside areas of highest flood risk as far as reasonably practicable;
- Electrical infrastructure will be elevated by the Mounting Structures;
- Switch Rooms, Conversion Units and O&M buildings will be located outside of Flood Zones 2 and 3 and away from areas of surface water flooding as far as practicable;
- Land beneath Solar PV arrays will be managed as grassland / wildflower meadow to reduce soil erosion and slow runoff;
- Access tracks will be constructed of a permeable surface, with additional passive drainage features such as shallow ditches and filter drains;
- The BESS will incorporate SuDS features and bunding to manage surface water runoff; and
- 10 m watercourse edge buffers will be incorporated for all infrastructure works.

9.4 Construction and Decommissioning Effects

- 9.4.1 The Construction and Decommissioning Phases are considered to be those with the higher water demand. The impacts of these Phases on the Water Resource Zones (WRZ) within the study are anticipated to be **Minor** following the implementation of embedded mitigation measures. The impact on the SPZ is considered to be **Negligible** with the embedded mitigation.
- 9.4.2 The Construction and Decommissioning activities present a risk of spills and sediment / contaminant mobilisation, which may adversely affect the water quality of above and below ground receptors. With the embedded mitigation measures, the effects on both hydrological and hydrogeological receptors is considered to be **Minor**.
- 9.4.3 The movement of construction vehicles, soil stripping and placement of materials / stockpiling may contribute to ground compaction and changes in surface water runoff during the Construction and Decommissioning Phases. After embedded mitigation, the impacts are considered to be **Minor**.
- 9.4.4 Battery installation and removal may cause mobilisation of potentially harmful materials to hydrological and hydrogeological receptors. After embedded mitigation, impacts are expected to be **Minor**.
- 9.4.5 The Construction and Decommissioning Phases may cause a temporary reduction in groundwater recharge through the installation of temporary impermeable surfaces. With the embedded mitigation measures, there is anticipated to be a **Minor** impact.
- 9.4.6 During and beyond the Decommissioning Phase, there is potential for heat pollution from the cables to affect Groundwater Dependent Terrestrial Ecosystems (GWDTEs). Following the implementation of embedded mitigation measures, the impact is anticipated to be **Minor**.

9.5 Operation Effects

- 9.5.1 The Operational Phase of the Scheme has a lower water demand, however, with the inclusion of embedded mitigation measures, the impacts are considered to be **Minor**. The impact on the SPZ is considered to be **Negligible** with the embedded mitigation.
- 9.5.2 During the Operational Phase, there is a risk of contaminant mobilisation from accidental vehicle leaks and spills and in surface water runoff from new impermeable areas associated with the Scheme. With the inclusion of embedded mitigation, the potential effects are considered to be **Minor**.
- 9.5.3 Batteries and PV arrays may require replacement during the Operational Phase, which may cause the mobilisation of potentially harmful substances. However, the composition of Solar PV Arrays means that even if they

become damaged at surface level, they are likely to remain intact and not leak. As such, and with the inclusion of embedded mitigation measures, the impacts from battery replacement activities and / or potential Array Breakage / replacement is considered to be **Minor**.

- 9.5.4 In absence of mitigation, there is a potential fire risk for the BESS, which could cause the mobilisation of contaminants from fire water runoff. These elements of the Scheme will incorporate lined drainage systems with auto shut-off valves, which, along with embedded mitigation, means there will be a **Minor** impact on receptors. Additional information regarding the isolation and removal of surface water runoff in the unlikely event of a fire incident is provided in the **Outline Battery Safety Management Plan (oBSMP) [EN011014/APP/7.5]**
- 9.5.5 The conversion of the ground across the majority of the Order Limits from agricultural use to grassland will provide greater soil stability, and will reduce nutrient loading to hydrological and hydrogeological receptors. This means there will be a reduction in agricultural chemical application, which may increase the water quality of watercourses in the area. This will have a **Negligible to Major Beneficial** (which is significant) effect, depending on the sensitivity of the receptor.
- 9.5.6 The increase in impermeable areas of the Order Limits causes potential for impacts on groundwater recharge. After the inclusion of embedded mitigation, the effect is considered to be **Minor**.
- 9.5.7 During the Operational Phase, there is potential for the thermal dynamics of the cables to transfer energy across the Order Limits and impact GWDTEs. After the implementation of embedded mitigation, there is anticipated to be a **Minor** impact.

9.6 Additional Mitigation

- 9.6.1 As no significant adverse effects have been identified for receptors during any phase of the Scheme once embedded mitigation is taken into account, no additional mitigation measures are required.

10 Cultural Heritage

10.1 Overview

10.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Cultural Heritage. The full Cultural Heritage assessment is included in **ES: Chapter 10 Cultural Heritage [EN0110014/APP/6.1.10]**.

10.2 Baseline Conditions

10.2.1 Baseline Conditions were gathered from desk-based studies, walkover surveys conducted between Summer 2024 and Autumn 2025, an aerial mapping survey undertaken in 2024, a geophysical survey conducted in 2024 and 2025 and an archaeological trial trench evaluation undertaken in August to November 2025. Baseline conditions were based on a Study area of 5 km around the Sites and BESS Site, and for the highest grade heritage assets. A study area of 2 km was used for the remaining designated heritage assets and 1 km for non-designated heritage assets. A Study area of 500 m has been used for the Cable Route Corridor (CRC).

10.2.2 There are no designated heritage assets within the Order Limits, however, several designated assets have been identified within the Study Area which may be sensitive to impact from the Scheme. Non-designated assets within the Study Area include 202 Buildings of Townscape Significance within Conservation Areas.

10.2.3 The fields within the Order Limits largely comprise 20th century agricultural fields with boundary loss. A study of archaeological remains has identified several potential remains across the Sites, including the potential remains of All Saints Church (demolished in 1570), cropmarks of a ring ditch, medieval and post-medieval pottery and a small section of a World War II airfield.

10.2.4 There is high potential for the some of the CRCs to contain remains from the prehistoric, Roman, Saxon and medieval periods.

10.2.5 In the absence of the Scheme, the Cultural Heritage future baseline would not likely substantially change. Should the Scheme not proceed and the Order Limits remain under arable farming, there would be a continued deterioration of archaeological remains.

10.3 Embedded Mitigation

10.3.1 Some mitigation has been incorporated into the Scheme's design. These include:

Construction

- Construction activities causing environmental changes (such as noise and vibration) will be sufficiently removed from heritage assets to avoid or minimise (as practicable) impacts within their settings;
- Where possible, transportation routes have been identified to avoid additional traffic movements past sensitive heritage assets;
- Temporary construction compounds will be sited to avoid areas of known archaeological remains; and
- Management of historic hedgerows will be undertaken in accordance with the Hedgerow Removal Plan set out in the **Outline LEMP [EN0110014/APP/7.4]**.

Operation and Maintenance

- A 4 m high acoustic fence will be constructed around BESS components to ensure no significant environmental impacts on surrounding buildings; and
- Site-specific mitigation will be introduced including visual screening from vegetation and setback of Sub-Sites to reduce visibility.

10.4 Construction Effects

Designated and Non-Designated Heritage Assets

- 10.4.1 Direct impacts to designated heritage assets have been confirmed to be scoped out by the Planning Inspectorate (PINS) scoping opinion received in February 2025. There is also no potential for direct impacts on non-designated heritage assets.

Archaeological Remains

- 10.4.2 Impacts to archaeological assets within the Order Limits may occur during the Construction Phase through the installation of various Scheme elements. Piling for PV panel mounting structures will have a **Negligible** impact. Excavations for cabling and other below ground elements of the Scheme **Neutral and Minor Adverse (Not Significant)** impact on archaeological remains.
- 10.4.3 The construction of the Project Substations, National Grid Substation and majority of the BESS Site will have a **Neutral (Not Significant)** effect on archaeological remains, with the exception of an undated watering hole in the north eastern corner of the BESS Site, which will experience a **Moderate Adverse (Significant)** effect.

- 10.4.4 Temporary construction compounds have been sited in areas of lower archaeological interest where possible, therefore, it is anticipated there will be **Neutral (Not significant)** effects. The exception to this is the temporary construction compound in Sub-Site 4A, which is an area of late Iron Age to Roman features and will have **Moderate/Minor Adverse (Significant)** effects.

Historic Landscape Character

- 10.4.5 The change of use from agricultural to energy production within the Order limits will change the historic landscape character. However, as most of the Order Limits are characterised as 20th century agriculture, the impacts of minimal removal of hedgerows and landscaping mitigation will be **Negligible (Not Significant)**.

10.5 Operation Effects

Designated and Non-Designated Heritage Assets

- 10.5.1 The Scheme may cause indirect impacts on designated heritage assets by changing the character of the landscape and setting, glare and shadowing caused by the reflection of sunlight off solar arrays and noise pollution. These impacts will be reduced once landscaping mitigation has matured. The impacts are anticipated to range from **Neutral to Minor Adverse (Not Significant)**.

Archaeological Remains

- 10.5.2 Adverse impacts to archaeological remains will take place during the Construction Phase, with the majority of archaeological remains being preserved in situ. These remains would be taken out of the agricultural cycle of regular ploughing. Therefore, there is anticipated to be a **Minor Beneficial (Not Significant)** impact.

10.6 Decommissioning Effects

Designated and Non-Designated Heritage Assets

- 10.6.1 The Decommissioning Phase may temporarily affect the settings of heritage assets, particularly in relation to plant movement and the presence of Temporary Construction Compounds. These impacts will last between 12 and 24 months, and are anticipated to be **Neutral (Not Significant)**.
- 10.6.2 After decommissioning, several impacts on designated heritage assets from the Operational Phase of the Scheme would be reversed.

10.7 Additional mitigation

- 10.7.1 Additional mitigation measures will be led by and proportionate to the below ground impacts of the Scheme. The precise details of areas of mitigation cannot yet be determined, however mitigation will take one or more of the following methods; geophysical survey, informative trenching, geoarchaeological assessment, archaeological excavations, archaeological monitoring and preservation in situ. [For construction, the Moderate Adverse (Significant) effect will be reduced to not-significant as a result of the Additional Mitigation Strategy proposed.]

11 Transport and Access

11.1 Overview

- 11.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Transport and Access. The full Transport and Access assessment is included in **ES Volume 1, Chapter 11: Transport and Access [EN0110014/APP/6.1.11]**.

11.2 Baseline Conditions

- 11.2.1 Baseline conditions were collected from desk and field-based studies. The Study Area identifies the highway network likely to be affected by the Scheme, with the final Study Area being agreed with the Local Highway Authority (LHA).
- 11.2.2 The road network surrounding the Solar PV Sites and CRC consist of two main north to south links, A140 and B1332, and one main east to west link, B1527. These roads will be the main connectors for construction traffic associated with the scheme.
- 11.2.3 The Great Eastern Main Line runs approximately 300 m west of Sub-Site 1A, running north to south from Norwich to London. There are several bus services operating around the Scheme, running semi-regular services, including service to Norwich and Harleston.
- 11.2.4 There are several road and PRow which intersect with the Scheme, including Sub-Sites and CRC. National Cycle Network (NCN) routes 30 and 40 run to the south of the Scheme, NCN route 1 runs east of the scheme.
- 11.2.5 Accident data from September 2019 to August 2024 shows a total of 100 recorded accidents within the Study Area, with the majority occurring on the A140 and B1332. Accident volumes are not considered high relative to baseline traffic flows on the A140 and B1332, suggesting no existing highway safety concerns
- 11.2.6 No further highway upgrades are planned within the Study Area prior to the Construction Phase of the Scheme. Traffic flows or infrastructure may change as a result of cumulative schemes in the area.

11.3 Embedded Mitigation

- 11.3.1 Likely effects will be avoided, minimised, mitigated or reduced through design measures and embedded mitigation. Operation and Maintenance has been scoped out of the ES, however, some embedded mitigation measures will still be applied for this Phase as outlined below.

Construction

- Construction routes have been selected with the principal aim to avoid routing vehicles through local communities where possible. Existing access points will be used where possible and interactions with PRoW will be limited. Proposed access routes for Heavy Good Vehicle (HGV) traffic are defined in the **Outline CTMP [EN0110014/APP/7.6]**;
- Internal haul routes have been incorporated to minimise the use of public roads for material and equipment movements during construction, limiting potential congestion and highway safety risks and optimising site logistics. Proposed internal haul routes are illustrated in **ES Figure 11.2-11.8: Likely and Suitable Routes to the Scheme [EN0110014/APP/6.2.6.2.11.2 - 11.8.11]**;
- Trenchless crossing techniques such as Horizontal Directional Drilling (HDD) have been incorporated into the design, reducing the need for open-cut excavation at sensitive locations and minimising traffic disruption;
- The **Outline CTMP [EN0110014/APP/7.6]** will provide a clear framework for managing construction vehicle movements to and from the Scheme to minimise transport related impacts;
- A Framework Construction Worker Travel Plan is provided in Chapter 8 of the **Outline CTMP [EN0110014/APP/7.6]** and sets out the plan to reduce vehicle impacts associated with construction worker trips; and
- An **Outline CEMP [EN0110014/APP/7.1]** sets out the wider environmental management and mitigation measures.

Operation and Maintenance

- An **Outline OTMP [EN0110014/APP/7.1]** sets out the overarching controls and principles for traffic associated with the Scheme during operation;
- The **Outline OEMP [EN0110014/APP/7.2]** sets out the monitoring procedures and requirements to ensure maintenance activities are carried out in a controlled and compliant manner; and
- An **Outline PRoW Management Plan [EN0110014/APP/7.8]** sets out measures to protect and manage PRoW during Operation and Maintenance.

Decommissioning

- The Decommissioning Phase will be designed to spread transport effects both temporally and geographically; and

- The **Outline Decommissioning Environmental Management Plan [EN0110014/APP/7.3]** sets out the general principles to be followed in the decommissioning phase of the Scheme.

11.4 Construction Effects

Severance

- 11.4.1 Existing traffic flows are very low, and absolute changes (vehicle per day increases) remain minimal with the implementation of the scheme. The overall effect is considered to be **Minor Adverse (Not Significant)**.

Driver Delay

- 11.4.2 Most vehicle trips associated with the Scheme will take place outside of typical peak hours. During the Construction Phase, there may be occasional delays associated with vehicles arriving at or departing from the Scheme. Due to the rural nature of the road network and the temporary increase in construction traffic, the impact is anticipated to be **Medium Adverse (Not Significant)**.

Non-Motorised User (NMU) delay

- 11.4.3 The level of pedestrian and cyclist activity along the effected routes is considered to be low, however there are several PRowS intersecting the road, and some pedestrian delay may occur from construction vehicles. An **Outline Public Rights of Way and Permissive Paths Management Plan (Outline PRow Plan) [EN0110014/APP/7.8]** has been developed which sets out measures to manage closures and minimise disruption. After these mitigation measures, the effect is **Negligible Adverse (Not Significant)**.

Non-Motorised Users (NMU) Amenity

- 11.4.4 Existing pedestrian and cycle activity is low, which, combined with the staggering of the construction programme, means no significant effects are anticipated. The impact is anticipated to be **Low Adverse (Not Significant)**.

Fear and Intimidation

- 11.4.5 Average traffic flows in the Study Area remain very low, with vehicle speeds ranging from 31-41 mph. Therefore, the effect on fear and intimidation is considered to be **Negligible Adverse (Not Significant)**.

Road Safety

- 11.4.6 There are no existing highway safety concerns which would result in increased collisions after the introduction of traffic related to the Scheme. After the introduction of mitigation measures, the impact is considered **Low Adverse (Not Significant)**.

Hazardous and Large Loads

- 11.4.7 Large loads will be required during the Construction Phase to transport specialise plant and equipment. These movements will be managed by a specialist haulage contractor for safety and compliance. Therefore, a **Low Adverse (Not Significant)** impact is expected.

11.5 Operation Effects

- 11.5.1 The Operational Phase of the Scheme has been scoped out as traffic associated with this phase is anticipated to be significantly lower than during the Construction and Decommissioning Phases.

11.6 Decommissioning Effects

- 11.6.1 The Decommissioning Phase is not expected to exceed the number of vehicles forecast during the Construction Phase. The effects of the Scheme during Decommissioning will be no worse than during Construction, and no significant adverse effects are anticipated for severance, driver delay, pedestrian delay, NMU amenity, fear and intimidation, road safety and hazardous and large loads. The effect for all these receptors is anticipated to be **Negligible to Low Adverse (Not Significant)**.

11.7 Additional Mitigation

- 11.7.1 As no significant effects have been identified for receptors during any phase of the Scheme once embedded mitigation is taken into account, no additional mitigation measures for the Scheme are required.

12 Noise and Vibration

12.1 Overview

- 12.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Noise and Vibration. The full Noise and Vibration assessment is included in **ES Volume 1, Chapter 12: Noise and Vibration [EN0110014/APP/6.1.12]**.

12.2 Baseline Conditions

- 12.2.1 Baseline conditions were collected from desk assessments, a baseline environmental sound survey and construction traffic flow data.
- 12.2.2 The Study Area for construction activity noise is 300 m, the Study Area for construction vibration is 100 m, the Study Area for construction traffic noise and vibration is 50 m from defined construction routes. The Study Area for operational noise is 500 m. The Study Area for decommissioning activity noise is 300 m from the Order Limits and 50 m from defined decommissioning routes for traffic noise.
- 12.2.3 Receptors that have been categorised as high sensitivity include residential dwellings, with medium sensitivity receptors being commercial, agricultural and PRowS. Baseline sound surveys show daytime ambient sound levels ranging from the mid-40s to the mid-50s decibels (dB), with daytime background sound levels ranging from 28 to 52 dB, and lower night time background levels ranging from 18 to 35 dB.
- 12.2.4 Future baseline sound levels may increase due to population growth and associated rises in road traffic, though these increases are not anticipated to be significant.
- 12.2.5 The Planning Practise Guidance defines adverse and significant adverse effects which are used for determining noise effects below, as follows:
- Lowest Observable Adverse Effect Level (LOAEL) – the level above which adverse effects on health and quality of life can be detected.
 - Significant Observed Adverse Effect Level (SOAEL) – the level above which significant adverse effects on health and quality of life occur.

12.3 Embedded Mitigation

- 12.3.1 The following embedded mitigation measures have been incorporated into the Scheme's design:

Construction and Decommissioning

- The Scheme layout has been designed to maximise the distance between noise generating activities and noise sensitive receptors (NSRs);
- Construction working hours agreed with the Local Planning Authority will be adhered to;
- The measures set out in the **Outline CEMP [EN0110114/APP/7.1]**, **Outline CTMP [EN0110114/APP/7.6]** and **Outline DEMP [EN0110114/APP/7/3]** will be followed, to mitigate and reduce noise and vibration impacts;
- General noise mitigation practices such as using ‘silenced’ plant and equipment where practicable, switching off engines when not in use, selecting less noisy equipment where practicable and operating plant at low speeds will be put into place; and
- Precise locations for Horizontal Directional Drilling (HDD) will be confirmed by a principal contractor. Temporary acoustic barriers will be installed around the HDD working area where appropriate.

Operation and Maintenance

- A 4 m high acoustic fence will be included around the BESS containers;
- Fans associated with BESS containers will operate at reduced speeds during night time and early morning periods, and will be oriented away from nearby receptors; and
- Inverters will be designed to mitigate tonal elements.

12.4 Construction Effects

- 12.4.1 Construction impacts are anticipated to come from the noise and vibration created during the construction of the Project Substations, National Grid Substation, BESS and Solar PV Arrays, the noise created from HDD and the noise and vibration from construction traffic. The impacts for all of these are anticipated to be **Negligible to Minor Adverse (Not Significant)**.

Horizontal Directional Drilling

- 12.4.2 HDD can generate elevated noise and may need to be undertaken during night-time hours. If night-time working is needed, this will be controlled through prior approval access. The HDD works will be less than 10 days in total, as such there will be a **Negligible to Major Adverse** effect from noise. Vibration effects from HDD are expected to be **Negligible (Not Significant)**.

Construction of Project Substations, National Grid Substation, BESS and Solar PV Arrays

- 12.4.3 Percussive piling may be required for the installation of the BESS, 400 kV Substations, 132 kV Substations and the National Grid Substation. However, these are anticipated to take place at such a distance from any receptors that vibration impacts would not be perceptible. The effects are therefore anticipated to be **Negligible (Not Significant)**.
- 12.4.4 Piling activity associated with Solar Array construction will occur 45 m away from the closest receptor. As such, there is anticipated to be a **Negligible to Minor Adverse** impact (**Not Significant**).
- 12.4.5 Access track construction and upgrades will also occur at a distance of m from the closest receptor, therefore there is a **Negligible to Minor Adverse** effect expected (**Not Significant**).

Construction Traffic

- 12.4.6 The closest receptor is approximately 30 m away from the construction traffic route. Absolute road traffic noise levels at the closest receptor are anticipated to be below the Lowest Observed Adverse Effect Level (LOAEL). Construction traffic noise will likely cause **Negligible to Minor Adverse** effects (**Not Significant**).
- 12.4.7 Construction traffic vibration will depend on factors such as ground composition, HGV speeds and the quality of road / track. The impact of vibration on receptors within 5-10 m of access roads is expected to be **Moderate Adverse (Significant)**, and **Negligible to Minor Adverse** on receptors over 10 m away from access roads.

12.5 Operation Effects

- 12.5.1 Operational impacts are anticipated to come from the noise of the operation of the Project Substations, National Grid Substation, BESS and Solar PV Arrays, and the PV Tracker Motors. These noises could impact Residential and Education Buildings, Offices and Commercial Units and PRoW within the vicinity of the Scheme.

Residential Receptors

- 12.5.2 During the daytime, the rating level from on-site operations at all assessed residential noise sensitive receptors is anticipated to be below the prevailing background sound level. Therefore, the operational noise during the daytime is considered **Negligible Adverse (Not Significant)**.

- 12.5.3 During the early morning period, the effect is anticipated to be **Negligible Adverse (Not Significant)** at 41 of the residential receptors, with 14 residential receptors experiencing a **Minor Adverse** impact (**Not Significant**). Seven residential receptors have been identified as being between 6 and 8 dB above background sound level as such, these receptors are anticipated to have a **Moderate Adverse (Significant)** impact.
- 12.5.4 During night time hours, the impact is anticipated to be **Negligible Adverse (Not Significant)** at all receptors but one. The impact at the other receptor exceeds background sound levels by 2 dB due to noise emissions from the BESS Site, and therefore will have a **Minor Adverse** impact (**Not Significant**).

Non-residential receptors and public rights of way

- 12.5.5 Operational noise associated with the Scheme on non-residential receptors and along PRoWs are expected to have a **Negligible Adverse (Not Significant)** impact, as all noise is below the LOAEL.

PV Tracker motors

- 12.5.6 Expected sound levels from the PV Tracker Motors are considerably below typical background sound levels at all receptors. As such, there is anticipated to be **Negligible Adverse (Not Significant)** impact.

12.6 Decommissioning Effects

- 12.6.1 Decommissioning effects may occur from the noise created during the decommissioning of the Project Substations, National Grid Substation, BESS and Solar PV Arrays and traffic noise and vibration. The impacts are anticipated to be similar to, and no greater than, those generated during construction works. These impacts are anticipated to be **Negligible to Minor Adverse (Not Significant)**

12.7 Additional Mitigation

- 12.7.1 No additional mitigation measures have been proposed beyond the embedded mitigation already incorporated for the construction and decommissioning phases.
- 12.7.2 During early morning periods of the Operational Phase, predicted noise levels may exceed the LOAEL for certain limited residential receptors, therefore further mitigation is required. Mitigation could include use of low-noise inverter models, acoustic enclosures, relocation or reorientation of plant, or installation of noise barriers. This is subject to further detailed design. After the implementation of additional mitigation, noise levels should be less than the LOAEL, resulting in a residual **Negligible Adverse (Not**

Significant) effect during the daytime, and a **Minor Adverse (Not Significant)** effect during the night-time and early morning.

13 Air Quality

13.1 Overview

13.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Air Quality. The full Air Quality assessment is included in **ES Volume 1, Chapter 13: Air Quality [EN0110014/APP/6.1.13]**.

13.2 Baseline Conditions

13.2.1 Baseline data has been informed by a desk-based assessment and previous particulate matter monitoring undertaken by South Norfolk Council (SNC). Impacts on ecological receptors have been considered if they lie within 200 m of a road with increased traffic flows due to the Scheme.

13.2.2 The Order Limits is within the administrative boundary of SNC, and there are no Air Quality Management Areas within SNC or the neighbouring local authority of Broadlands District Council (BDC). The nearest AQMA to the Order Limits is the Central Norwich AQMA, approximately 9.6 km from the Order Limits.

13.2.3 Measured NO₂ concentrations at the closest monitoring location to the Order Limits have been well below the annual mean NO₂ Air Quality Objectives (AQO), with measured concentrations remaining below 60 µg/m³. There is a generally decreasing trend in concentrations over time, in accordance with national trends.

13.2.4 The predicted background concentrations for NO_x, NO₂ and particulate matter (PM₁₀ and PM_{2.5}) across the Order limits are all well below the relevant AQOs.

13.2.5 It is predicted that there will be a reduction in pollutant concentrations in the future. Estimated future baseline conditions also remain well below the relevant AQOs.

13.3 Embedded Mitigation

13.3.1 The following embedded mitigation has been included within the Scheme's design to avoid, minimise, mitigate or reduced any significant effects.

Construction

- Implementation of an **Outline CEMP [EN0110014/APP/7.1]** including specific measures to mitigate against construction dust, NRMM and road traffic emission impacts have;

- Implementation of an **Outline CTMP [EN0110014/APP/7.6]**, which will minimise air quality impacts through defined construction vehicle routes, delivery scheduling and a Construction Worker Travel Plan (CWTP); and
- The CWTP within the **Outline CTMP [EN0110014/APP/7.6]** includes measures such as staff minibus services and provision of bicycle parking facilities.

Operation and Maintenance

- The Scheme does not include a centralised combustion-based energy centre;
- Sensitive siting of infrastructure will be considered, with the BESS Containers / Compound being at least 200 m from the nearest residential receptor;
- Creation of new woodland belts and native tree planting, and restoration of key hedgerows;
- Implementation of the **Outline LEMP [EN0110014/APP/7.4]** to increase green infrastructure;
- Implementation of the **Outline BSMP [EN0110014/APP/7.5]**, which will introduce measures to mitigate air quality impacts in the event of a BESS fire; and
- Implementation of an **Outline OEMP [EN0110014/APP/7.2]** and **Outline Operational Traffic Management Plan [EN0110014/APP/7.7]**, which will focus on maintenance and replacement aspects including dust management and reducing worker car trips.

Decommissioning

- During decommissioning, transportation will be reduced by consolidating waste and exports; and
- An **Outline DEMP [EN0110014/APP/7.3]** will be submitted, including measures to mitigate against dust and road traffic emissions.

13.4 Construction Effects

- 13.4.1 Construction impacts on air quality are anticipated to come from construction road traffic emissions, which may impact both human, and ecological receptors.

Human Receptors

- 13.4.2 The largest traffic flow increase on any road as a result of the Scheme is anticipated to occur on the A140, with the largest increase of HGV traffic

flows anticipated to occur on the B1332 Norwich Road. No HGVs will route through the Norwich AQMA. Therefore, increases in road traffic are well below the Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) criteria, and as such, the impact is expected to be **Negligible (Not Significant)**.

Ecological Receptors

- 13.4.3 No roads are expected to experience an increase in road traffic over the criteria thresholds. Therefore, the air quality effect as a result of road traffic emissions associated with the Scheme on all ecological receptors is expected to be **Negligible (Not Significant)**.

13.5 Operation Effects

- 13.5.1 Air Quality impacts from the Operational Phase have been scoped out of the ES, as no impacts are anticipated.

13.6 Decommissioning Effects

- 13.6.1 Decommissioning impacts on air quality are anticipated to come from decommissioning road traffic emissions, which may impact both human, and ecological receptors.

Human Receptors

- 13.6.2 The Decommissioning Phase is not expected to exceed the number of vehicles forecast during the Construction Phase. Subject to changes in technology and construction techniques, similar impacts are anticipated to those during the Construction Phase. There is also expected to be a reduction in pollutant concentrations over the lifetime of the Scheme due to reductions in background pollutant concentrations and vehicle emissions as a result of replacement of older vehicles with newer vehicles that meet reduced emission standards.
- 13.6.3 Therefore, there is considered to be a **Negligible (Not Significant)** impact on human receptors.

Ecological Receptors

- 13.6.4 As the effects of the Scheme during the Decommissioning Phase are not expected to be worse than the Construction Phase, the impact is considered to be **Negligible (Not Significant)**.

13.7 Additional Mitigation

- 13.7.1 As no significant effects have been identified for receptors during any phase of the Scheme after the implementation of embedded mitigation, no further additional mitigation measures are required.

14 Socio-Economics

14.1 Overview

- 14.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Socio-Economics. The full Socio-Economics assessment is included in **ES: Chapter 14: Socio-Economics [EN0110014/APP/6.1.14]**.

14.2 Baseline Conditions

- 14.2.1 Baseline data has been collected from a desk-based assessment.

Resident Population

- 14.2.2 There are approximately 16,000 people living in the Local Area to the Order Limits, which is 11% of the total population of South Norfolk. The Local Area has an older population profile compared to the East of England and England as a whole. Population change from 2012 to 2024 for the Study Area shows a general trend of steady growth, typically between 0.5% and 1.5% each year.

Economic Activity and Employment

- 14.2.3 The economic activity rate for South Norfolk from July 2024 to June 2025 was 85%, meaning 85% of the working aged population were either in work, or searching for work. South Norfolk has an unemployment rate of 6.4%, which is considerably higher than Norfolk, Suffolk, the East of England and England. South Norfolk has an employment rate of 79.6% which is above the regional and national averages. The job density for South Norfolk is 0.77, meaning there are 0.77 jobs for every resident of working age, which is lower than regional and national averages.
- 14.2.4 The industry employing the largest number of people in the Local Area is the construction industry (17%), followed by the health sector (12%).

Local Economy

- 14.2.5 Gross Value Added (GVA) per annum across South Norfolk was £3,461 million for 2019 and 2023. This equates to GVA of £51,675 per worker per annum, which is lower than regional and national averages.

Tourism Industry

- 14.2.6 The tourism industry represents 4.2% of total employment in South Norfolk. There are no tourist attractions within the Order Limits, however, there are a number of tourist attractions located near to the Order Limits.

Temporary Accommodation

- 14.2.7 The average number of available rooms in temporary accommodation within South Norfolk over a 12-month period is estimated at 734.

Future Baseline

- 14.2.8 The population of South Norfolk is projected to grow much faster than the regional and national averages, with expectation of a population increase of 8.8% by 2030.
- 14.2.9 Employment activity is expected to decrease by 0.4% in 2028 and 0.3% in both 2029 and 2030.
- 14.2.10 South Norfolk's GVA per worker is expected to increase from £57,369 to £58,291 from 2028 to 2030, which is below the regional and national averages

14.3 Embedded Mitigation

- 14.3.1 The following embedded mitigation measures have been incorporated into the Scheme's design:
- Apprenticeship and trainee opportunities, targeted engagement with local education providers and STEM organisations, and collaboration with council initiatives will be undertaken during the Construction Phase, as set out in the **Outline Employment, Skills and Supply Chain Strategy [EN0110014/APP/7.10]**;
 - Construction services from local contractors and sub-contractors will be used where feasible, as set out in the **Outline Employment, Skills and Supply Chain Strategy [EN0110014/APP/7.10]**;
 - Initiatives to sustain long-term skills development and other community benefits will be embedded in the operational phase to sustain long-term skills development and other benefits to the community. This will include exploring opportunities to work with schools, colleges, and local authorities to deliver targeted outreach activities focused on renewable energy and STEM careers, which may include offering site visits for schools and colleges, and structured work placement opportunities as set out in the **Outline Employment, Skills and Supply Chain Strategy [EN0110014/APP/7.10]**.

14.4 Construction Effects

Jobs, Employment and the Supply Chain

- 14.4.1 The Scheme will create direct, indirect and induced jobs during the Construction Phase. It is anticipated that the Construction Phase would support an average of 278 workers per day, equivalent to 233 full-time equivalent (FTE) jobs. The on-site workforce is expected to peak at approximately 720 workers (604 FTE jobs). After including displacement due to reduction in employment elsewhere in the study areas, the net direct jobs created would be 360 during the Construction Phase. This represents 10.3% of construction employment in South Norfolk, 1.6% of construction employment in Norfolk and 0.2% of construction employment in the East of England. This will have a **Major Beneficial (Significant)** effect in South Norfolk, and a **Minor Beneficial** effect in Norfolk and the East of England.
- 14.4.2 Indirect and induced jobs are anticipated to be 684 in total. However, it is unlikely that all current workers in the construction sector would be available to work on the Scheme. Therefore, of the total 1,044 net direct and indirect jobs created by the Scheme, 29 are anticipated for people living in South Norfolk, 116 elsewhere in Norfolk, 261 in the rest of the East of England, and 638 outside the region. Therefore, the resident-based construction employment impacts are anticipated to be **Negligible (Not Significant)** for South Norfolk, Norfolk and East of England

Skills and the Labour Market

- 14.4.3 The Construction Phase of the Scheme will provide opportunities for upskilling and training, including those outlined in the embedded mitigation. As such, there is expected to be a **Moderate Beneficial (Significant)** effect on skills in South Norfolk.

Temporary Accommodation Market

- 14.4.4 Workers on the Scheme may need to temporarily relocate to the local area for the duration of the construction period. There are an estimated 734 available rooms within South Norfolk, and in a worst-case scenario, 360 construction workers may need to seek temporary accommodation. Therefore, there is expected to be a **Minor Adverse (Not Significant)** impact on temporary accommodation.

Tourism Industry

- 14.4.5 There are no tourism assets within the Order Limits, however, there are a number of tourist attractions, tourist accommodation providers and PRoW located near to the Scheme. There is expected to be a **Minor Adverse (Not Significant)** impact on the tourism industry in South Norfolk.

14.5 Operation Effects

Jobs, Employment and the Supply Chain

- 14.5.1 It is estimated that there will be approximately 120 net direct jobs supported during the operation and maintenance phase based on the peak replacement scenario. These roles will be operation and maintenance crews, landscaping and occasional repair teams, which will not be permanently supported. Therefore, a **Minor Beneficial (Not Significant)** effect is anticipated in South Norfolk.

Skills and the Labour Market

- 14.5.2 The Applicant is committed to supporting education and skills development in the local area, as such there is considered to be a **Moderate Beneficial (Significant)** effect on skills and the labour market in South Norfolk during the peak replacement scenario.

Temporary Accommodation Market

- 14.5.3 In the peak replacement scenario there would be approximately 120 workers needing to seek temporary accommodation, and it is anticipated there will be a **Minor Adverse (Not Significant)** effect on the temporary accommodation market in South Norfolk during operation.

Tourism Industry

- 14.5.4 Indirect effects during the Operational Phase on tourist attractions and tourist accommodation near the Order Limits may relate to visual and glint and glare effects. There is expected to be a **Minor Adverse (Not Significant)** effect.

14.6 Decommissioning Effects

- 14.6.1 As the Decommissioning Phase of the Scheme is not expected to commence until at least 2091, there is no knowledge of the socio-economic context of the area at that time. Therefore, the decommissioning effects of the Scheme are assumed to be not exceed those assessed for the Construction Phase.

14.7 Additional Mitigation

- 14.7.1 As no significant adverse effects have been identified for receptors during any phase of the Scheme after embedded mitigation has been implemented, no additional mitigation measures are required.

15 Soils and Agricultural Land

15.1 Overview

15.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Soils and Agricultural Land. The full Soils and Agricultural Land assessment is included in **ES Volume 1, Chapter 15: Soils and Agricultural Land [EN0110014/APP/6.1.15]**.

15.2 Baseline Conditions

15.2.1 Baseline conditions have been collected by a desk based assessment, a detailed Agricultural Land Classification (ALC) field survey carried out in July and August 2024, and farm interviews and a walkover survey conducted in November 2025. The Study Area for this is limited to the Order Limits.

Agricultural Land Quality

15.2.2 The Order Limits are provisionally mostly undifferentiated Grade 3 land with a small area of Grade 4. Grade 3 land is classified as “good to moderate” quality, whereas Grade 4 is “poor quality” agricultural land.

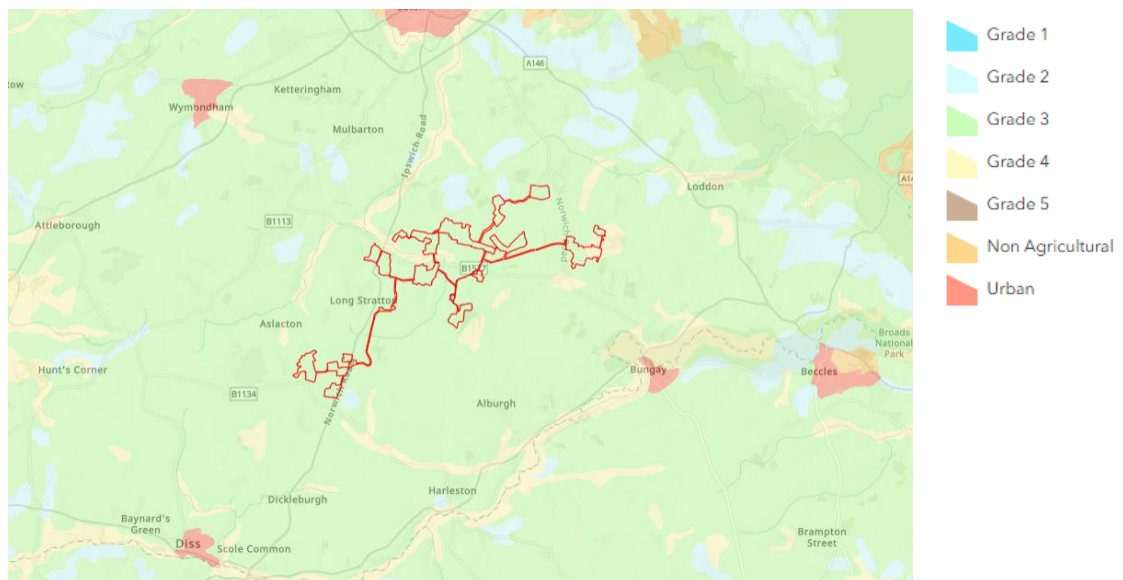


Figure 15.1: Provisional ALC Map for the Order Limits and Surrounding Area

15.2.3 Grade 3 land is split into Grade 3a “good” and Grade 3b “moderate”. Only land with an ALC Grade of 3a or above is classified as Best and Most Versatile (BMV) land. Surveys were conducted within the Order Limits, and shows that the Order Limits include 68.4% of BMV (Grades 1, 2 and 3a) land, 14% of Grade 3b and 2.3% of Grade 4 land.

Agricultural Business

15.2.4 Most of the land within the Order Limits is used for arable cropping, with some parts used for agri-environmental farming, some for biofuels and some parts are grassland grazed by livestock. Within the Sites 1-10, there are no fixed agricultural facilities, with no buildings, irrigation reservoirs, concrete pads or other infrastructure. There are seven farming businesses occupying Sites 1-10 and the BESS Site. None of the land within the Order Limits is used for location-sensitive land uses such as dairy farming.

Future Baseline

15.2.5 In the absence of the Scheme, the current farming practices are likely to continue within the Order Limits. It is anticipated that there would be changes to the type and mix of farming, but continued agricultural use is assumed.

15.3 Embedded Mitigation

15.3.1 The areas identified for solar PV arrays has been reduced within the area surveyed for ALC and micro-siting to minimise the use of BMV particularly relates to fixed equipment and woodland planting.

15.3.2 The following embedded mitigation measures have been incorporated into the Scheme's design:

Construction

- An **Outline Soil and Resources Management Plan (OSRMP) [EN0110014/APP/7.9]** has been developed to guide good practice and minimise potential impacts on soils and agricultural land quality and includes:
 - Minimising or avoiding vehicle movement over soils (trafficking) when soils are in a plastic, wet state;
 - Only moving soils, which is only necessary for limited areas such as to build tracks, the BESS and substation areas, when soils are dry;
 - For the mostly small volumes of soils that need to be stored for subsequent restoration, placing them into storage bunds when they are dry, and managing and maintaining the bunds; and
 - Minimising trench widths, replacing soils in the reverse order and preventing any adverse long-term effects on land quality.

Operation

- Minimising travel over land in vehicles when ground conditions are wet; and
- Implementation of the **Outline SRMP [EN0110014/APP/7.9]**.

Decommissioning

- Following the same timing principles as are to be applied at the Construction Phase; and
- Implementation of the **Outline SRMP [EN0110014/APP/7.9]**.

15.4 Construction Effects

Agricultural Land Quality

15.4.1 The effects of the individual components of the Scheme on Agricultural Land Quality are:

- Temporary Construction Compounds: **Minor Adverse (Not Significant)**;
- Access Tracks: **Minor Adverse (Not Significant)**;
- Ground-mounted PV modules: **Negligible (Not Significant)**;
- Vehicle trafficking: **Negligible (Not Significant)**;
- Cabling: **Minor Adverse (Not Significant)**;
- National Grid Substation: **Minor Adverse (Not Significant)**;
- 132 kV and 400 kV substations: **Minor Adverse (Not Significant)**;
- BESS: **Minor Adverse (Not Significant)**; and
- Green Infrastructure: **Minor Adverse (Not Significant)**.

15.4.2 Individually, these impacts are Not Significant, the cumulative amount of BMV land disturbed short-term temporarily for construction compounds is 11.9 ha. There will be long-term temporary disturbance, that is reversible for 14.0 ha of BMV, resulting in an adverse effect of **Minor Adverse** significance, which is not significant in EIA terms.

15.4.3 The potential permanent loss or downgrading of agricultural land from the tracks, NG Substation, Project Substation and BESS areas, if not restored to comparable quality, could involve 28.9 ha of BMV. If the area of tree planting on BMV land is added to the total for the tracks, NG and Project Substations and BESS, the collective amount of BMV will be 37.9 ha BMV.

The impact on permanent loss of BMV during construction is therefore a **Moderate Adverse (Significant)** effect.

Soils

15.4.4 Soils impacts are broadly similar to the effects on agricultural land. The effect on soils for each of the works include:

- Temporary Construction Compounds: **Minor Adverse**;
- Access Tracks: **Minor Adverse**;
- Ground-mounted PV modules: **Negligible**;
- Vehicle trafficking: **Minor Adverse**;
- Cabling: **Minor Adverse**;
- Substations and BESS: **Minor Adverse**; and
- Green Infrastructure: **Negligible**.

15.4.5 These temporary, reversible impacts on soils are expected to have an overall effect of **Minor Adverse** which is not significant.

Agricultural Business

15.4.6 Construction activity will be controlled so the use of the local highway network is not significantly affected, therefore travel between farmwards and agricultural land will continue uninterrupted. There are no internal tracks within the Order Limits that serve other farmland, so no existing access routes between fields should be affected. Therefore, effects are expected to be **Negligible**.

15.5 Operation Effects

Agricultural Land Quality

15.5.1 There will be no further disturbance to soils during the Operation of the Scheme, therefore, agricultural land quality within the Order Limits will not be affected. Impacts are anticipated to be **Negligible**.

Soils

15.5.2 For the Operational Phase, land will be sown to grassland and managed, including potential grazing by sheep. This is expected to have a temporary positive benefit for soils, as the land may be returned to arable farming use

after decommissioning. However, as the benefits are temporary, the impact is expected to be **Minor** or **Negligible** and not significant.

Agricultural Businesses

- 15.5.3 Impacts to agricultural businesses within the Order Limits are primarily related to a reduction in land availability. The farms will also benefit from the guaranteed income from the diversification of the enterprise base. Impacts are expected to be **Minor Adverse** and not significant.

Wider Food and Economic Effects

- 15.5.4 A proportion of the land currently used for farming cereals will be lost, this may have impacts on direct expenditure on seeds, fertilisers and sprays, sales of produce, and some fixed costs such as machinery running costs. However, introduction of management of sheep involves more labour per ha than arable cropping, and involves purchases of feed, veterinary services and medicine, and livestock, as well as animal transport and machinery running. Therefore, there is anticipated to be a **Negligible** effect.

15.6 Decommissioning Effects

- 15.6.1 On decommissioning, most of the long-term temporary effects will be removed. Only the National Grid Substation and the Grid Connection Infrastructure will remain.

Agricultural Land Quality

- 15.6.2 PV panels, piles and the bases for fixed infrastructure will be removed. Cables will be removed by digging a narrow trench and replacing soils afterward. Sites with Solar PV array will be returned to farmers and landowners. Tracks and the BESS Site will be removed, with original topsoil being returned to the area. Impacts are expected to be **Minor Adverse** and not significant.

Soils

- 15.6.3 Decommissioning can be timed to be carried out when soil conditions are suitable, as set out in the **Outline SRMP [EN0110014/APP/7.9]**. This will cause **Minor Adverse** effects which are not significant.

Farm Businesses

- 15.6.4 During decommissioning, agricultural activity across the Order Limits will be disrupted, sheep grazing may have to be temporarily relocated. The impacts will be **Minor Adverse** and not significant.

15.7 Additional Mitigation

- 15.7.1 No further mitigation measures have been incorporated for the Scheme for any phase as although there is a significant effects anticipated for permanent BMV loss, there are no further measures available.

16 Ground Conditions

16.1 Overview

- 16.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Ground Conditions. The full Ground Conditions assessment is included in **ES: Chapter 16 Ground Conditions [EN0110014/APP/6.1.16]**.

16.2 Baseline Conditions

- 16.2.1 Baseline data was collected from a desk-based assessment and a walkover survey carried out on 20th June 2024. Study Areas vary in distance from the Order Limits depending on the receptor in question: 250 m buffer for Potentially Contaminative Land Uses; 250 m buffer for Human Health Receptors; 250 m for Hydrogeological Receptors (with a 1km buffer used from any 132 kV or 400 kV substation); 250 m used for Hydrological Receptors; 500 m used for Peat Soils; and 250 m used for Mineral Resources.

Geology

- 16.2.2 The main superficial deposit within the Order Limits is the Lowestoft Formation – Diamicton, with thickness ranging from 6 m in the centre of the Order Limits to over 20 m in the north of the Order Limits. The bedrock geology within the Order Limits is the Crag Group ‘sands, gravels, silts and clays’, with Chalk deposits present beneath the superficial deposits across much of the Sites.

Geodiversity

- 16.2.3 Geodiversity includes SSSIs designated for geological purposes, Local Geological Sites (LGS), Regionally Important Geological Sites (RIGS) and County Geodiversity Sites (CGS). The Order Limits are not within 250 m of any geologically designated SSSIs, or within 1 km of a CGS.

Hydrogeology

- 16.2.4 There are several aquifers across the Order Limits, with designations being either Secondary A Aquifers or Secondary Undifferentiated Aquifers.
- 16.2.5 Within 1 km Study Area for the proposed substations, there are 33 private water supplies (PWS) or permitted abstractions, 21 of which are potentially still active. None are close to potential contamination sources, and no risks have been identified. Within the 250 m Study Area for PV arrays and the cable route, there are 52 PWS or permitted abstractions, 41 of which are

potentially still active. Two are close to potential contamination sources, but due to shallow proposed construction and a lack of a viable contamination pathway through the Diamicton, no risks have been identified.

- 16.2.6 The majority of the Order Limits are within a groundwater Source Protection Zone (SPZ) 3. The Order Limits are not located within a groundwater Drinking Water Safeguard Zone.

Hydrology

132 kV and 400 kV Substations

- 16.2.7 There are no statutory Main Rivers within 250 m of any 132 kV or 400 kV substations. There are a series of field drains, small ponds and ditches near several sites which drain to nearby watercourses. The substations are within the catchments of 'Starston Brook Water Body' (**Error! Reference source not found.**), 'Hempnall Beck Water Body' (**Error! Reference source not found.**), Tas (Tasburgh to R. Yare) Water Body' (**Error! Reference source not found.**) and Broome Beck Water Body' (**Error! Reference source not found.**). All of these water bodies have a Moderate or Poor ecological status and previously failed chemical status.
- 16.2.8 There are no recorded permitted surface water abstractions within 1 km of the 132 kV or 400 kV substations. Some substations and the BESS Site are within a surface water Drinking Water Safeguard Zone (DWSZ), but the related pollutants are from farming uses, so are not relevant to proposed electrical infrastructure.

PV Arrays and Cable Route

- 16.2.9 Most of the subsites are not located within 250 m of a statutory main river, with the exception of certain parts of subsites and cable route corridors (CRCs) which are in close proximity to Hempnall Beck and a tributary of the River Tas. There are field drains, small streams and ordinary watercourses within or close to many subsites across the Order Limits. There are no licenced surface water abstractions within 250 m of the subsites for PV arrays or cable routes. Several subsites and CRCs are within a surface water Drinking Water Safeguard Zone, but the related pollutants are from farming uses, so are not relevant to proposed electrical infrastructure.

Potential Ground Conditions Hazards

Potentially Contaminative Land Uses

- 16.2.10 There is a very low risk of potential sources of significant existing contamination across the Order Limits. Some small areas within the Study Area have a history of potentially contaminative land use and are a Source of Potential Contamination (SPC).

Unexploded Ordnance (UXO)

- 16.2.11 UXO may be present within the Order Limits due to prior use and storage within former military airfields and from military activity during the First and Second World Wars.

Minerals

- 16.2.12 There are no Safeguarded Existing Mineral Extraction or Existing Mineral Infrastructure sites within 250 m of the Order Limits. There are no Mineral Site Allocations within 250 m of the Order Limits.
- 16.2.13 The Presence of the Solar PV modules and CRC will temporarily sterilise minerals within parts of the Order Limits. The minerals within the Order Limits are also not considered to be economically viable or practical to extract due to a combination of limited resources and constraints posed by nearby roads, watercourses and residential properties.

Future Baseline

- 16.2.14 In the absence of the Scheme, the future baseline will be expected to remain the same as the current baseline.

16.3 Embedded Mitigation

- 16.3.1 The following embedded mitigation measures have been incorporated into the Scheme's design for the construction, operation and decommissioning phases:
- Scheme layout design to avoid sensitive features or receptors as far as practicable and to locate structures away from areas of potential land instability;
 - Implementation of an **Outline CEMP [EN0110014/APP/6.3.7.1]** including measures such as:
 - Ground investigations and assessment to inform the design of the Scheme;
 - Inclusion of UXO mitigation measures;
 - A Foundation Works Risk Assessment (FWRA) for any structures requiring deep foundations and / or piling;
 - The Construction (Design and Management) Regulations 2015 (CDM) regulate the health, safety and welfare of construction projects and will apply to the Scheme;

- A Hydrogeological Risk Assessment will be undertaken where required at trenchless crossings to assess risks to groundwater and groundwater receptors;
 - Health and Safety measures such as Personal Protective Equipment (PPE) in accordance with related guidance and regulations;
 - Appropriate training of workers in handling and use of potentially hazardous substances;
 - Control of earthworks, material movement and temporary dewatering activities will be undertaken in accordance with appropriate permits and guidance;
 - Measures to minimise exposure to contaminated soils including an awareness briefing;
 - Measures to minimise and control runoff and / or leaching to controlled waters;
 - Measures to protect soils and minimise vegetation disturbance as set out in the; and
 - Implementation of a protocol to deal with unexpected contamination.
- Design mitigation to prevent loss of peat soils; and
 - Implementation of an **Outline DEMP [EN0110014/APP/6.3.7.3]**.

16.4 Construction Effects

Exposure to Existing Potential Contamination

Human Health

- 16.4.1 After the inclusion of embedded mitigation measures, the potential Construction Phase effects on human health receptors from exposure to any pre-existing contamination through ground disturbance are considered **Negligible to Minor** and are not significant.

Hydrology

- 16.4.2 After the inclusion of embedded mitigation, the effects on hydrology receptors from exposure to pre-existing contamination through ground disturbance are considered **Negligible** and are not significant.

Hydrogeology

- 16.4.3 After the inclusion of embedded mitigation, the effects on hydrogeology receptors from exposure to pre-existing contamination through ground disturbance are considered **Minor** and are not significant.

Sterilisation of Safeguarded Minerals

- 16.4.4 The construction of the PV arrays and some areas of CRCs 6, 7 and 8 will occur within areas of safeguarded mineral deposits. The piled foundations for the PV arrays will not require excavation, therefore will not disturb the mineral. Cable trenches will require excavation with will disturb the mineral, however these excavations will be replaced after works are completed. Therefore, a **Negligible** impact is expected which is not significant.

Loss of Peat Soils

- 16.4.5 Peat soils have been identified within CRC7, adjacent to Hempnall Beck, within a County Wildlife Site and within an area of irreplaceable fenland habitat. Therefore, a trenchless crossing will be used in this area, meaning the impact will be **Negligible** and not significant.

16.5 Operation Effects

Exposure to Existing Potential Contamination

Human Health

- 16.5.1 With the inclusion of the embedded mitigation measures, potential Operational effects on human health from exposure to contamination through ground disturbance are expected to be **Minor** and not significant.

Hydrology

- 16.5.2 After the implementation of embedded mitigation measures, Operational effects on hydrological receptors due to contamination are expected to be **Negligible** and not significant.

Hydrogeology

- 16.5.3 After embedded mitigation, operational impacts on hydrogeological receptors from contamination are anticipated to be **Minor** and not significant.

Sterilisation of Safeguarded Materials

- 16.5.4 During Operation, any mineral resources will be inaccessible for extraction, but the Scheme will not permanently sterilise the underlying safeguarded materials. Therefore, there is expected to be a **Negligible** impact.

16.6 Decommissioning Effects

- 16.6.1 With the inclusion of embedded mitigation measures, the impacts of the Decommissioning Phase are likely to be similar to but of a lower intensity than the construction phase activities, and the effects are therefore the same as those assessed at the Construction Phase.

16.7 Additional Mitigation

- 16.7.1 As no significant effects have been identified during any phase of the Scheme, no additional mitigation measures are required.

17 Electromagnetic Fields

17.1 Overview

17.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Electromagnetic Fields (EMF). The full Electromagnetic Fields assessment is included in **ES: Chapter 17 Electromagnetic Fields [EN0110014/APP/6.1.17]**.

17.2 Baseline Conditions

17.2.1 Baseline conditions have been collected by a desk-based study.

17.2.2 There is an existing 400 kV overhead cable route and electrical infrastructure within the area surrounding the Order Limits. The minimum distance to be maintained between human health receptors and existing overhead line cables is 15 m. The Scheme will use the existing overhead 400 kV cables and implement a diversion to the existing network.

17.2.3 There will be no change to the future baseline for EMF in the absence of the Scheme.

17.3 Embedded Mitigation

17.3.1 The following embedded mitigation measures will be implemented as part of the Schemes design:

- There will be a setback distance maintained of at least 15 m for the existing 400 kV cables from human health receptors;
- Electric fields will be contained within the 132 kV and 400 kV underground cable's protective insulation and sheath. Electrical fields from the underground power cables will be shielded by surrounding cable duct and conducting soil; and
- All proposed cables will be UK Conformity Assessed (UKCA) and / or European Conformity (CE) marked.

17.4 Construction Effects

17.4.1 Cables will not be powered during the Construction of the Scheme. Therefore, there will be no effects of EMFs during the Construction Phase.

17.5 Operation Effects

- 17.5.1 Safe levels of magnetic fields and electric fields should not exceed 100 microtesla (μT) (for magnetic fields) and 5 kV m^{-1} (for electric fields).
- 17.5.2 During the operational phase, underground cables will operate at a maximum voltage of 400 kV, with the maximum magnetic field strength at 1 m above ground measuring at $95 \mu\text{T}$, which is below the limit, so impacts are expected to be **Minor** and not significant. Electric fields are contained within the cables protective insulation, so no external electric fields are expected to occur from the underground cables.
- 17.5.3 The magnetic field strength for 400 kV overhead cables, with a 7.6 m ground clearance measures $81 \mu\text{T}$ which is less than the reference limit of $100 \mu\text{T}$ for magnetic fields. Therefore, the impact is anticipated to be **Minor** and not significant.
- 17.5.4 The maximum electric field strength for the existing 400 kV overhead cables measures 10 kV m^{-1} . This is above the safe level of 5 kV m^{-1} , however, there will be a distance of at least 15 m between the overhead cables and receptors, so the electric field strength will be less than the reference limit. Therefore, there will be a **Minor** impact which is not significant.
- 17.5.5 The Scheme will result in **No Significant** residual adverse EMF effects on human health.

17.6 Decommissioning Effects

- 17.6.1 Cables will not be powered during Decommissioning. Therefore, there will be no effects of EMFs during the Decommissioning Phase.

17.7 Additional Mitigation

- 17.7.1 As no likely significant effects have been identified, no additional mitigation measures are required.

18 Other Environmental Matters

18.1 Overview

18.1.1 This chapter considers the likely significant environmental impacts of the Scheme in relation to Other Environmental Matters. These Other Environmental Matters include Telecommunications, Utilities and Television; Waste and Materials; Major Accidents and Disasters; Glint and Glare; and Human health. The full Other Environmental Matters assessment is included in **ES: Chapter 18 Other Environmental Matters [EN0110014/APP/6.1.18]**.

18.2 Major Accidents and Disasters

Baseline Conditions

- 18.2.1 The Study Area for Major Accidents and Disasters is within 5 km of the Order Limits.
- 18.2.2 The Scheme is not located within a safeguarding zone of an explosives site, or within Health and Safety Executives (HSE) hazardous substances consented sites. There are no hazardous substances anticipated to be stored on site during any phase of the development. The Scheme is located within HSE's land use planning consultation zones for major accident hazard pipelines for the Gas Power Services Site, and Natural Gas 5 Feeder pipeline. There are no designated Control of Major Accident Hazards Regulations 2015 (COMAH) Sites within 3 miles of the Scheme.
- 18.2.3 Future baseline in the absence of the scheme is expected to be the same as the existing baseline.

Embedded Mitigation

- 18.2.4 Mitigation measures embedded into the Scheme design include:
- Mitigation is set out in the **Outline CEMP [EN0110014/APP/7.1]**, **Outline OEMP [EN0110014/APP/7.2]**, **Outline DEMP [EN0110014/APP/7.3]**, **Outline BSMP [EN0110014/APP/7.5]**, **Outline CTMP [EN0110014/APP/7.6]** and the **Flood Risk Assessment [EN010168/APP/6.3]**; and
 - Measures include minimising spills, offsetting from sensitive receptors, and the preparation of relevant risk assessments

Impacts

18.2.5 Potential impacts may include:

- Electrical Fires and explosions;
- Aviation incidents
- Control of Major Accident Hazards Regulations 2015 (COMAH) Sites;
- Utilities damage / strike;
- Unexploded Ordnance (UXO);
- Unstable ground conditions;
- Traffic and road accidents;
- Climate change and extreme weather-related events;
- Accidental spillages;
- Infestation / spread of vegetation pests and diseases; and
- Crime / terrorism.

18.2.6 It is considered that all major accident and disaster risk events associated with the construction, operation and decommissioning of the Scheme will be appropriately mitigated through the embedded mitigation. No significant major accident and disaster effects are therefore expected.

18.3 Telecommunications, Utilities and Television

Baseline Conditions

18.3.1 There are multiple cables, pylons, and pipelines crossing the Order Limits which are owned and operated by a number of different utilities providers. On-site utilities could include water, sewers, gas or oil pipelines and electrical cables. There are no telecommunications masts located within the Order Limits, however there are a number of telecommunications assets including underground and overhead cabling. On-site utilities include water, gas and oil pipelines and electrical network. The areas television service is predominantly serviced by the Tacolneston transmitting station, approximately 6.5 km west of the Order Limits.

18.3.2 Future baseline in the absence of the Scheme is not expected to be substantially differed to the existing baseline.

Embedded Mitigation

18.3.3 Mitigation measures embedded into the Scheme design include:

- Liaison with all utility providers with assets in the area;
- Locating the Scheme outside of utilities protected zones;
- Above and below ground infrastructure will be located with adequate offsets / buffers from existing telecommunications and utility infrastructure where possible;
- Use of ground penetrating radar before excavation to identify unknown utilities;
- Use of Trenching and horizontal directional drilling to lay cabling where crossings are required;
- Adherence to safe working guidance beneath any overhead lines during the Construction Phase; and
- Safe working measures will be in place for work near buried utilities.

Impacts

18.3.4 The Scheme is unlikely to interfere with telecommunications infrastructure due to low heights of the solar PV arrays, and the nature of solar development. Substations delivered by the Scheme will be the subject of consultation with National Grid Electricity Transmission plc and relevant undertakers. An existing dual circuit 400 kV overhead line will be diverted as part of the scheme, with up to six new pylons built. The new proposed pylons are of similar height to previous infrastructure so impacts are not expected to increase. After the implementation of embedded mitigation, there is expected to be no adverse likely significant effects on telecommunications infrastructure during construction, operation and maintenance and decommissioning phases. Likewise, there are no adverse likely significant effects predicted for utilities or television.

18.4 Glint and Glare

Baseline Conditions

18.4.1 Study areas for Glint and Glare impacts vary by receptor. Consideration has been given to major national and regional roads within 1 km of the solar PV panel areas; residential dwellings within 1 km of the panel areas; railway receptors within 500 m of the panel areas; and aerodromes within 15 km of the panel areas.

18.4.2 Existing baseline conditions were collected from a desk-based review. Six airfields have been identified within the Study Area:

- Seething Airfield, 560m east;
- Long Stratton Airfield, 2.14km south-west;
- Hardwick Airfield, 30m south;
- Topcroft Farm Airfield, 1.10km south-east;
- Nut Tree Farm Airfield, 2.31km south; and
- Norfolk Gliding Airfield, 1.88km east.

18.4.3 Road receptors have been identified along the A140 and the B1527, and 482 dwelling receptors have been identified within the Study Area.

18.4.4 The future baseline in the absence of the Scheme is expected to remain the same.

Embedded Mitigation

18.4.5 Mitigation measures embedded into the Scheme design include:

- Screening in the form of proposed vegetation for separate 300 m, 400 m and 500 m sections of the B1527 and 46 dwellings to obstruct views. Full details of landscape mitigation is presented in the **Outline LEMP [EN0110014/APP/7.4]**.

Impacts

Construction and Decommissioning Phase

18.4.6 Installation of PV panels as part of construction may cause glint and glare impacts. However, during construction and decommissioning, less PV panels will be present than in the Operational Phase and as a worst-case scenario there will be the same level of panels as in operation which for, as concluded below, there are no likely significant effects. Therefore, no significant effects are anticipated during construction or decommissioning.

Operational Phase

18.4.7 Solar reflections from the scheme may affect 4.2 km of the A140, 7.9 km of the B1527, 482 dwellings and the approach path or landing path of all assessed aerodromes. Screening from existing vegetation, buildings and intervening terrain is expected to obstruct the reflecting panels for the entire 4.2 km of the A140, 5.8 km of the B1527 and 414 dwellings, with additional embedded mitigation planting to obstruct or reduce the impact on the remaining section of the roads and dwellings. Pilots are expected to employ

mitigation in line with industry safe practices. After embedded and further mitigation, no significant effects are anticipated.

18.5 Waste and Materials

Baseline Conditions

Non-Hazardous Landfill Capacity

- 18.5.1 The East of England has a total inert and non-hazardous landfill capacity of 52.6 million m³ as of 2024, which is an increase of 2.9% since 2019.

Hazardous Landfill Capacity

- 18.5.2 The East of England does not have any hazardous waste landfill facilities with capacity information published under Environmental Agency conditional licencing, therefore capacity must be considered at a national level. England has a capacity has a hazardous landfill capacity of 9.17 million m³. Capacity has decreased by 50.3% from 2019-2024.

Waste Management

- 18.5.3 Sufficient capacity already exists in Norfolk to accommodate the forecast growth waste production until 2038. As of 2021, there were 88 operational waste treatment and transfer sites in Norfolk County Council's area. In Norfolk, the maximum existing waste management capacity of operational sites is 3.755 million tonnes per annum, 1.1 million of which is dedication to handling inert and construction and demolition waste arisings.

Future Baseline

- 18.5.4 In the absence of the Scheme, landfill capacity is assumed to stay the same as predicting future capacity is unrealistic due to its cyclical nature.

Embedded Mitigation

- 18.5.5 Mitigation measures embedded into the Scheme design include:
- In accordance with the waste hierarchy (Ref 18-20), the Scheme will prioritise waste prevention, then reuse, recycling and recovery, with landfill disposal as a last resort; and
 - All waste management will comply with relevant industry regulations and legislation.

Construction

- A pre-fabrication approach (assembly of components within a factory or manufacturing site) will be taken to reduce construction waste;

- Uncontaminated excavated soil and stone will be reused on site where feasible;
- The **Outline CEMP [EN0110014/APP/7.1]** will set out a Site Waste Management Plan (SWMP), which will detail the management, storage and disposal of materials, and a Construction Resource Management Plan (CRMP), which will outline the approach to managing labour, materials and equipment; and
- The location of temporary construction compounds will minimise the amount of excavation and construction waste required for hardstanding for access, material storage and welfare unit placement.

Operational

- The waste hierarchy will be adhered to, with landfill disposal only considered as a last resort;
- Waste management will comply with relevant regulations;
- Waste electronics and electrical equipment (WEEE) generated, including PV panels and Ancillary Infrastructure, will be recovered and recycled by an authorised reprocessor; and
- Batteries will be recovered, recycled or disposed of in accordance with the Waste Batteries and Accumulators Regulations 2009.

Decommissioning

- All infrastructure will be removed, recycled, recovered or disposed of in accordance with good practice and market conditions; and
- The decommissioning of the Scheme will adhere to the measures and procedures outlined in the **Outline DEMP [EN0110014/APP/7.3]**, including maximising the recycling and reuse of Scheme components at the end of their life.

Impacts

Construction

- 18.5.6 After embedded mitigation, total quantities of construction waste is anticipated to be 37,600 m³, of which only small amounts are expected to be hazardous waste. Waste production per year is equivalent to 0.18% of Norfolk's 2024 construction and demolition waste capacity. Even in a worst-case scenario where all waste generated is disposed to landfill, this is equivalent to 0.07% of inert or non-hazardous landfill void capacity for the East of England. The impact to inert and non-hazardous waste capacity and hazardous waste capacity are both expected to be **Slight Adverse** which is **not significant**. For materials, the estimated consumption of steel, concrete and aggregates is less than 1% of the regional (or for steel, national)

baseline availability and therefore the effects are anticipated to also be **Slight Adverse** and **not significant**.

Operation

- 18.5.7 After embedded mitigation, annual operational waste is 14.7 m³ of inert and non-hazardous waste and 7.19 m³ of WEEE (PV Panels) and BESS. Even if, in a worst-case scenario, all waste is disposed to landfill, the Scheme will have a **Neutral to Slight Adverse** impact on regional inert and non-hazardous waste capacity. In a peak replacement scenario, waste generation would represent up to 0.22% of Norfolk's construction and demolition waste capacity, and 0.06% of the East of England's inert or non-hazardous landfill capacity, while an estimated 1,830 m³ of WEEE and BESS waste would equate to 0.22% of national hazardous landfill capacity. No Significant impacts are expected for non-hazardous or hazardous waste.

Decommissioning

- 18.5.8 Decommissioning of the Scheme is expected to generate 143,000 m³ of inert and non-hazardous waste; 43,400 m³ of WEEE and BESS; and 21,300 m³ of large installations for disposal. This would equate to 10.7% of Norfolk's annual construction and demolition waste handling capacity, and, in a worst-case scenario where all waste is disposed in landfill, equates to 0.24% of the East of England's non-hazardous landfill capacity. For hazardous waste, a worst-case estimate of 2,170 m³ of WEEE and BESS waste, and up to 1,060 m³ of potentially hazardous material from large-scale installations is expected to be disposed of in landfill, representing 0.02% and 0.01% respectively of national hazardous landfill capacity. Material and resource requirements for decommissioning are likely to be minimal. No significant effects are anticipated on waste or materials.

18.6 Human Health

Baseline Conditions

Population Profile

- 18.6.1 The study area comprises approximately 45,200 residents with a near-even gender distribution (51% female and 49% male). The population has an older demographic compared to regional and national averages, with 28% of residents aged 65 years or older. 56.4% of the population are working age adults (16-64 years), and 15.6% are children and young people (0-15 years). The population is predominantly White (98%).

Health Profile

- 18.6.2 Approximately 45% of residents describe their health as 'very good', with 1% of residents describing their health as 'very bad'. 18.5% of residents within the study area reported being disabled, which is slightly lower than regional rates (20.2%), but higher than the national average (17.3%). The average

life expectancy is 83.8 years for females and 79.9 years for males. Males are expected to live to age 62 in good health, while women are expected to live to age 63 in good health.

- 18.6.3 The top four types of long-term ill health in Norfolk are cancer, heart or cardiovascular disease (CVD), musculoskeletal (MSK) conditions and poor mental health.

Wider Determinants of Health

- 18.6.4 56.9% of residents aged 16 years and over are economically active. The unemployment rate is 1.7%, with full-time students account for 1.2% of the population. Travel-to-work patterns show that 32% of residents work mainly from home, while 57% commute by car or van. Active travel modes are limited, with 4.5% walking and 1.2% cycling. Most commutes are over longer distances, with 17.8% travelling 10-20 km and smaller proportions travelling over 20 km.
- 18.6.5 Across the Study Area, deprivation levels are generally low. The baseline indicated that the area is relatively affluent with low levels of deprivation, though rural accessibility and educational attainment present local challenges.
- 18.6.6 The Study Area has 2,789 households experiencing fuel poverty (where a household spends more than 10% of their income on energy costs), representing a rate of 14.1%.

Climate Change

- 18.6.7 Recent climate trends show an increase in extreme weather events, which pose risks to vulnerable populations and health systems. Norfolk recorded its first 40 °C day in 2022, during which heat-related mortality increased by 18%, equating to 242 excess deaths compared to the five-year average. Winter mortality in 2023–24 was 10.2% higher than the previous four-year average, primarily due to cardiovascular and respiratory conditions. Warmer, drier conditions have increased wildfire risk, with Norfolk experiencing 45 wildfires in 2022, a 96% rise from 2021.

Future Baseline

- 18.6.8 The population is expected to rise by 8.8% between 2024 and 2030. Employment activity is expected to decline slightly by 0.3-0.4% through to 2030. Unemployment is expected to fall to 6.2% above baseline by 2030.
- 18.6.9 The absence of the Scheme is not anticipated to alter the future climate baseline. Water environment conditions are expected to remain similar with potential increases in peak river flow and peak rainfall intensity. Air Quality is expected to improve over time due to reductions in pollution, cleaner vehicles and national decarbonisation policies.

Embedded Mitigation

18.6.10 Mitigation measures embedded into the Scheme design are described throughout the ES and those applicable to human health include:

Construction

Climate Change

- Adoption of the Considerate Constructors Scheme;
- Efficient plant use, regular maintenance and promotion of low-carbon travel for construction workers;
- Climate-resilient design measures;
- Worker protection through adaptive working practices and monitoring of weather and flood warnings; and
- Controls secured through the **Outline CEMP [EN0110014/APP/7.1]**, **Flood Risk Assessment [EN0110014/APP/9.1]** and **Outline BSMP [EN0110014/APP/7.5]**.

Water environment

- Management of runoff and pollution through bunding, silt traps, filter drains and spill response measures;
- Use of underground cabling and trenchless techniques beneath watercourses and flood risk areas;
- Control of construction water demand through water neutrality measures and off-site wastewater disposal; and
- Secured through the **Outline CEMP [EN0110014/APP/7.1]** and **Water Resources Assessment [EN0110014/APP/6.3.9.3]**.

Landscape and Visual

- Protection of existing trees and vegetation through surveys, exclusion zones and arboricultural methods;
- Temporary visual screening for sensitive receptors, good site housekeeping and dust suppression near residential receptors and PRowS; and
- Control of construction lighting to minimise light spill and restoration of disturbed ground and hedgerows in accordance with the **ES: Appendix 7.11 Lighting Strategy [EN0110014/APP/6.3.7.11]** and the **Outline LEMP [EN0110014/APP/7.4]**.

Transport and Access

- Defined construction access routes, use of internal haul roads and minimisation of vehicle movements through local communities;
- Delivery scheduling, abnormal load management and workforce travel controls under the **Outline Construction Traffic Management Plan (OCTMP) [EN0110014/APP/7.6]**; and
- Wider environmental controls delivered through the **Outline CEMP [EN0110014/APP/7.1]**.

Air Quality

- Dust and emission controls for construction activities and non-road mobile machinery, secured via the **Outline CEMP [EN0110014/APP/7.1]**; and
- Promotion of sustainable worker travel through the Framework Construction Worker Travel Plan within the **Outline CTMP [EN0110014/APP/7.6]**.

Socio-Economics

- Local employment opportunities, apprenticeships, training and supply chain engagement. Secured through the **Outline Employment, Skills and Supply Chain Strategy [EN0110014/APP/7.10]**.

Soils and Agricultural Land

- Timing, trafficking and reinstatement measures to reduce soil compaction and disturbance. Secured through the **Outline Soil Resource Management Plan (OSRMP) [EN0110014/APP/7.9]**.

Ground Conditions

- Layout optimisation of the Scheme, Ground investigations, UXO risk mitigation, foundation risk assessments and adherence to statutory health and safety requirements.

Operation

- Implementation of climate resilience and environmental controls through the **Outline Operational Environmental Management Plan (OOEMP) [EN0110014/APP/7.2]**;
- Long-term air quality and wellbeing benefits delivered through woodland, hedgerow and habitat management secured by the **Landscape and Ecological Management Plan (LEMP) [EN0110014/APP/7.4]**. Management of limited operational traffic through the **Outline**

Operational Traffic Management Plan (OOTMP) [EN0110014/APP/7.7];

- The implementation of the **Outline Public Rights of Way and Permissive Paths Management Plan [EN0110014/APP/7.8]**, which provides a framework for the management of routes throughout the Scheme;
- Ongoing community engagement, education and skills initiatives delivered through the **Employment, Skills and Supply Chain Strategy [EN0110014/APP/7.10]**; and
- Potential EMF effects are avoided through design compliance rather than operational mitigation measures. Adherence to ICNIRP guidelines, cable burial and setback distances secured through the **Design Principles, Parameters and Commitments [EN0110014/APP/3.1]**.

Decommissioning

- Management of transport movements, dust, noise, soil disturbance and water quality through the **Outline DEMP [EN0110014/APP/7.3]**;
- Application of resilience based and lower carbon approaches, set out in the **Outline DEMP [EN0110014/APP/7.3]**; and
- Retention of flexibility to reflect future technological, regulatory and environmental change while maintaining protection of human health.

Impacts

- 18.6.11 After embedded mitigation, no significant impacts relevant to Human Health are expected for Climate Change; Water Environment; Landscape and Visual; Transport and Access; Air Quality; Noise and Vibration; Socio-Economics; Soils and Agricultural Land; Ground Conditions; or Electromagnetic Fields.

19 Cumulative and In-Combination Effects

19.1 Introduction

19.1.1 This chapter of the NTS provides a summary of the potential likely in-combination effects between topics. There are two types of cumulative effects:

- In-Combination Effects: Effects interactions and combination of different environmental residual (post-additional mitigation) effects from within the Scheme affecting a single receptor; and
- Cumulative Effects – Potential impacts arising from two or more development that are reasonably foreseeable and / or consented, but not yet part of the existing baseline environment. These developments, if in proximity to the Scheme, may lead to cumulative effects on the same receptor. Each topic chapter within the **ES: Chapters 6-18 [EN0110014/APP/6.1.6 – 6.1.18]** sets out how the particular topic area has considered and assessed the cumulative effects.

19.1.2 A list of proposed schemes that overlap the Order Limits or are located close enough to the Scheme that they have the potential to generate significant cumulative effects have been identified.

19.1.3 The list of developments of cumulative developments is set out in Appendix 2 of this report. These developments were screened to assess their potential interaction with the Scheme and a short list of cumulative developments was produced to inform the cumulative effects assessment. The short list of developments are shown on **ES Appendix 2.4 Cumulative Schemes [EN0110014/APP/6.3.2.4]**.

19.2 Cumulative Effects Assessment

19.2.1 The assessment of cumulative effects arising from the Scheme in combination with other proposed Schemes (inter-project effects) is based on a review of current submitted planning applications, as well as a study of planning policy documents.

19.2.2 An assessment of the cumulative effects of the Scheme along with the shortlisted cumulative developments has been presented in each technical chapter **ES Volume 1, Chapter 6 to 18 [EN0110014/APP/6.1]**.

19.2.3 Within the majority of technical chapters, no likely significant effects have been identified through the cumulative effects assessment where they were not already predicted for the Scheme in isolation.

- 19.2.4 Four technical chapters identified significant cumulative effects, with all other chapters not experiencing any significant cumulative effects.

Chapter 9: Water Environment

- **Beneficial (Significant)** effect on water quality in cumulation with other solar schemes due to the pausing of agricultural activities during operation.

Chapter 14: Socio-Economics

- **Major Beneficial (Significant)** effect on jobs, employment and the supply chain in South Norfolk, a **Moderate Beneficial** cumulative effect in Norfolk and a **Moderate Beneficial** cumulative effect in the East of England region during the construction phase;
- **Moderate Beneficial (Significant)** effect on skills and the labour market in South Norfolk during the construction phase;
- **Moderate Beneficial (Significant)** impact on Jobs, Employment and the Supply Chain in South Norfolk during the operational phase; and
- **Moderate Beneficial (Significant)** impact on Skills and the Labour Market during the operational phase.

Chapter 15: Soils and Agricultural Land

- **Moderate Adverse (Significant)** effect due to the loss of BMV agricultural land during decommissioning.

Chapter 18: Other Environmental Matters

- **Moderate Adverse (Significant)** effect for hazardous waste capacity during operation for Waste and Materials. Expected to be generate by cumulative effects from all cumulative schemes assessed; and
- **Moderate or Large Adverse (Significant)** effect for hazardous waste capacity during decommissioning for Waste and Materials. Expected to be generated by cumulative effects from all cumulative schemes assessed.

19.3 In-Combination Effects Assessment

- 19.3.1 In-combination effects occur when receptors are subject to residual effects under more than one environmental topic.

19.3.2 To aid the assessment of in-combination effects, screening has been undertaken to identify 'receptor groups' based on whether a receptor is exposed to more than one type of effect. The term 'receptor group' is used to highlight where potentially sensitive groups of receptors have been identified through the EIA process to date. The following 'receptor groups' have been identified:

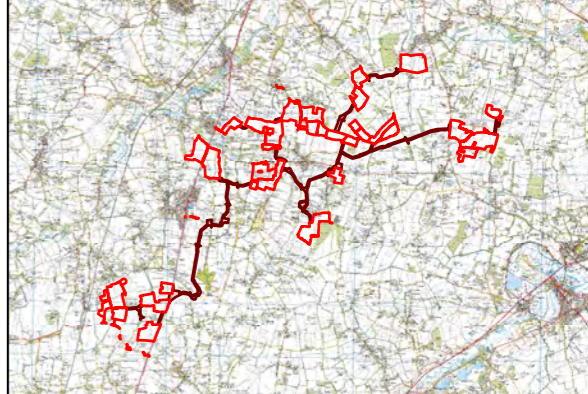
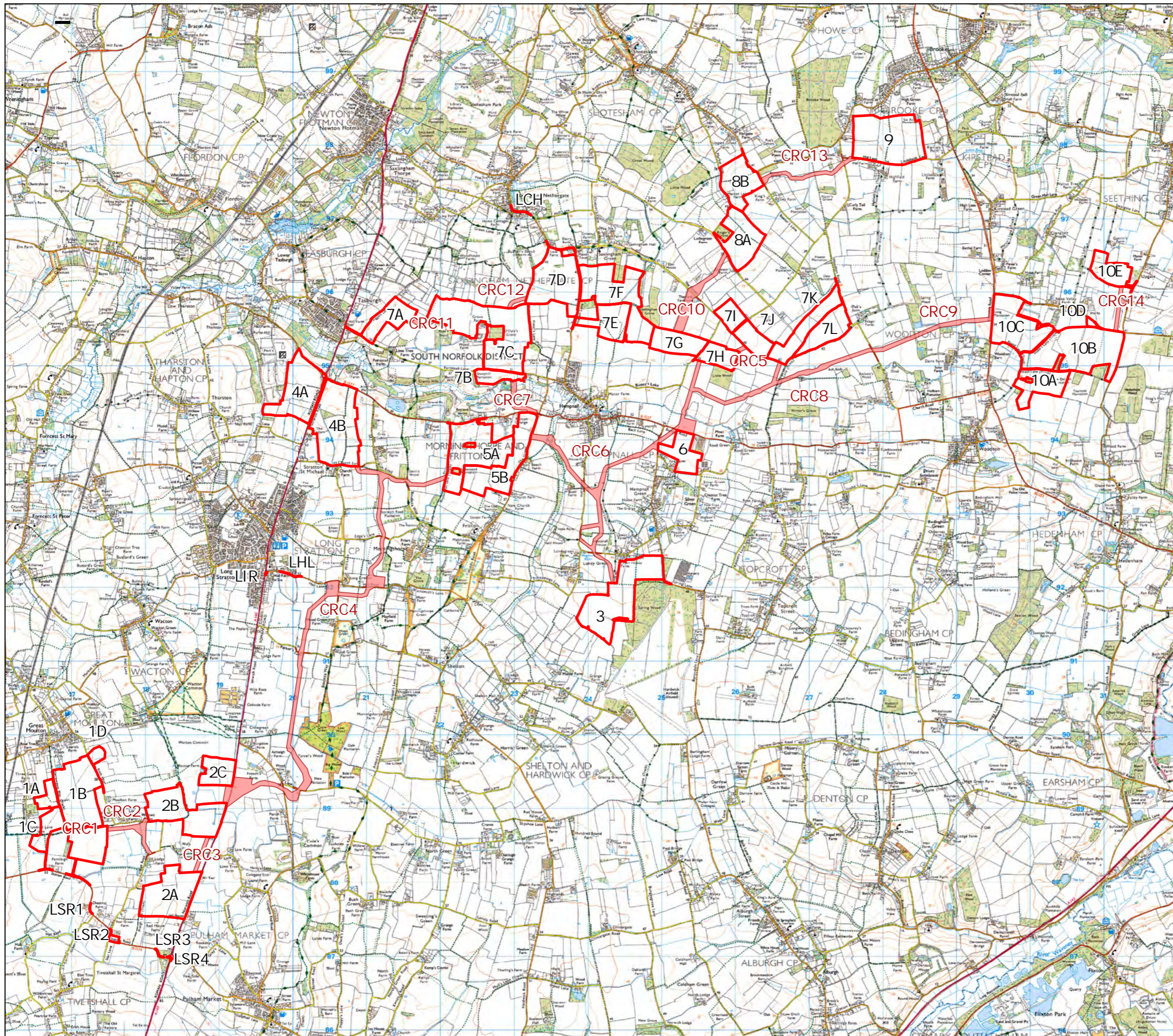
- Residents and occupants/users of surrounding land uses, including places of work and the local road network;
- Users of PRow and walking routes;
- Heritage assets, including Listed Buildings , Conservation Areas and archaeological sites; and
- Ecologically-designated sites and priority habitats.

19.3.3 **ES Volume 1, Chapter 19: Cumulative and In-Combination Effects [EN0110014/APP/6.1]** summarises the potential effect interactions. **Significant** effect interactions are anticipated for the receptor group of local residentials and users of the local area as a result of the construction and decommissioning phases of the Scheme. **Significant** in-combination effects have also been identified during the operational phase for local residents and user of the local area and ecologically-designated sites.

20 Summary of Residual Effects

- 20.1.1 The ES presents the final findings and conclusions associated with the Scheme in **ES Volume 1, Chapter 20 Summary of Residual Significant Effects [EN0110014/App/6.1.20]**.
- 20.1.2 A number of embedded and additional mitigation measures have been identified to mitigate and control environmental effects during the construction, operational and decommissioning phases of the Scheme. These are secured through appropriate requirements and other controls within the DCO for the Scheme.

Appendix A



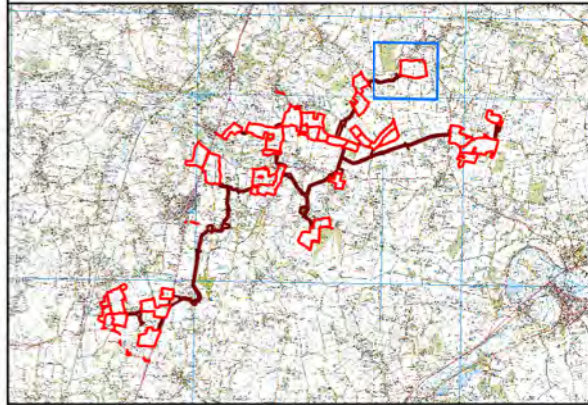
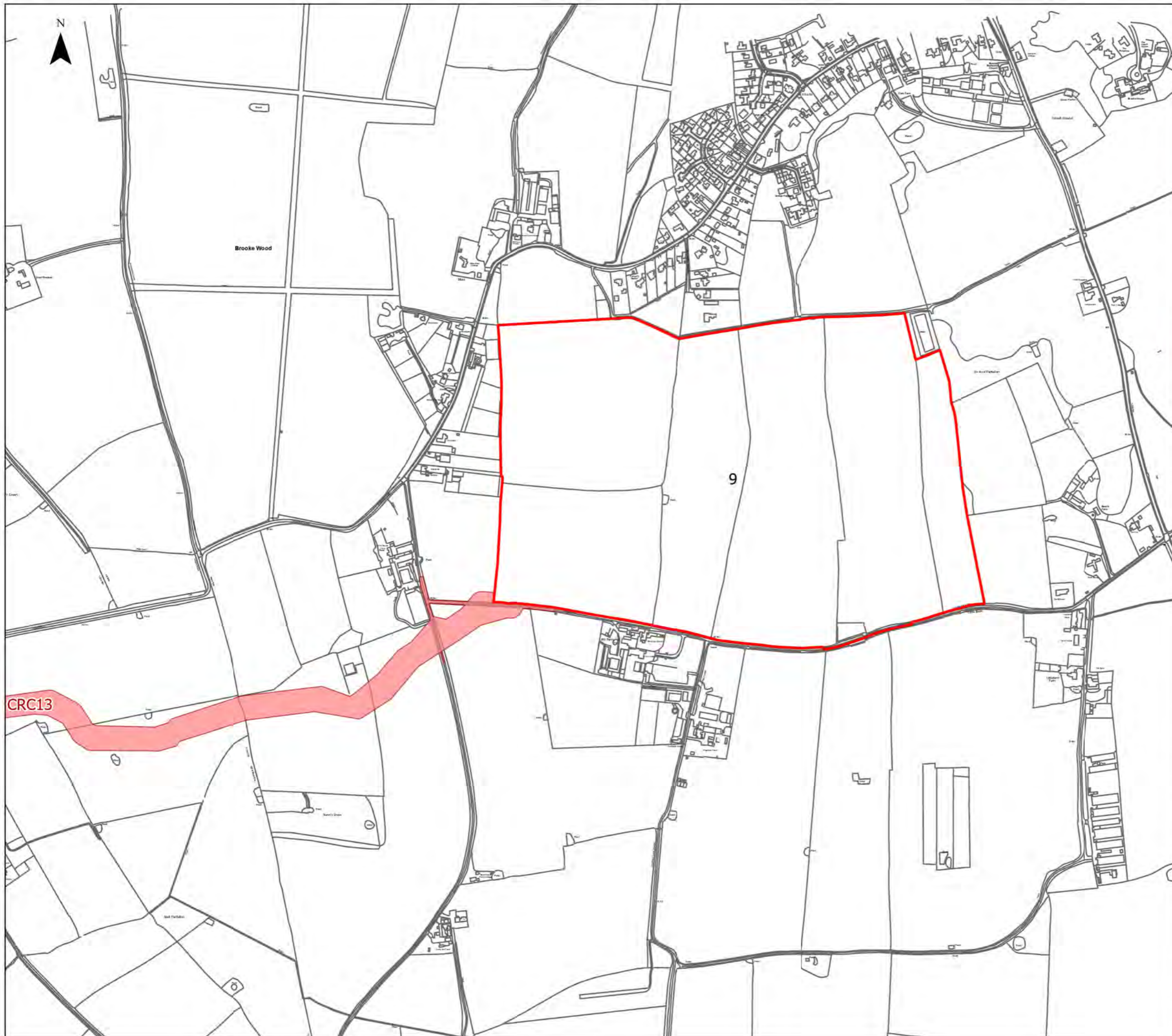
Legend
 Sites
 Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
 © Crown copyright and database rights 2025 Ordnance Survey AC0000849896

0 1 2 km
 1:50,000 @ A3

APFP Regulation 5(2)(a):	Application Doc No 6.4.
Ref: Site Location Plan	Date: 16/02/2026
Drawn: TL	Checked: LB

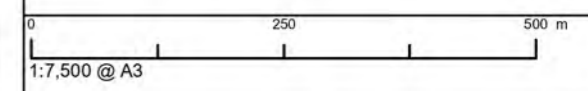
Figure 1.1: Site Location Plan
 Overview Plan
 Revision A



Legend

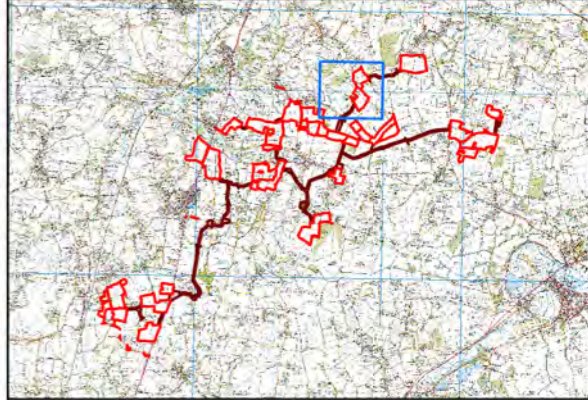
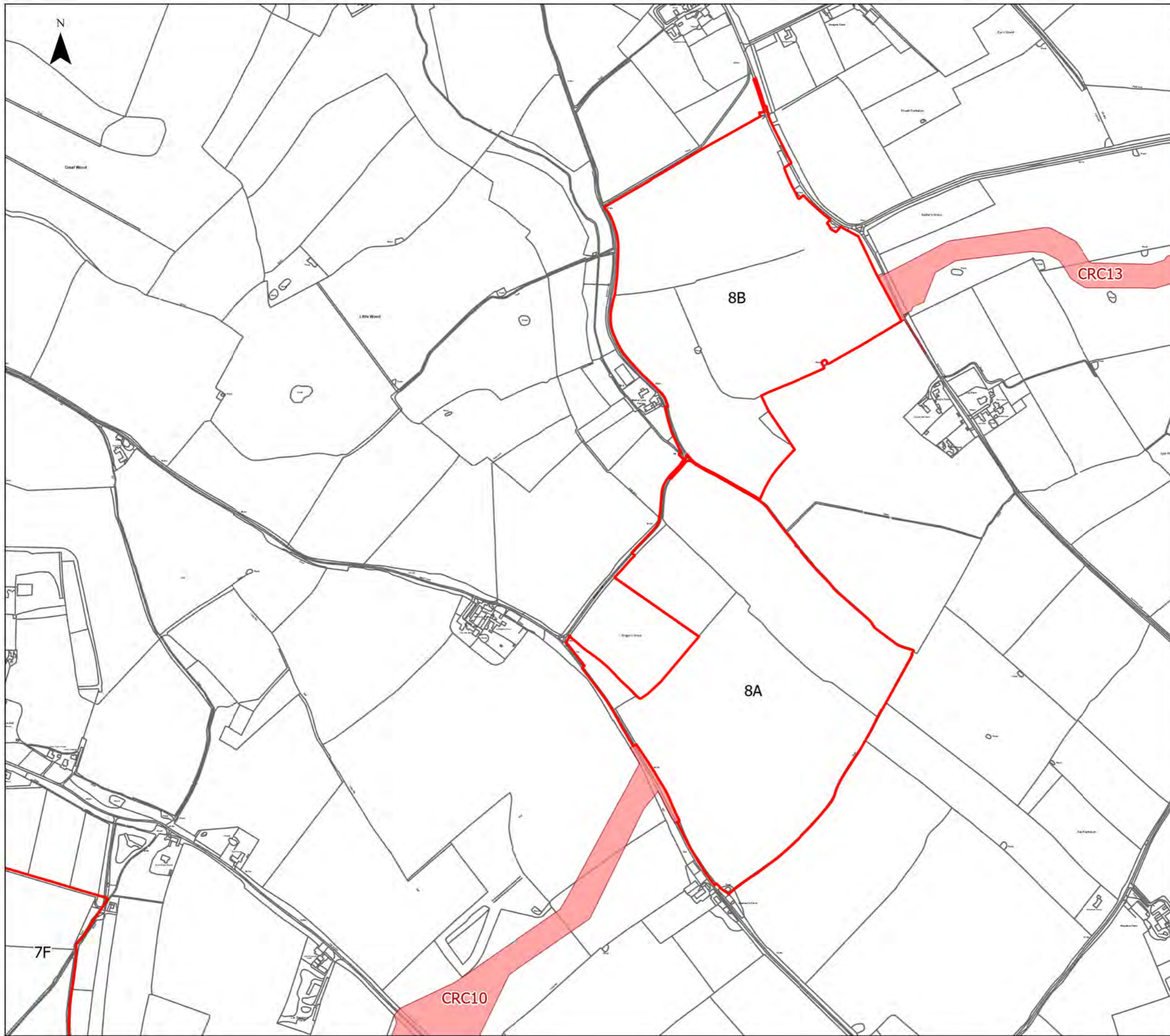
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

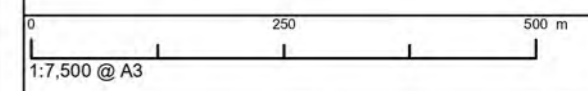
Figure 1.1: Site Location Plan
Sheet 1 of 19
Revision A



Legend

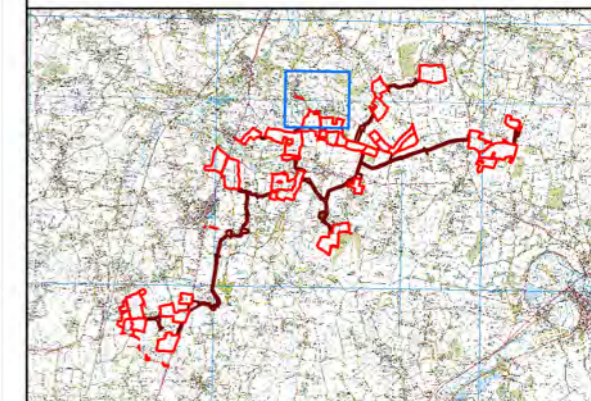
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
Sheet 2 of 19
Revision A



Legend

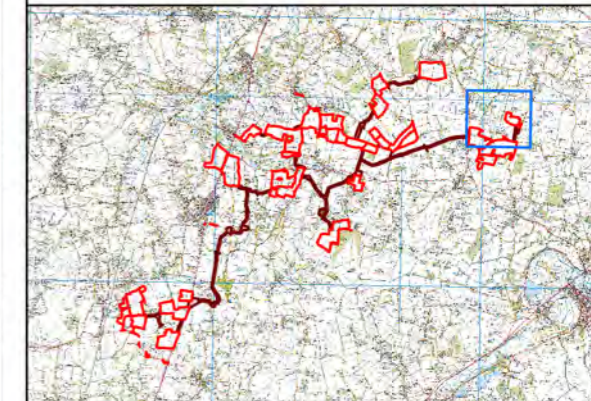
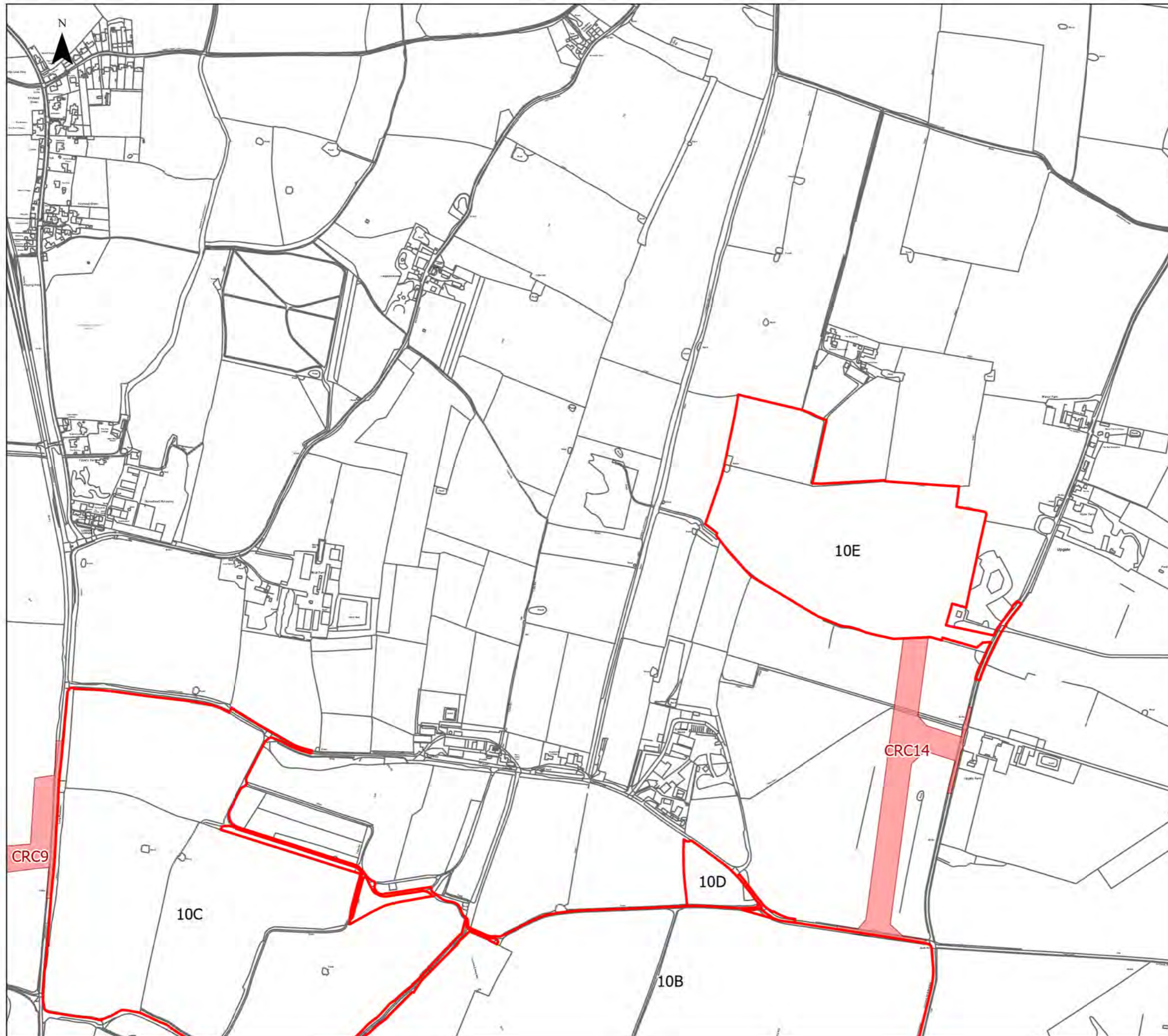
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896

0 250 500 m
1:7,500 @ A3

APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
Sheet 3 of 19
Revision A



Legend

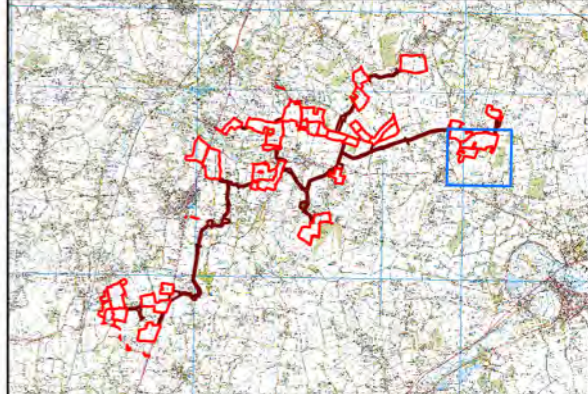
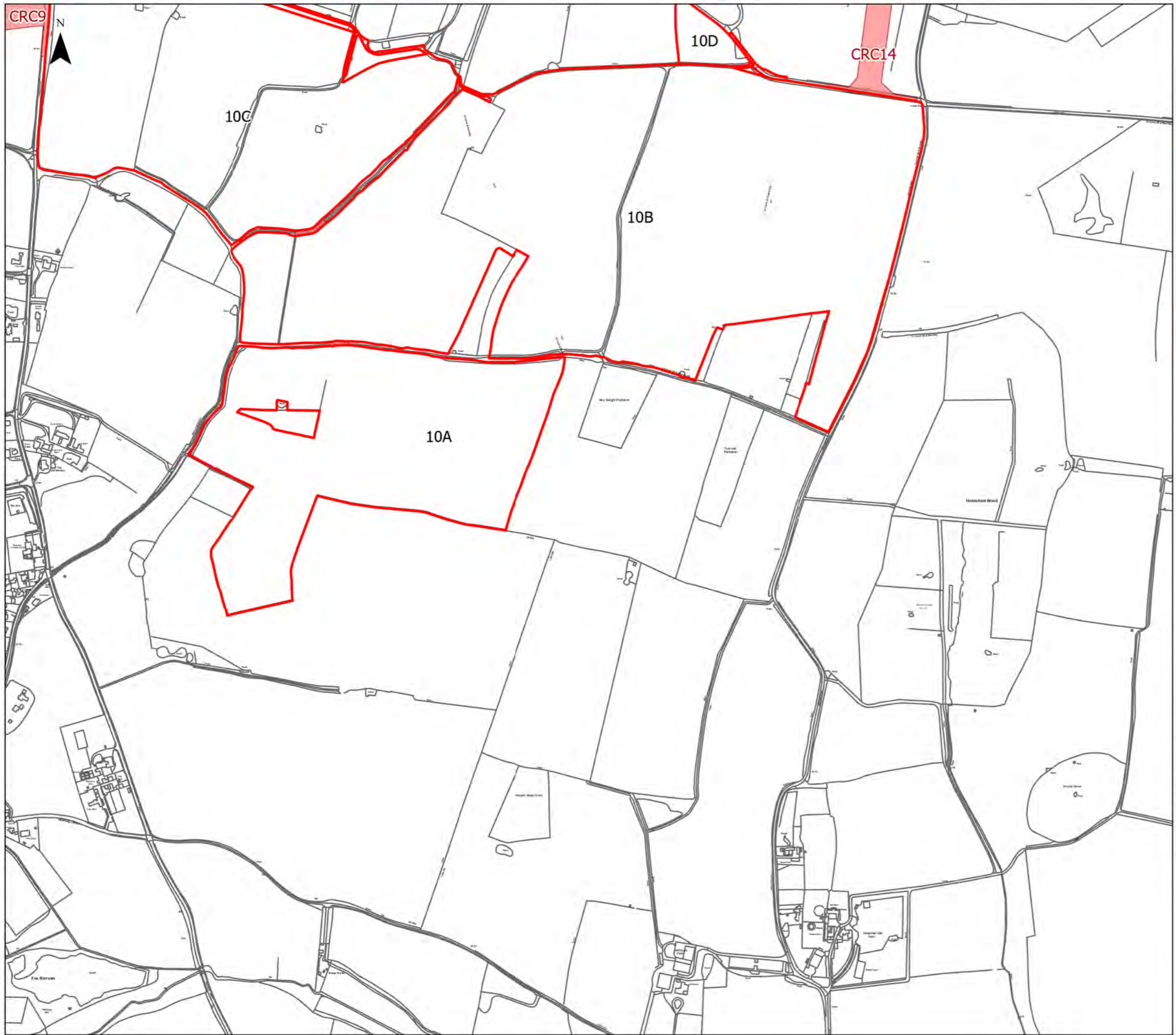
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896

0 250 500 m
1:7,500 @ A3

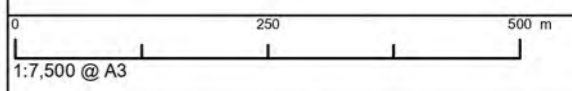
APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
Sheet 4 of 19
Revision A



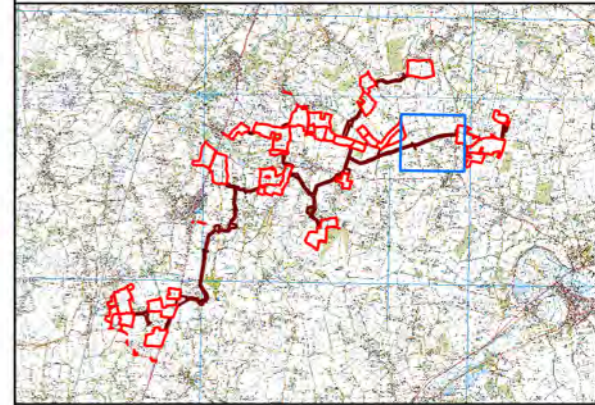
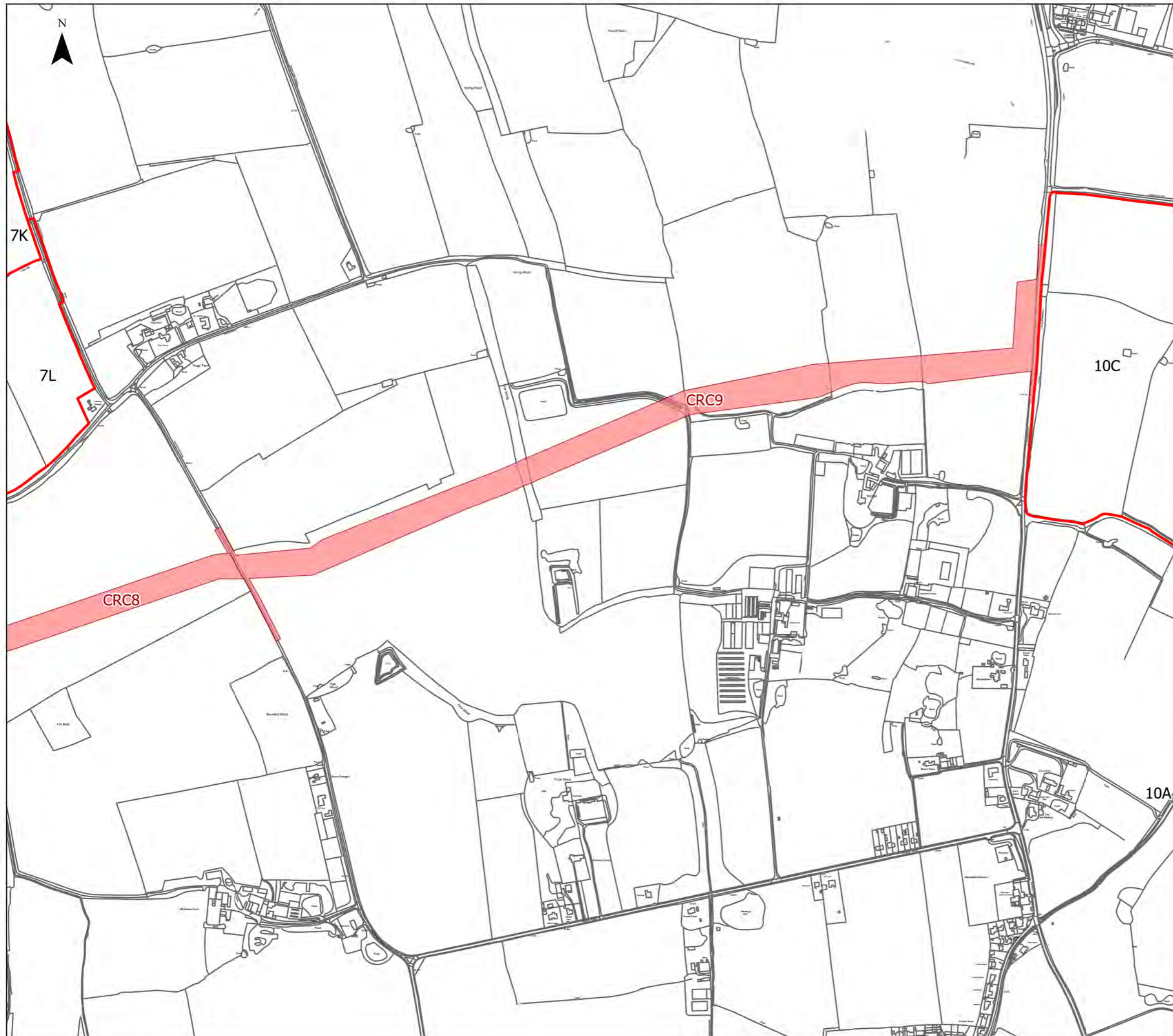
- Legend**
- Sites
 - Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

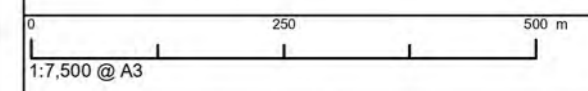
Figure 1.1: Site Location Plan
Sheet 5 of 19
Revision A



Legend

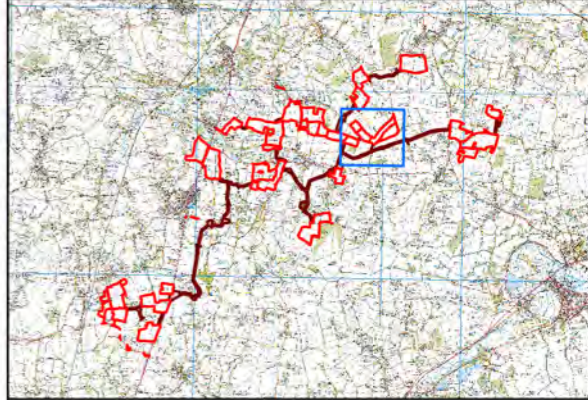
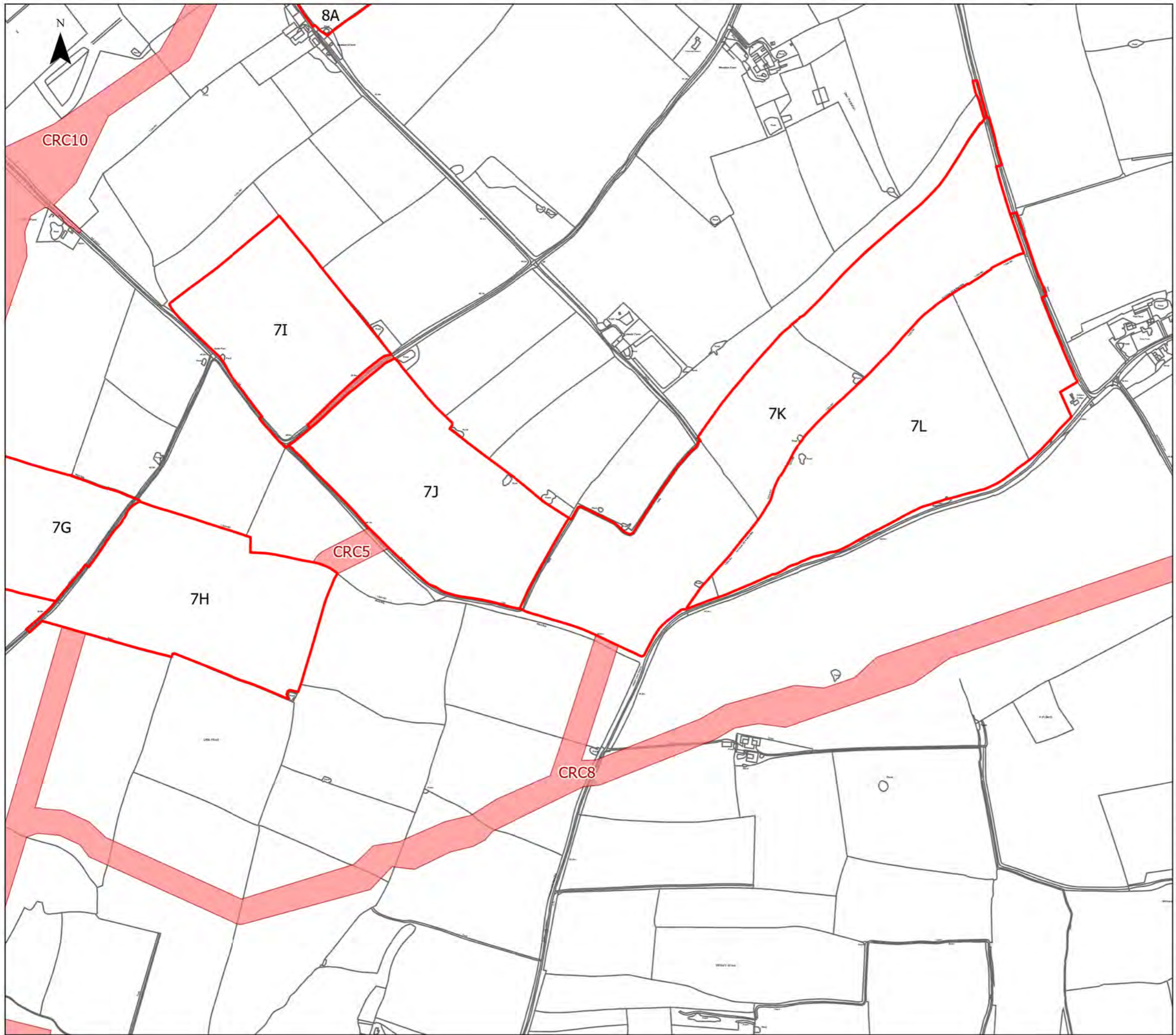
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

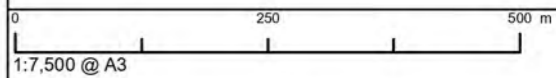
Figure 1.1: Site Location Plan
Sheet 6 of 19
Revision A



Legend

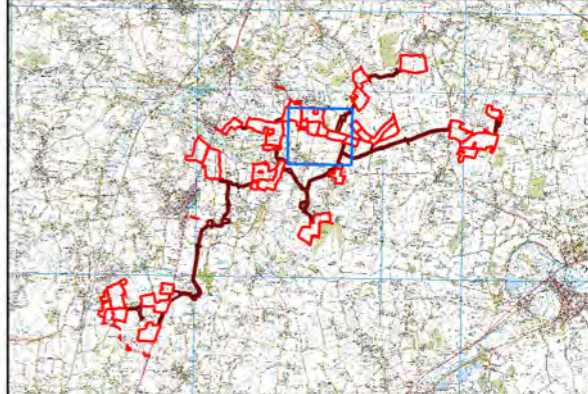
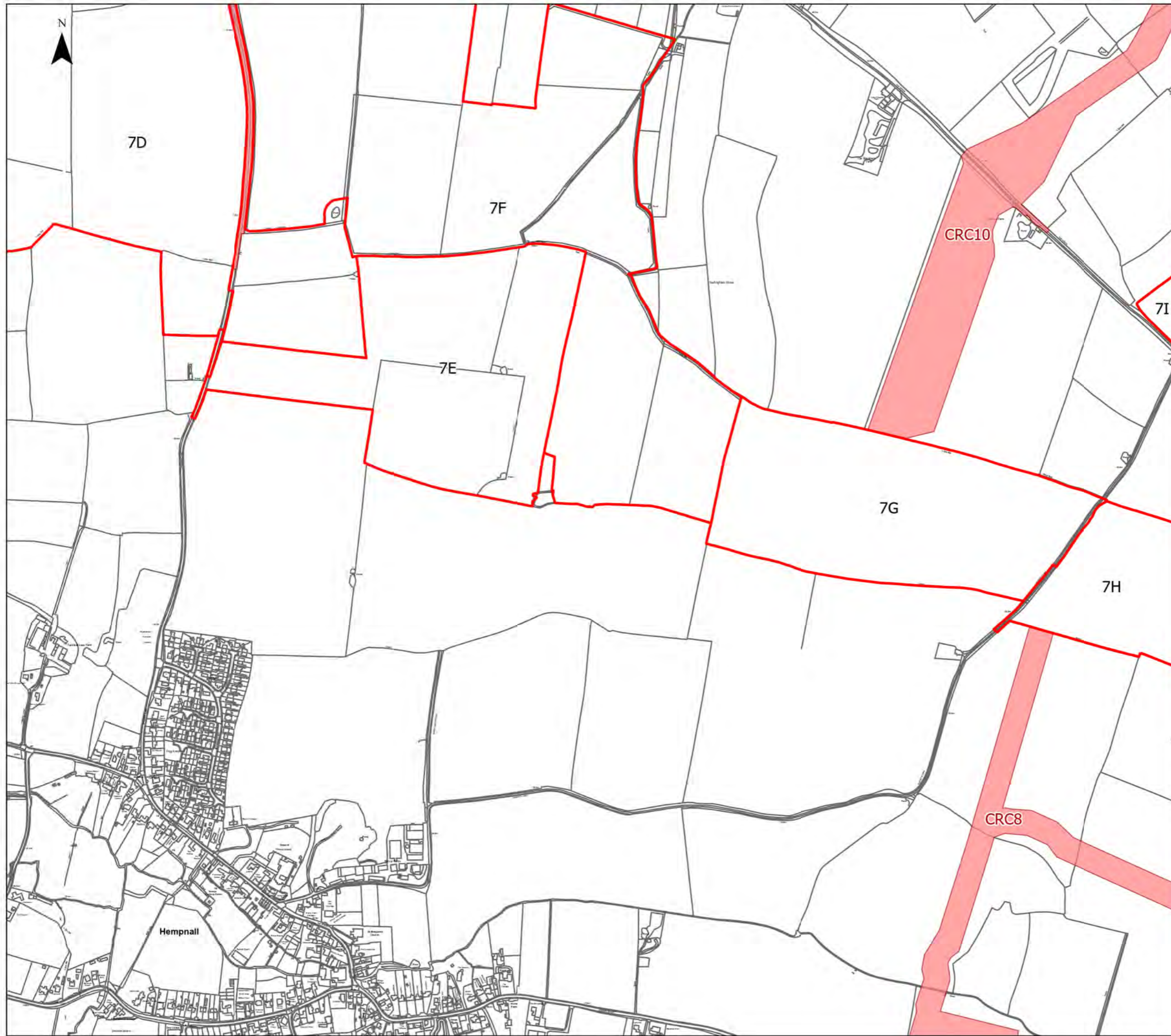
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



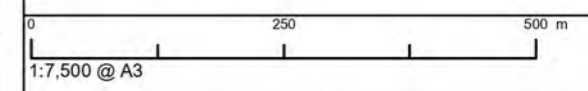
APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
Sheet 7 of 19
Revision A



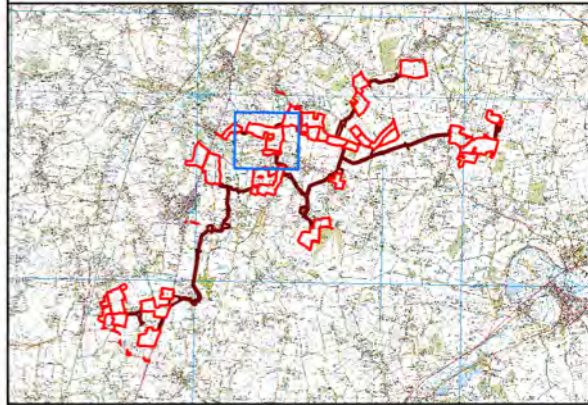
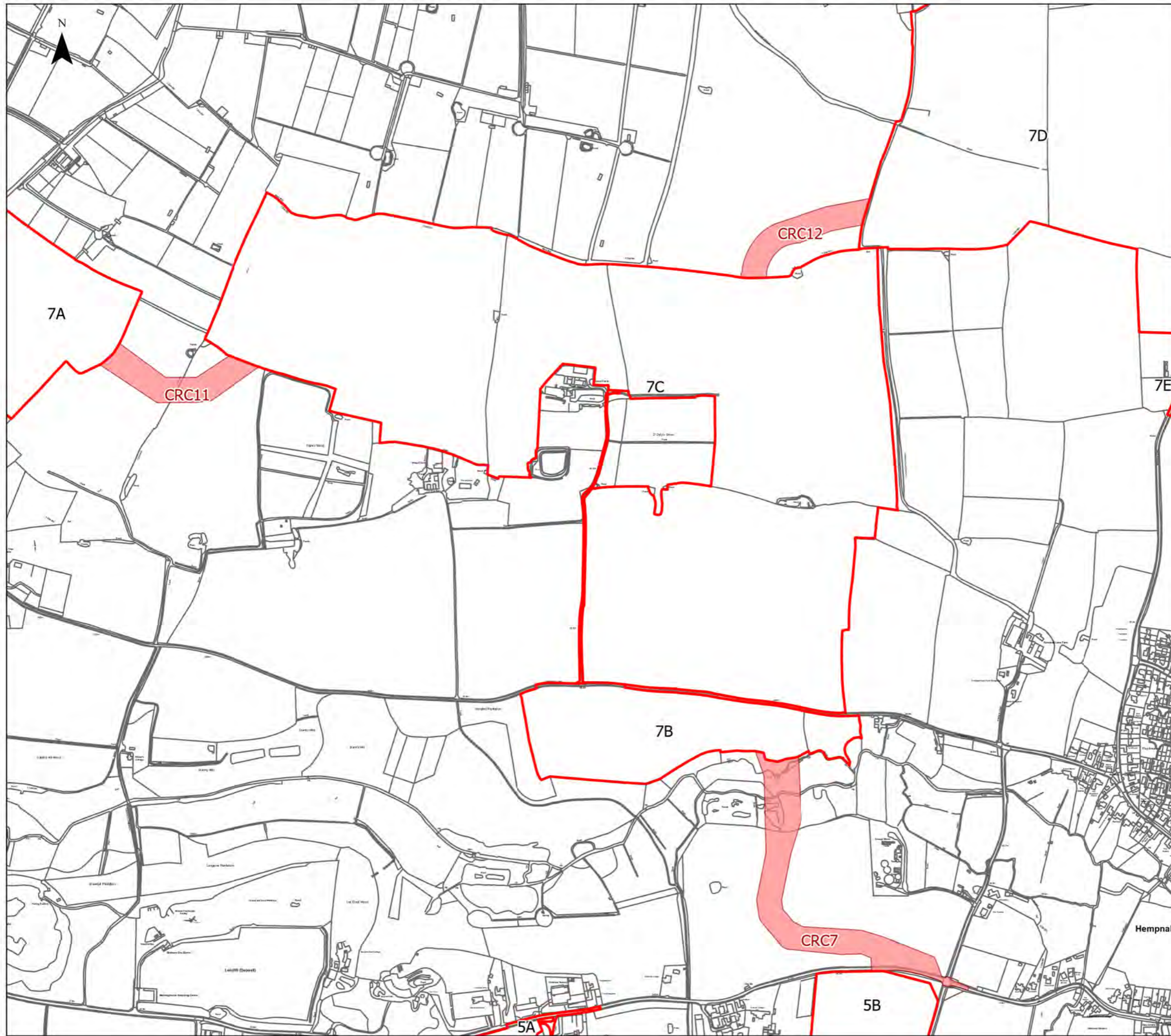
Legend
 Sites
 Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
 © Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
 Sheet 8 of 19
 Revision A



Legend

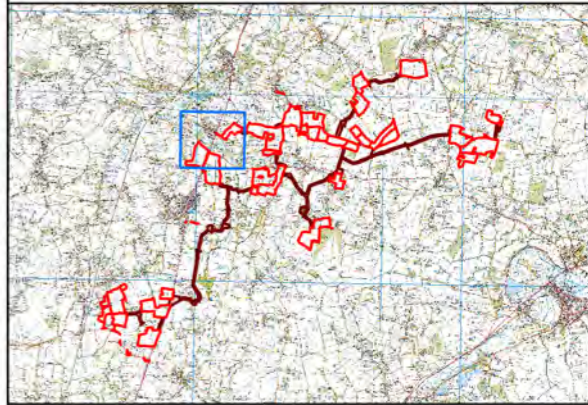
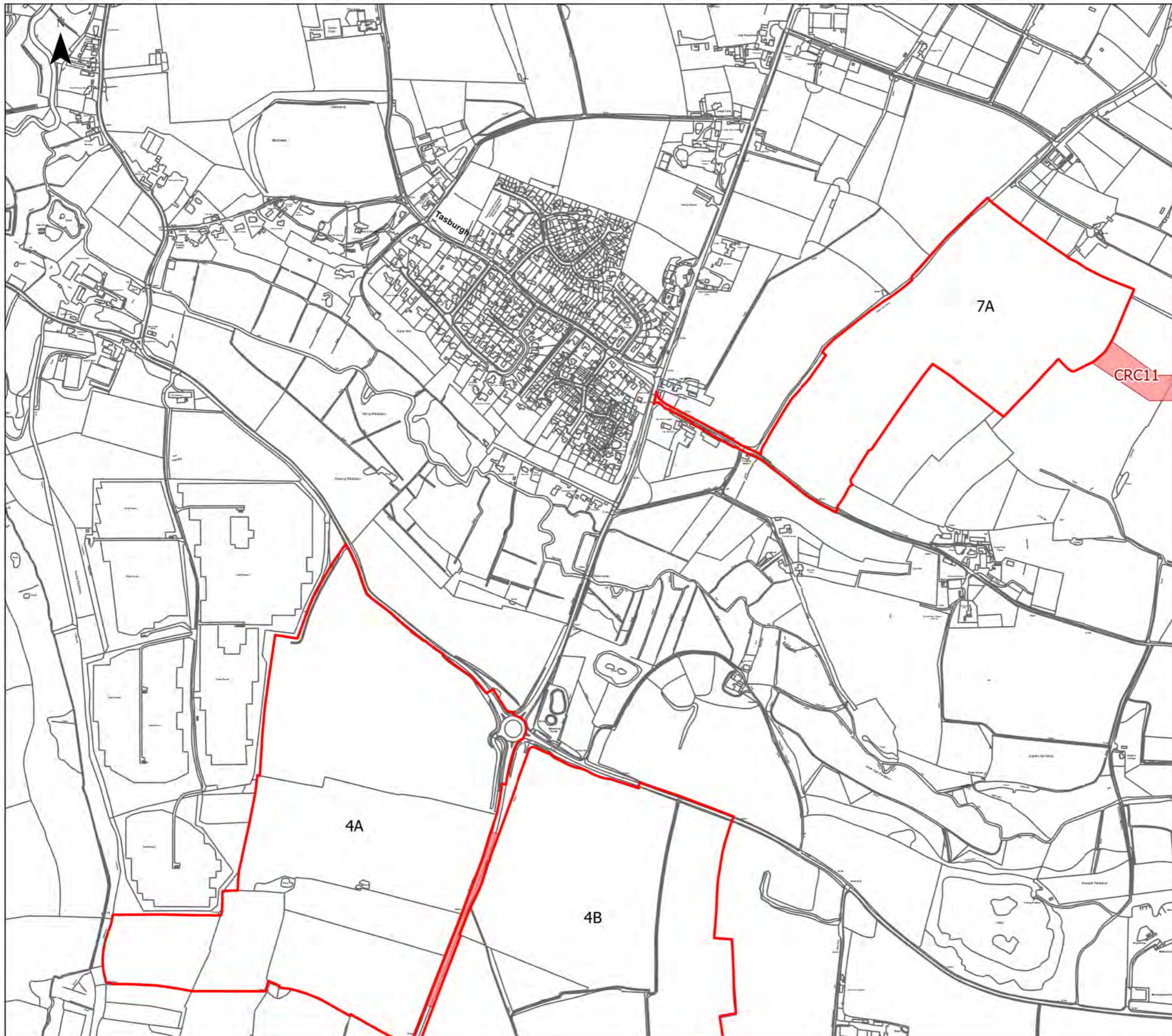
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896

0 250 500 m
1:7,500 @ A3

APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

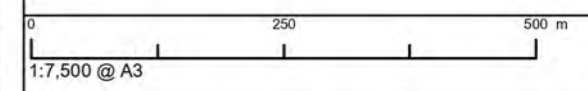
Figure 1.1: Site Location Plan
Sheet 9 of 19
Revision A



Legend

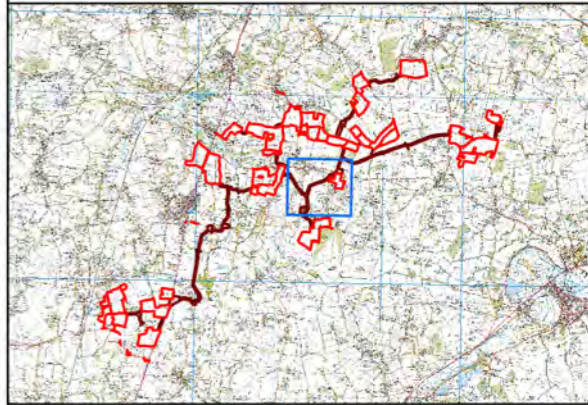
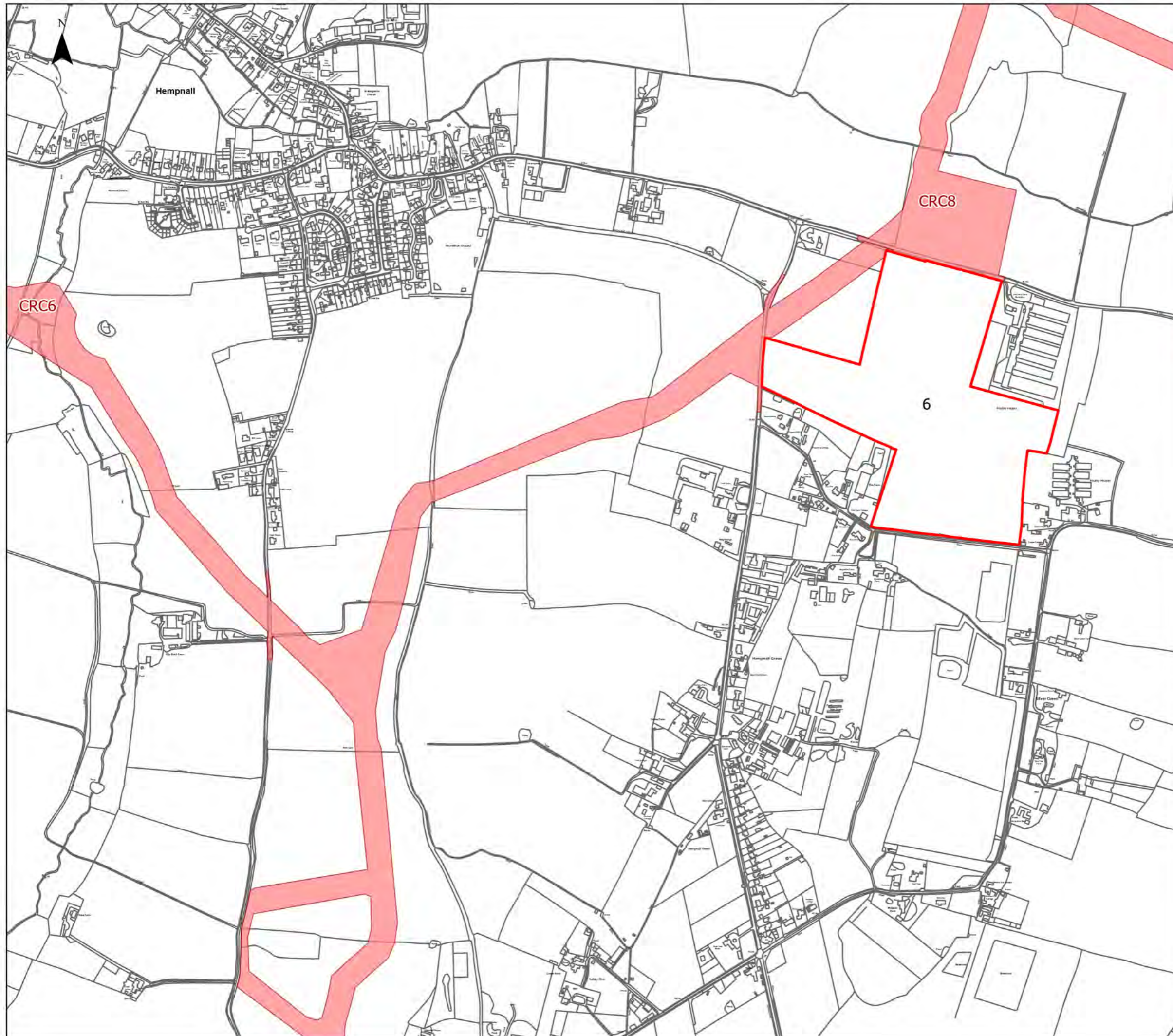
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
Sheet 10 of 19
Revision A



Legend

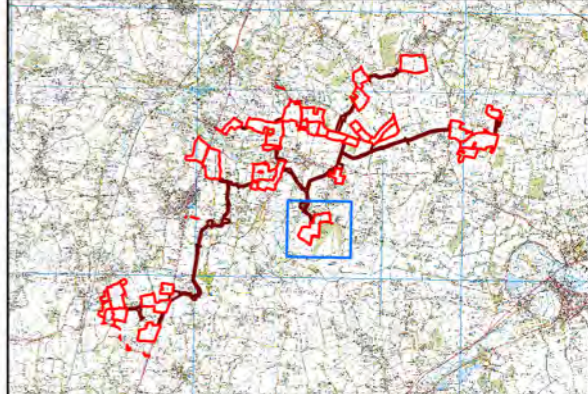
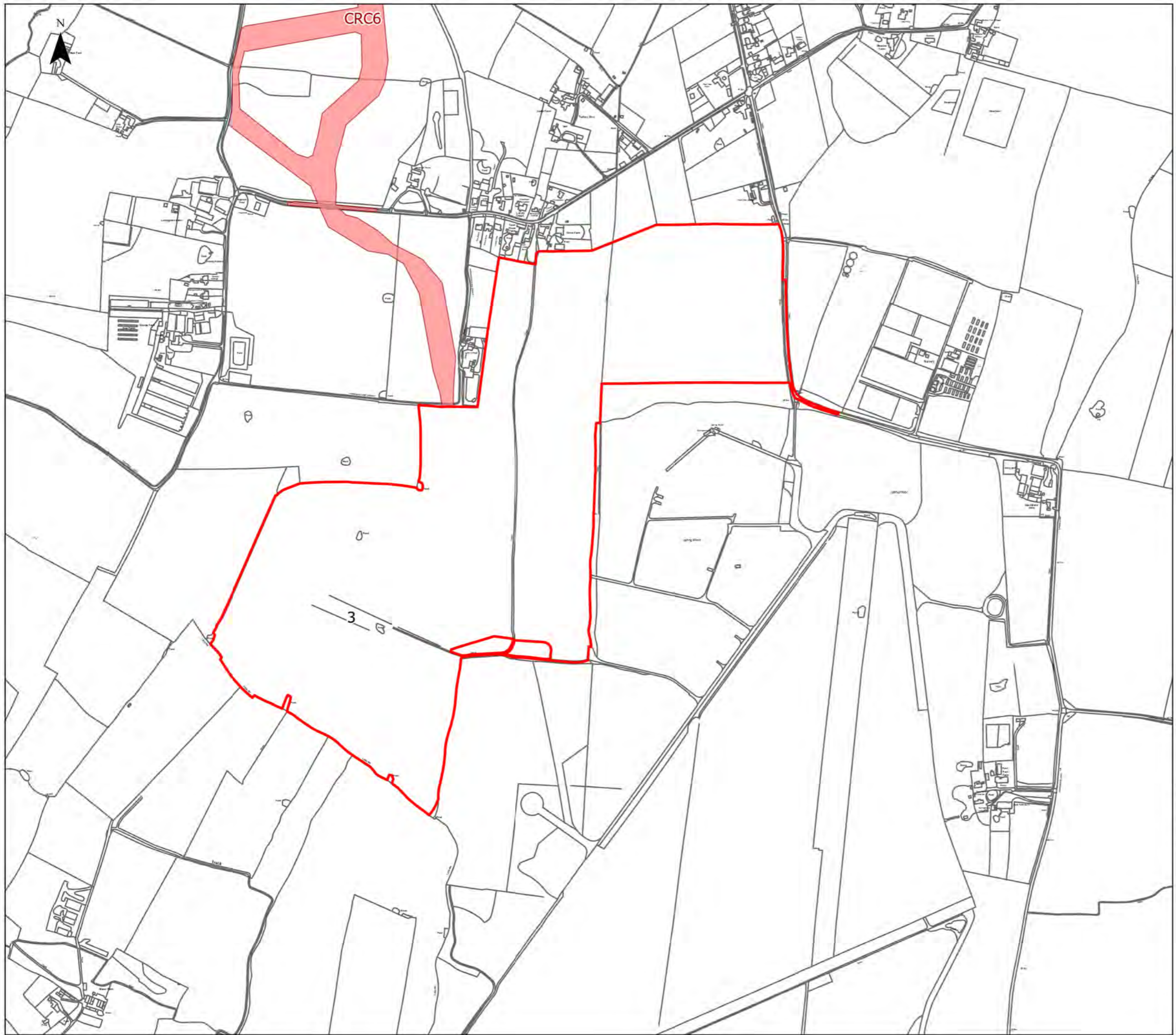
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896

0 250 500 m
1:7,500 @ A3

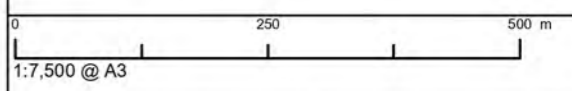
APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
Sheet 11 of 19
Revision A



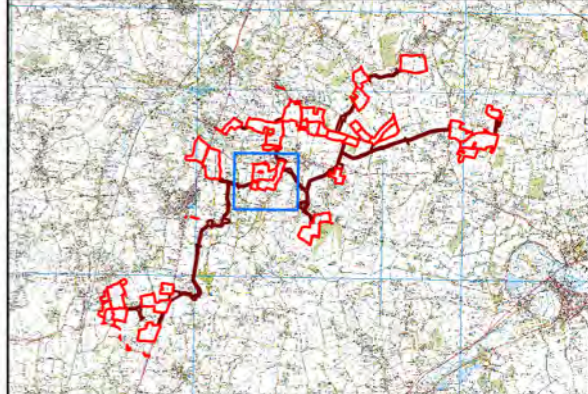
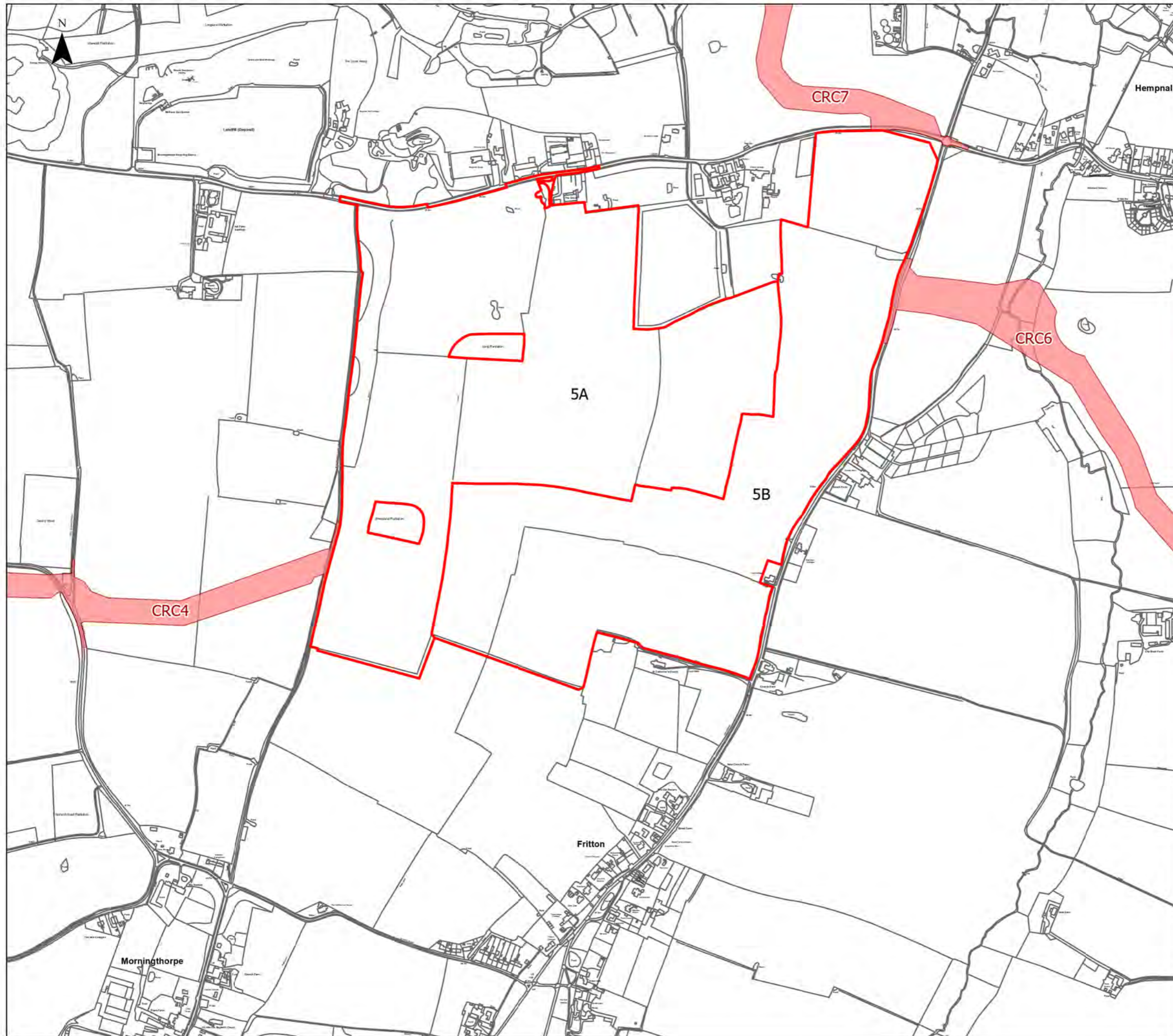
Legend
 Sites
 Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
 © Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
 Sheet 12 of 19
 Revision A



Legend

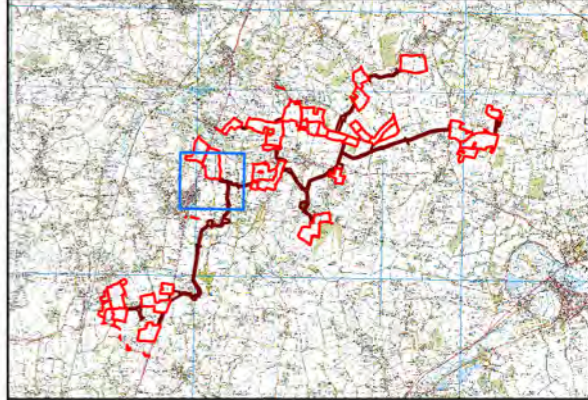
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896

0 250 500 m
1:7,500 @ A3

APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

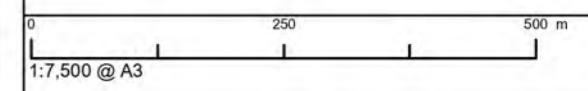
Figure 1.1: Site Location Plan
Sheet 13 of 19
Revision A



Legend

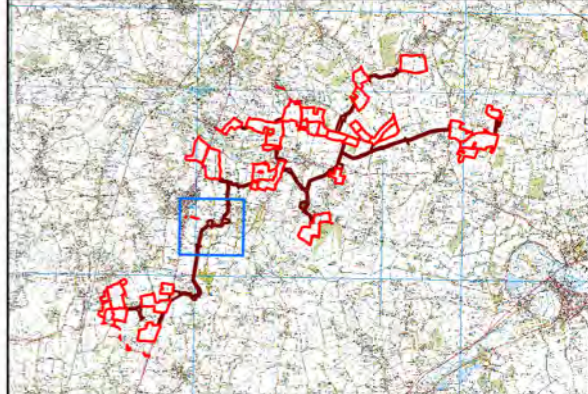
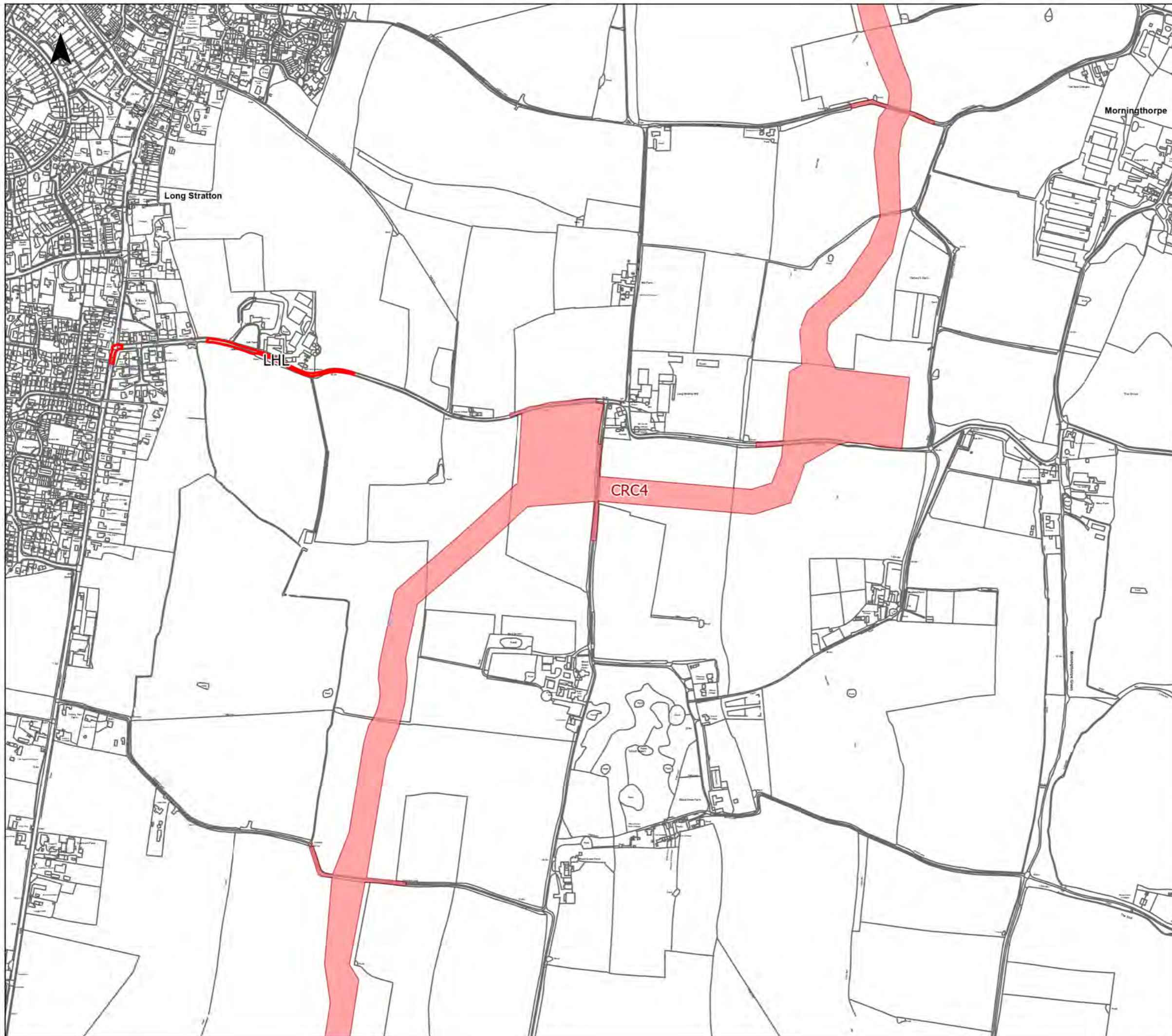
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

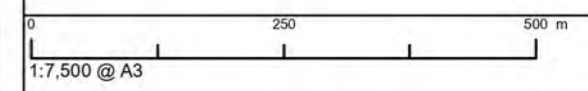
Figure 1.1: Site Location Plan
Sheet 14 of 19
Revision A



Legend

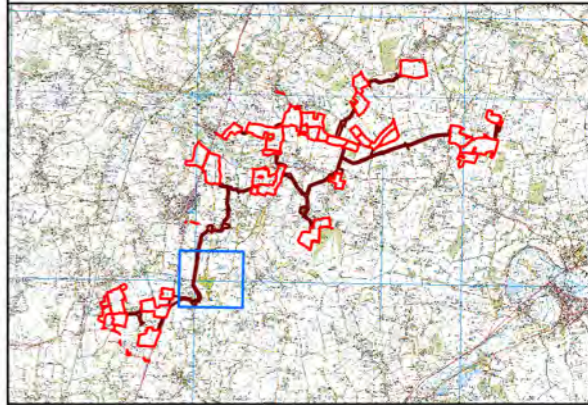
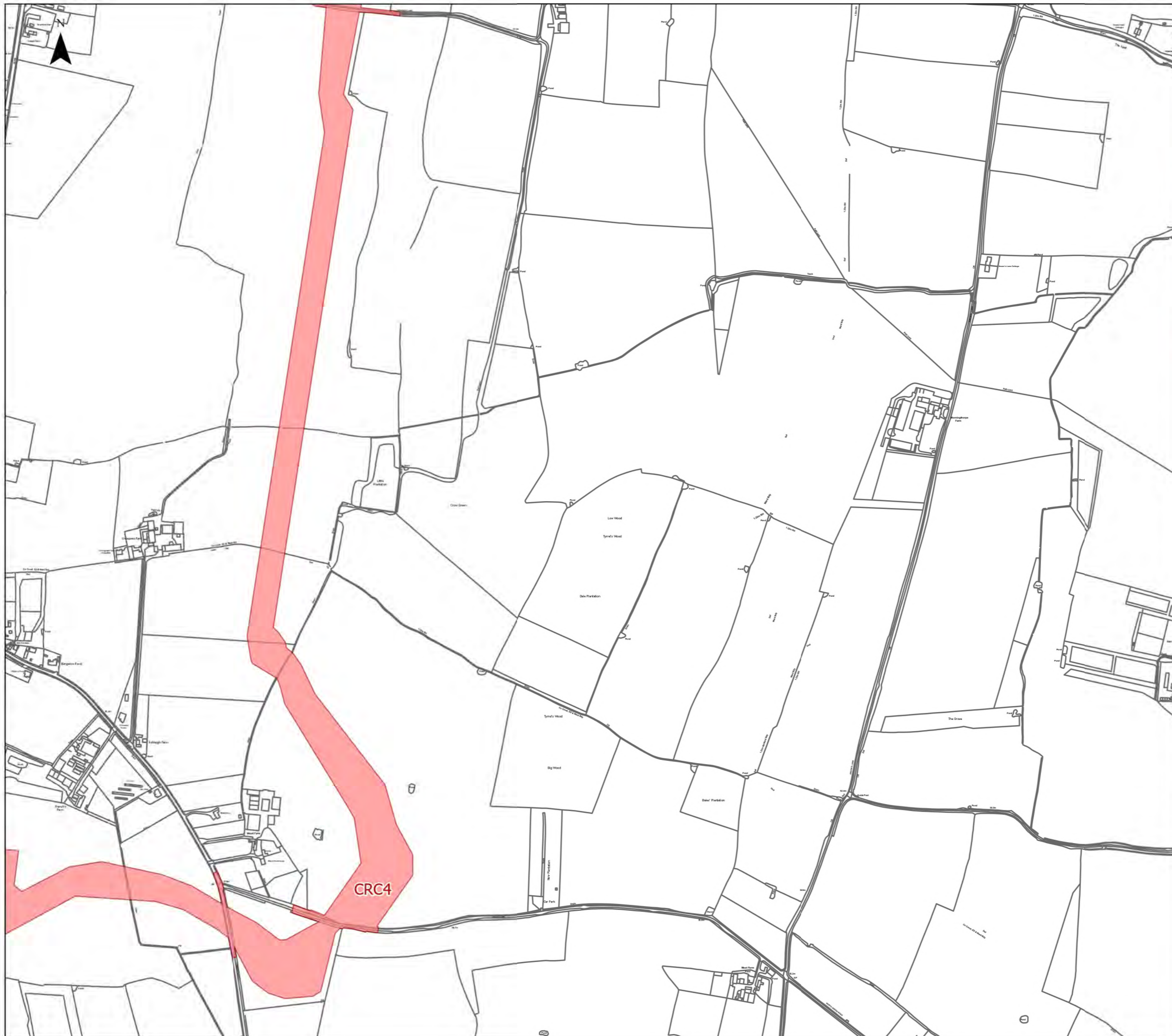
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
 © Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

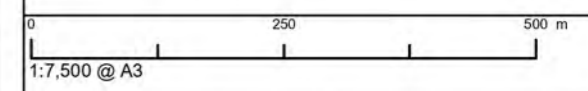
Figure 1.1: Site Location Plan
 Sheet 15 of 19
 Revision A



Legend

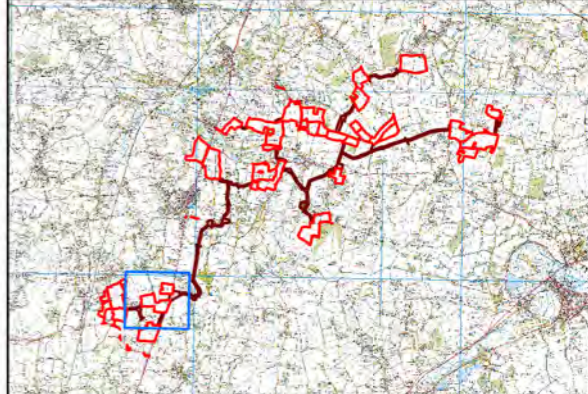
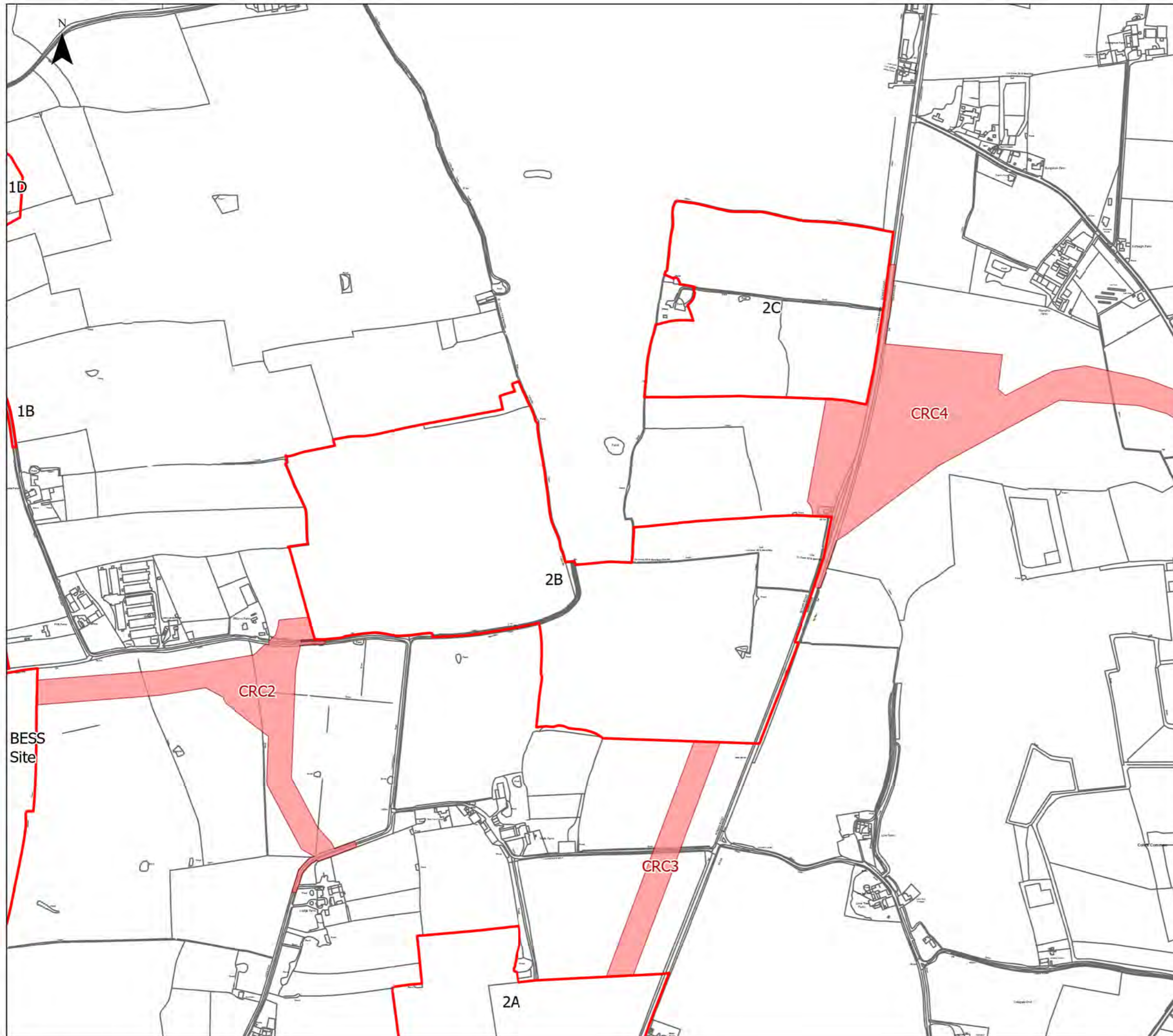
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



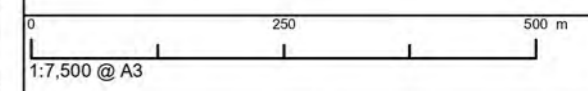
APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
Sheet 16 of 19
Revision A



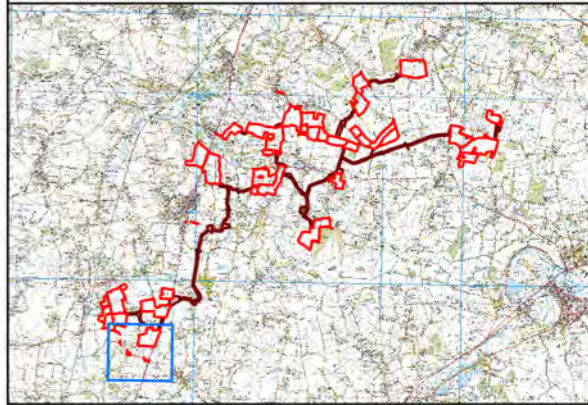
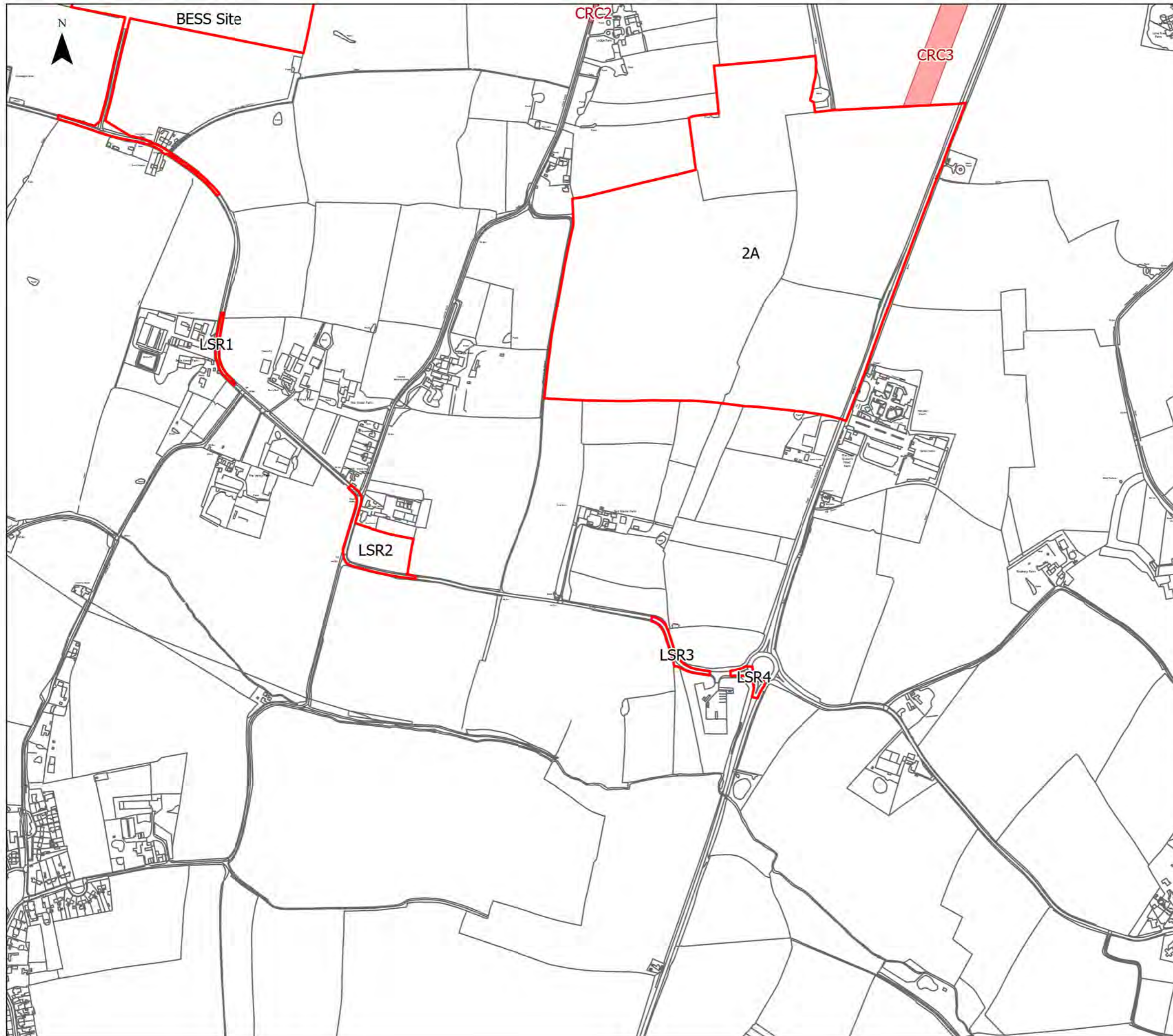
Legend
 Sites
 Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
 © Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

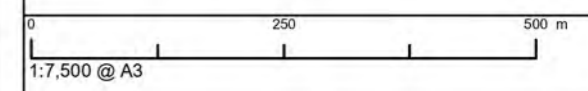
Figure 1.1: Site Location Plan
 Sheet 17 of 19
 Revision A



Legend

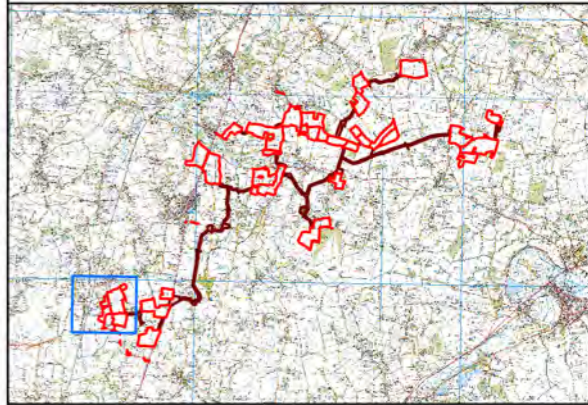
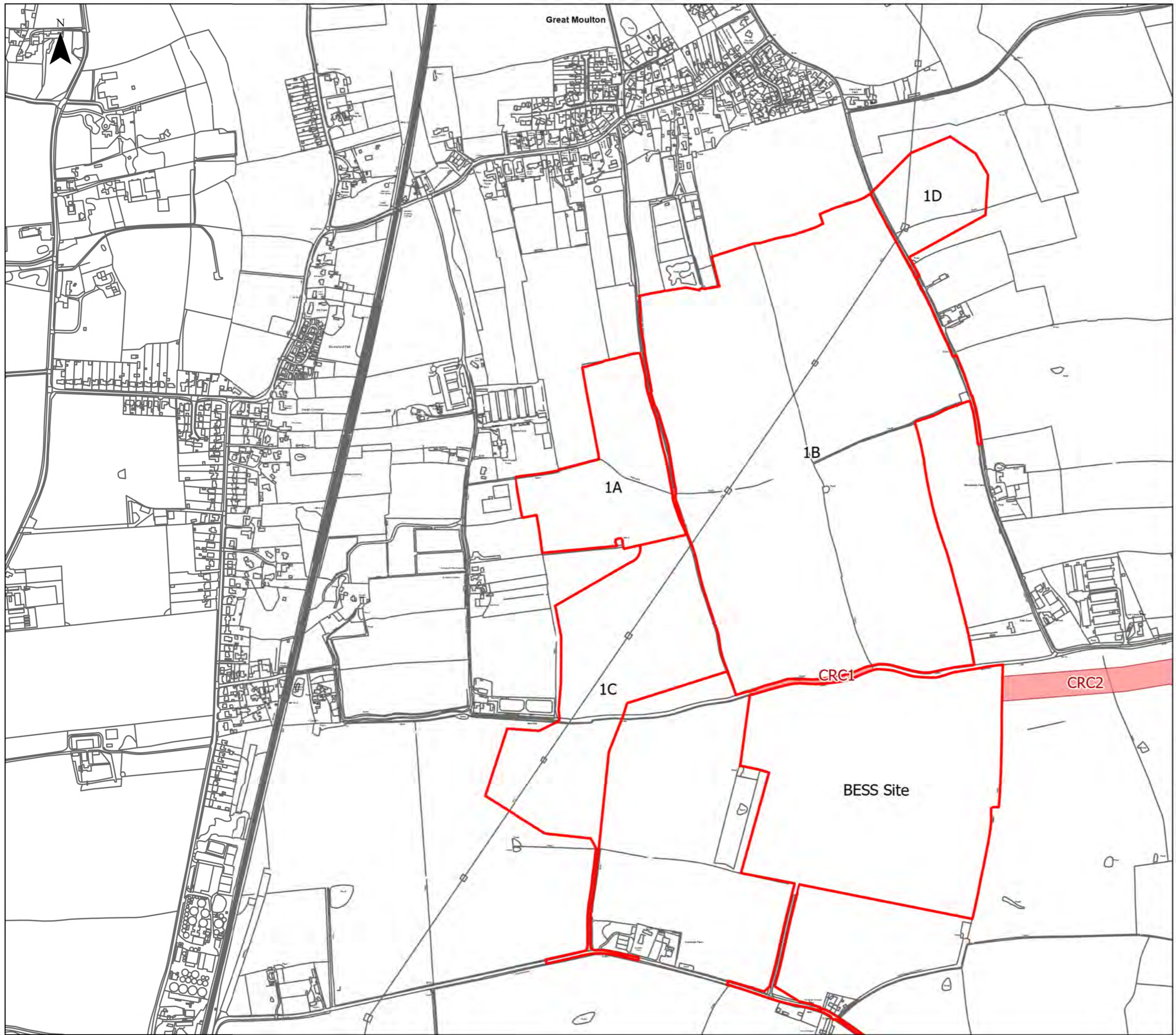
- Sites
- Cable Route Corridor

© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/03/2026
Drawn: TL	Checked: LB

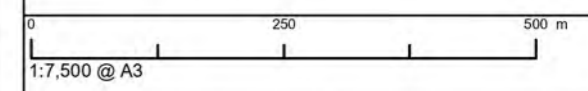
Figure 1.1: Site Location Plan
Sheet 18 of 19
Revision A



Legend

- Sites
- Cable Route Corridor

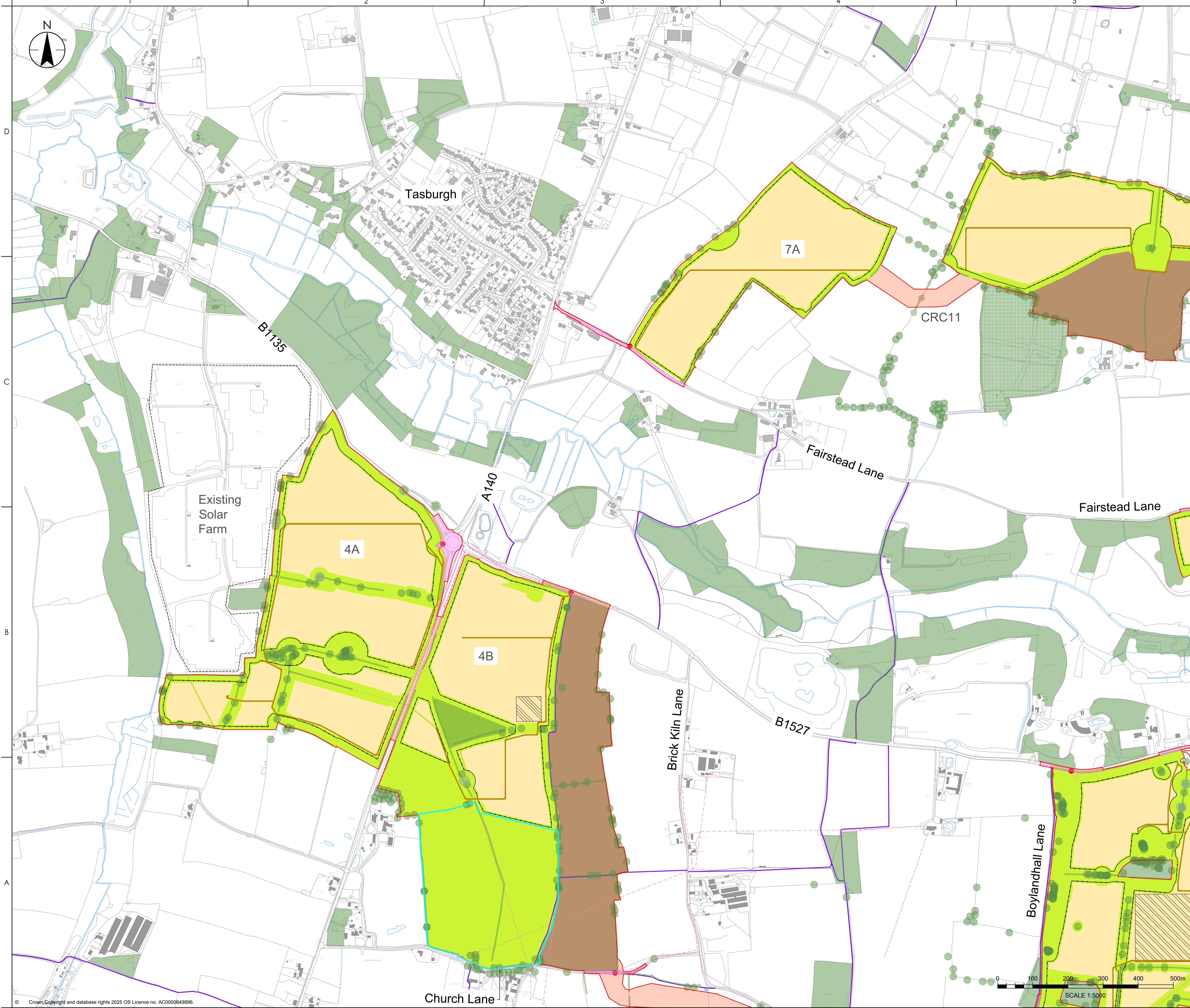
© Crown copyright and database rights 2025 Ordnance Survey AC0000808122
© Crown copyright and database rights 2025 Ordnance Survey AC0000849896



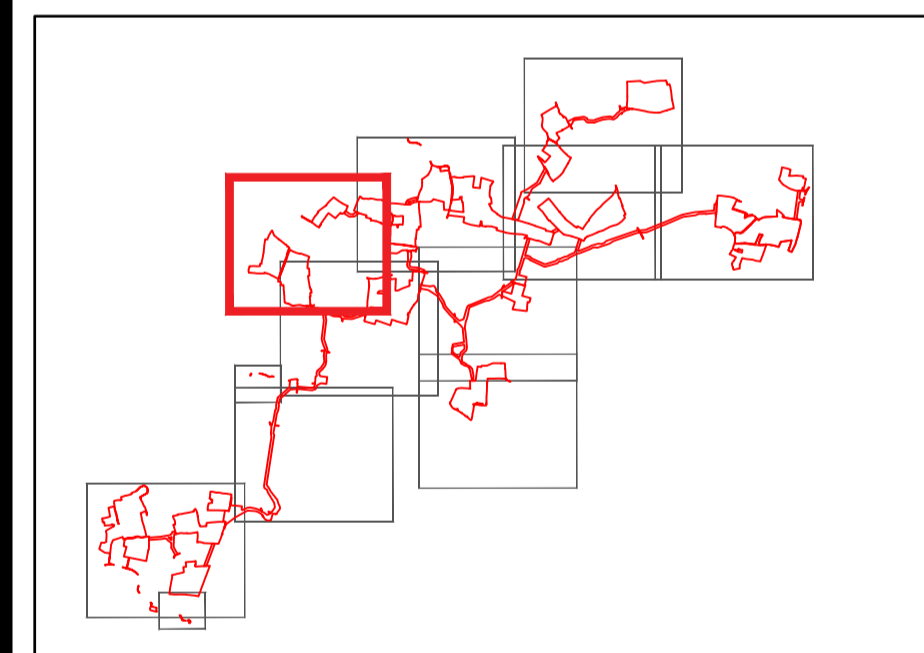
APFP Regulation: 5(2)(a)	Application Doc No. 6.4
Ref: Site Location Plan	Date: 05/C3/2026
Drawn: TL	Checked: LB

Figure 1.1: Site Location Plan
Sheet 19 of 19
Revision A

Appendix B



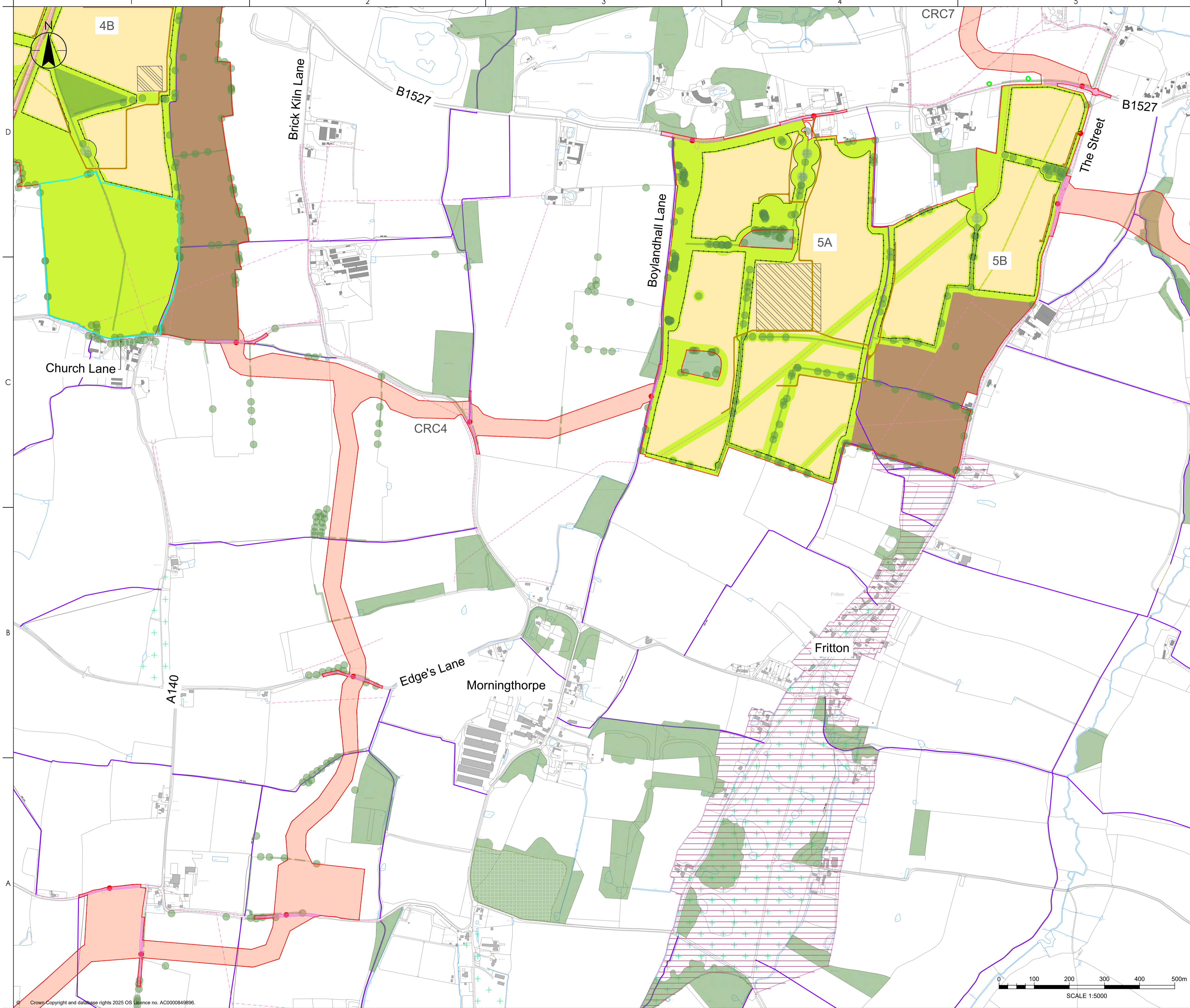
- LEGEND**
- Order Limits
 - Existing Landscape Features and Designations**
 - Existing Vegetation Cover
 - Ancient Woodland
 - Veteran Trees
 - Watercourse / Waterbody
 - Public Right of Way (PRoW)
 - Open Access Land (CROW 2000)
 - Conservation Area
 - Existing Built Form / Buildings
 - Existing Utilities (Various)
 - Proposed Infrastructure**
 - Solar PV Arrays
 - Battery Energy Storage System (BESS)
 - 132kV Project Substation
 - 400kV Project Substation
 - National Grid Substation
 - Areas subject to overhead line works associated with National Grid Substation
 - Cable Route Corridor
 - Highway Works Area
 - Indicative fencing
 - Indicative access routes (permanent for maintenance)
 - Indicative access points (Construction, Operation & Decommissioning)
 - Proposed Planting, Ecological Mitigation and Enhancement***
 - Area for potential mitigation and enhancement
 - Retained agricultural land
 - Proposed Community Measures**
 - Permissive Path
 - Community Space
- *for further details of proposed landscape measures refer to Outline Landscape and Ecology Management Plan [EN0110014/APP/7.4]



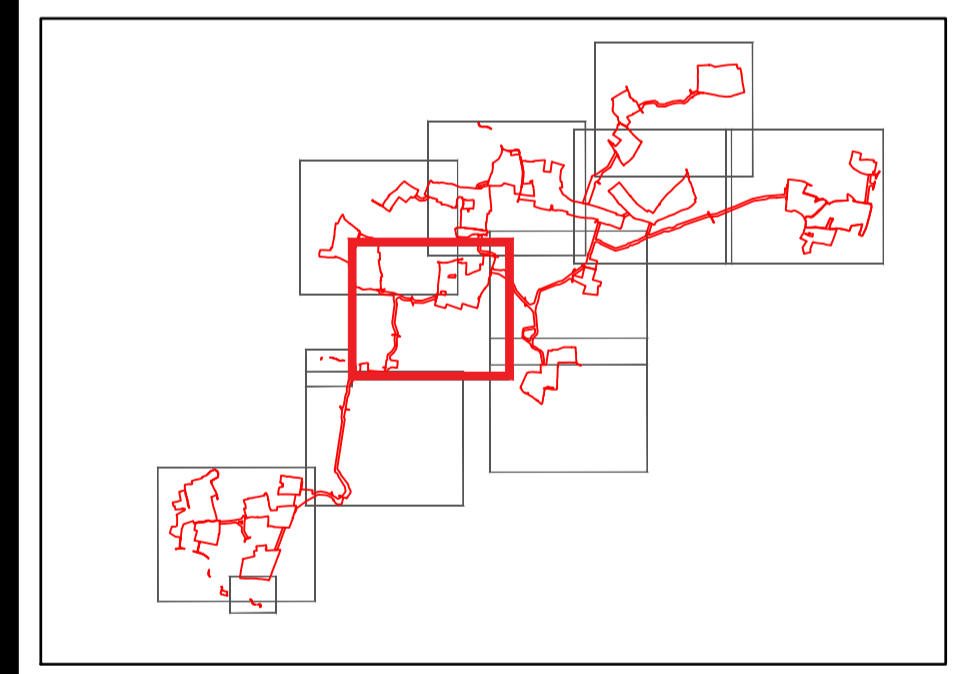
S5 - FOR REVIEW AND ACCEPTANCE

MB/CC Dwn.	AC Dign.	KF Chkd.	2024.03.02 YYYY.MM.DD
Client/Project			
East Pye Solar			
Title			
APFP 5(2) (a); Application Document Reference 6.2.4.1 Figure 4.1 Indicative Masterplan Sheet 5			
Project No. 333101211		Scale 1:5,000	
Revision V1		Drawing No.	

APFP 5(2) (a); Application Document Reference 6.2.4.1
 Figure 4.1 Indicative Masterplan Sheet 5
 © Crown Copyright and database rights 2025 OS Licence no. AC0000849896



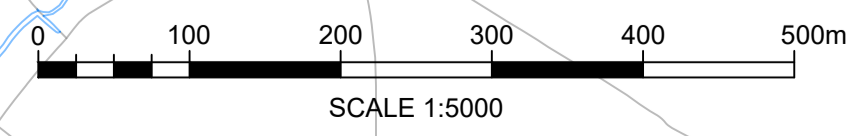
- LEGEND**
- Order Limits
 - Existing Landscape Features and Designations**
 - Existing Vegetation Cover
 - Ancient Woodland
 - Veteran Trees
 - Watercourse / Waterbody
 - Public Right of Way (PRoW)
 - Open Access Land (CROW 2000)
 - Conservation Area
 - Existing Built Form / Buildings
 - Existing Utilities (Various)
 - Proposed Infrastructure**
 - Solar PV Arrays
 - Battery Energy Storage System (BESS)
 - 132kv Project Substation
 - 400kv Project Substation
 - National Grid Substation
 - Areas subject to overhead line works associated with National Grid Substation
 - Cable Route Corridor
 - Highway Works Area
 - Indicative fenceline
 - Indicative access routes (permanent for maintenance)
 - Indicative access points (Construction, Operation & Decommissioning)
 - Proposed Planting, Ecological Mitigation and Enhancement***
 - Area for potential mitigation and enhancement
 - Retained agricultural land
 - Proposed Community Measures**
 - Permissive Path
 - Community Space
- *for further details of proposed landscape measures refer to Outline Landscape and Ecology Management Plan [EN0110014/APP7.4] KEY SHEET



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

S5 - FOR REVIEW AND ACCEPTANCE

MB/CC	AC	KF	2024.03.02
Dwn.	Dign.	Chkd.	YYYY.MM.DD
Client/Project			
East Pye Solar			
Title			
APFP 5(2) (a); Application Document Reference 6.2.4.1			
Figure 4.1 Indicative Masterplan Sheet 7			
Project No.	Scale		
333101211	1:5,000		
Revision	Drawing No.		
V1			



Reference: 02/03/2024, 09:05:02, 1:202422 P:\Browns\Wicham\Browns\02 - drawings\02 - design\04 - L1 - Indicative Masterplan
 CH000001 - SHEET 5014 - E:\Users\michardowen\Documents\East Pye - 02 - drawings\02 - design\04 - L1 - Indicative Masterplan

