A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010041

6.7 Environmental Statement – Appendix 9.1 Extended Phase 1 Habitat Survey Report

Part A

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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CONTENTS

EXECUTIVE SUMMARY

This technical report presents the findings of an extended Phase 1 habitat survey undertaken by Jacobs UK Ltd. (Jacobs) on behalf of Highways England. The aim of the survey was to record the habitats found within the survey area while noting habitats of ecological importance, and to determine the presence or likelihood of protected flora and fauna which may pose constraints upon the proposed upgrade to dual carriageway of the A1 between Morpeth and Ellingham. This comprised two discreet sections:

- Section A - Morpeth to Felton, and;
- Section B - Alnwick to Ellingham.

The aim of the report is to present the extended Phase 1 habitat survey information from surveys undertaken between April and June 2016 by Jacobs for Highways England.

The survey included a desk top study of online resources, a data search with the local records centre and wildlife groups (as outlined in Section 2.2 of this report) and on-site surveys by professional ecologists. The survey area was surveyed on foot between the 25th and 29th of April, the 9th and 13th May and between the 13th and 17th June 2016. All of the habitats were mapped according to the Handbook for Phase 1 Habitat Survey (JNCC, 2010). Floristic nomenclature follows that of Stace (Stace, 2010). Any points of interest were identified and recorded as numbered target notes, which are mapped on Figures 2.1 to 2.18 (Section A – Morpeth to Felton) and Figures 3.1 – 3.12 (Section B – Alnwick to Ellingham).

Two statutory sites designated as Sites of Special Scientific Interest (SSSI) were recorded within 2 km of the proposed options during the desk study. The two SSSIs are known as Longhorsley Moor and the River Coquet and Coquet Valley Woodlands. Longhorsley Moor is designated for containing the best example of lowland sub-atlantic heath which remains in Northumberland although some parts of the site resemble wet heath. The River Coquet is designated as a SSSI, both for its woodlands and river and stream habitat and one of the most important game fisheries in the north of England, with large runs of sea trout and salmon. The River Coquet and Coquet Valley Woodlands SSSI lies within the footprint of all Section A options under consideration.

Thirty-five different habitat types were recorded during the field survey. The survey area for Section A and Section B is dominated by a mixture of arable farmland and improved grassland with associated field boundaries including ditches and hedgerows, the majority of which are species poor.

Seven Habitats of Principal Importance (HoPIs)(Section 41- Natural Environment and Rural Communities Act 2006) were present within the survey area: arable field margins, hedgerows, inland rock, lowland heath, lowland mixed deciduous woodland, rivers and streams and standing water. In accordance with the Handbook for Phase 1 habitat survey, these habitats are all identified similarly. They are considered to be of a higher ecological value than the other habitats in the study area. The dominant habitats that are likely to be most affected by the proposed options are arable farmland, improved grassland, hedgerows, broadleaved plantation woodland and mixed plantation woodland.

1 INTRODUCTION

1.1 Scheme Background

1.1.1 Following the outcomes of the 2014 A1 North of Newcastle Feasibility Study, the Department of Transport confirmed in its first Roads Investment Strategy, the intention to upgrade twenty-one kilometres of the existing A1 to a dual carriageway between Morpeth and Ellingham in Northumberland. This comprised two discreet sections:

- Section A - Morpeth to Felton, and;
- Section B - Alnwick to Ellingham.

1.1.2 At this stage (PCF Stage 2) of the project three options are under consideration for Section A and one option is under consideration for Section B, these are briefly described below:

Section A - Morpeth to Felton

- Online Option – this option follows the line of the existing A1.
- Hybrid Option - this option has a similar arrangement to the online option, however a short offline section would provide a smoother curve between Causey Park Bridge and Bockenfield Bridge. A short section of the existing A1 would be detrunked (i.e. handed over for maintenance by Northumberland County Council rather than Highways England) and form part of a local road network.
- Offline Option – this option would be online at its north and south ends, but a large central section would form a new bypass to the west of the existing A1 between the Floodgate Burn crossing and Bockenfield Bridge. The existing A1 would be detrunked and form part of a local road network, which would separate local and strategic traffic.

Section B – Alnwick to Ellingham

- Online Option – this option follows the route of the existing A1. This option includes the construction of a single compact grade separated junction accommodating all movements, with an overbridge, at Charlton Mires, linking the A1 with the B6347; all other junctions would be closed off, and the provision of a number of accommodation bridges to improve connectivity and allow access to farm units.

1.2 Report Rationale

1.2.1 The aim of this report is to present the extended Phase 1 habitat survey information from surveys undertaken in 2016 by Jacobs for Highways England. The information presented will be used to inform the preferred option and identify the requirement for additional surveys to be completed at PCF Stage 3. The data will ultimately inform the Environmental Impact assessment (EIA) for the preferred option.

1.3 Definitions

1.3.1 The study area relates to a 2 km buffer (5 km for European designated sites and bat species only) around the proposed options in which desk study information has been collated via online and third party sources.

1.3.2 The survey area refers to a 500 metre buffer around the proposed options for Section A and Section B in which habitats have been mapped and features on interest target noted. The buffer is shown on Figures 2.1 – 2.19 and Figures 3.1-3.13 in Section 5 of this report.

1.4 Legislative and Regulatory Context

1.4.1 An assessment of the legislative and regulatory framework covering protected species and habitats in the UK has been undertaken. Due consideration was given to the following statutory instruments and policy frameworks in the preparation of this report:

- Conservation of Habitats and Species Regulations 2010 (as amended);
- Wildlife and Countryside Act 1981 (as amended) (WCA);
- Countryside and Rights of Way (CROW) Act 2000;
- Protection of Badgers Act 1992;
- Natural Environment and Rural Communities Act 2006 (NERC Act 2006);
- Weeds Act 1959;
- The Hedgerows Regulations 1997;
- The Environment Act 1995;
- Wild Mammals (Protection) Act 1996;
- Biodiversity Action Plans (Northumberland LBAP), and;
- Chapter 11 - National Planning Policy Framework (NPPF, 2012)

2 METHODOLOGY

2.1 Objective

2.1.1 The purpose of the extended Phase 1 habitat surveys were:

- to record the habitats within the survey area;
- note habitats of ecological importance, and;
- to determine the presence or likelihood of protected flora and fauna which may pose constraints upon the proposed project and may requiring additional species/habitat-specific surveys.

2.2 Desk Study

2.2.1 A search of online resources was undertaken to obtain ecological information about the study area and its surrounding landscape. The following websites were researched:

- National Biodiversity Network – NBN Gateway[1];
- The Multi Agency Geographic Information for the Countryside website[2], and;
- Google Maps (satellite photography was used to assess the layout of the site and provide context for the preliminary ecological walkover survey, in addition to a broad assessment of habitat types and locations)[3].

2.2.2 The study area for desktop searches was based on a combined 2 km buffer from all options for Sections A and B. International and European designated sites were searched for within a 5 km. The location of these designated sites in relation to the study area can be seen in Figure 1.1 and Figure 1.2.

2.2.3 Ordnance survey maps and aerial photographs were also studied to identify habitats of possible conservation importance within the study area.

2.3 Data Search

2.3.1 In addition to online resources, 3rd party organisations were contacted in 2016 to obtain habitat and species records within the study area for the last 15 years. Specifically these were:

- Alnwick & District Natural History;
- Alnwick Wildlife Group;
- the Environmental Records Information Centre North East (ERIC North East);
- Natural History Society of Northumberland;
- Northumberland Badger Group;
- Northumberland Bat Group;
- North East England Butterfly Conservation;
- Northumberland Moth Group, and;
- North East Reptile and Amphibian Group.

[1] https://data.nbn.org.uk/
[2] http://www.magic.gov.uk/
[3] https://www.google.co.uk/maps

2.3.2 To date records have been received from ERIC North East, the Northumberland Badger Group, North East Butterfly Conservation Group and the Alnwick Wildlife Group. Reponses are still awaited from the North East Reptile and Amphibian Group, Northumberland moth group, Alnwick & District Natural History Group and the Natural History Society of Northumberland. Data has still yet to be received from the bat group.

2.3.3 The aim of the data requests was to identify records of legally protected species or habitats within 2 km of the site (5 km for bat species). In addition species and habitats of principal importance under the UK Post-2010 Biodiversity Framework (NERC Act 2006) along with those listed on the Northumberland Biodiversity Action Plan were also noted.

2.3.4 A summary of the desk study can be found in Section 3 of this report.

2.4 Field Survey

Extended Phase 1 Habitat

2.4.1 The survey area for field surveys was based on a 500 m buffer of Section A and Section B options. The survey area was surveyed on foot between the 25th and 29th of April, the 9th and 13th May and between the 13th and 17th June 2016, by experienced Jacobs ecologists. All of the habitats were mapped according to the Handbook for Phase 1 Habitat Survey (JNCC, 2010). Occasionally areas or features were too small to habitat map and these have been described within target notes. Floristic nomenclature follows that of Stace (Stace, 2010). Any points of interest were identified and recorded as numbered target notes, which are shown on Figures 2.1 to 2.19 (Section A – Morpeth to Felton) and Figures 3.1 – 3.13 (Section B – Alnwick to Ellingham) and detailed in Appendix A and Appendix B of this report.

2.4.2 The “extended” element of this survey is in accordance with the Guidance for Baseline Ecological Assessment (Institute of Environmental Assessment 1995), which enhances the standard methodology by looking for evidence of any protected species or identifying habitats which may be capable of supporting particular protected species such as: badger (*Meles meles*), bats, water vole (*Arvicola amphibius*), breeding birds, great crested newts (*Triturus cristatus*) and reptile species.

2.4.3 For the purposes of this report protected species are considered to comprise plant and animal species afforded legal protection. These include animals and plants protected by relevant Schedules of the Habitat Regulations 2010 (as amended), Wildlife and Countryside Act 1981 (as amended), the Badgers Act 1992 and species and habitats listed on Section 41 of the NERC Act 2006.

Important Hedgerows

2.4.4 Sufficient detail was recorded for all hedgerows in the survey area to determine if additional survey effort was required to identify any that would meet the criteria to qualify as ‘ecologically important’ under the Hedgerows Regulations wildlife criteria (HMSO 1997). In brief this would be determined by identifying woody and ground flora species. In addition, supplementary features such as ditches, banks and the proximity/connectivity to other hedgerows would be recorded where observed.

Limitations

2.4.5 There were small sections within the survey area that were un-surveyed due to access permission not being granted by landowners. Where appropriate, assessment of the habitats within these sections was made from adjoining land where permission had been given and from public rights of way. In addition, assessment of some of the habitat within and directly surrounding Northgate Hospital was made using Google Earth due to restricted access in this area. The small areas that could not be accessed have been clearly marked on the Figures (Section A, Figure 2.19).

2.4.6 The findings of this report represent the professional opinion of qualified ecologists and do not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited in this document. Should there be a delay in the proposed project programme, it is considered prudent that the survey findings be reviewed and updated as required to ensure that the assessment of ecological impacts is undertaken against an accurate baseline.

2.4.7 It should be borne in mind that the behaviour of animals can be unpredictable and may not conform to standard patterns recorded in scientific literature. Therefore, this survey cannot predict with absolute certainty that animal species will occur in apparently suitable locations or habitats, or that they will not occur in locations or habitats that appear unsuitable.

2.4.8 To minimise the likelihood of adverse effects on protected animal and plant species, it is accepted good practice to repeat surveys should a significant period of time lapse between the initial survey visit and works commencing. If the works are not undertaken within a year of this report, a repeat survey may be necessary and should be carried out by an appropriately experienced ecologist who is fully informed of all previous survey work carried out on the site.

2.4.9 If the work proposals are altered to include use of additional areas (e.g. for the purposes of access or materials storage) assessment in relation to important habitats and protected species in these areas would also be required.

3 BASELINE

3.1 Data Search

Statutory and Non-Statutory Designated Sites of Nature Conservation Importance

3.1.1 Tables 1 and 2 below provide details for designated sites identified in the study area for Section A and Section B respectively. Sites are tabulated in order of nature conservation importance.

Table 1: Section A - Designated Sites

Site name	Description / reason for designation	Distance from the proposals
Northumbria Coast Ramsar site and Special Protection Area (SPA)	The site supports a breeding population of little tern (*Sterna albifrons*). Wintering populations of ruddy turnstone *(Arenaria interpres*) and purple sandpiper (*Calidris maritima*). Citations can be accessed at: http://jncc.defra.gov.uk/pdf/ris/uk11049.pdf	c.10 km north-east of northern end of the proposed options
North Northumberland Dunes Special Area of Conservation (SAC)	The site contains Annex I habitats: embryonic shifting dunes; shifting dunes with marram grass (*Ammophila arenaria*); fixed dunes with herbaceous vegetation; dunes with creeping willow (*Salix repens* ssp. *Argentea*), and; humid dune slacks. The site also supports the Annex 1 Species, Petalwort (*Petalophyllum ralfsii*). Citation can be accessed at: http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0017097	9.7 km north-east of the proposed options
Longhorsley Moor Site of Special Scientific Interest (SSSI)	Long Horsley Moor is the best example of lowland sub-Atlantic heath which remains in Northumberland. Citation can be accessed at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1000596	1.8 km west of the proposed options.
River Coquet and Coquet Valley Woodlands SSSI	The River Coquet is an unmodified fast-flowing upland river supporting characteristic fauna and flora. Many of the woodlands near the river are semi-natural and ancient woodland sites, representative of valley woodlands in Northumberland. Citation can be accessed at: http://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s2000052	Within the scheme footprint
Scotch Gill Wood Local Nature Reserve (LNR)	Mature broad-leaved woodland site. Citation can be accessed at: http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1009124	2 km south of the options.
Davies Wood LNR	Mature broad leafed woodland with song birds, small mammals and ground flora. Natural England site information can be accessed at: http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1008865	1.3 km south east of the options.

Site name	Description / reason for designation	Distance from the proposals
Bracken bank LNR	Urban fringe site containing various flora, fauna and woodland trees. Natural England site information can be accessed at: http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1134213	1.3 km south east of the options.
Coquet River Felton Park LWS	Parkland site contiguous with the River Coquet.	Within the scheme footprint
Longhorsley Moor LWS	Mix of heathlands, scrub and woodland that adjoin Longhorsley Moor SSSI.	2 km west of the options.
Coquet River Moldshaugh LWS	Parcel of land adjacent to right bank of the river Coquet at West Thirston.	1.9 km east of the options.
Font River Woods LWS	Woodland lining the River Font between Mitford and Stanton.	1.7 km south west of the options.
Cotting Woods LWS	Area of ancient semi-natural woodland containing houses and associated gardens.	1.2 km south west of the options.

Table 2: Section B - Designated Sites

Designation	Qualifying features/ notable species / habitats present	Distance, and direction, from the options
North Northumberland Dunes SAC	The site contains Annex I habitats: embryonic shifting dunes; shifting dunes with marram grass (*Ammophila arenaria*); fixed dunes with herbaceous vegetation; dunes with creeping willow (*Salixrepens* ssp*. Argentea*), and; humid dune slacks. The site also supports the Annex 1 Species, Petalwort (*Petalophyllum ralfsii*). Citation can be accessed at: http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0017097	9.7 km north-east of the proposed options
River Tweed SAC	The site contains Annex I habitats: Water courses of plain to montane levels with the (Ranunculion fluitantis) and Callitricho-Batrachion vegetation communites. The site also supports the Annex II Species: Atlantic salmon (*Salmo salar*), and; Otter (*Lutra lutra*). Citation can be accessed at: http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0012691	c.9.5 km west of the proposed options
Northumbria Coast Ramsar site and SPA	The site supports a breeding population of little tern (*Sterna albifrons*). Wintering populations of ruddy turnstone *(Arenaria interpres*) and purple sandpiper (*Calidris maritima*). Citations can be accessed at: http://jncc.defra.gov.uk/pdf/ris/uk11049.pdf	c.9 km east of the proposed options.
Berwickshire and North Northumberland Coast SAC	The site contains Annex I habitats: Mudflats and sandflats not covered by seawater at low tide; Large shallow inlets and bays; Reefs, and; Submerged or partially submerged sea	7.6 km east of southern end of scheme

Designation	Qualifying features/ notable species / habitats present	Distance, and direction, from the options
	caves. The site also supports the Annex II Species: grey seal (*Halichoerus grypus*). Citation can be accessed at: http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0017072	
Newham Fen SAC	The site contains the Annex I habitat: Alkaline Fen. Citation can be accessed at: http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0012890	6.7 km north of the proposed options
Ratcheugh Crag – Pepper Moor LWS	Whinstone crag with folly and associated grassland and scrub. Designated for the presence of whin grassland.	2.6 km east of the proposed options
Hulne Park LNR	Parkland site to the west of Alnwick occupying former hunting ground. A mosaic of mature woodland and grassland.	1.5 km west of the proposed options

3.1.2 Designated sites in the study area for Sections A and B are shown on Figures 1.1 and 1.2 respectively.

Protected and Notable Species

3.1.3 Table 3 below summarises the protected and notable species records within the 2km study area gathered from third party data requests for Section A.

Table 3: Section A - Protected and notable species summary

Feature	Habitat/Species Record
Amphibians	A desk top review of OS and aerial mapping identified fifteen ponds located within 500 m of the proposed online and hybrid options. Seventeen ponds are located within 500 m of the proposed offline option. These ponds could have the potential to support great crested newt (GCN) and other amphibians. Desk study records illustrated that there are 4 records of GCN within the study area for Section A. GCN are fully protected in the UK under domestic and European legislation and listed as Priority Species on the Northumberland LBAP. In addition GCN are listed as a species of principal Importance (SoPI) – NERC Act 2006.
Reptiles	A desk top review of OS and aerial mapping identified that habitat such as rough grassland, arable field margins and riparian habitats was present in the study area. These habitat types were considered suitable to support common and widespread reptile species namely: common lizard (*Zootoca vivipara*), grass snake (*Natrix natrix*), slow worm (*Anguis fragilis*) and adder (*Vipera berus)*. Desk study records illustrated that there were nine records of adder and 37 of common lizard in the study area in Section A. The common and widespread reptile species are partially protected in the

Feature	Habitat/Species Record
	UK under domestic legislation from intentional/reckless killing or injury. All species of reptile identified here are listed as a SoPI.
Breeding Birds	Desk study records illustrated that there were 18 bird species of conservation concern recorded in the study area (BoCC – Red/Amber Listed, SoPI – NERC Act 2006) for Section A. Records for 6 schedule 1 species (WCA Act 1981) were also returned. Farmland birds are listed as priority species on the Northumberland LBAP. A number of commonly recorded farmland bird species are also listed as SoPI.
Wintering Birds	Desk study records illustrated that there were 18 bird species of conservation concern recorded in the study area (BoCC – Red/Amber Listed, SoPI – NERC Act 2006) for Section A. Records for 2 schedule 1 species (WCA Act 1981) were also returned. Farmland birds are listed as priority species on the Northumberland LBAP. A number of commonly recorded farmland bird species are also listed as a SoPI.
Barn Owl (*Tyto alba*)	Desk study records illustrated that there were six records of barn owl in the study area in Section A. Barn owl are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and listed as a priority species on the Northumberland LBAP.
Badger	Desk study records that there were 61 records of badger in the study area for Section A. Of these 14 were records of badger setts. Badger and their setts are fully protected under Protection of Badgers Act 1992.
Bats	Desk study records illustrated that there were at least 2,058 individual bats recorded comprising seven different species and seven bat roosts within 5 km of the proposed options. A total of 33 of these bats comprising six different species were recorded from within 500 m of the A1 in Section A, although no roosts were identified. Bat species recorded comprised: • brown long-eared bat (*Plecotus auritus*); • soprano pipistrelle (*Pipistrellus pygmaeus)*; • common pipistrelle (*Pipistrellus Pipistrellus)*; • noctule (*Nyctalus noctula)*; • Natterer's bat (*Myotis nattereri*); • whiskered/Brandt's bat (*Myotis mystacinus / brandtii),*and*;* • Daubenton's bat (*Myotis daubentonii*). Bats are fully protected in the UK under domestic and European legislation and listed as priority species on the Northumberland LBAP.
Water Vole	No records for water vole were highlighted by within 2km of Section A. Water vole is listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition Water vole is listed as a SoPI and as a priority species on the Northumberland LBAP.
Otter (*Lutra lutra*)	Desk study records illustrated that there were 27 records of otter in the study area in Section A.

Feature	Habitat/Species Record
	Otter are fully protected in the UK under domestic and European legislation. In addition Otter is listed as a SoPI and as a priority species on the Northumberland LBAP.
Red Squirrel (*Sciurus vulgaris*)	Desk study records illustrated that there were 327 records of red squirrel in the study area around Section A. Red squirrel are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition they are listed as a SoPI and as a priority species on the Northumberland LBAP.
Brown Hare (*Lepus europaeus*)	Information provided by ERIC North East illustrates that there were 14 records of brown hare in the study area in Section A. Brown hare are listed as a SoPI and as a priority species on the Northumberland LBAP.
Terrestrial Invertebrates	Habitats in the survey area have the potential to support a range of protected or notable terrestrial invertebrate species especially in the more diverse habitats such as woodland, scrub and hedgerow. Dingy Skipper (*Erynnis tages*) is listed as a SoPI and as a priority species on the Northumberland LBAP.
Aquatic Invertebrates	Records of the following species were identified through online data sources (these species are listed either on the annexes or schedules of the Habitats Directive/Habitats and Species Regulations 2010 (as amended), Wildlife and Countryside Act 1981 (as amended) or Section 41 of the NERC Act 2006): • freshwater pearl mussel (*Margaritifera margaritifera*), • yellow mayfly (*Potamanthus luteus*), • pond mud snail (*Omphiscola glabra*), • depressed river mussel (*Pseudanodonta complanata*), • shiny ramshorn snail (*Segmentina nitida*) • large mouthed valve snail (*Valvata macrostoma*) • great raft spider (*Dolomedes plantarius*), • medicinal leech (*Hirudo medicinalis*), • lesser silver water beetle (*Hydrochara caraboides*), • Glutinous snail (*Myxas glutinos*)*;* and • white-clawed crayfish (*Austropotamobius pallipes*).
Fisheries	Records of the following species were identified through online data sources (these species are listed either on the annexes or schedules of the Habitats Directive/Habitats and Species Regulations 2010 (as amended), Wildlife and Countryside Act 1981 (as amended) or Section 41 of the NERC Act 2006): • Atlantic salmon (*Salmo salar*), • brown/sea trout (*Salmo trutta*), • European eel (*Anguilla anguilla*), • bullhead (*Cottus gobio*), • sea lamprey (*Petromyzon marinus*), • river lamprey (*Lampetra fluviatilis*); and • brook lamprey (*Lampretra planeri*).
Invasive Plant Species	Records of the following species were identified through online data sources (these species are listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended) within 2 km of the scheme:

Feature	Habitat/Species Record
	• Japanese knotweed (*Fallopia japonica*), • New Zealand pygmyweed (*Crassula helmsii*), • montbretia (*Crocosmia x crocosmiiflora*) • rhododendron (*Rhododendron ponticum*); and. variegated yellow archangel (*Lamiastrum galeobdolon subsp. argentatum*).

3.1.4 Table 4 below summarises the protected and notable species records within the 2km study area gathered from third party data requests for Section B.

Table 4: Section B - Protected and notable species summary.

Species or Species group, Habitat	Baseline Summary
Amphibians	A desk top review of OS and aerial mapping identified eight ponds within 500 m of the proposed option, which could hold potential for GCN and other amphibians. Desk study records identified 2 records of GCN for the study area in Section B. GCN are fully protected in the UK under domestic and European legislation and listed as priority species on the Northumberland LBAP. In addition GCN are listed as a SoPI.
Reptiles	A desk top review of OS and aerial mapping identified that habitat such as rough grassland, arable field margins and riparian habitats was present in the study area. These habitat types were considered suitable to support common and widespread reptile species namely: common lizard, grass snake, slow worm and adder. ERIC North East provided no records of reptiles for the study area in Section B. The common and widespread reptile species are partially protected in the UK under domestic legislation from intentional/reckless killing or injury. All species of reptile identified here are listed as a SoPI.
Breeding Birds	Desk study records illustrated 14 bird species of conservation concern recorded in the study area (BoCC – Red/Amber Listed and SoPI – NERC Act 2006) for Section B Records for 2 schedule 1 species (WCA Act 1981) were also returned. Farmland birds are listed as priority species on the Northumberland LBAP. A number of commonly recorded farmland bird species are also listed as SoPI.
Wintering Birds	Desk study records illustrated 14 bird species of conservation concern recorded in the study area (BoCC – Red/Amber Listed and SoPI – NERC Act 2006) for Section B Records for 4 schedule 1 species (WCA Act 1981) were also returned.

Species or Species group, Habitat	Baseline Summary
	Farmland birds are listed as priority species on the Northumberland LBAP. A number of commonly recorded farmland bird species are also listed as SoPI.
Barn Owl	Desk study records illustrated that there were six records of barn owl in the study area in Section B Barn owl are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and listed as a priority species on the Northumberland LBAP.
Badger	Desk study records illustrated that there were seven records of badger in the study area for Section B. Of these 4 were records of badger setts. Badger and their setts are fully protected under Protection of Badgers Act 1992.
Bats	Desk study records illustrated that there were at least 915 individual bat records comprising 7 different species within 5km of the proposed scheme. Bat species records comprised: • brown long-eared bat (*Plecotus auritus*);soprano pipistrelle (*Pipistrellus pygmaeus)*; • common pipistrelle; (*Pipistrellus Pipistrellus)*; • noctule; (*Nyctalus noctula)*; • Natterer's bat; (*Myotis nattereri*); • whiskered/Brandt's bat*,* (*Myotis mystacinus / brandtii),*and*;* • Daubenton's bat. (*Myotis daubentonii*). Within 500m of the A1, there was a single record of a 60 individual soprano pipistrelle bats within a maternity roost at North Charlton at the noth-eastern edge of the survey buffer. Bats are fully protected in the UK under domestic and European legislation and listed as Priority Species on the Northumberland LBAP. In addition three species of bats which could be recorded as present in the study area are listed as SoPI (soprano pipistrelle, noctule, brown long-eared bat).
Water Vole	Desk study records illustrated that there was one record of water vole within 2km, and none within 500m, in the study area for Section B. Water vole are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition Water vole is listed as a SoPI and as a priority species on the Northumberland LBAP.
Otter	Desk study records illustrated that there were four records of otter in the study area for Section B. Otter are fully protected in the UK under domestic and European legislation. In addition Otter are listed as a SoPI and as a priority species on the Northumberland LBAP.
Brown Hare	Desk study records illustrated that there were twenty six records of brown hare in the study area for Section B. Brown hare are listed as a priority species on the Northumberland LBAP

Species or Species group, Habitat	Baseline Summary
Red Squirrel	Desk study records illustrated that there were 327 records of red squirrel in the study area around Section B. Red squirrel are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition they are listed as a SoPI and as a priority species on the Northumberland LBAP.
Terrestrial Invertebrates	Habitats in the survey area had the potential to support a range of protected terrestrial invertebrate species especially in the more diverse habitats such as woodland, scrub and hedgerows. Dingy Skipper is listed as a SoPI and as a priority species on the Northumberland LBAP.
Aquatic Invertebrates	The aquatic habitats in the survey area were considered suitable to support a range of aquatic invertebrate species. Records of the following species were identified through online data sources (these species are listed either on the annexes or schedules of the Habitats Directive/Habitats and Species Regulations 2010 (as amended), Wildlife and Countryside Act 1981 (as amended) or Section 41 of the NERC Act 2006): • freshwater pearl mussel (*Margaritifera margaritifera*), • yellow mayfly (*Potamanthus luteus*), • pond mud snail (*Omphiscola glabra*), • depressed river mussel (*Pseudanodonta complanata*), • shiny ramshorn snail (*Segmentina nitida*) • large mouthed valve snail (*Valvata macrostoma*) • great raft spider (*Dolomedes plantarius*), • medicinal leech (*Hirudo medicinalis*), • lesser silver water beetle (*Hydrochara caraboides*), • Glutinous snail (*Myxas glutinos*)*;* and • white-clawed crayfish (*Austropotamobius pallipes*).
Fisheries	The watercourses in the survey area were considered suitable to support a range of fish species. Records of the following species were identified through online data sources (these species are listed either on the annexes or schedules of the Habitats Directive/Habitats and Species Regulations 2010 (as amended), Wildlife and Countryside Act 1981 (as amended) or Section 41 of the NERC Act 2006): • Atlantic salmon (*Salmo salar*), • brown/sea trout (*Salmo trutta*), • European eel (*Anguilla anguilla*), • bullhead (*Cottus gobio*), • sea lamprey (Petromyzon marinus), • river lamprey (*Lampetra fluviatilis*); and • brook lamprey (*Lampretra planeri*).
Invasive Plant species	Records of the following species were identified through online data sources (these species are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) within 2 km of the scheme: • Giant hogweed (*Heracleum mantegazzianum*). • Giant knotweed (*Fallopia sachalinensis*), • Himalayan balsam (*Impatiens glandulifera*), • Himalayan cotoneaster (*Cotoneaster simonsii*), • Japanese knotweed (*Fallopia japonica*),

Species or Species group, Habitat	Baseline Summary
	• montbretia; • rhododendron; and. • variegated yellow archangel.

3.2 Field Survey

Habitats

3.2.1 Habitats (JNCC alphanumeric reference codes in parenthesis) within the 500 m survey area comprised:

- Arable (J1.1);
- Amenity grassland (J1.2);
- Bare ground (J4);
- Boundary removed (J2.7);
- Broad-leaved semi-natural woodland (A1.1);
- Broad-leaved plantation woodland (A1.1.2);
- Coniferous plantation woodland (A1.2.2);
- Continuous bracken (C1.1);
- Dense/continuous scrub (A2.1);
- Dry ditch (J2.6);
- Dry heath/acid grassland mosaic (D6);
- Fence (J2.4);
- Improved grassland (B.4);
- Introduced shrub (J1.4);
- Marginal vegetation (F2.1);
- Marshy grassland (B5);
- Mixed semi-natural plantation woodland (A1.3.1);
- Mixed plantation woodland (A1.3.2);
- Native species-rich intact hedge (J2.1.1);
- Native species-poor intact hedge (J2.1.2);
- Native species-poor defunct hedge (J2.2.2);
- Natural acid/neutral inland cliff (I1.1.1);
- Neutral semi-improved grassland (B2.2);
- Poor semi-improved grassland (B6);
- Quarry (I2.1);
- Recently-felled broad-leaved woodland (A4.1);
- Recently-felled coniferous woodland (A4.2);
- Running water (G2);
- Scattered broad-leaved trees (A3.1);
- Scattered scrub (A2.2);
- Species-poor hedge and trees (J2.3.2);
- Spoil (I2.2);
- Standing water (G1);
- Tall ruderal (C3.1), and;
- Wall (J2.3.5).

3.2.2 Habitats identified above are mapped on Figures 2.1 to 2.19 (Section A – Morpeth to Felton) and Figures 3.1 – 3.13 (Section B – Alnwick to Ellingham). Detailed Target Notes, including supplementary information on sites, species of interest and composition are

provided in Appendices A (Section A) and B (Section B). Within each section, target notes ascend numerically from south to north. A floristic species list for the study area can be found in Appendix C. The thirty-five habitat types found within the survey area for Section A and B are summarised together under each habitat type in alphabetic order below.

Arable (J1.1)

3.2.3 This habitat type, in conjunction with improved grassland was the most common within the survey area. Arable fields were enclosed for the most part by native species-poor hedgerows, some boundaries comprised species-poor hedgerows with associated dry ditches. Crops within the fields were predominantly wheat (*Triticum sp*.) and barley (*Hordeum sp*.) and to a much lesser extent oat (*Avena sativa*) and rape (*Brassica napus*) and other brassicas. Field margins were generally of limited botanical interest, mainly dominated by a narrow strip of improved grassland or tall ruderal vegetation; although exceptions were noted where new plantation woodland had been planted or where very wide field margins occurred to provide game cover. Within the survey area for Section A notable examples of such field margins occur at Target Note A295 (Figure 2.1) and A214. Within the survey area for Section B notable examples of such field margins occur at Target Note B150 (Figure 3.1).

3.2.4 Arable field margins are listed as a Habitats of Principal Importance (HoPI) under Section 41 of the NERC Act 2006 .

Amenity grassland (J1.2)

3.2.5 This type of grassland is mostly associated with open spaces found next to residential developments, caravan parks, road verges and notably within Section A and Section B survey area; Burgham Park Golf Course located south-west of the River Coquet and the Bockenfield and Felmoor caravan parks (Section A, Figures 2.4 & 2.5). The sward in this habitat type is generally species-poor and highly managed by a mixture of mowing and nutrient enhancement (fertilizers).

Bare ground (J4)

3.2.6 Areas of bare ground were uncommon but examples were located to the west of the A1 directly south of the large pond at Patterson Cottage (Section B, Figure 3.3) and within the burial ground east of the A1 (Section A, Figure 2.3).

Boundary removed (J2.7)

3.2.7 OS map boundaries were noted to be absent in seventeen locations within the study area. These appear to be removed/defunct fence lines or former hedgerows now marked only by a line of trees (e.g. Section A, Figures 2.4, 2.5, 2.6 & 2.12).

Broad-leaved semi-natural woodland (A1.1)

3.2.8 Broad-leaved woodland is the dominant feature bordering the River Coquet where the A1 crosses the river (Section A, Figure 2.2). The woodland comprised alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*), oak, silver birch (*Betula pendula*), downy birch (*Betula pubescens*), willow (*Salix sp*.), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), field maple (*Acer campestre*), beech (*Fagus sylvatica*), sycamore (*Acer pseudoplatanus*), rowan (*Sorbus aucuparia*) and wych elm (*Ulmus glabra*). Ground flora was fairly diverse and included dog's mercury (*Mercurialis perennis),* native and hybrid bluebell (*Hyacinthoides non-scripta, H. x massartiana*), lesser celandine (*Ranunculus ficaria*), primrose (*Primula vulgaris*), greater wood rush (*Luzula sylvatica*), wood anemone (*Anemone nemorosa*), honeysuckle (*Lonicera spp*.), male fern (*Dryopteris filix-mas*), ramsons (*Allium ursinum*), meadowsweet (*Filipendula ulmaria*), cleavers (*Galium aparine*), wild angelica (*Angelica sylvestris*), great burdock (*Arctium lappa*), wood sorrel (*Oxalis acetosella*), wood avens (*Geum urbanum*), opposite-leaved golden saxifrage

(*Chrysosplenium oppositifolium*), common dog violet (*Viola riviniana*), pignut (*Conopodium majus*), foxglove (*Digitalis purpurea*), ground ivy (*Glechoma hederacea*), barren strawberry (*Potentilla sterilis*), black horehound (*Ballota nigra*), creeping forget-me-not (*Myosotis secunda*) and mare's tail (*Hippurus vulgaris*). The wood forms part of the River Coquet and Coquet Valley Woodlands SSSI. Lowland mixed deciduous woodland is listed as a HoPI and as a Priority Habitat on the Northumberland LBAP. Other examples of this habitat type can be found north-east of the Coquet (Section A, Figure 2.1) and bordering the River Lyne (Section A, Figure 2.14, TNs - A36 and A53).

Scattered broad-leaved trees (A3.1)

3.2.9 A group of potentially veteran pedunculate oaks (*Quercus robur*) (Section B, Figure 3.7, TN-B60) were noted immediately to the south east of Islaford Bridge on Heiferlaw Bank (NU 176 183) and which appear to be relict natural broadleaved semi-natural woodland. An additional group of potentially veteran pedunculate oaks was noted on an embankment located 100 m directly to the east of this target note. Nine mature and potentially veteran oaks were also noted close to Heiferlaw Bridge adjacent to the B6341 (Section B, Figure 3.7, TN-B76).

Broad-leaved plantation woodland (A1.1.2) /

3.2.10 This habitat type is common throughout the survey area with planted road verges commonly comprised young broadleaved plantation. Examples of established tracts of this habitat type were found south-west of the B6345 (Section A, Figure 2.1) and south–east of Felmoor Park (Section A, Figure 2.6). Newly planted broadleaved plantation was occasionally noted such as adjacent to South Charlton Bog (Section B, Figure 3.5, TN-B150). Tube guards were present but largely devoid of trees, potentially due to foraging by deer.

3.2.11 A line of mature and veteran ash and oak were noted along the edge of a conifer plantation (Murdie's Covert) appearing to be the remnants of broadleaved plantation woodland (Section B, Figure 3.7, TNs - B70 to B74, B91 and B92).

3.2.12 Lowland mixed deciduous woodland is listed as a HoPI and as a priority habitat on the Northumberland LBAP. Trees (and Hedges) are listed as a priority habitat on the Northumberland LBAP.

Coniferous Plantation Woodland (A1.2.2)

3.2.13 Several coniferous plantation woodland parcels were present within the survey area. Tile Kiln Rush (Section A, Figure 2.1, TN - A259) comprises a coniferous plantation that appears to have been planted over felled broadleaved woodland due to the ground flora indicator species that remain. Burgham Golf Club also contains dense stands of conifer plantation dominated by Scot's pine (*Pinus sylvestris*), European larch (*Larix decidua*) and sitka spruce (*Picea stichensis*) (Section A, Figure 2.5, A176).

3.2.14 A Small (0.8 ha) Scot's pine dominated plantation woodland (Lodge Plantation) is present straddling Shipperton Burn (NU 169 219), immediately adjacent to the A1 (Section B, Figure 3.1, TN - B136). A dense, 3.4 ha conifer plantation (Heater Wood) with Scot's pine and spruces (*Picea sp*.) was located north-west of West Linkhall (Section B, Figure 3.2, TN-B118). The wood was fenced off for pheasant rearing. The ground flora was depauperate with an area of rhododendron (*Rhododendron ponticum spp*.). Occasional broadleaf species included cherry (*Prunus sp.*) and elder (*Sambucus nigra*) were present, comprising less than 5% of the total.

Continuous bracken (C1.1)

3.2.15 Bracken was noted to be a component of woodland ground flora within the survey area typically in association with conifer (Section A, Figure 2.4, A181), felled woodland (Section

A, Figure 2.2, TN-A254), mixed plantation woodland (Section A, Figure 2.2, TN-A256) and within acidic heath/grassland mosaic (Section B, Figure 3.11, TN-B19).

Dense/continuous scrub (A 2.1) and Scattered scrub (A2.2)

3.2.16 This habitat type was widespread throughout the study area in localised areas. Examples include the banks of Earsdon Burn at Causey Park (Section A, Figure 2.8) and at Islaford Bridge and Murdie's Covert where gorse scrub forms a component of the land parcel (Section B, Figure 3.7). The typical species recorded were gorse (*Ulex europaeus*) which was noticeably abundant throughout the survey area, with hawthorn, elder, bramble (*Rubus fruticosus* agg.), willow (*Salix sp.*), dog rose (*Rosa canina* agg) and occasional broom (*Cytisus scoparius*). Scrub is listed within the Trees and Hedgerows Habitat Action Plan within the Northumberland LBAP.

Dry Ditch (J2.6)

3.2.17 This habitat type was only recorded a small number of times during the surveys, always on agricultural field boundaries.

Dry heath/acid grassland mosaic (D6)

3.2.18 The crag, north of Heckley House (NU 187 164) noted in TN-B19 (Section B, Figure 3.11), covers an area of approximately 1 ha and comprises a strip of scot's pine, rowan and occasional oak at the top of the crag which gives way to a mosaic of bracken, grasses such as wavy hair grass (*Deschampsia flexuosa*), heather (*Calluna vulgaris*), gorse, and bilberry (*Vaccinium myrtillus*). This small section of habitat was surrounded by lower lying improved grassland and arable land. Lowland heath and inland rock are both listed as a HoPI.

Fence (J2.4)

3.2.19 Fences; typically post and wire, were a ubiquitous feature of the survey area, present in virtually all the agricultural fields. Typically, fences were present in association with species poor hedgerows, ditches and walls.

Improved Grassland (B.4)

3.2.20 Improved grassland in the study area was extensive and species-poor; dominated by grass species that are indicative of intensive grazing and the use of fertilizers. The typical species found are annual meadow grass (*Poa annua*) and perennial rye grass (*Lolium perenne*). Occasional daisy (*Bellis perennis*) and creeping buttercup (*Ranunculus repens*) are also present as are common nettle (*Urtica dioica*) and docks (*Rumex sp*.) indicating areas of local enrichment from grazing.

Introduced Shrub (J1.4)

3.2.21 This habitat type was found in localised areas such as road verges, gardens and businesses located within the study area. The habitat type was rare within the study area and was typified by species such as cotoneaster (*Cotoneaster horizontalis*), New Zealand flax (*Phormium sp*.), berberis (*Berberis sp*.), smoke tree (*Cotinus sp*.), dogwood (*Cornus sanguinea*), spotted laurel (*Aucuba japonica*), mahonia (*Mahonia spp*), hebe (*Hebe spp*) and ceanothus (*Ceanothus spp*.).

Marginal vegetation (F2.1)

3.2.22 Marginal vegetation is present throughout the survey area along watercourses and the edge of standing water bodies. Species recorded during the survey included water-cress (*Rorippa nasturtium-aquaticum*), water figwort (*Scrophularia auriculata*), fool's-water-cress

(*Apium nodiflorum*), reed sweet-grass (*Glyceria maxima*), common reed (*Phragmites australis*), hemlock (*Conium maculatum*), water plantain (*Alisma plantago-aquatica*) and bulrush (*Typha latifolia*).

Marshy Grassland (B5)

3.2.23 This habitat type is scattered across the survey area where wet flushes are present, which was dominated by soft rush (*Juncus effusus*) and common reed (*Phragmites australis*). Notably large expanses of this habitat were noted within South Charlton Bog and at Heiferlaw Bridge (NU 177 187 & NU 179185 respectively; Section B, Figure 3.7) to the north and south of White House Burn. Other examples of this habitat occur around the confluence of Earsdon Burn and tributary to the west of the Oak Inn at Causey Park (NZ 183 943) (Section A, Figure 2.4) and on low lying ground to the east and south of the Northumberland Canine Centre at West Moor (NZ 170 986) (Section A, Figure 2.3).

Mixed semi-natural plantation woodland (A1.3.1)

3.2.24 This habitat type is uncommon within the survey area where most mixed plantation is typically an immature mix of species. Exceptions include the mixed semi-natural plantation woodland within Minto's Dean; near Felton (Section A, Figure 2.1, TN-A321**)**. The woodland contains blocks of mature deciduous and mature coniferous trees with overlap between the sections. Species include oak, beech, rowan, Sitka spruce, Norway spruce (*Picea abies*), silver birch, hazel hawthorn and holly (*Ilex aquifolium*). The ground flora within the woodland which contains an area of marshy grassland/wet woodland is relatively abundant. Species included ramsons, dog's mercury, woodruff (*Galium odoratum*), red campion (*Silene dioica*), nettle, hogweed (*Heracleum sphondylium*), gorse, opposite-leaved golden saxifrage, meadowsweet, hart's-tongue fern (*Phylittus scolopendrium*), honeysuckle, greater stichwort (*Stellaria holostea*), bluebell, pignut, wood anemone, greater celandine (*Chelidonium majus*), lesser celandine, primrose, wood sorrel, field wood-rush (*luzula campestris*), toothwort (*Lathraea squamaria*), giant fescue (*Festuca gigantea*) and tufted hair grass (*Deschampsia caespitosa*). Wet woodland is listed as a HoPI.

Mixed Plantation Woodland (A1.3.2)

3.2.25 Mixed woodland habitats are common within the survey area; frequently found along the A1 embankments and buildings as small new plantations. The plantation fronting the houses at Blackwood opposite Blackwood Hall (NZ 174 981, Section A, Figure 2.3, TN-A223) is typical of this habitat type. The plantation in this location contained whitebeam, hawthorn, leylandii, rowan, silver birch, grey willow, goat willow, horse chestnut and Lombardy poplar. Ground flora included lesser burdock, moschatel (*Adoxa moschatellina*) and bluebell.

3.2.26 The 4.5 ha mixed plantation (Edington Dean) straddling Shipperton Burn to the west of the A1 at North Charlton is representative of more mature mixed plantation. At this location species included Scot's pine, European larch, sycamore, and ash with hawthorn understorey and a bluebell dominated ground flora. Similarly, Craggy Wood at West Linkhall is a mixed woodland plantation with semi-mature sycamore, ash and Scot's pine dominated with an understorey of hawthorn, cherry laurel, wild privet (*Ligustrum vulgare*) and elder, (Section B, Figure 3.3, TN-B124).

3.2.27 The young mixed (conifer dominated) plantation woodland at Murdie's Covert (NU 177 190) (Section B, Figure 3.7, TN-B79) contained remnants of older woodland. Species here comprise spruce, sycamore, ash, Scot's pine, elder, wild privet, silver birch, hawthorn, blackthorn and holly. However, eight mature (potentially veteran) oaks were present at the fringe of the woodland (including TNsB91 & B92) indicating that the wood is of some antiquity despite the current species assemblage. Ground flora included primrose,

moschatel, foxglove, raspberry (*Rubus idaeus*) and honeysuckle. Trees are listed as a Priority Habitat on the Northumberland LBAP.

3.2.28 Ellsnook Plantation (NU 181 191) comprised an immature woodland (Section B, Figure 3.7, TN-B95) with trees including silver birch, European larch, cherry, oak and ash which segues into mixed woodland (Section B, Figure 3.7, TN-B79) consisting of young planted ash and silver birch with sycamore, spruces, yew (*Taxus baccata*) and cherry laurel. The ground flora was consistent with established woodland including species such as wood sorrel, bluebell, hard rush, lady fern (*Athyrium felix-femina*), wood anemone and abundant ferns and mosses. Some woodlands comprised a mixture of types such as the mosaic of mixed plantation woodland containing wet and dry woodland, with Scot's pine, alder, ash, hazel, rowan and beech surrounding Eshott Burn (Section A, Figure 2.11, TN-A140).

Native species-poor intact hedge (J2.1.2) / Native species-poor defunct Hedge (J2.2.2) / Species-poor hedge and trees (J2.3.2)

3.2.29 These habitat types were widespread throughout the survey area. Species-poor hedgerows denoted field boundaries within the majority of the survey area. The hedgerows were typically dominated by hawthorn, with less frequent species comprising elder, blackthorn, holly, ash and beech. The majority of hedgerows within the survey area were reinforced by the contiguous use of post and wire fences, sometimes on both sides of the hedge. Other associated features included ditches and embankments.

3.2.30 Species-poor defunct hedges were also a notable feature of the survey area. Hedgerows were typically dominated by hawthorn with a depauperate understorey. The vast majority were supplemented by the emplacement of post and wire fencing although occasional re-planting of gaps with whips was noted.

3.2.31 Species-poor hedges with trees were also a notable feature of the survey area. Dominant tree species were ash and oak, frequently presenting as mature (potentially veteran) trees with features suitable for roosting bats and breeding birds. Hedgerows are listed as a HoPI and as a priority habitat on the Northumberland LBAP.

3.2.32 Based on the recorded features of hedgerows identified above, additional survey work was scoped out in relation the Hedgerows Regulations (HMSO 1997) assessments to determine "ecologically important" hedgerows.

Native species-rich Intact hedge (J2.1.1)

3.2.33 A number of hedges were assessed as being species-rich. One hedge at Causey Park Hag to the west of the A1 (NZ 184 955) contained hawthorn, ash, sycamore, with occasional dog rose, and recently planted blackthorn (*Prunus spinosa*) and occasional oak. Ground flora within the associated dry ditch comprised cleavers, nettle, garlic mustard (*Alliaria petiolata*), and lesser celandine with occasional crosswort (*Cruciata laevipes*) and greater stitchwort. A number of species-rich hedges were noted clustered around Helm to the east of the A1 (Section A, Figure 2.5, TN-A171. Figure 2.5, TN-A175. Figure 2.10, TN-A173. Figure 2.5, TN-A166 and Figure 2.10, TN-A150) each containing five or six woody species. Another hedgerow of this type was present a little further to the south (Section A, Figure 2.11, TN-A127) at Earsdon Hill). Hedgerows are listed as a HoPI and listed as priority habitats on the Northumberland LBAP.

3.2.34 Based on the recorded features of hedgerows identified above, additional survey work was scoped out in relation the Hedgerows Regulations (HMSO 1997) assessments to determine "ecologically important" hedgerows.

Natural acid/neutral inland cliff (I1.1.1)

3.2.35 A sandstone crag (Section B, Figure 3.11, TN-B19) was noted between the A1 and the B6341 above Heckley House (NU 187161). The outcrop is surrounded by dense scrub, marshy grassland and semi-natural woodland and contains numerous deep fissures that offer bat roosting and bird-nesting potential. Inland Rock is listed as a HoPI.

Neutral semi-improved grassland (B2.2)

3.2.36 Areas of neutral semi-improved grassland were noted adjacent to areas of marshy grassland at West Moor (NZ 170 986) (Section A, Figure 2.3, TN-A232), dominated by Yorkshire fog (*Holcus lanatus*), cock's-foot (*Dactylis glomerata*), marsh foxtail (*Alopecurus geniculatus*) and meadow fescue (*Festuca pratensis*). Other species included meadow foxtail (*Alopecurus pratensis*) with crested dog's-tail, soft rush, sharp rush, bloody crane's-bill (*Geranium sanguineum*), meadow buttercup (*Ranunculus acris*), lesser celandine, meadowsweet and cuckoo flower (*Cardamine pratensis*). This habitat type was also noted west of the A1 at Heckley Fence Farm (Section B, Figure 3.9) and below the River Lyne (Section A, Figure 2.14, TN-A42). Here the grassland was grazed short with sweet vernal grass (*Anthoxanthum odoratum*) and crested dog's-tail (*Cynosurus cristatus*) were abundant with frequent Yorkshire fog, perennial rye grass, creeping thistle, red clover (*Trifolium pratense*), creeping buttercup and meadow buttercup (*Ranunculus acris*) and occasional rough hawkbit (*Leontodon hispidus*) and pale sedge (*Carex pallescens*).

Poor semi-improved grassland (B6)

3.2.37 This habitat type is present at various locations in the study area typically as small parcels of land bordering arable land in the form of field margins, along road verges and within woodland understoreys. Many were likely to have been extensively grazed or had fertiliser added in the recent past. The species found on this grassland type included perennial rye grass, false oat grass (*Arrhenatherum elatius*), tufted hair-grass, sweet vernal grass, timothy (*Phleum pratense*) and meadow foxtail. This habitat is often supplemented by common tall ruderals such as black knapweed, docks, willowherbs and nettles.

Quarry (I2.1)

3.2.38 No active quarries were noted during the survey. However former small-scale quarry workings were identified within the survey area, which have now become densely vegetated or which now leave no trace. A former quarry at South Charlton centred on NGR NU 180 206 is now improved grassland. Similarly, Ellsnook Plantation in Section B has naturalised a former quarry with a pond and woodland (Section B, Figure 3.7, TNs B94 & B95). Walls are the only man made feature now visible.

3.2.39 Target Note B44 (Section B, Figure 3.10, TN-B44) noted a hollow and rocky outcrop, potentially a small former quarry, now vegetated with species including scots pine, sycamore, beech and elder.

Recently-felled broad-leaved woodland (A4.1)

3.2.40 This habitat was noted at one location. Clear felled woodland with remnant broad-leaved trees but showing some coniferous new growth was present to the north-west of Section A (Figure 2.2, TN-A256). Ground flora included bluebells, bracken, and abundant rushes and sedges to the south.

Recently-felled coniferous woodland (A4.2)

3.2.41 This habitat was noted at two locations. In the same general location as the recently felled broad-leaf woodland is a former conifer plantation that has been clear felled and allowed to regenerate with broad-leaved species (Figure 2.2, TN-A254). Trees included cherry,

sycamore, willows and silver birch. Scrub is abundant within the understorey consisting of elder, bramble, honeysuckle, hawthorn, gorse and broom. Ground flora includes grasses, bracken, sedges, mosses, raspberry, wood sorrel, ramsons and wood anemone. A very small (0.2 ha) clear-felled section of Park Wood to the north-west of Section A was also noted to have been felled (Section A, Figure 2.2, TN-A254).

Running Water (G2)

3.2.42 Rivers and burns are listed as a HoPI and as a Priority Habitat on the Northumberland LBAP. The River Coquet and thirty smaller watercourses, and minor tributaries, were located within Section A. A total of seventeen watercourses, and minor tributaries were located throughout Section B. A number of these watercourses traverse the options under consideration; most notably: the River Coquet and River Lyne, Longdike Burn and Earsdon Burn within Section A and Shipperton Burn and Charlton Burn within Section B.

3.2.43 A number of the watercourses were found to offer habitat potential for otters with field signs attributable to the species noted in Longdike Burn (Section A, Figure 2.4, TNs A182 & A205). Rivers and streams are listed as a HoPI and as a Priority Habitat on the Northumberland LBAP.

Standing water (G1)

3.2.44 Twenty-seven ponds were located within 500 m of the proposed options. Water quality appeared generally moderate or good ranging from eutrophic to dystrophic with many of the ponds fed by streams or surface water runoff and supporting numerous macrophytes such as yellow water lily (*Nuphar lutea*), bog pondweed (*Potamogeton polygonifolius*), common duckweed (*Lemna minor*), pond water crowfoot (*Ranunculus peltatus*) and sphagnum mosses (*Sphagnum spp*.). One highly eutrophic pond was noted to the north of Bockenfield Manor (NZ 179 978) which was receiving discharge from septic tanks (Section A, Figure 3.3, TN-A230). Ponds are listed as a HoPI and Ponds. Lakes & Reservoirs are listed as a Priority Habitat on the Northumberland LBAP.

Tall Ruderal (C3.1)

3.2.45 This habitat type was scattered across the survey area typically within habitat mosaics and within less managed grassland. A number of unmanaged arable fields or portions thereof had become fully colonised by tall ruderals (Section B, Figures 3.1, 3.6, 3.8 and 3.9). Many field margins within the survey area contain abundant tall ruderals with some strips deliberately fenced to provide game cover (notably Section B, Figures 3.11 and 3.12 and Section A, Figure 2.5, TN-A214). The species that were typically dominant in this habitat type included creeping thistle (*Cirsium arvense*), meadowsweet (*Filipendula ulmaria*), soft rush, black knapweed (*Centaurea nigra*) and rosebay willowherb (*Chamerion angustifolium*).

Wall (J2.3.5)

3.2.46 Walls were a common feature of dwellings throughout the survey area and provided negligible habitat potential. Occasional derelict walls from former enclosures were noted such as to the south of Brockley Hall (NU 165 206). These were maintained as a barrier through the erection of post and wire fences and occasionally, species-poor hedgerows. One intact wall still used as a field boundary was recorded at South Charlton, east of South Charlton Farm at NU 165 201.

Spoil (I2.2)

Spoil was identified within several areas throughout the survey area. Spoil heaps can act as valuable hibernacula for amphibians and reptiles.

Invasive Species

3.2.47 Invasive plant species as listed on Schedule 9 of the WCA 1981 (as amended) were identified in the survey area. ERIC North East provided one record for Japanese knotweed, 300 m east of the survey area for Section A. Records of invasive species within 2 km of the proposals include New Zealand pygmyweed (*Crassula helmsii*), montbretia (*Crocosmia x crocosmiiflora*), Himalayan cotoneaster (*Cotoneaster simonsii*), giant knotweed (*Fallopia sachalinensis*) and variegated yellow archangel (*Lamiastrum galeobdolon subsp. argentatum*).

3.2.48 Invasive species recorded during the Phase 1 habitat survey are summarised below with an indication of location given with reference to Figures and Target Notes (TN). Species recorded in the study area were:

3.2.49 A Japanese Knotweed (*Fallopia japonica*) stand was located within Blubbery Wood (Section A, Figure 2.16, TN-A20). This had been cut and left in-situ indicating attempted management.

3.2.50 Rhododendron. Typically planted as an ornamental, this species was noted within Heater Wood forming a widespread understorey (Section B, Figure 3.2, TN-B118). ERIC North East provided a single record for Rhododendron (*Rhododendron sp.*) within the survey area. Similarly, rhododendron was recorded within broadleaved semi-natural woodland in Section A (Figure 2.1, TN-A276; Figure 2.2, TN-B257) and also where a small woodland is attached to Earsdon Hill Farm (Section A, Figure 2.11, TN-A144).

3.2.51 These species are listed on Schedule 9 of the WCA 1981 which makes it an offence to actively plant or otherwise cause such species to grow in the wild.

Protected species potential

3.2.52 Amphibians: As previously discussed ERIC North East provided four records of great crested newt within the survey area and 80 records within 2 km of the proposed options. All the records identified were associated with Section A. However both the survey areas of Section A and Section B contained suitable terrestrial and aquatic habitats that could support great crested newts and other amphibian species. Ponds identified during the survey were scattered across Section A with a notable cluster centred on Bockenfield Caravan Park and Burgham Park area. Burgham Park was notable for being one of only three locations within the study area where records for GCN were returned with a cluster of three records located within the golf course. A single record was returned for Rock in Section B with a third location near Morpeth at insufficient resolution to determine an exact location.

3.2.53 Badgers: Widespread badger (*Meles meles*) field signs including setts and associated activity were recorded during the Phase 1 surveys undertaken by Jacobs in 2016, which focused on an area within 500 m of the proposed options. During the Phase 1 survey, ten badger setts were identified in Section A, and five setts in Section B. Badgers and their setts are subject to illegal persecution throughout the UK. Therefore, as this report is likely to be made publicly available, no information that would allow the location of badger setts to be identified is included herewith. Information relating to badgers will be contained in a separate badger report following a specific survey for the species. ERIC North East provided records of two setts and twenty-six records of individual badgers within the survey area, this increased to eighteen sett records and sixty-eight individual records within the wider 2 km study area.

3.2.54 Bats: Over 190 trees within the study area were assessed as having the potential to support bat roosts during the Phase 1 survey, however these will require more detailed bat roost potential surveys. These were present throughout the survey area for Section A and Section B with the majority of suitable trees taking the form of mature oak and ash

trees. These are a particularly notable feature of the landscape within the survey area typically associated with woodlands, watercourses and hedgerows with occasional clusters such as at Craggy Wood (Figure 3.3) and Rock Nab (Figure 3.6) Other habitats within the survey area offer foraging potential for bat species. Notably these include: the River Coquet, Earsdon Burn, Shipperton Burn, White House Burn, Longdike Burn, Denwick Burn and their tributaries. Standing water bodies such as the lake at Felmoor Park (NZ 181 972), the large ponds at West Linkhall (NU 175 209) and south west of Bockenfield Bridge (NZ 178 971) and the numerous smaller water bodies provide foraging opportunities. Scattered trees, plantation woodland and associated scrub are a common feature of the survey area which typically attracts a variety of invertebrate prey for bats. The survey area also contains an extensive network of potential commuting pathways for bats along arable field margins and hedgerows and the strips of plantation woodland bordering the A1 itself.

3.2.55 Birds: The areas of woodland, hedgerows and dense and scattered scrub in the study area provide suitable nesting habitat for numerous species of birds. Species including carrion crow (*Corvus corone corone*), magpie (*Pica pica*), greenfinch (*Carduelis chloris*), great tit (*Parus major*), wood pigeon (*Columba palumbus*) and pheasant (*Phasianus colchicus*) were widely observed during the survey. The arable fields within the study area are likely to provide nesting and feeding resources for ground nesting birds and the wetland areas including waterbodies, watercourses and marsh offer an important foraging/roosting/nesting resource for waterfowl and waders.

3.2.56 ERIC North East returned few bird records with only one record of a red listed species within the Survey Area, lapwing (*Vanellus vanellus*). However, within a 2 km buffer of the survey area, some twenty-one red listed species records were returned of which several were recorded during the Phase 1 habitat survey.

3.2.57 During the extended Phase 1 habitat survey, several species of waterfowl were recorded including mallard (*Anas platyrhynchos*), coot (*Fulica atra*), mute swan (*Cygnus olor*), greylag geese (*Anser anser*), Canada geese (*Branta canadensis*), common tern (*Sterna hirundo*), and cormorant (*Phalacrocorax carbo*). Woodlands and trees throughout the study area are likely to provide suitable nesting and foraging habitat for breeding birds, with common species such as blackbird (*Turdus merula*), wood pigeon and carrion crow noted during the survey. The improved grasslands within the study area are likely to provide nesting and feeding resources for ground nesting birds such as lapwing and skylark (*Alauda arvensis*). Hedgerows throughout the site are likely to provide suitable nesting and foraging habitat for breeding birds such as robin (*Erithacus rubecula*), goldfinch (*Carduelis carduelis*) and whitethroat (*Sylvia communis*).

3.2.58 Farms, barns and other buildings within the study area have the potential to provide nest sites for species such as house sparrow (*Passer domesticus*), swallow (*Hirundo rustica*) and barn owl (*Tyto alba*) with widespread foraging opportunities over adjacent arable land. A barn owl was recorded during the survey alighting from a mature ash (Section A, Figure 2.1, TN-A291). Barn owl boxes were also noted within woodland north of the River Coquet (Section A, Figure 2.2, TN-A271) at Hebron West Farm (Section A, Figure 2.16, TN-A9) and at Causey Park Lodge (NZ 189 953,Section A, Figure 2.11, TN-A147). Swallows were recorded within a shed at this location, whilst brambling (*Fringilla montifringilla*), yellowhammer (*Emberiza citrinella*), chaffinch (*Fringilla coelebs*), siskin (*Carduelis spinus*) and greenfinch were also present with kestrel (*Falco tinnunculus*) nesting within conifers to the south of the plot. Other species noted within the agricultural habitats included red-legged partridge (*Alectoris rufa*), lapwing, curlew (*Numenius arquata*), oystercatcher (*Haematopus ostralegus*), and snipe (*Gallinago gallinago*),

3.2.59 Otter: During the Phase 1 surveys otter field signs were recorded at two locations, within Longdike Burn (NZ 180 964) either side of the A1 (Section A, Figure 2.4, TN-A204 & Figure 2.4, TN-A182). Otter footprints were in abundance on sandy shallow banks

adjacent to the burn, indicating access and egress from the watercourse. The habitat contained undercut banks with prominent tree roots offering holt potential and a slide was noted on the right bank of the watercourse. Data provided by ERIC North East provided thirteen otter records within the survey area of Section A and three within Section B since 2006. Otter are known to be present within the River Coquet. The national decline in otter distribution reached a low in the 1970s but since the disuse of organo-chlorine pesticides which caused the decline, otters have been spreading back into many areas, especially in northern and western England. Otters can travel over large areas. Some are known to use twenty kilometres or more of river habitat. Therefore there is the potential for all watercourses within the survey area to be used by otters.

3.2.60 Red squirrel: ERIC North East returned records for three individuals for Section B and 44 for Section A. This unequal distribution is mirrored somewhat in the results from within 2 km of the scheme where 326 individuals were recorded in Section A and 65 in Section B. Woodlands and plantations containing purely conifers were more abundant in Section A, a ratio of approximately 6:2 which may explain the disparity in individual records. Squirrel stripped cones and detritus was evident but these are not in themselves sufficient to identify which species of squirrel is responsible. However it is probable that red squirrels are present throughout both survey areas.

3.2.61 Reptiles: There were no records of reptiles found within the survey area in the ERIC North East records within the last ten years. Further afield, beyond the 500 m survey area, records were identified for common lizard and adder; 0.6 km to the east and 7 km west of Section A respectively. No records were identified in relation to Section B. The extended Phase 1 habitat survey identified that the dominant habitat type within the survey area was arable land or improved grassland with hedgerows (many neglected and typically species-poor) that lacked associated features such as embankments or dense diverse ground flora. Thin strips of tall ruderal vegetation, rank grass and associated scrub are present in some locations such as adjacent to Earsdon Brook and grassed field margins but these were considered to offer limited habitat potential given the adjacent habitat structure of arable land and grazing. The small dry heath mosaic at Heckley House (Section B, Figure 3.11, TN-B19) provided optimal habitat for reptiles. However its limited size (approx. 1.2 ha) encircled within a landscape dominated by agriculture, makes it unlikely to support a viable reptile population.

3.2.62 Water Vole: There were no records of water voles found within the survey area in the ERIC North East records within the last ten years. However, water vole field signs were found in abundance during the Phase 1 habitat surveys within Longdike Burn (NZ 180 964) (Section A, Figure 2.4, TN-A182). Several of the watercourses surveyed, offered suitable water vole habitat. Burrows were noted within a tributary of Denwick Burn near Heckley Fence Farm in Section B that appeared to indicate water vole presence (Section B, Figure 11 TN 21). Burrows indicative of water vole with abundant food sources were also noted to a tributary of Earsdon Burn at New Houses Farm (Section A, Figure 2.8, TN-A108). Specific water vole surveys of the watercourses traversed by the survey area will be undertaken at a later stage of the project.

3.2.63 Terrestrial/Aquatic Invertebrates: There were no records of invertebrates found within the survey area in the ERIC North East records within the last ten years. A number of records were provided for invertebrate just beyond the survey area including brown-spot pinion (*Agrochola litura*), ear moth (*Amphipoea oculea*), mouse moth (*Amphipyra tragopoginis*) and rosy rustic (*Hydraecia micacea*) approximately 1.2 km from the A1 at Felton. Several habitats within the survey area; woodlands, marshy grassland, heath, rivers, streams, ponds and pasture all provide excellent habitat for invertebrates.

4 SUMMARY

4.1.1 Below is a brief summary of the ecological features identified during the extended Phase 1 habitat survey. The impact assessment and any mitigation measures required in relation to adverse effects upon these sites and habitats will be presented within environmental reporting at a later stage of the project (i.e. PCF Stage 2 Environmental Assessment Report and subsequent reporting at PCF Stage 3).

4.2 Statutory and Non-statutory designated sites

4.2.1 The sites of International/European importance; Northumbria Coast Ramsar site and SPA located approximately 10 km north-east from the northern end of Section A and North Northumberland Dunes SAC, 9.7 km north-east of the proposed options in Section Aare coastal habitats with limited connectivity to the survey area disconnected from the proposals over large tracts of arable and pastoral farmland.

4.2.2 In relation to Section B, the sites of International/European importance; Northumbria Coast Ramsar site and SPA (9 km to the east), North Northumberland Dunes SAC (9.7 km to the north-east) and Berwickshire and North Northumberland Coast SAC (7.6 km to the east) are disconnected from the proposals over large tracts of arable and pastoral farmland.

4.2.3 Similarly, the: River Tweed SAC and Newham Fen SAC lie approximately 9.5 km to the west and 6.7 km to the north of Section B respectively and would also be unaffected by the proposals.

4.2.4 Longhorsley Moor Site of Special Scientific Interest (SSSI), Scotch Gill Wood Local Nature Reserve (LNR), Davies Wood LNR and Bracken Bank LNR, are all a minimum of 1.2 km or greater from the proposed options in Section A.

4.2.5 The River Coquet and Coquet Valley Woodlands SSSI lies within the footprint of all Section A options under consideration. Of note within this site is the presence of ancient woodland.

4.3 Habitats

4.3.1 Thirty-five different habitat types were recorded during the field survey. The study area is dominated by a mixture of arable farmland and improved grassland with associated field boundaries including ditches and hedgerows.

4.3.2 Seven Priority Habitats (Section 41. NERC Act 2006), arable field margins, hedgerows, inland rock, lowland heath, lowland mixed deciduous woodland, rivers and streams and standing water are present within the study area. These are considered to be of a higher ecological value than the other habitats within the survey area.

4.3.3 Arable, improved grassland and hedgerows, broadleaved plantation woodland and mixed plantation woodland are the dominant habitats in the study areas. With the exception of some woodland contained a varied ground flora (e.g. Section A, Figure 2.11, TN-A321) they are relatively floristically poor habitats.

4.3.4 At this stage additional survey work was scoped out in relation the Hedgerows Regulations (HMSO 1997) assessments to determine “ecologically important” hedgerows.

4.4 Invasive Species

4.4.1 There was a stand of Japanese knotweed within Blubbery Wood (Section A, Figure 16, TN20). The stand lies approximately 750 m east of the survey area. In addition, ERIC

North East provided a record of Japanese Knotweed that lies 300 m east of the survey area A. Neither knotweed stand was located close enough to the proposed options to cause a constraint on the proposed works.

4.4.2 Several other invasive species were also found within the survey area including New Zealand pygmyweed, montbretia, Himalayan cotoneaster, giant knotweed, variegated yellow archangel and Rhododendron. Care needs to be taken to ensure any works does not lead to their spread.

4.5 Protected/Notable Species

4.5.1 The records received during the desk study and habitats recorded during the Phase 1 habitat survey indicate the potential for the survey areas of Section A and Section B to support a number of protected/notable species including, but not limited to:

- amphibians (GCN);
- reptiles;
- breeding/wintering birds;
- bats;
- badger;
- otter;
- water vole;
- red squirrel, and;
- brown hare.
- invertebrates, and;
- fisheries.

4.5.2 Additional surveys may also be required at PCF Stage 3 to determine the presence of sensitive habitats types such as ancient woodland or floristically diverse grasslands. This would be in the form of targeted National Vegetation Classification (NVC) surveys to determine the plant communities present and provide a framework for subsequent assessment of nature conservation importance.

4.5.3 To inform subsequent stages of environmental reporting a number of surveys for the above features have been undertaken in 2016 and likely to continue in 2017.

5 REFERENCES

HMSO (1981) Wildlife and Countryside Act (as amended).

HMSO (1997) The Hedgerow Regulations.

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JNCC (2016). UK BAP priority habitats. Available from http://jncc.defra.gov.uk/page-5718

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National Biodiversity Network (NBN) (2014). Available from: www.nbn.org.uk (accessed October 2014).

Stace, C. (2010). *New Flora of the British Isles.*3rdedition. Cambridge University Press, Cambridge. UK .

FIGURES

FIGURE 1.1

Legend

- 2km Study Area
- 5km Study Area
- Ramsar
- Special Area of Conservation
- Special Protection Area
- Site of Special Scientific Interest
- National Nature Reserve
- Local Nature Reserve

Alnmouth Saltmarsh and Dunes SSSI

Warkworth Dunes and Saltmarsh SSSI

North Northumberland Dunes SAC

Northumberland Shore SSSI

River Coquet and Coquet Valley Woodlands SSSI

Hadston Links SSSI

Cresswell Ponds SSSI

Northumbria Coast SPA & Ramsar

Ulgam Meadow LNR

Cresswell Dunes LNR

Cresswell and Newbiggin Shores SSSI

Longhorsley Moor SSSI

Hawthorn Cottage Pasture SSSI

Queen Elizabeth II Country Park LNR

Scotch Gill Wood LNR

Davies Wood LNR

Bracken Bank LNR

Wansbeck Riverside Park LNR

Castle Island LNR

Carlisle Park LNR

Borough Woods LNR

Choppington Community Woods LNR

Willow Burn Pasture SSSI

0 5 Km

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Drawing Title: STATUTORY AND NON-STATUTORY DESIGNATED SITES OF NATURE CONSERVATION IMPORTANCE SECTION A

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Drawing No.	B2104700_EC_PH1_0101

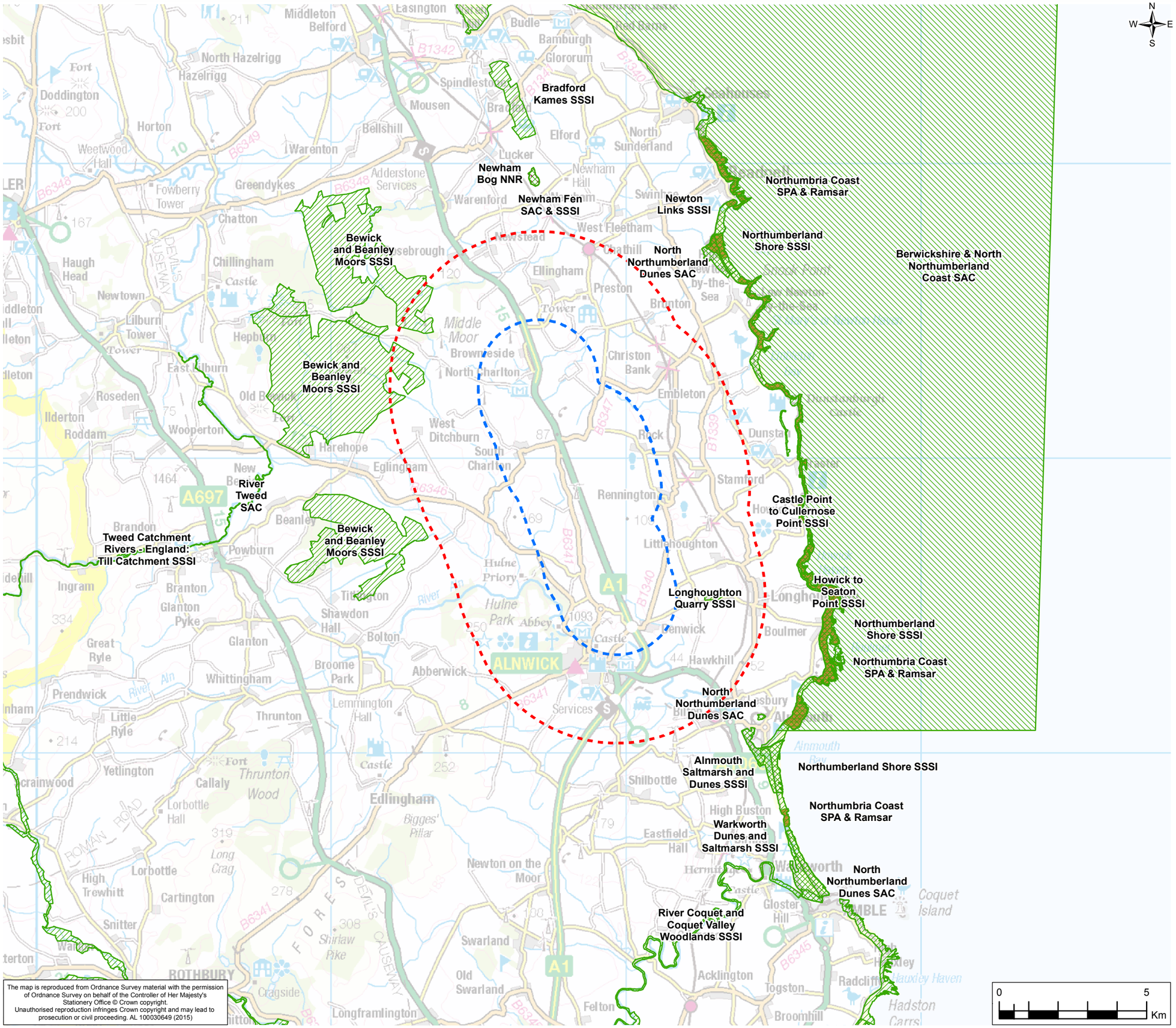

FIGURE 1.2

Legend

- 2km Study
- 5km Study
- Ramsar
- Special Area of Conservation
- Special Protection Area
- Site of Special Scientific Interest
- National Nature Reserve
- Local Nature Reserve

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Drawing No.: B2104700_EC_PH1_0102

FIGURE 2.1

Legend

- Survey Area
- Sheet Extents (Sheet Number)

001
002
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015
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018

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W E
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0 2,000 m

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Drawing Title: SECTION A
PHASE 1 HABITAT SURVEY FIGURE OVERVIEW

Drawing Status:

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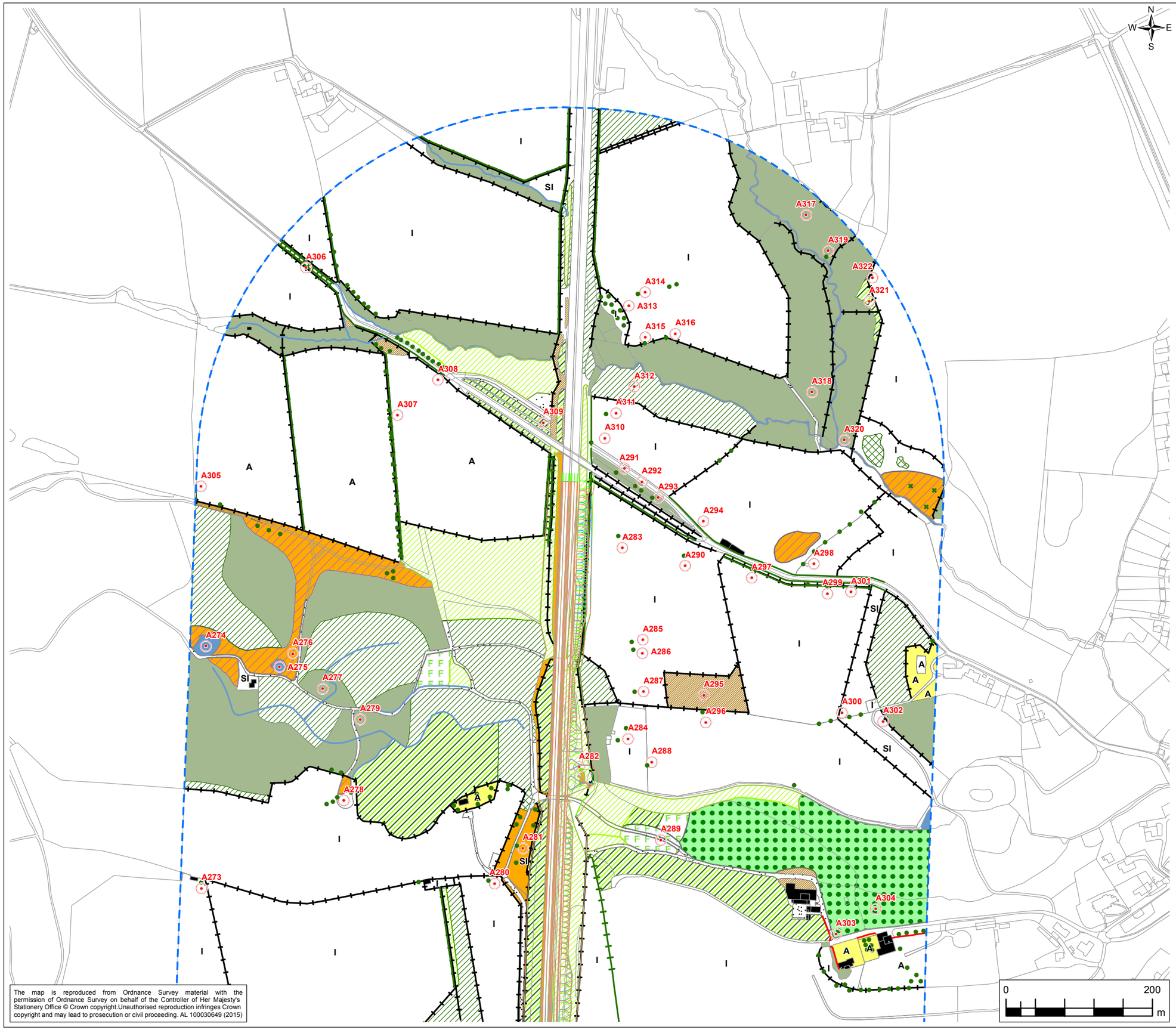
Client No.		

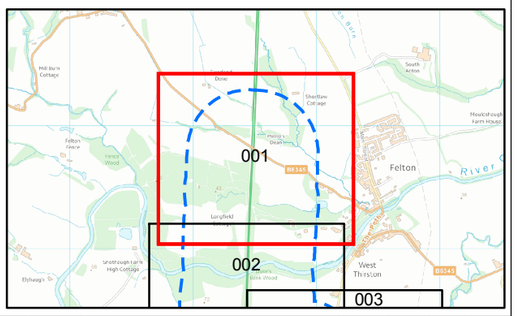
Drawing No.: B2104700_EC_PH1_0201

FIGURE 2.2



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- Amenity Grassland
- Arable
- Bare Ground
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Coniferous Woodland - Recently Felled
- Dense/Continuous Scrub
- Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- Poor Semi-improved Grassland
- Scattered Scrub
- Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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Drawing Title: SECTION A
EXTENDED PHASE 1 HABITAT SURVEY MAP (2016)
Sheet 1

Drawing Status

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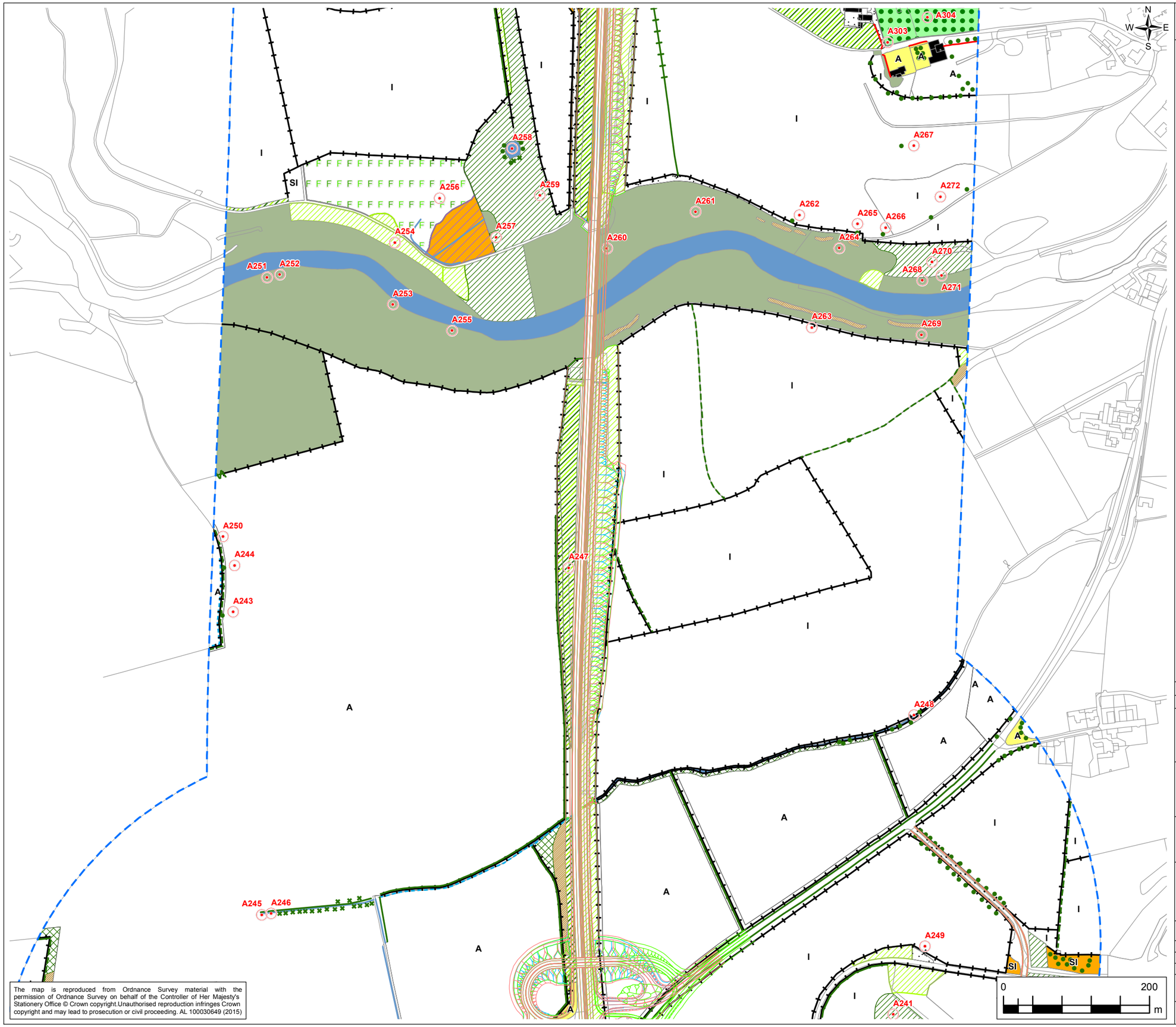
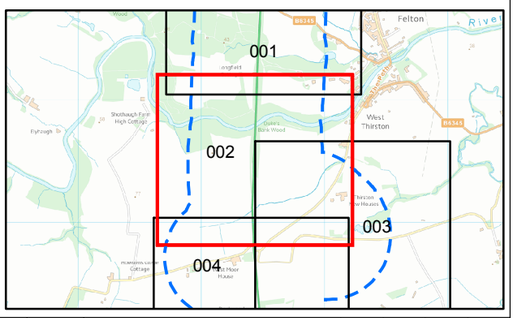
Client No.		

Drawing No.: B2104700_EC_PH1_SectionA_001

FIGURE 2.3





Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- Amenity Grassland
- Arable
- Bare Ground
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Coniferous Woodland - Recently Felled
- Dense/Continuous Scrub
- Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- Poor Semi-improved Grassland
- Scattered Scrub
- Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal

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EXTENDED PHASE 1 HABITAT SURVEY MAP (2016)
Sheet 2

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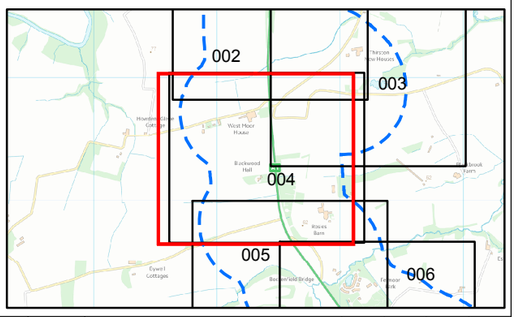
Client No.		

Drawing No.: B2104700_EC_PH1_SectionA_002

FIGURE 2.4

Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Coniferous Woodland - Recently Felled
- Dense/Continuous Scrub
- I — Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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EXTENDED PHASE 1 HABITAT SURVEY MAP (2016)
Sheet 3

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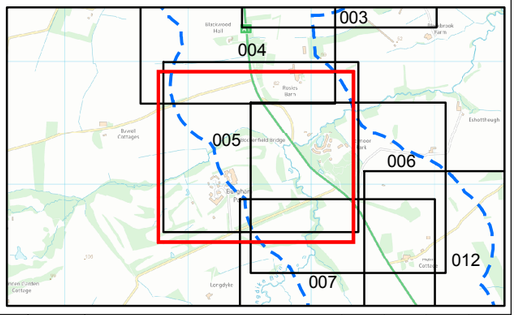
Drawing No.: B2104700_EC_PH1_SectionA_003

0 200 m

FIGURE 2.5

Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Coniferous Woodland - Recently Felled
- Dense/Continuous Scrub
- I — Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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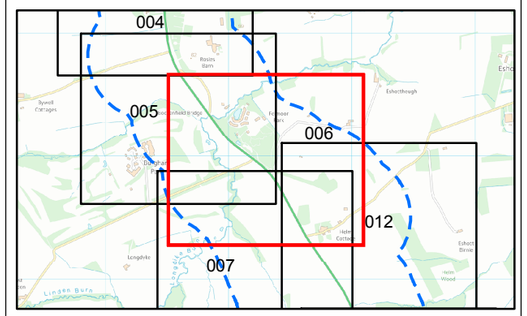
0 200 m

FIGURE 2.6

Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Coniferous Woodland - Recently Felled
- Dense/Continuous Scrub
- I — Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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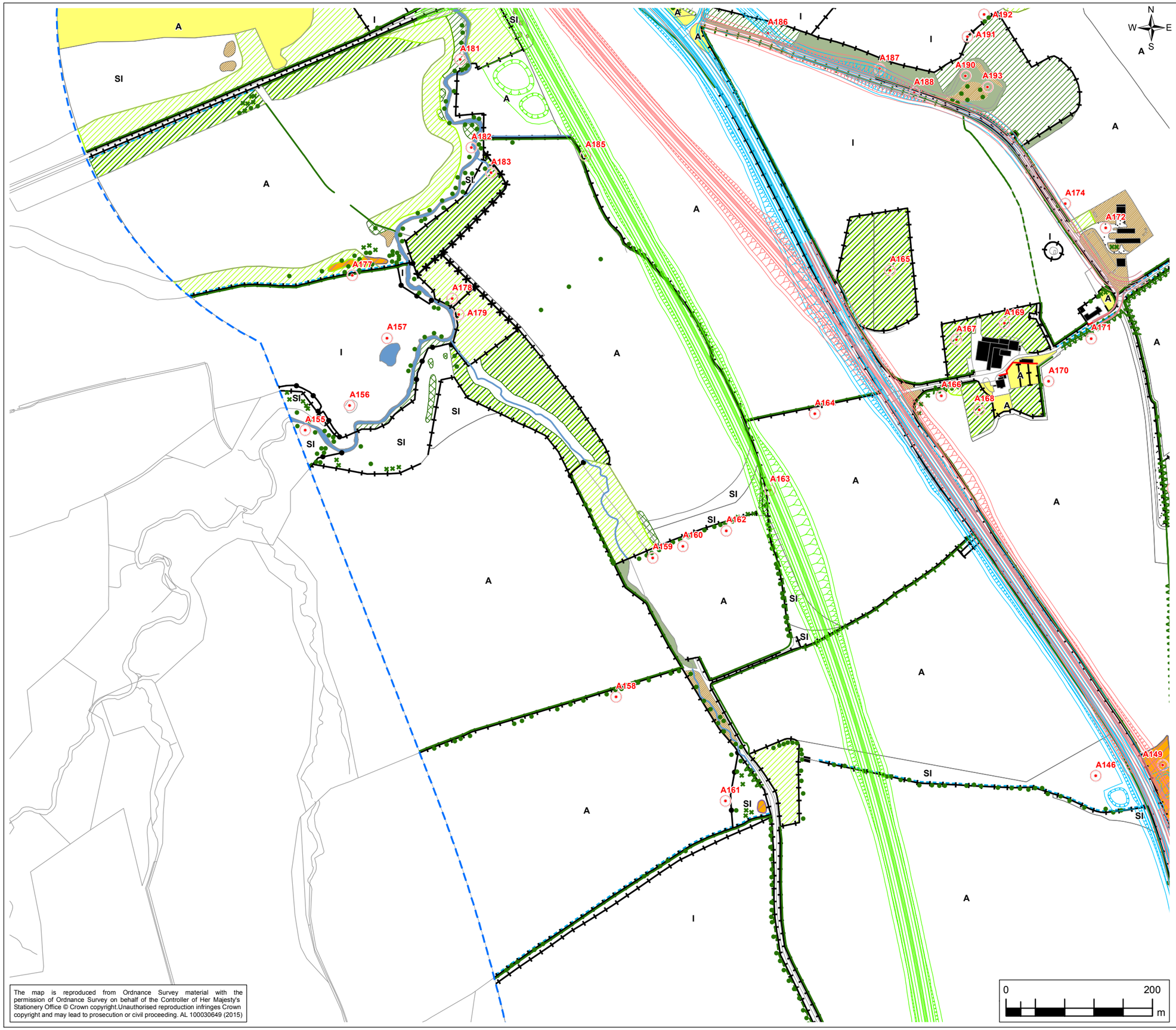
Drawing No.: B2104700_EC_PH1_SectionA_005

0 200 m

FIGURE 2.7



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Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
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- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
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- Mixed woodland - semi-natural
- No Access
- Poor Semi-improved Grassland
- Scattered Scrub
- Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal

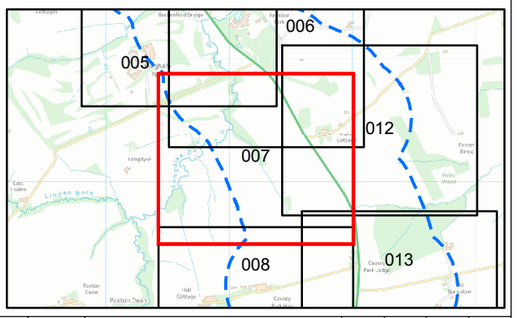

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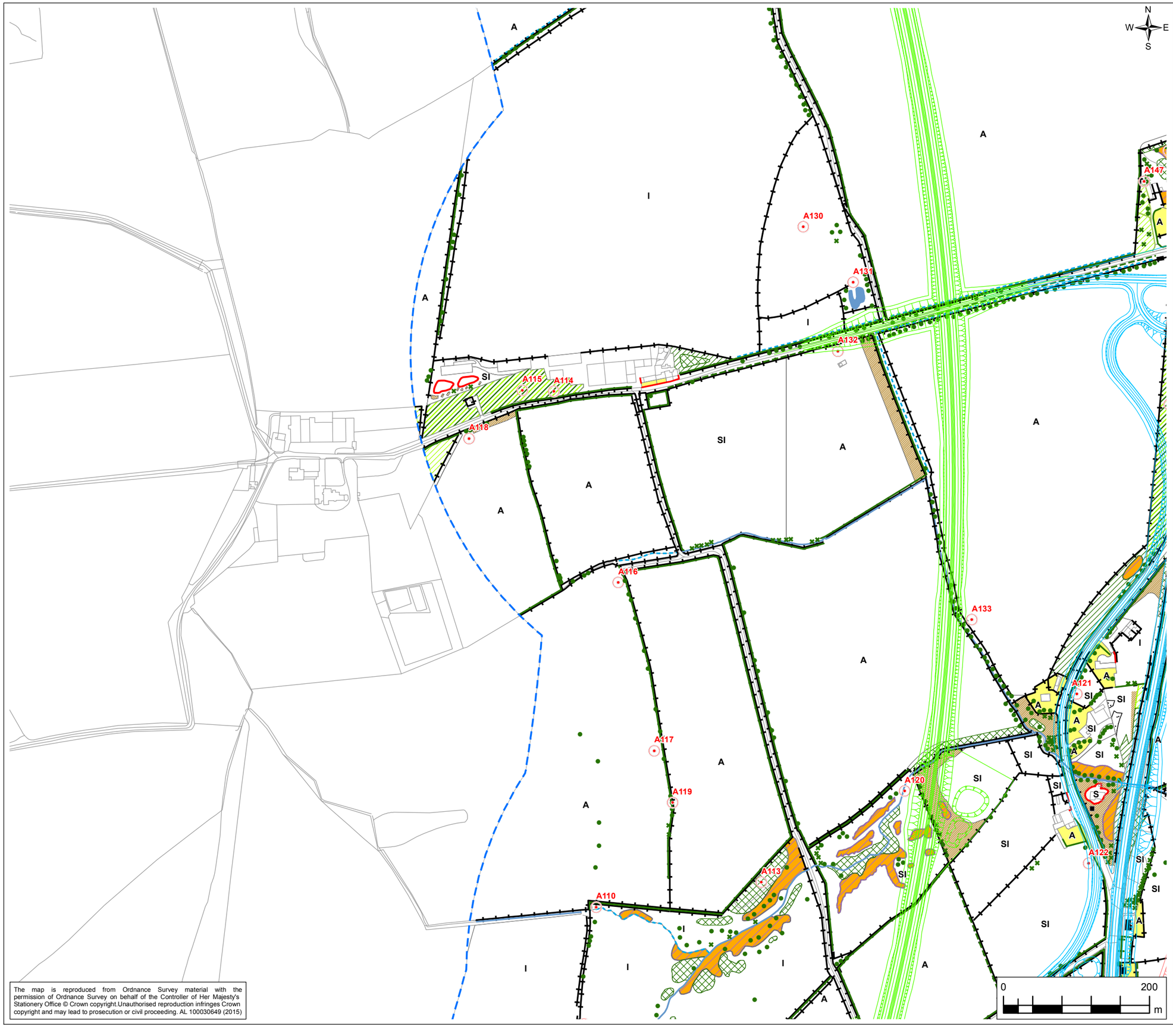
FIGURE 2.8



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
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- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal

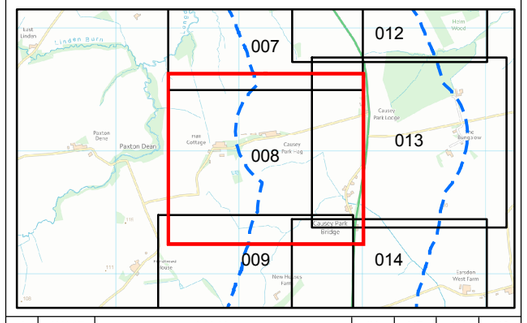

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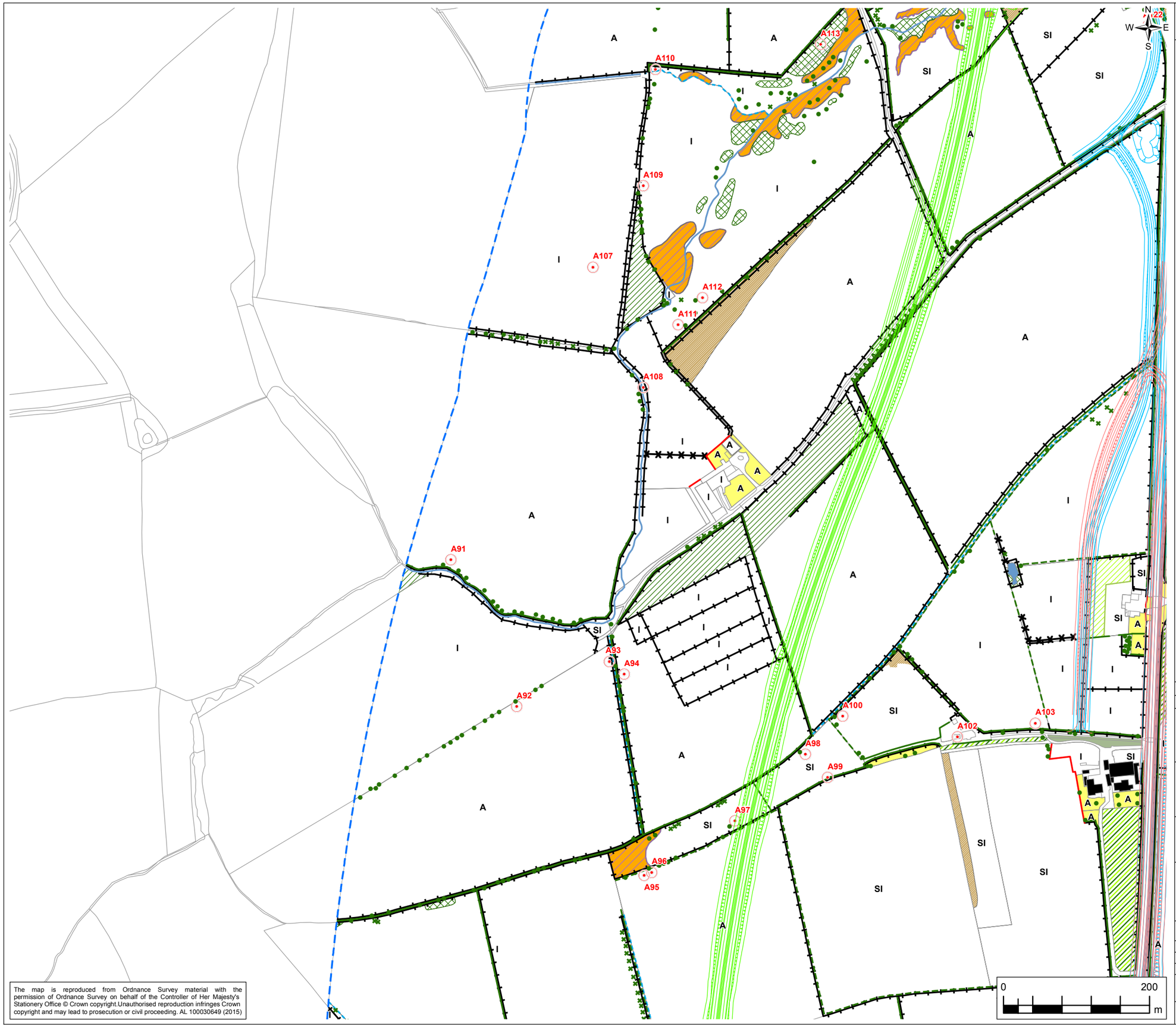
FIGURE 2.9



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
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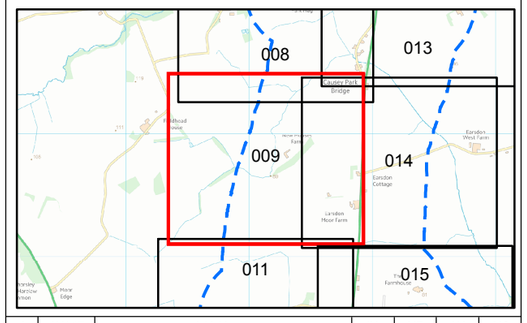
- Mixed woodland - semi-natural
- No Access
- Poor Semi-improved Grassland
- Scattered Scrub
- Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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Client No.		

Drawing No.: B2104700_EC_PH1_SectionA_008

FIGURE 2.10

Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
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- Dry Ditch
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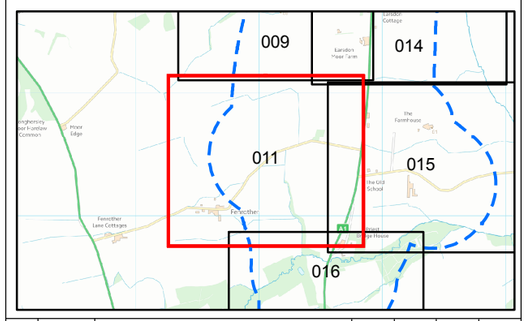
- Mixed woodland - semi-natural
- No Access
- Poor Semi-improved Grassland
- Scattered Scrub
- Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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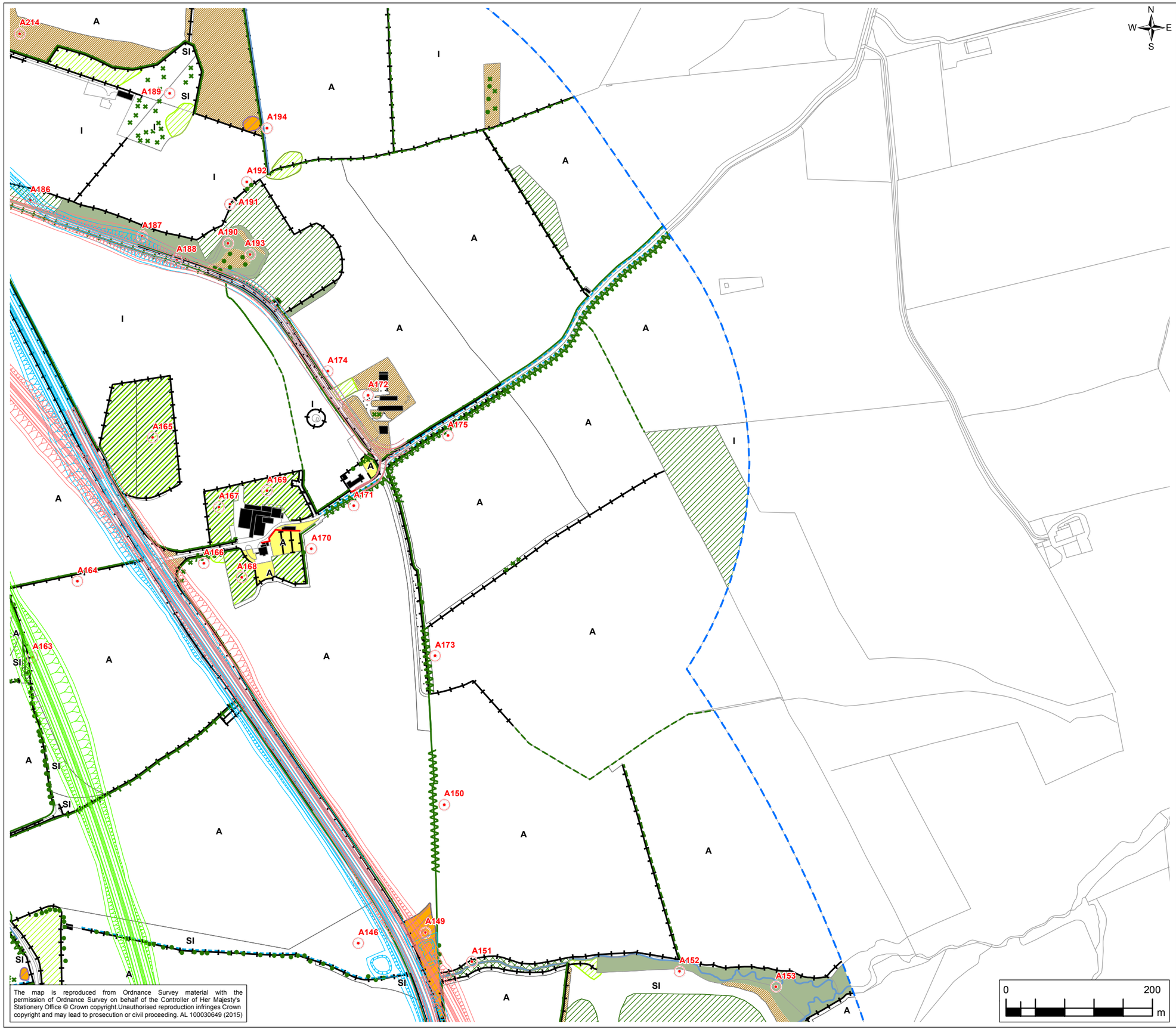
0 200 m

FIGURE 2.11



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
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- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- Poor Semi-improved Grassland
- Scattered Scrub
- Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal

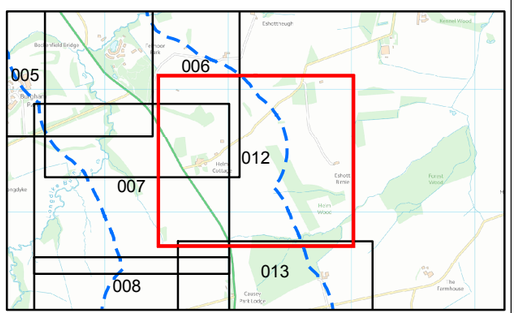

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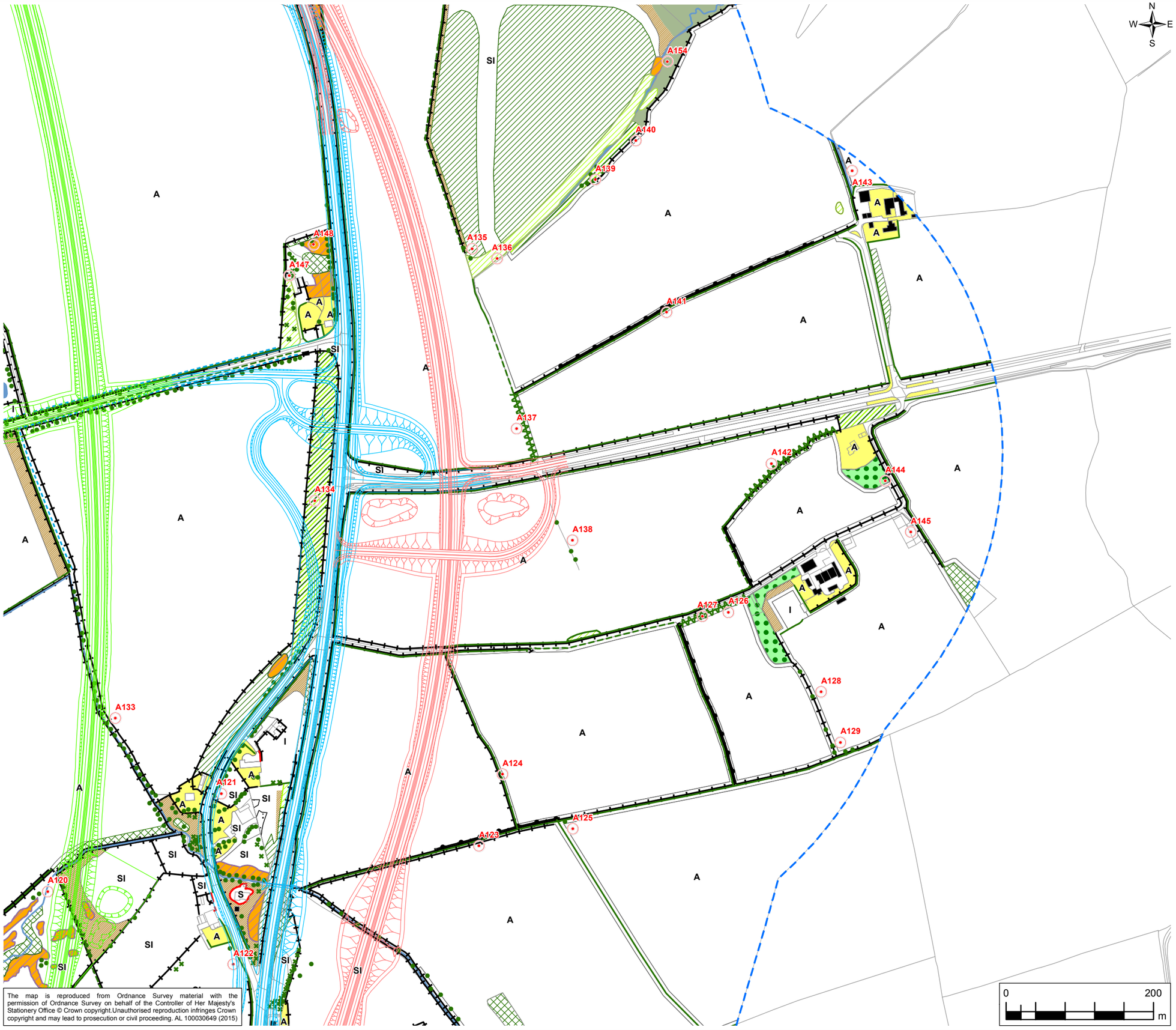
FIGURE 2.12



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
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- Species-poor Intact Hedge
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- Coniferous Woodland - Recently Felled
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- Mixed Woodland - Recently Felled
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- No Access
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal

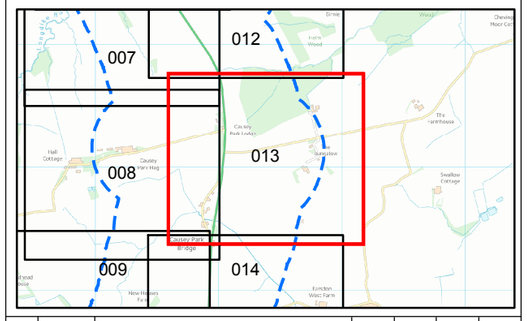

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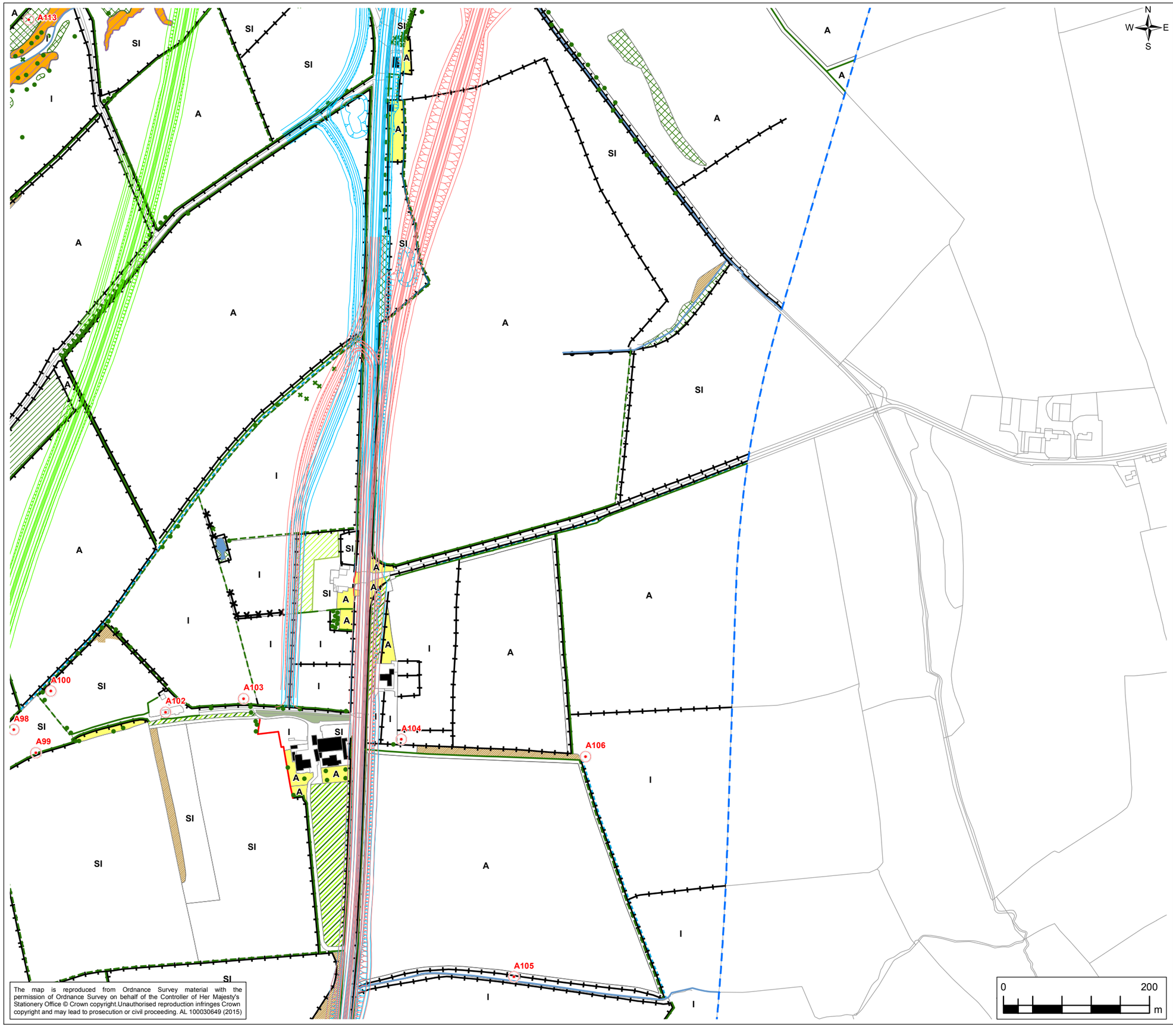
FIGURE 2.13



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
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- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal

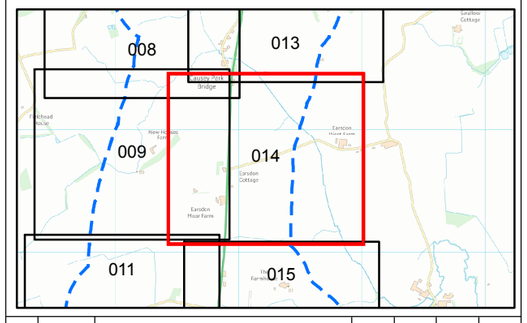

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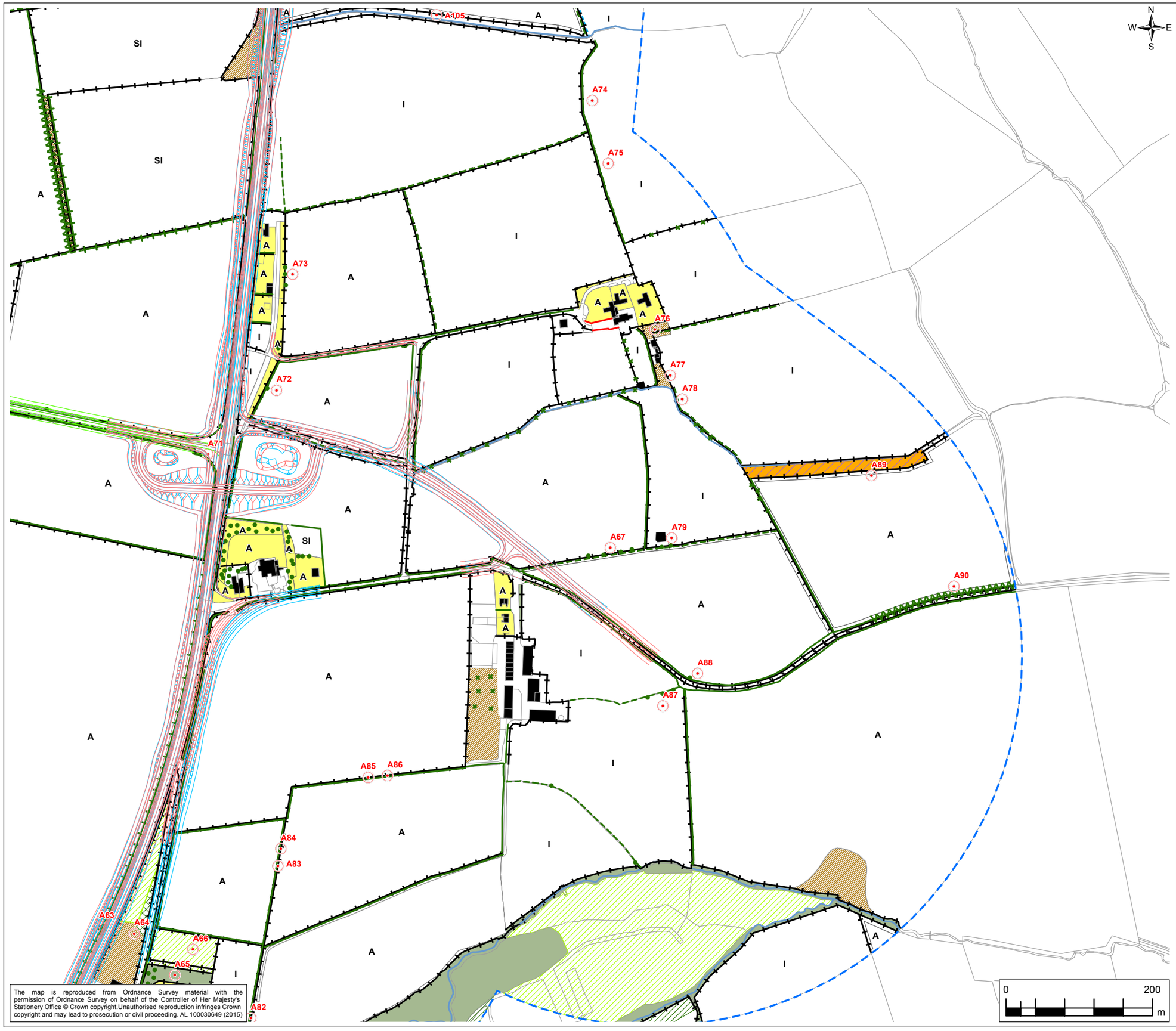
FIGURE 2.14



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
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- Scattered Scrub
- SI — Semi-improved Neutral Grassland
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- Standing Water
- Tall Ruderal

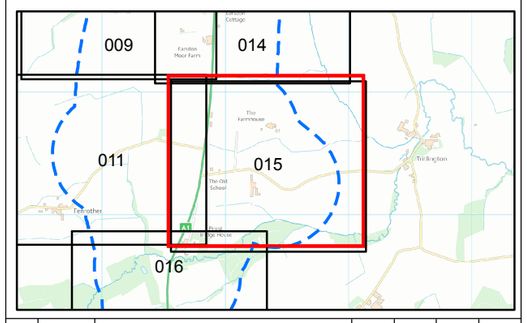

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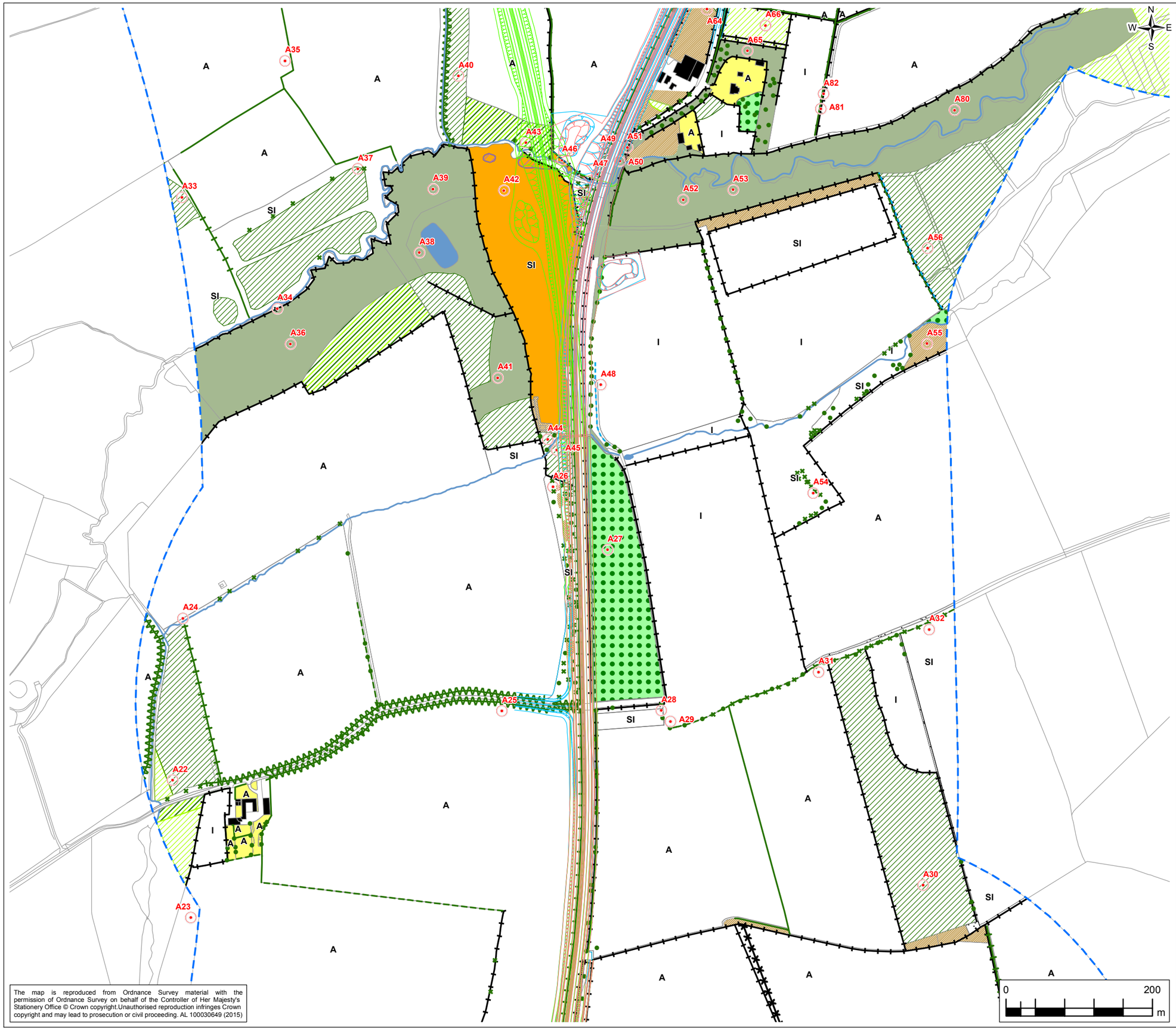
FIGURE 2.15



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
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- Scattered Scrub
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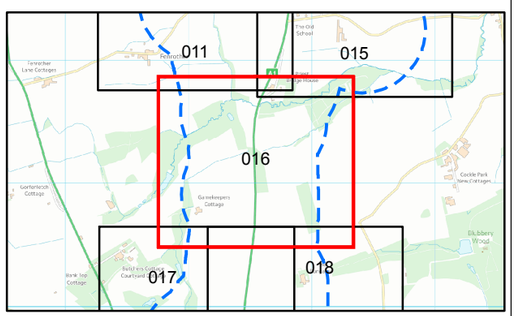
- Spoil
- Standing Water
- Tall Ruderal



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Sheet 14

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FIGURE 2.16

Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
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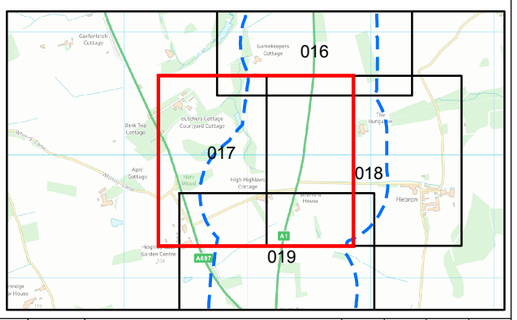
- No Access
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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Sheet 15

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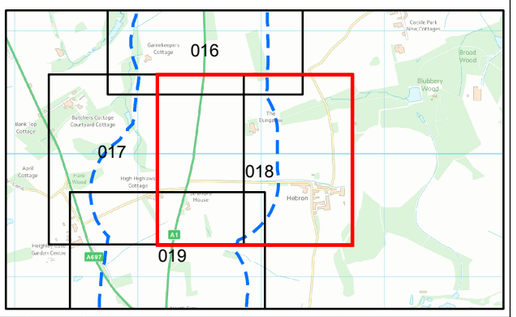
0 200 m

FIGURE 2.17

Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- Amenity Grassland
- Arable
- Bare Ground
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Coniferous Woodland - Recently Felled
- Dense/Continuous Scrub
- Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- Poor Semi-improved Grassland
- Scattered Scrub
- Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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Jacobs No.	B2104700	
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Drawing No.: B2104700_EC_PH1_SectionA_016

0 200 m

FIGURE 2.18

Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Coniferous Woodland - Recently Felled
- Dense/Continuous Scrub
- I — Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal

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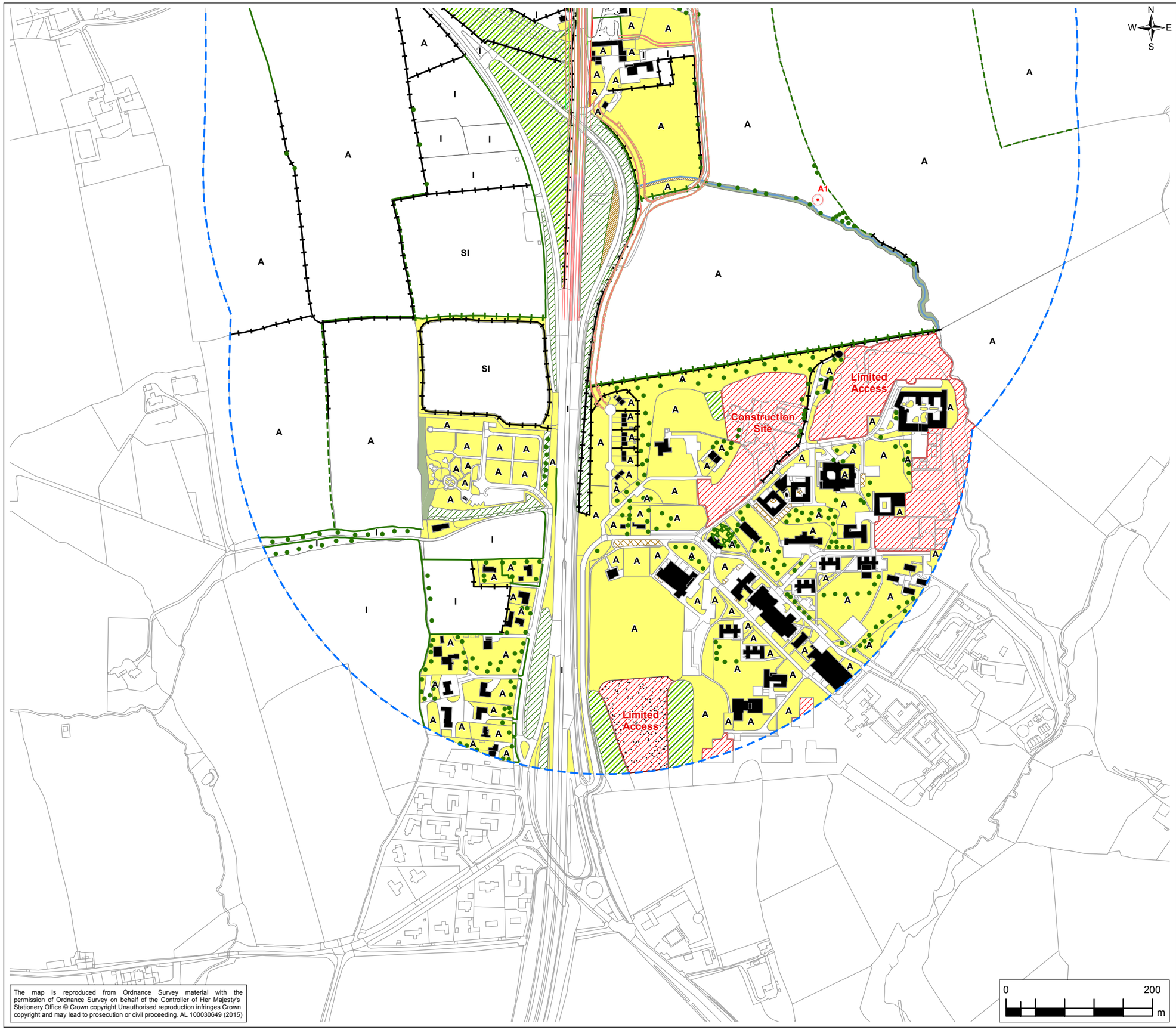
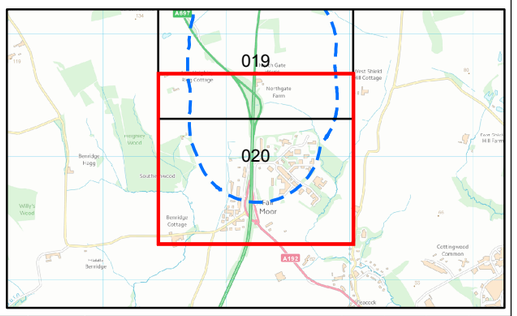
0 200 m

FIGURE 2.19



Legend

- Section A Hybrid Option
- Section A Offline Option
- Section A Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Boundary Removed
- Earth Bank
- Native species-rich Intact Hedge
- Fence
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- Amenity Grassland
- Arable
- Bare Ground
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Coniferous Woodland - Recently Felled
- Dense/Continuous Scrub
- Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- Mixed Woodland - Recently Felled
- Mixed woodland - semi-natural
- No Access
- Poor Semi-improved Grassland
- Scattered Scrub
- Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Tall Ruderal



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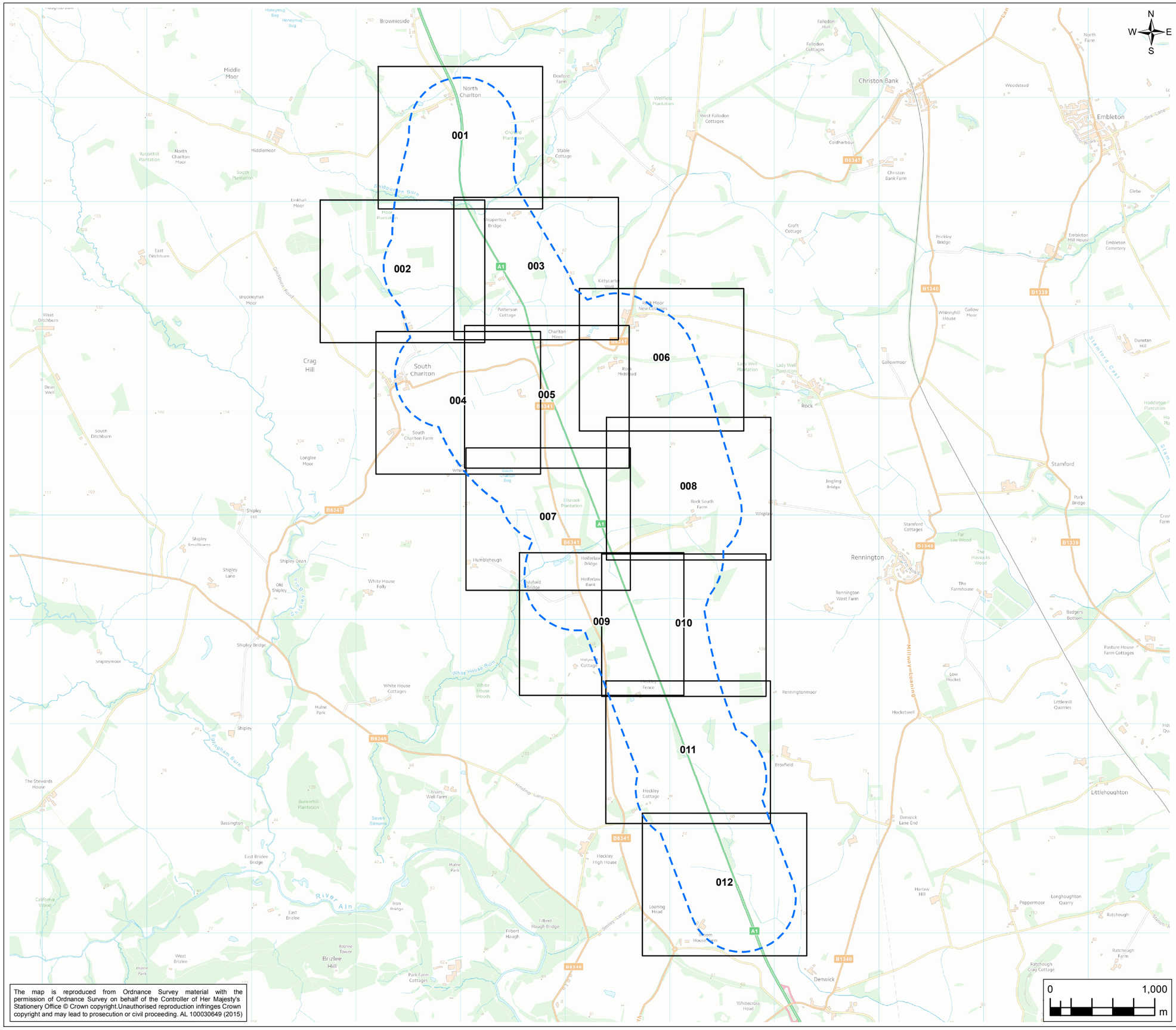

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FIGURE 3.1

Legend

- 500m Buffer (all options combined)
- Sheet Extents (Sheet Number)

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Client No.	
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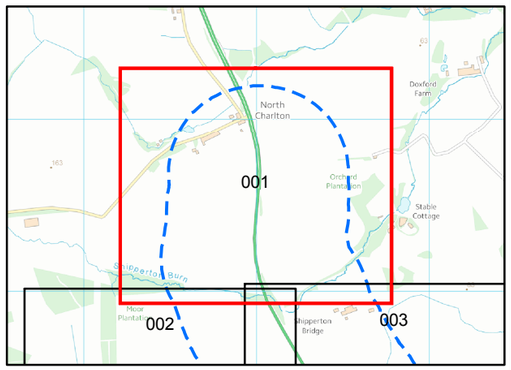
FIGURE 3.2

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Bracken
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Dense/Continuous Scrub
- Dry heath/acid grassland mosaic
- I — Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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Sheet 1

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0 200 m

FIGURE 3.3

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
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- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Dense/Continuous Scrub
- Dry heath/acid grassland mosaic
- I — Improved Grassland
- Introduced Shrub
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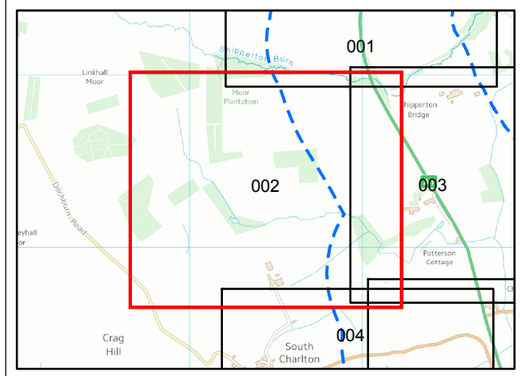
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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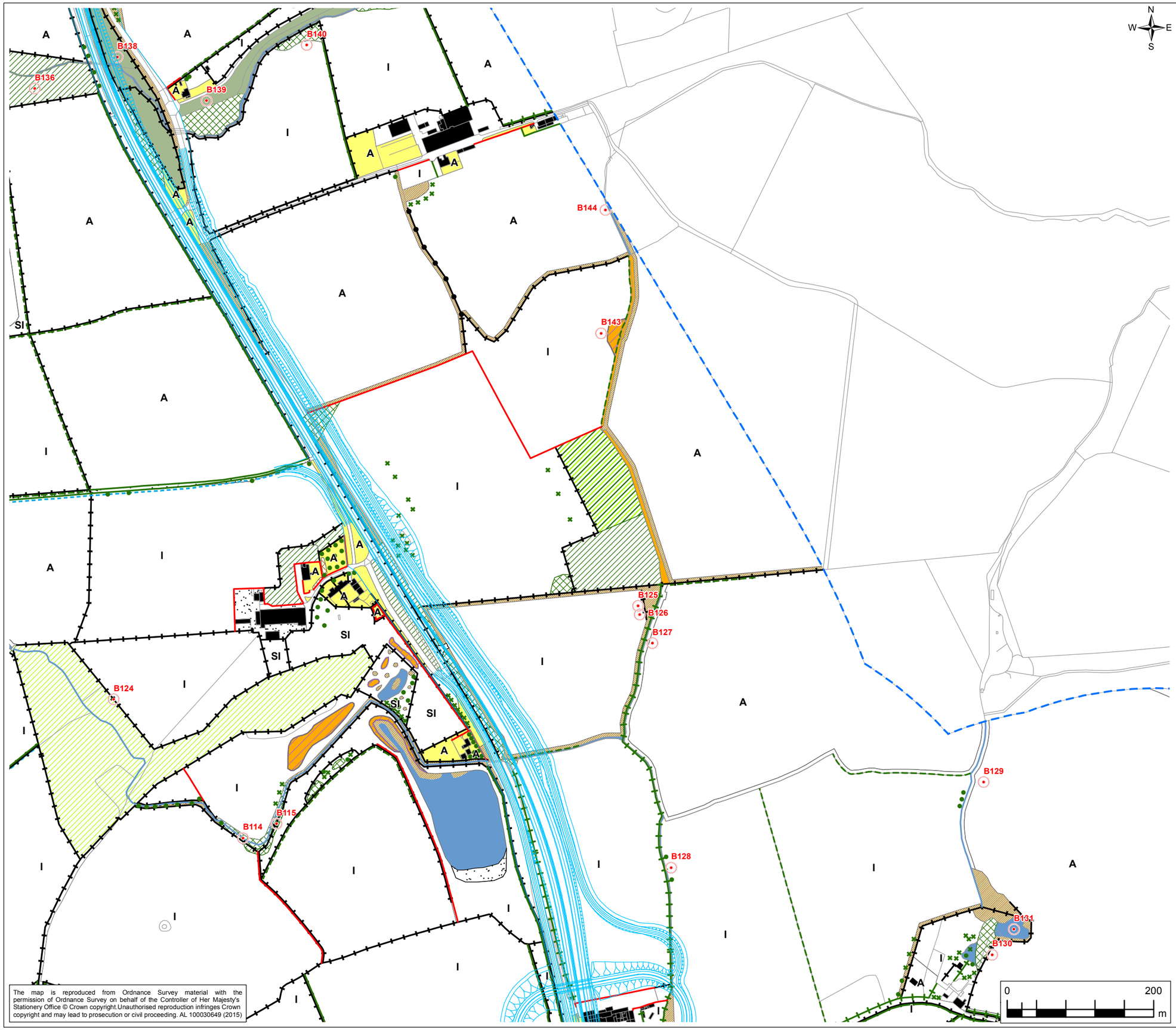
0 200 m

FIGURE 3.4



Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
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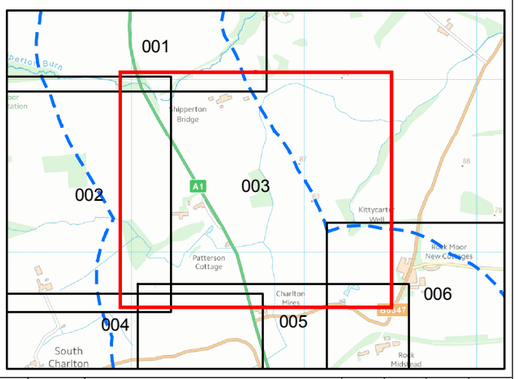
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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Client No.		

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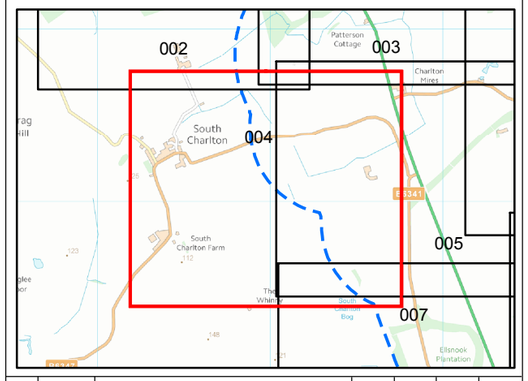
FIGURE 3.5

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Bracken
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Dense/Continuous Scrub
- Dry heath/acid grassland mosaic
- I — Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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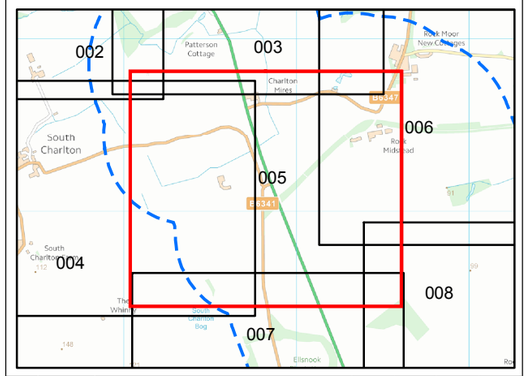
0 200 m

FIGURE 3.6

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Bracken
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Dense/Continuous Scrub
- Dry heath/acid grassland mosaic
- I — Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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0 200 m

FIGURE 3.7

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Bracken
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Dense/Continuous Scrub
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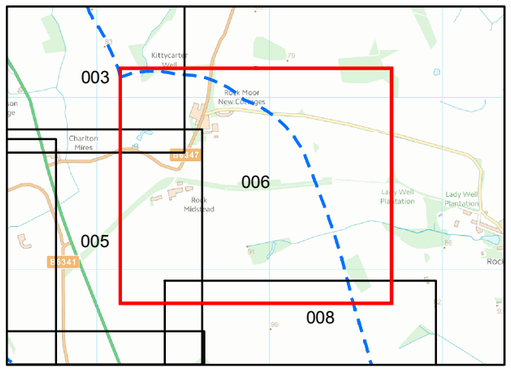
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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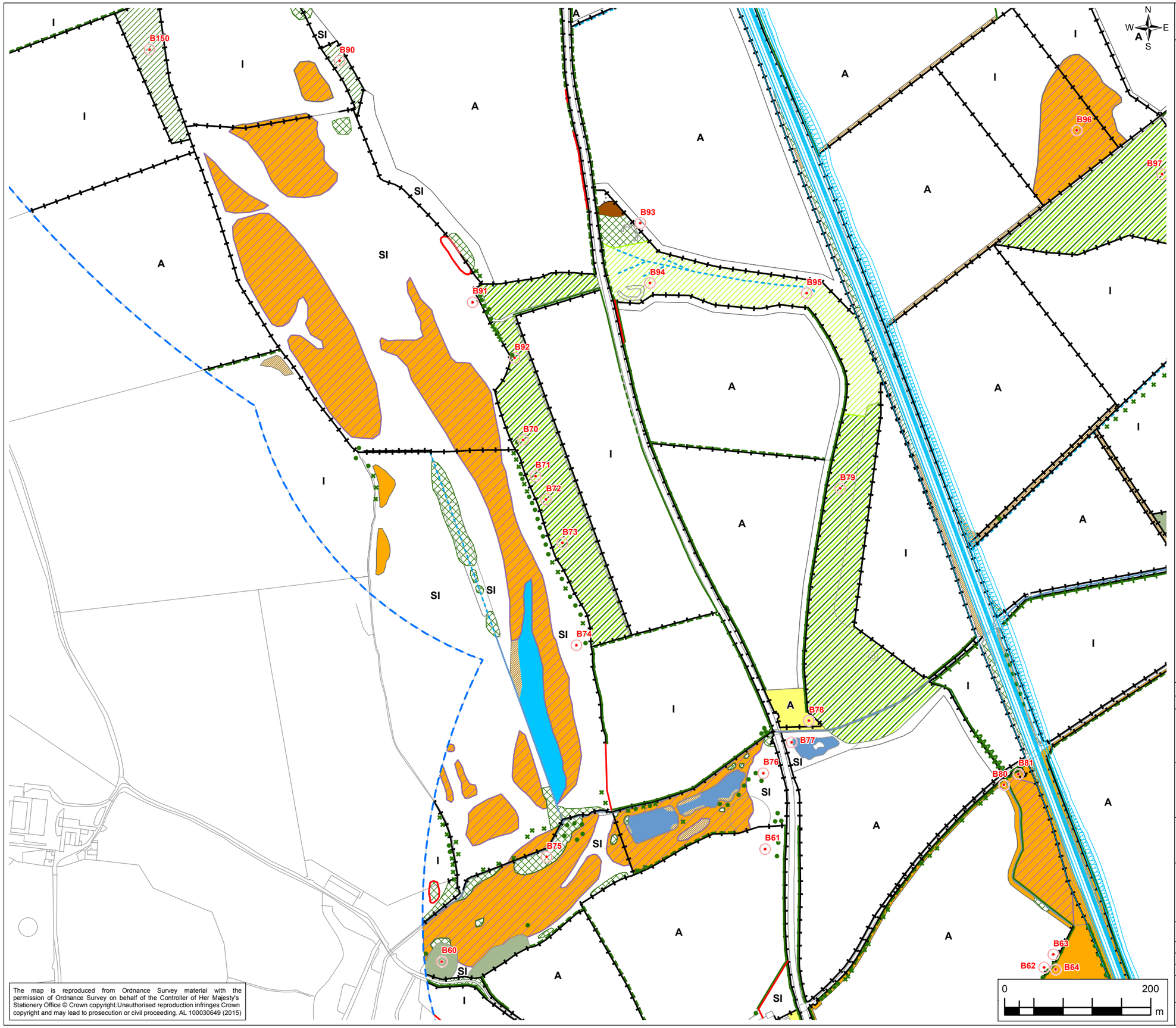
0 200 m

FIGURE 3.8



Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
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- A — Arable
- Bare Ground
- Bracken
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
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- Coniferous Plantation Woodland
- Dense/Continuous Scrub
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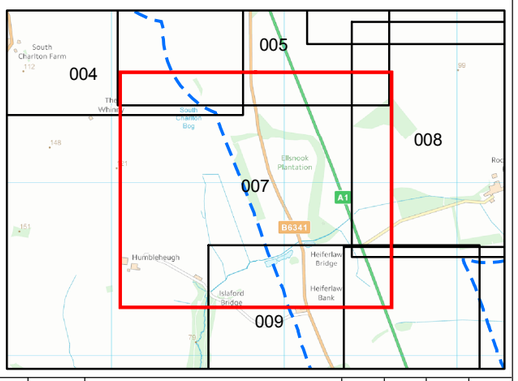
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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Sheet 7

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FIGURE 3.9

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Bracken
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Dense/Continuous Scrub
- Dry heath/acid grassland mosaic
- I — Improved Grassland
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- Mixed Plantation Woodland
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
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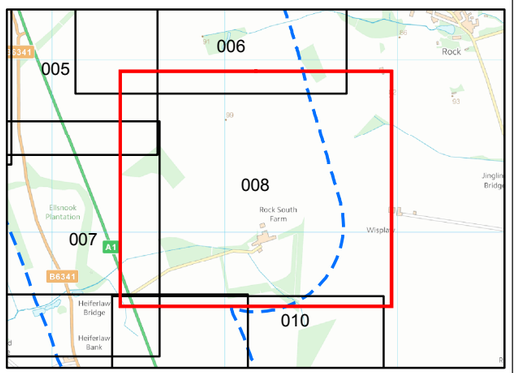
- Unimproved Neutral Grassland



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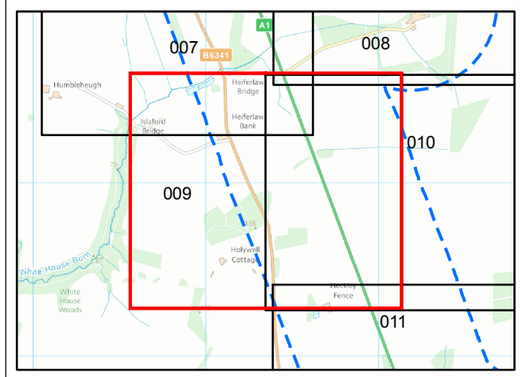
Drawing No.: B2104700_EC_PH1_SectionB_008

0 200 m

FIGURE 3.10

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
- Bracken
- Broad-leaved Plantation Woodland
- Broad-leaved Semi-natural Woodland
- Building
- Coniferous Plantation Woodland
- Dense/Continuous Scrub
- Dry heath/acid grassland mosaic
- I — Improved Grassland
- Introduced Shrub
- Marshy Grassland
- Mixed Plantation Woodland
- SI — Poor Semi-improved Grassland
- Scattered Scrub
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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Project: A1 NORTHUMBERLAND

Drawing Title: SECTION B
EXTENDED PHASE 1 HABITAT SURVEY MAP (2016)
Sheet 9

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Scale @ A3	1:5,000	DO NOT SCALE
Jacobs No.	B2104700	
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Drawing No.: B2104700_EC_PH1_SectionB_009

0 200 m

FIGURE 3.11

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
- A — Arable
- Bare Ground
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- Broad-leaved Plantation Woodland
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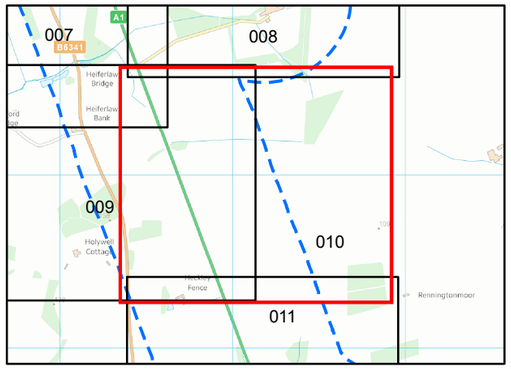
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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Sheet 10

Drawing Status

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Drawing No. B2104700_EC_PH1_SectionB_010

0 200 m

FIGURE 3.12

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
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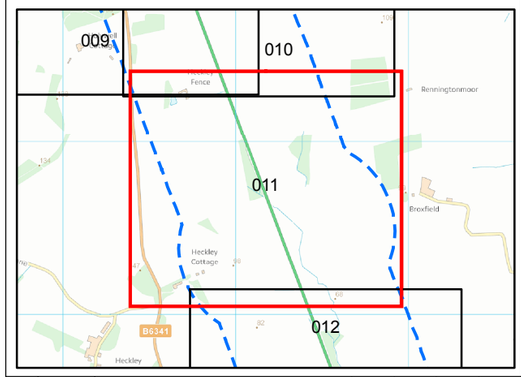
- SI — Semi-improved Neutral Grassland
- Spoil
- Standing Water
- Swamp
- Tall Ruderal
- Unimproved Neutral Grassland



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0 200 m

FIGURE 3.13

Legend

- Section B Online Option
- Survey Area
- Target Note
- Broad-leaved Scattered Tree
- Earth Bank
- Fence
- Inland Cliff
- Native species-rich Intact Hedge
- Species-poor Defunct Hedge
- Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- Dry Ditch
- Wall
- A — Amenity Grassland
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- Broad-leaved Plantation Woodland
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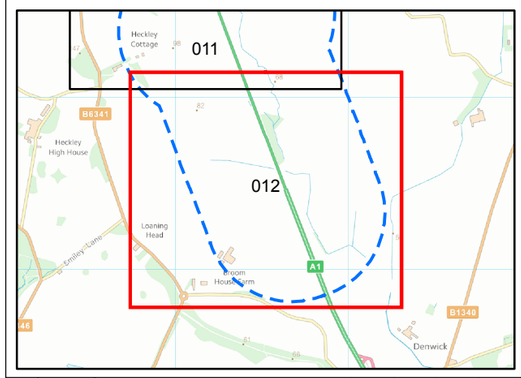
- Unimproved Neutral Grassland



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Sheet 12

Drawing Status:

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Drawing No.: B2104700_EC_PH1_SectionB_012

0 200 m

APPENDIX A: TARGET NOTE DESCRIPTIONS SECTION A

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
A1	Wet ditch, surrounding species included hazel (*Corylus avellana*), elder (*Sambucus nigra*), goat willow (*Salix caprea*), blackthorn (*Prunus spinosa*) and ash (*Fraxinus excelsior*). Water was 1-2 cm deep running southwards. The ditch had limited suitability for otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) due to the size of the stream, shading and overgrown vegetation.
A2	Mixed plantation, predominately Scots pine (*Pinus sylvestris*) and silver birch (*Betula pendula*) with a hawthorn (*Crataegus monogyna*) and elder edge including non-native red berried elder (*Sambucus racemosa*).
A3	Mixed plantation woodland with European larch (*Larix decidua*), silver birch, Scots pine and occasionally edged with elder hawthorn. The understory featured bramble (*Rubus fruticosus*) and nettle (*Urtica dioica*), cock's-foot (*Dactylis glomerata*), common dog violet (*Viola riviniana*), hedge woundwort (*Stachys sylvatica*), false brome (*Brachypodium sylvaticum*) and male fern (*Dryopteris filix-mas*).
A4	Pond (approximately 10 x 15 m) surrounded by rank grassland which featured mugwort (*Artemisia vulgaris*), greater willowherb (*Epilobium hirsutum*) and nettle. Aquatic marginal vegetation was absent. A defunct hedge of gorse (*Ulex europaeus*) and hawthorn bordered the pond.
A5	Broadleaved plantation consisting mainly of sycamore (*Acer pseudoplatanus*), elder, hawthorn, ash, beech (*Fagus sylvatica*) and holly (*Ilex aquifolium*).
A6	Mixed plantation woodland with a species-poor ground flora and dominant nettle understorey. Ash and elder dominated the woodland with frequent oak (*Quercus sp.*) and occasional rowan (*Sorbus aucuparia*) and Scots pine.
A7	Broadleaved plantation consisting mainly of sycamore, ash, elder, Scots pine and abundant bramble.
A8	Mixed scattered trees with poplar (*Populus sp.*), horse chestnut (*Aesculus hippocastanum*), cedar (*Cedrus sp.*), beech, and a hedgerow of holly, wych elm (*Ulmus glabra*) and hawthorn.
A9	Owl box on a mature sycamore but no apparent usage by owls or other birds. Overall the tree had limited bat roost potential only one hole (facing downwards). A 2 m field margin was located next to the tree.
A10	Wildflower margin lying behind a mown amenity grassland border.
A11	Church and graveyard with mown amenity grassland and mole hills. Occasional yew (*Taxus baccata*), cypress (*Cupressaceae sp.*) and beech were present. The church was considered to have bat roosting potential.
A12	Young broadleaved plantation with sycamore, silver birch, rowan, pedunculate oak

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	(*Quercus robur*), beech and hybrid black poplar (*Populus x Canadensis agg.*) with an understorey of nettles and soft brome (*Bromus hordeaceus*). The duck pond to the west was eutrophic and was edged by alder (*Alnus glutinosa*) but had no marginal vegetation.
A13	Semi-improved grassland either side of a culvert. The ditch was 1.5 m in width and less than 0.2 m deep. Water starwort (*Callitriche sp.*) was within the ditch with meadowsweet (*Filipendula ulmaria*) and angelica (*Angelica sp.*) on the banks. Grassland species included tufted hair grass (*Deschampsia cespitosa*), meadow vetchling (*Lathyrus pratensis*), upright hedge parsley (*Torilis japonica*), nettle, creeping thistle (*Cirsium arvense*), square-stemmed St John's wort (*Hypericum tetrapterum*), soft rush (*Juncus effusus*), male fern and hedge woundwort.
A14	Improved cow-grazed pasture where poaching created a wet, poor semi-improved grassland edge under trees with floating sweet grass (*Glyceria fluitans*), creeping buttercup (*Ranunculus repens*) and localised rushes. The neighbouring plantation woodland was largely silver birch.
A15	Mature pedunculate oak with bat roost potential, requiring further assessment.
A16	Small copse with numerous species including mature pedunculate oak, ash, elder, wych elm, hawthorn, hazel, rowan, goat willow, silver birch, Scots pine and Italian alder (*Alnus cordata*).
A17	Old species-poor hedge with mature oak and ash.
A18	Ditch with semi-improved grassland including frequent crested dog's-tail (*Cynosurus cristatus*), cock's-foot, tufted hair grass and creeping thistle.
A19	Mixed plantation mainly consisting of sitka spruce (*Picea sitchensis*), beech, silver birch and sycamore.
A20	Japanese knotweed (*Fallopia japonica*) cut down and left in situ.
A21	Area used as a waste ground by adjacent farm, overgrown with regenerating silver birch, rosebay willowherb (*Chamerion angustifolium*) and nettle.
A22	Wet ditch, flowed through woodland below, less than 1 m wide and very shaded with limited flora. Woodland to the west of the ditch was predominately mature Scots pine and Japanese larch (*Larix kaempferi*) with a ground flora dominated by brambles, with honeysuckle (*Lonicera periclymenum*), broad buckler-fern (*Dryopteris dilatata*), greater stitchwort (*Stellaria holostea*), localised heath bedstraw (*Galium saxatile*), enchanter's nightshade (*Circaea lutetiana*) and wood sorrel (*Oxalis acetosella*). Roadside species included snow berry (*Symphoricarpos albus*), cherry laurel (*Prunus laurocerasus*), cherry (*Prunus sp.*) and rhododendron (*Rhododendron sp.*). Young broadleaved plantation woodland to the east of the ditch featured silver birch, rowan, ash, sycamore, elm (*Ulmus sp.*), guelder rose (*Viburnum opulus*), alder and holly. Tufted hair grass and brambles dominated the understorey. The hedge line to the east was species-poor (hawthorn and elder) with trees. The hedge line to the west was an old

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	overgrown species-rich hedge with old hazel, cherry, holly, hawthorn and wych elm.
A23	Set aside strip of poor semi-improved grassland approximately 30 m wide, dominated by Yorkshire fog (*Holcus lanatus*) with soft rush, jointed rush (*Juncus articulatus*), white clover (*Trifolium repens*) and creeping buttercup.
A24	Wet ditch, less than 1 m wide with stands of reed canary grass (*Phalaris arundinacea*), nettle, false oat-grass (*Arrhenatherum elatius*), meadowsweet and angelica. The ditch has water vole potential.
A25	Species-rich hedge with wych elm, hawthorn, blackthorn, holly, hazel, dog-rose (*Rosa canina*), honeysuckle and bramble. Some sections were dominated by just one or two species. Mature ash trees within the hedge line had potential for roosting bats. The verge was 1-2 m wide and featured poor semi-improved grassland with patches of meadowsweet.
A26	A line of young planted trees among scrub (gorse, hawthorn and blackthorn) with bracken (*Pteridium aquilinum*), stands of nettles, rosebay willowherb and pockets of wet grassland. Wet grassland featured greater willowherb, valerian (*Valeriana officinalis*), soft rush, meadowsweet, broad buckler-fern and male fern.
A27	Scattered planted apple trees (*Malus sp.*) and ash.
A28	Grey squirrels (*Sciurus carolinensis*) noted within mixed woodland.
A29	Heighley Wood (private), mixed woodland.
A30	Broadleaved plantation consisting mainly of sycamore, elder, hawthorn, ash, beech and holly.
A31	Road/avenue of mature lime (*Tilia sp.*) and ash leading to Heighley Wood.
A32	Poor semi-improved grassland with locally frequent common knapweed (*Centaurea nigra*).
A33	Rough grassland with young planted broadleaved trees, including ash, rowan, silver birch and oak with scattered hawthorn, blackthorn and hazel. The field was not entered to survey in detail as ownership was unclear.
A34	Stream edged with hemlock water dropwort (*Oenanthe crocata*) next to woodland. Defunct overgrown hazel and mature oak hedge. Woodland ground flora featured a number of ancient woodland indicators, as well as wood speedwell (*Veronica montana*) and bitter vetch (*Lathyrus linifolius*). Small ephemeral pond near the stream featured yellow flag (*Iris pseudacorus*), valerian, common marsh bedstraw (*Galium palustre*) and grey sedge (*Carex divulsa*).
A35	Narrow field margin with perennial sow-thistle (*Sonchus arvensis*), field pansy (*Viola arvensis*), and fools parsley (*Aethusa cynapium*).
A36	Broadleaved semi-natural woodland, predominantly semi-mature silver birch with occasional holly and scattered mature oak, both pedunculate and sessile (*Quercus petraea)*, along defunct hedgelines. Diverse ground flora through woodland including

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	bracken, tufted hair grass, wood sorrel, herb robert (*Geranium robertianum*) and bramble. Localised areas were dominated by greater woodrush (*Luzula sylvatica*). Areas featuring a number of ancient woodland indicators were located near mature hedge lines and old trees, including wood sorrel, bluebell (*Hyacinthoides non-scripta*), hairy woodrush (*Luzula pilosa*), sanicle (*Sanicula europaea*), wood sedge (*Carex sylvatica*), false brome and woodruff (*Galium odoratum*). Other species included hard fern (*Blechnum spicant*), male fern, primrose (*Primula vulgaris*) and enchanter's nightshade. Some additional species may have been missed by this early August visit.
A37	Rough grassland with young planted broadleaved trees including ash, rowan, silver birch and oak with scattered hawthorn, blackthorn and hazel. Grassland species included Yorkshire fog with abundant false oat-grass, cock's-foot and angelica. Hogweed (*Heracleum sphondylium*), meadow vetchling (*Lathyrus pratensis*), hedge woundwort, upright hedge parsley and creeping thistle were all frequent with occasional yarrow (*Achillea millefolium*), bifid hemp nettle (*Galeopsis bifida*) and crosswort (*Cruciata laevipes*).
A38	Pond with no visibly marginal vegetation, heavily used by ducks and eutrophic with some algae. Well-spaced mature sessile oaks offering bat roosting potential surrounded the pond, more so to the west. Trees require further assessment. Poor ground flora was heavily disturbed by ducks at the time of survey.
A39	Wet grassland under self-set ash woodland. Melancholy thistle (*Cirsium heterophyllum*), valerian, angelica, common marsh bedstraw, knapweed, common spotted-orchid (*Dactylorhiza fuchsii*), broadleaved helleborine (*Epipactis helleborine*), betony (*Stachys officinalis*) and large flowered bellflower (*Campanula latifolia*) were recorded between the grassland and the stream to the north. Approximately 500 mallard were recently released within the woodland. Surveyors were asked to avoid flushing birds towards the A1 which limited the survey effort. Vegetation below trees was flattened and damaged by birds.
A40	Young broadleaved plantation woodland with abundant ash, frequent alder and occasional hawthorn, hazel and rowan. Grassland below tall with scattered gorse and bramble, abundant tufted hair grass, soft rush, creeping thistle, Yorkshire fog, creeping buttercup, meadow vetchling, upright hedge parsley, nettles and broad-leaved dock (*Rumex obtusifolius*) with occasional common spotted-orchid.
A41	Open damp woodland with mature oak and birch (*Betula sp.*), some downy birch (*Betula pubescens*) offering bat roost potential, requiring further assessment. Ground flora was less diverse than elsewhere, ducks had been using the area. Damp woodland indicators included broadleaved buckler-fern, creeping soft-grass (*Holcus mollis*), tufted hair grass, marsh thistle (*Cirsium palustre*), angelica and greater bird's-foot trefoil (*Lotus pedunculatus*). Ancient woodland indicators included cow wheat (*Melampyrum pratense*) and betony.
A42	Semi-improved neutral grassland grazed by sheep. The northern field edge, at the bottom of a slope, featured abundant soft rush with occasional hard rush, jointed rush

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	and marsh thistle. Within the short grazed grassland sweet vernal-grass (*Anthoxanthum odoratum*) and crested dog's-tail were abundant with frequent Yorkshire fog, perennial rye grass (*Lolium perenne*), creeping thistle, red clover (*Trifolium pratense*), creeping buttercup, meadow buttercup (*Ranunculus acris*) with occasional rough hawkbit (*Leontodon hispidus*) and pale sedge (*Carex pallescens*). This field was cautiously classified as semi-improved neutral grassland, though the area surveyed appeared relatively species-poor. Further investigation is recommended as the whole field was not surveyed in detail.
A43	Area of thick willow carr (*Salix sp.*) along stream edge, both mature and younger trees.
A44	A small wooded field corner with mature ash, English elm (*Ulmus minor*) and lime. Ground flora included bluebells, wood avens (*Geum urbanum*) and around 15 early purple orchids (*Orchis mascula*).
A45	Broadleaved plantation with hazel, birch, guelder rose and stands of blackthorn. Ground flora included broadleaved helleborine and three-nerved sandwort (*Moehringia trinervia*). Rough grassland featured male fern, angelica, grey sedge, wood sedge and meadowsweet.
A46	Marshy grassland along a narrow stream. Stands of bulrush (*Typha latifolia*) and hemlock water dropwort were located along the stream. The neighbouring grassland supported valerian, angelica, meadowsweet and greater willow herb amongst false oat-grass, creeping thistle and nettles.
A47	Culvert beneath the A1, 1-2 m wide and less than 0.5 m deep. A low fence was located across the entrance of the culvert which did not form a barrier to otter. No spraint was found. The culvert was shaded by trees, mostly mature alder, resulting in limited marginal vegetation. The banks featured hemlock water dropwort with nettles, cleavers (*Galium aparine*) and hedge woundwort.
A48	Overgrown ditch with dense bramble.
A49	Wooded embankment sloping down from the A1 to the east, featuring sycamore, alder and hawthorn. Ground flora included primrose, enchanter's nightshade and wood avens.
A50	Broadleaved woodland following River Lyne dominated by alder and occasional ash and pedunculate oak.
A51	Semi-natural broadleaved woodland dominated by mature pedunculate oak, sycamore and beech. Species-rich ground flora included bluebell, wood sorrel, creeping soft grass and greater stitchwort with locally abundant bramble.
A52	Mixed woodland dominated by European larch with occasional beech and sycamore.
A53	Semi-natural broadleaved woodland dominated by mature pedunculate oak, silver birch and hazel with species-rich ground flora including woodruff, wood sorrel, bluebell and greater stitchwort and climbing honeysuckle.
A54	Semi-improved grassland forming a farm track with cock's-foot, curled dock (*Rumex*

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	crispus) and frequent blackthorn regeneration.
A55	Species-poor hedgerow with mature ash.
A56	Mixed plantation with sycamore, Scots pine, ash and pedunculate oak with bramble and very locally dominant snowberry (*Symphoricarpos sp.*).
A57	Semi-improved grassland along verges with localised patches of moderately species rich grassland. Though most of the verge along this minor road measure less than 2 m in width and is relatively species poor. Here the verge reaches around 4 m in width and is more diverse. Species recorded include Yorkshire fog (*Holcus lanatus*), false oat-grass (*Arrhenatherum elatius*), tall fescue (*Festuca arundinacea*), common knapweed (*Centaurea nigra*), hedge wound wort (*Stachys sylvatica*), bush vetch (*Vicia sepium*), tufted vetch (*Vicia cracca*), meadow vetchling (*Lathyrus pratensis*), zig-zag clover (*Trifolium medium*), crosswort (*Cruciata laevipes*), creeping cinquefoil (*Potentilla reptans*), yarrow (*Achillea millefolium*), and hogweed (*Heracleum sphondylium*) with localised meadow sweet (*Filipendula ulmaria*). Narrower verges area dominated by false oat-grass, hogweed, creeping thistle and cleavers with localised perennial sow-thistle. In shorter verges rough hawkbit was recorded.
A58	Semi-improved pasture grazed by horses. Not surveyed in detail due to access ambiguity. Grassland species included common ragwort (*Jacobaea vulgaris*), creeping buttercup, white clover, ribwort plantain (*Plantago lanceolata*), spear thistle (*Cirsium vulgare*), creeping thistle, common mouse-ear (*Cerastium fontanum*), thyme-leaved speedwell (*Veronica serpyllifolia*), upright hedge parsley, common knapweed, crosswort, bush vetch and meadow vetchling. Much of this field was heavily grazed with patches of thistles and ragworts, more diversity only evident around the edges. A wet ditch was located to the north of the southern hedge line of this field with abundant meadowsweet and hemlock water drop wort and occasional water figwort (*Scrophularia auriculata*). Hedge dominated by hawthorn, also contained willow including rusty willow (*Salix cinerea subsp. oleifolia*) and osier willow (*Salix viminalis*).
A59	An overgrown ditch divides the arable field to the south from an area of rough grassland to the north. The ditch was almost dry at the time of survey with meadow sweet and greater Willowherb the only species indicative of a wet habitat. The neighbouring species poor semi-improved grassland supported perennial sow-thistle, hogweed, meadow vetchling, false oat-grass, Yorkshire fog, hedge wound wort, creeping thistle, cock's-foot, timothy and creeping buttercup.
A60	Mature ash along the field boundary had potential for roosting bats. The stream below these trees was less than 0.5 m wide and was unshaded, good habitat for water voles (no signs seen). Willows including large osier were present. Field margins included localised corn spurry (*Spergula arvensis*) and cut-leaved crane's-bill (*Geranium dissectum*).
A61	Semi-improved field corner dominated by Yorkshire fog with abundant false oat-grass and cock's-foot. Dicots including creeping buttercup, common knapweed, hogweed, meadow vetchling, upright hedge parsley, field horsetail (*Equisetum arvense*),

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	crosswort, creeping thistle, black bindweed (*Fallopia convolvulus*) and nettles.
A62	A 5 m wide strip of semi-improved grassland located between the arable field to the west and a wet ditch and woodland belt to the east. Marginal plants along the ditch (0.5-1 m wide) included marsh woundwort, hemlock water dropwort, greater willowherb, meadowsweet, angelica, monkey flower (*Mimulus sp.*), marsh marigold (*Caltha palustris*), reed canary grass and brooklime (*Veronica beccabunga*). Ditch had potential for water vole. To the east of the ditch an overgrown species-rich hedge line with trees featured ash, holly, hawthorn, crab apple (*Malus sylvestris*) and blackthorn with occasional mature pedunculate oak. The bank to the east of the hedge line was planted with young broadleaved trees predominately alder and ash with rough grassland below.
A63	Species-poor hedge dominated by hawthorn with alternating small leaved lime (*Tilia cordata*) and beech on the east side of the hedge beside the A1. Elm both within the hedge and as tall thin semi-mature trees.
A64	Area of tall ruderal vegetation and scrub as part of a very large layby used as a major truck stop with evident fly tipping and litter issues.
A65	Semi-natural broadleaved woodland, partly managed as a garden, some good flora including bluebell, lesser celandine (*Ficaria verna*) and primrose. Not fully surveyed due to access issues, surveyed from boundary.
A66	Broadleaved plantation grazed by sheep, including ash, oak, rowan and silver birch.
A67	Three ash trees with bat roost potential, not surveyed due to access issues but require assessment.
A68	Mature ash in hedgerow with north-facing rot pocket leading to potential void at 3 m. Some cracks and holes in bark covering shallow voids. Tree offers bat roost potential, requiring assessment.
A69	Semi-mature ash with calloused trunk crevice. Smaller hole in snag end of limb facing west. Tree offers bat roost potential, requiring assessment.

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
A70	 Mature ash in hedge peppered with rot, hollow limbs and cavities in trunk. Exposed in places with a free flow of air through gaps. Tree offers bat roost potential, requiring assessment. See Figure 2.10.
A71	Moderately species-rich verge with yarrow, bush vetch, tufted vetch, creeping cinquefoil, prickly sow-thistle (*Sonchus asper*), meadow vetchling, common knapweed, hogweed, cow parsley (*Anthriscus sylvestris*), common bent (*Agrostis capillaris*), false oat-grass, meadow foxtail (*Alopecurus pratensis*), Yorkshire fog and occasional tufted hair grass with meadowsweet in wetter areas towards the hedge.
A72	Ash tree which offers bat roost potential, requiring assessment.
A73	Line of trees of mixed ages, some of which are ash trees offering bat roost potential, requiring assessment.
A74	Three oak trees offering bat roost potential, requiring assessment.
A75	Two oak trees and one ash offering bat roost potential, requiring assessment.
A76	Species-poor tall ruderal vegetation dominated by curled dock, nettle and cock's-foot.
A77	Chicken coup.
A78	Open stream 1 m wide and less than 15 cm deep, grazed.
A79	Two ash trees offering bat roost potential, requiring assessment.
A80	Broadleaved semi-natural woodland. Species include sycamore, beech, oak and alder. Ground flora includes Dogs mercury, nettle, enchanter's nightshade, herb robert, wood sorrel, broad buckler-fern, false oat-grass, bluebell, holly, greater stitchwort, wood avens, bramble, red campion (*Silene dioica*) and common spotted-orchid.
A81	Three mature ash and one oak on the boundary of a field. Some low potential features present for bats. Trees offer bat roost potential, requiring assessment.
A82	Crab apple tree which is possibly veteran (0.5 m dbh). Several small rot pockets also present offering bat roost potential requiring assessment. The tree has previously

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	been part of hedgerow.
A83	Mature ash tree (1.5m dbh). Two rot pockets present but no other features suitable for bats. Tree offers bat roost potential, requiring assessment.
A84	Mature Ash tree (1.5m dbh). Tree offers bat roost potential, requiring assessment.
A85	Field margin with reed canary grass, creeping thistle, ragwort, broad-leaved dock, mugwort and rosebay willow herb. Good habitat for farmland birds.
A86	Areas of hard standing where buildings have previously stood. Tall ruderal coming through with species including ragwort, dock, rosebay willowherb, false oat-grass and nettle.
A87	Four ash trees with low to moderate offering bat roost potential, requiring assessment.
A88	Ash tree offering bat roost potential, requiring assessment.
A89	Mosaic of shaded shallow stream, marshy grassland dominated by reed sweet-grass (*Glyceria maxima*) and soft rush.
A90	Species-rich hedgerow including hawthorn, elder, holly, goat willow, ash, blackthorn and dog rose.
A91	Mature alder located next to woodland with split scaffold limb containing vertical cracks and voids and three west-facing woodpecker sized holes. Tree offers bat roost potential, requiring assessment.
A92	Mature oak with two rot pockets on south-facing scaffold limb, downward-facing and horizontal to ground. Tree offers bat roost potential, requiring assessment.
A93	 Senescent oak with large burrs and missing bark with one limb in leaf (the rest of the tree appeared to be dead). Obvious holes leading to voids. Tree offers bat roost potential, requiring assessment. See Figure 2.9.
A94	Mammal excavation within gorse scrub mass. Apparent mound but not accessible due to double fence and thick gorse.
A95	Semi-mature ash with holes in limbs and bark leading to potential voids and crevices. Tree offers bat roost potential, requiring assessment.

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
A96	 Ash with south-facing deep vertical split and rot in trunk. Potential void to top of callous. Tree offers bat roost potential, requiring assessment. See Figure 2.9.
A97	 Potential Midland hawthorn (*Crataegus laevigata*) with shallow-lobed leaves. Appeared anomalous due to northern location so may have been a hybrid. See Figure 2.9.
A98	Large veteran ash with some ivy cladding and small features such as cracks in bark and small rot pockets. Ivy may conceal some minor features. Tree offers bat roost potential, requiring assessment.
A99	Veteran ash with two calloused rot pockets resulting from broken limbs leading to potential voids. Located at 4 and 6m above ground. Tree offers bat roost potential, requiring assessment.
A100	Mature ash with deep fissure to top of scaffold limb where bark was lifted, creating a

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	long crevice. Tree offers bat roost potential, requiring assessment.
A101	 Veteran oak with ruptured trunk encircling large void. Tree in dangerous condition but offers bat roost potential, requiring assessment. See Figure 2.10.
A102	Barn with missing terracotta slates. Bat and barn owl potential.
A103	Hedge comprising cherry, hawthorn, honeysuckle, holly and ash. Rich in woody species but of no antiquity.
A104	Ash tree offering bat roost potential, requiring assessment.
A105	Shaded stream 1 m wide and less than 10 cm deep with hawthorn and bramble scrub and species-poor tall ruderal vegetation.
A106	Open shallow ditch with species-poor tall ruderal vegetation and occasional scattered hawthorn and gorse.
A107	Six hares ‘boxing’ in field.
A108	Burrows noted in the bank of a small stream/ditch. The bank was deep, up to 5 feet in places. Burrows could be attributable to water vole. Water is very shallow (5-6”) and very slow moving. Abundant food sources were present for water vole. Marsh marigold and floating sweet-grass (*Glyceria fluitans*) were present within the stream.
A109	Deeply fissured mature oak with crevices and cavities. Tree offers bat roost potential, requiring assessment.
A110	Veteran oak in the corner of a field with splits and cavities and two woodpecker-sized holes. Tree offers bat roost potential, requiring assessment.
A111	Veteran oak with numerous small crevices and spaces between the lifted bark and wood beneath. Tree offers bat roost potential, requiring assessment.
A112	Veteran oak with numerous small crevices and spaces between the lifted bark and

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	wood beneath. Tree offers bat roost potential, requiring assessment.
A113	Recent mammal excavation noted. Numerous mammal pathways were present but no other field signs.
A114	Mixed plantation woodland with dog rose, sycamore, Norway maple (*Acer platanoides*), bird cherry (*Prunus padus*), horse chestnut, wych elm, blackthorn, elder, holly, Scots pine and cypress, grey willow (*Salix cinerea*), larch (*Larix sp.*), ash, rowan and sitka spruce. Ground flora comprised of rosebay willowherb, bramble and bracken.
A115	Mixed plantation woodland. Dog rose, sycamore, Norway maple, bird cherry, horse chestnut, wych elm, blackthorn, elder, holly, Scot's pine and cypressia, grey willow, larch, ash, rowan and sitka spruce. Ground flora comprised of rosebay willowherb, bramble and bracken.
A116	Veteran gnarled oak with rot pocket and crevice around broken limb. Split open bark on limbs with cavities forming. Tree offers bat roost potential, requiring assessment.
A117	Mature ashes with calloused rot pockets (one in each tree) facing west at 2 and 4m above ground. Appeared to lead to voids. Tree offers bat roost potential, requiring assessment.
A118	Semi-mature oak with large cavity to trunk leading upwards into void. Tree offers bat roost potential, requiring assessment.
A119	Semi-mature oak with large cavity to trunk leading upwards into void. Tree offers bat roost potential, requiring assessment.
A120	Stream averaging 1-1.5 m width and approximately 20 cm deep. Stickleback (*Gasterosteidae*) noted. In-stream vegetation comprised marsh marigold, yellow flag and watercress (*Nasturtium officinale*). Water clear and flow imperceptibly slow. Semi-improved grassland on banks included species such as wavy hair grass (*Deschampsia flexuosa*), crested dog's-tail, sweet vernal-grass and perennial rye grass. Stream passed ridge and furrow field which was to the south.
A121	Veteran sycamore, riddled with cavities, splits, rot pockets. Tree offers bat roost potential, requiring assessment.
A122	Holly, sycamore, ash, dog rose and blackthorn.
A123	Two pedunculate oak trees offering bat roost potential, requiring assessment.
A124	Two (sycamore and ash) trees offering bat roost potential, requiring assessment.
A125	Oak offering bat roost potential, requiring assessment.
A126	Ash trees offering bat roost potential, requiring assessment.
A127	Species-rich hedgerow with hawthorn, elder, holly, sycamore, ash and dog rose.
A128	Two ash trees offering bat roost potential, requiring assessment.

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
A129	Four sycamores offering bat roost potential, requiring assessment.
A130	Moto cross racing track characterised by bare ground trackways interspersed with poor semi-improved grassland and abundant tall ruderals, mainly dock and nettles. Occasional green alkanet (*Pentaglottis sempervirens*), comfrey (*Symphytum sp.*), borage (*Borago officinalis*) and silverweed (*Argentina anserina*).
A131	Man-made pond next to motor cross track. No macrophytes and no shade. Fish possibly present. Waterfowl present (two mallard).
A132	Mature ivy-clad ash and oak with potential to support roosting bats, requiring assessment.
A133	Ditch with double fence containing bramble, hawthorn, holly and cherry scrub amongst semi-mature sycamore, cherry, alder, silver birch, ash, oak and willow.
A134	Mixed plantation woodland with Scots pine, larch, sycamore, hawthorn and oak.
A135	Three oak trees offering bat roost potential, requiring assessment.
A136	Fairly young broadleaved plantation with rowan, bird cherry, silver birch and oak.
A137	Species-rich hedgerow with trees including hawthorn, ash, goat willow, blackthorn and dog rose.
A138	Two oaks offering bat roost potential, requiring assessment.
A139	Small area of mixed plantation with ash, sycamore and Scots pine.
A140	Mosaic of mixed plantation woodland, wet and dry woodland with Scots pine, alder, ash, hazel, rowan and beech.
A141	Raised earth bank with species-poor hedgerow.
A142	Species-rich hedgerow including hawthorn, elder, apple, field maple (*Acer campestre*), wych elm and dog rose.
A143	Mature oak offering bat roost potential, requiring assessment and bat box on adjacent Scots pine.
A144	Mixed woodland with sycamore and Scots pine with species-poor ground flora and areas of rhododendron (*Rhododendron ponticum*).
A145	Area that contained derelict outbuildings with corrugated roofs, rubble piles that could provide hibernacula, and an active beehive.
A146	Semi-improved grassland with tall ruderal vegetation. Wavy hair grass, meadow foxtail, creeping thistle, curled dock, creeping buttercup, perennial rye grass and common knapweed. Grassland seguing into marshy grassland as it became increasingly wet.
A147	Veteran ash with platform and barn owl box attached at 3 m above ground.
A148	Swallow (*Hirundo rustica*) nest on beam inside lean-to shed. Brambling (*Fringilla montifringilla*), chaffinch (*Fringilla coelebs*), siskin (*Carduelis spinus*) and greenfinch

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	(*Chloris chloris*) also present and kestrel (*Falco tinnunculus*) nesting within conifer to the south of the plot.
A149	Species-poor marshy grassland dominated by soft rush.
A150	Species-rich hedgerow with hawthorn, wych elm, blackthorn, dog rose and gorse.
A151	Eshott Burn, 1 m wide and less than 10 cm deep bordered by dense bramble, hawthorn and blackthorn scrub.
A152	Strip of occasionally mown poor semi-improved grassland intersecting the broadleaved plantation.
A153	Area of semi-natural broadleaved woodland with mature oaks with low BRP, birch and holly.
A154	Marshy grassland along stream.
A155	Fresh mammal excavations digging and established mammal pathways present along river bank.
A156	Dried out water feature also used for eventing.
A157	Equestrian eventing pond with jumps and duck carving. No shade, no macrophytes, fish or wildfowl. Moderate water quality from field runoff.
A158	Veteran ash in hedgerow with double fence. Some small cracks and potential openings at juncture of limbs and at snag ends. Tree offers bat roost potential, requiring assessment.
A159	Line of mature oak, sycamore, ash along fenceline.
A160	Ash, semi-mature with three callousing rot pockets, two of which may have led to voids. Tree offers bat roost potential, requiring assessment.
A161	Veteran multi-stemmed ash within a hedgerow. Formerly laid as part of the hedgerow. The north-western trunk has a vertical calloused split from the ground level to 4 m above ground with an apparent void at the top. Tree offers bat roost potential, requiring assessment.
A162	Boundary marked by mature oak, sycamore and ash.
A163	Hawthorn mass with potential mammal excavation inside. Hawthorn impenetrable so status not confirmed, requires survey at future point.
A164	Mammal excavation in hedgerow.
A165	Mixed woodland with Scots pine, oak, silver birch and sitka spruce.
A166	Species-rich hedgerow with holly, hawthorn, ash, blackthorn and dog rose.
A167	Mixed woodland with Scots pine, European larch, sycamore, wych elm and ash.
A168	Mixed woodland with Scots pine, sycamore and species-poor ground flora.
A169	Mixed woodland with sycamore, holly, hazel, and locally frequent aspen (*Populus*

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	tremula) and species-poor ground flora.
A170	Sycamore with occasional holes and splits, offering bat roost potential, requiring assessment.
A171	Species-rich hedgerow with holly, hawthorn, wych elm, elder and dog rose.
A172	Number of disused large buildings with tall ruderal vegetation, scattered scrub and ephemeral grassland.
A173	Species-rich hedgerow with holly, hawthorn, ash, blackthorn and dog rose.
A174	Sycamore with occasional holes and splits, offering bat roost potential, requiring assessment.
A175	Species-rich hedgerow with hawthorn, wych elm, gorse, sycamore and dog rose.
A176	Conifer wood dominated by Scots pine with infrequent cherry and ash. Woodland floor very damp with abundant rushes, nettle, creeping thistle and gorse.
A177	Strip of remnant wet woodland on slopes. Multi-stemmed ash and elder with wet ditch at bottom. Marshy grassland surrounding ditch with abundant dog's mercury (*Mercurialis perennis*), marsh marigold, lesser celandine and hogweed.
A178	Damaged ash with vertical splits, crevices and voids to trunk offering numerous potential roost sites for bats. To be assessed.
A179	Small section of remnant wood. Senescent, mature and damaged ash trees. Glade of willowherb and semi-mature sycamore also present.
A180	Damp semi-improved grassland dominated by cock's-foot, meadow foxtail and side flowering rushes and curled dock. Numerous mammal runs throughout.
A181	Conifer plantation next to river with broadleaved trees on left bank with willow, sycamore, cherry and elder. Ground flora diverse suggesting that woodland was replanted wood of some antiquity: greater stichwort, betony, opposite-leaved golden saxifrage (*Chrysosplenium alternifolium*), herb robert, tufted vetch, ground ivy (*Glechoma hederacea*), bracken, lesser celandine, dog's mercury, crosswort, comfrey, meadowsweet, primrose, cuckoo flower (*Cardamine pratensis*), selfheal (*Prunella vulgaris*), fool's-water-cress (*Apium nodiflorum*) and water avens (*Geum rivale*).
A182	Otter and water vole footprints in abundance on sandy shallow banks adjacent to river, indicating access and egress from watercourse. Habitat contained undercut banks with prominent tree roots offering holt potential. Vegetation suitable for water vole with earth substrate on banks. Slide noted to right bank of watercourse.
A183	Semi-mature stunted ash with rot pocket facing southeast leading to potential void offering bat roost potential, requiring assessment.
A184	Small isolated pond with species-poor marginal vegetation and no apparent aquatic vegetation. The southern section of the pond had a large area of locally dominant common reed (*Phragmites australis*). No tadpoles were observed at the time of

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	survey, though newts and frogs have been observed according to the campsite owner's son.
A185	Semi-mature ash in hedgerow. Rotten limb at 5 m above ground with numerous holes in lifted bark concealing spaces offering bat roost potential, requiring assessment.
A186	Mammal excavation.
A187	Semi-natural broadleaved woodland with oak, ash, lime and sycamore with occasional trees of low BRP. This gradually changed from west to east to established wet woodland consisting of downy birch with one veteran present, goat willow and hazel.
A188	Green lane.
A189	Scattered hawthorn and gorse scrub within grazed area.
A190	Norway spruce (*Picea abies*) cones eaten possibly by red squirrel (*Sciurus vulgaris*).
A191	Active mammal burrows.
A192	Two oaks offering bat roost potential, requiring assessment.
A193	Mosaic of a tunnel system, rocky outcrop disused building surrounded by encroaching semi-natural broadleaved woodland with species poor ground flora consisting of mainly common nettle, cleavers and bramble
A194	Species poor marshy grassland dominated by soft rush
A195	Veteran oak with ripped-off limb. Crown twisted with split upper limbs. Large potential void at bottom of crown. Dead heartwood with numerous crevices. Moderate BRP. One of a few remnant hedgeline trees on a former field boundary.
A196	 Dead ash with rotted, de-barked limbs. Crevices on other limbs where bark raised. Rot pockets to scaffold limbs. Tree offers bat roost potential, requiring assessment. See Figure2.5.
A197	Stream with sluggish, meandering flow. Gravel and pebble substrate. Width up to 1.5 m, earth embankments. Water depth less than 3 cm over riffles but up to 30 cm deep to outside of meanders.
A198	Pond containing marginal soft rush and algae covered submerged plants (no leaves). Standing water present in adjacent woodland drainage ditch but devoid of

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	macrophytes.
A199	Mixed planted woodland with Scots pine, ash and sycamore.
A200	Slow moving river approximately 3 m wide and 1 m deep. Banks well-vegetated with butterbur (*Petasites sp.*), nettle, white dead-nettle (*Lamium album*), greater stitchwort, great willowherb, yellow flag and crosswort.
A201	Planted ash, silver birch and sycamore with hawthorn.
A202	Earth bank with tall ruderal vegetation superseded by silver birch and alder.
A203	Fairly species-poor marshy grassland with frequent soft rush and locally frequent marsh marigold and meadowsweet.
A204	Major stream (Longdike Burn) flowing from west to east, bisecting Bockenfield Caravan Park and Felmoor Caravan Park. Numerous otter spraints were located throughout this stretch. The stream itself is 2-3 m wide and up to 1.5 m deep in occasional places.
A205	Mix of species-poor scrub including dense bramble and hawthorn and tall ruderal vegetation.
A206	Two veteran elm trees believed to be wych elm.
A207	Small island dominated by young alder, goat willow, bramble and silver birch.
A208	Area consisting of outbuildings used for storing landscaping, building and maintenance equipment for the caravan site.
A209	Small area of young goat willow, alder, dogwood and crack willow (*Salix fragilis*).
A210	Appears to be a type of waste water treatment system with a terraced assemblage of common reed.
A211	Species-poor marshy grassland with frequent marsh marigold, soft rush and meadowsweet.
A212	Semi-natural broadleaved woodland dominated by mature alder with occasional trees offering bat roost potential, requiring assessment.
A213	Line of ash and sycamore with low BRP with locally frequent moschatel (*Adoxa moschatellina*).
A214	Large area of tall ruderal vegetation left as game cover.
A215	Dense hawthorn and bramble possibly left as game cover.
A216	Barn owl roost or perch in veteran ash tree with two large calloused rot pockets, one at 2.5 m above ground level where owl seen flying from. Hole used by owl was whitewashed below with down feathers on trunk.
A217	Semi-mature ash wind-blown to south. Large rot hole in hollow trunk leading to cavities. Trunk contains crevices to exterior offering bat roost potential, requiring

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	assessment.
A218	Veteran ash with epicormic growth. Deep vertical rot pockets within main trunk leading to apparent voids offering bat roost potential, requiring assessment.
A219	Broadleaved plantation woodland comprising willow, silver birch, ash, hazel and hawthorn. Grass pathway cut into woodland. Ground flora reasonably diverse, including creeping thistle, curled dock, garlic mustard (*Alliaria petiolata*), comfrey, greater stichwort, great willowherb, broad-leaved dock, dandelion (*Taraxacum officinale*), soft rush, tufted vetch, angelica, herb robert, daisy (*Bellis perennis*), creeping buttercup, white clover and dog violet.
A220	Mammal pathway with bi-directional prints.
A221	Mature ash with large rot pocket leading up inside trunk to void offering bat roost potential, requiring assessment.
A222	Mature ash with large rot pocket leading up inside trunk to void offering bat roost potential, requiring assessment.
A223	Access not granted to this feature so viewed from edge. Mixed plantation woodland containing whitebeam (*Sorbus aria*), hawthorn, leylandii (*Cupressus x leylandii*), rowan, silver birch, grey willow, goat willow, horse chestnut and Lombardy poplar (*Populus nigra* 'Italica'). Ground flora visible included lesser burdock (*Arctium minus*), moschatel and bluebell.
A224	 Mature ash with large rot pocket leading up inside trunk to void offering bat roost potential, requiring assessment. See Figure 2.4.
A225	Planted broadleaved woodland as an accompaniment to the burial ground to the east.
A226	Landscaped pond with lesser reedmace (*Typha angustifolia*), yellow flag as well as aquatic broadleaved pondweed (*Potamogeton natans*). Tadpoles present, likely to have good suitability for great crested newts (*Triturus cristatus*) and other amphibians.
A227	Poor semi-improved grassland with some interesting flora such as frequent common knapweed, meadow vetchling, cuckooflower, sweet vernal-grass, crested dog's-tail

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	and field woodrush (*Luzula campestris*).
A228	Species-poor tall ruderal vegetation dominated by cock's-foot, perennial rye grass and bramble.
A229	Small village green with mature sycamores, all offering some bat roost potential, requiring assessment.
A230	Small very eutrophic silted and shaded pond bordered by abundant ground elder (*Aegopodium podagraria*), nettle and cleavers.
A231	Mammal pathway with prints leading through hedge.
A232	Semi-improved grassland dominated by meadow foxtail with crested dog's-tail, soft rush, sharp rush (*Juncus acutus*), bloody cranesbill (*Geranium sanguineum*), meadow buttercup, lesser celandine, meadowsweet and cuckoo flower.
A233	 Small pond heavily vegetated with water crowfoot (*Ranunculus aquatilis*). Soft rush at margins and green algae also present. Pond approximately 7 m in diameter. Terrestrial habitat good for great crested newts. No shading to pond which had moderately good water quality and no sign of fish or waterfowl. See Figure 2.4.
A234	Mixed semi-natural woodland containing beech, wych elm, alder, horse chestnut, ash, sitka spruce, Japanese maple (*Acer palmatum*), Austrian pine (*Pinus nigra*) and oak.
A235	Log pile, potential hibernacula for reptiles and amphibians.
A236	Dense gorse scrub.
A237	Derelict outbuilding and electricity sub-station surrounded by species-poor tall ruderal vegetation and ephemeral grassland.
A238	Broadleaved plantation with oak, rowan and silver birch.
A239	Semi-improved species-poor grassland.
A240	Electricity sub-station.
A241	Broadleaved plantation, unable to gain access.
A242	Five large photovoltaic panels.
A243	Mature twin-stemmed ash with deep vertical splits and crevices. Tree offers bat roost potential, requiring assessment.
A244	Semi-mature twin-stemmed ash with raised bark offering bat roost potential, requiring assessment.
A245	Mature ash with lifted bark offering bat roost potential, requiring assessment.
A246	Mature ash with calloused rot pocket leading to apparent void offering bat roost

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	potential, requiring assessment.
A247	Mixed woodland with Scots pine, ash, field maple, cherry, hawthorn, silver birch, rowan, oak, beech, goat willow, laurel (*Laurus sp.*) and sycamore. Ground flora includes bluebell, cleavers, herb robert, garlic mustard, dog's mercury and lesser celandine. There are wide mammal paths running into hedgerow.
A248	Area of goat willow scrub.
A249	Mammal pathway with prints.
A250	Oak with rot pockets leading to voids, all downward facing offering bat roost potential, requiring assessment.
A251	Large latrine containing 12 dung pits.
A252	Active mammal burrows.
A253	Signs of mammal fresh digging, mammal pathways present.
A254	Broadleaved plantation woodland which was formerly a conifer plantation but has been clear felled and allowed to regenerate. Trees include cherry, sycamore, willows and silver birch. Scrub is abundant within the understorey consisting of elder, bramble, honeysuckle, hawthorn, gorse and broom. Ground flora includes grasses, bracken, sedges, mosses, raspberry, wood sorrel, ramsons and wood anemone.
A255	Broadleaved woodland comprising alder, ash, oak, silver birch, willow, hawthorn, hazel, field maple, beech, sycamore, rowan and wych elm. Ground flora fairly diverse and includes dog's mercury, bluebell (native and hybrid), lesser celandine, primrose, enchanter's nightshade, *Luzula* sp., wood anemone (*Anemone nemorosa*), honeysuckle, male fern, ramsons (*Allium ursinum*), meadowsweet, cleavers, angelica, greater burdock (*Arctium lappa*), wood sorrel, wood avens, opposite-leaved golden saxifrage, dog violet, pignut (*Conopodium majus*), foxglove (*Digitalis purpurea*), ground ivy, barren strawberry (*Potentilla sterilis*), black horehound (*Ballota nigra*), forget-me-not (*Myosotis arvensis*) and field horsetail.
A256	Clear felled woodland with remnant broadleaved trees. Some coniferous new growth. Ground flora includes bluebells, bracken, and abundant rushes and sedges to the south.
A257	Patch of broadleaved semi-natural woodland with sycamore, rowan and silver birch. Apparently self-set. Ground flora dominated by bluebell. Rhododendron planted to north.
A258	Pond approximately 25 m x 30 m. Abundant emergent vegetation including bulrush, floating sweet grass and rushes with willow scrub at pond margins. Woodland beyond typified by sycamore and alder.
A259	Coniferous plantation with ground flora indicating former broadleaved woodland with ramsons, wood sorrel, bluebell, primrose and dog's mercury.
A260	Number of mature pedunculate oak, sycamore and ash offering bat roost potential,

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	requiring assessment.
A261	Semi-natural broadleaved woodland with pedunculate oak, silver birch, hazel, ash and sycamore with species-rich ground flora including woodruff, dog's mercury, primrose, wood anemone and red campion (*Silene dioica*) and locally frequent great woodrush (*Luzula sylvatica*).
A262	Number of mature pedunculate oak, sycamore and ash offering bat roost potential, requiring assessment.
A263	Woodland ride on edge of grazed improved field with species-rich ground flora including primrose, greater stitchwort, great woodrush, bluebell and wood anemone.
A264	One of a number of vertical rocky outcrops with a significant land slip adjacent.
A265	Number of mature pedunculate oak, sycamore and ash offering bat roost potential, requiring assessment.
A266	Number of mature pedunculate oak, sycamore and ash offering bat roost potential, requiring assessment.
A267	Oak offering bat roost potential, requiring assessment, with some splits and small holes.
A268	Scattered broadleaved woodland with a number of mature pedunculate oak and ash trees offering bat roost potential, requiring assessment and a number of bird boxes.
A269	Semi-natural broadleaved woodland similar to A261, very steep in places but well fenced.
A270	Mosaic of dense gorse and broadleaved plantation with patches of butterfly bush (*Buddleia davidii*) and snowberry.
A271	Owl box.
A272	Oak and sycamore trees offering bat roost potential, requiring assessment.
A273	Mature oak with tear-out wound offering bat roost potential, requiring assessment.
A274	Small pond approximately 10 m x 20 m. Very shallow with northern half dominated by bulrush. Some marginal vegetation dominated by soft rush.
A275	Small pond approximately 8 m x 10 m with side flowering rushes to margins and abundant duckweed (*Lemna minor*). In line with water channel that flows from west to east.
A276	Rhododendron stand within area dominated by marshy grassland and broad-leaved woodland.
A277	Wet ditch with broadleaved semi-natural woodland up to 1 m wide and 30 cm deep. Flow very sluggish with northern section of ditch choked with bulrush and *Juncus* sp.
A278	Mature and senescent oaks with numerous potential bat roost features such as split limbs. Moderate BRP.

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
A279	Broadleaved wet woodland dominated by ash and sycamore with elm, Scots pine and bird cherry. Ground flora comprises abundant mosses, dog's mercury, wood anemone, lesser celandine, opposite-leaved golden saxifrage, horsetails, ramsons and creeping buttercup.
A280	Mature oak with split limb offering bat roost potential, requiring assessment.
A281	Four mature oaks with numerous cracks and lifted bark offering bat roost potential, requiring further assessment. Trees had the appearance of a parkland landscape.
A282	Corrugated iron outbuilding or animal shelter.
A283	Veteran oak approximately 2 m in diameter. Long splits to limbs facing downwards and small rot pockets. Somewhat isolated within field but assessed as moderate BRP.
A284	Two ash trees offering bat roost potential, requiring further assessment.
A285	Veteran oak in field with downward facing rot pockets, crevices, splits and lifted bark. Moderate bat roosting potential.
A286	Heavily burred mature oak. Some open holes within burrs that may offer bat roosting potential, requiring further assessment. Low BRP.
A287	Mature sycamore with some fairly superficial splits and crevices offering bat roost potential, requiring further assessment.
A288	Ash tree offering bat roost potential, requiring further assessment.
A289	Area of clear fell conifer with some broadleaved plantation and regeneration as well as sitka spruce regeneration. Also contains a small wet flush with locally abundant soft rush.
A290	Veteran oak approximately 1.5 m in diameter with several splits, ivy cladding and snagged ends where bark has lifted with crevices forming. Some splits on the underside of limbs and occasional rot holes. Tree offers bat roost potential, requiring further assessment.
A291	Veteran ash with horizontal splits along main limbs potentially leading to voids. Some ivy cladding with accessible gaps. Tree offers bat roost potential, requiring further assessment.
A292	Mature, damaged ash with abundant lifted bark and holes leading to potential cavities offering bat roost potential, requiring further assessment.
A293	Veteran ash nearly 2 m in diameter with some ivy cladding and vertical split to south side of trunk offering bat roost potential, requiring further assessment.
A294	Veteran ash with one large south-facing rot pocket. Some accessible splits visible beneath the ivy cladding offering bat roost potential, requiring further assessment.
A295	Area of tall ruderal vegetation used as game cover with pens.
A296	Sycamore offering bat roost potential, requiring further assessment.

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
A297	Veteran sycamore with numerous rot pockets and crevices. Tree offers bat roost potential, requiring further assessment.
A298	Veteran sycamore with small downward facing rotten limb ends potentially leading to voids offering bat roost potential, requiring further assessment.
A299	Veteran oak with trunk in excess of 1.5 m diameter. One broken limb which was splitting concentrically at its end offering bat roost potential, requiring further assessment.
A300	Pedunculate oak with large cavity, other holes and split limbs. Tree offers bat roost potential, requiring further assessment.
A301	Veteran ash in hedgerow with small 3 cm diameter downward facing rot pocket offering bat roost potential, requiring further assessment.
A302	Three mature sycamore trees offering bat roost potential, requiring further assessment.
A303	Blue tit (*Cyanistes caeruleus*) nesting in stone wall.
A304	Mixed woodland with ash, sycamore and beech, with occasional Scots pine and Norway spruce and areas of ancient woodland indicator species such as wild garlic, lesser celandine and woodruff.
A305	Veteran ash nearly 2 m in diameter. Some ivy cladding and vertical split to south side of trunk offering bat roost potential, requiring further assessment.
A306	Veteran ash with some ivy cladding with accessible gaps. Numerous visible spaces behind the ivy offering bat roost potential, requiring further assessment.
A307	Veteran ash. One large south facing rot pocket. Some accessible splits visible beneath the ivy cladding. Assessed as offering bat roost potential, requiring further assessment.
A308	Mature, damaged ash with abundant lifted bark and holes leading to potential cavities offering bat roost potential, requiring assessment.
A309	Veteran ash. Horizontal splits along main limbs potentially leading to voids with some ivy cladding with accessible gaps offering bat roost potential, requiring further assessment.
A310	Veteran ash with some ivy cladding with accessible gaps offering bat roost potential, requiring further assessment.
A311	Veteran oak with rot pocket facing east at 4 m above ground leading to potential void offering bat roost potential, requiring further assessment.
A312	Broad-leaved semi-natural plantation woodland with mature and veteran oak, alder and ash. Widespread semi-mature sycamore, hawthorn and ash. Reminiscent of replanted ancient woodland. Ground flora depauperate due to sheep grazing.
A313	Veteran ash with south-facing hole leading to void at 4 m above ground level offering

Target Note (TN)	Description of Target Note (Sequence runs from south to north)
	bat roost potential, requiring further assessment.
A314	Veteran, possibly ancient, oak with numerous vertical crevices and splits facing upwards, offering bat roost potential, requiring further assessment.
A315	Veteran ash with bark peppered with holes on one limb leading to potential voids and crevices with one large hole and small rot pocket offering bat roost potential, requiring further assessment.
A316	Dead ash with numerous potential bat roosting features such as holes in bark, splits, rot pockets and deep horizontal cracks to limbs offering bat roost potential, requiring further assessment.
A317	Area of wet woodland with greater horsetail (*Equisetum telmateia*), meadowsweet, sharp rush, comfrey and opposite-leaved golden saxifrage. Wood avens was also present with occasional wavy hair grass at margins.
A318	Semi-natural broadleaved plantation woodland with oak, sycamore, beech, silver birch, ash and hazel. Ground flora dominated by wood anemone.
A319	Veteran oak with ivy partially cladding the trunk and limbs. Some small splits and tears to limbs offering bat roost potential, requiring further assessment.
A320	Stream approximately 1 – 2 m wide with swift flow (1 m/s) and 3 cm deep. Instream vegetation typically great willowherb with common sedges such as greater tussock sedge (*Carex paniculata*), rushes (soft rush, hard rush and sharp rush) and hard fern on the banksides. Surrounding marshy grassland and wet woodland contained a relatively abundant ground flora. Flora included ramsons, dog's mercury, woodruff, red campion, nettle, hogweed, gorse, opposite-leaved golden saxifrage, meadowsweet, hart's tongue (*Asplenium scolopendrium*), honeysuckle, greater stichwort, bluebell, pignut, wood anemone, greater celandine, lesser celandine, primrose, wood sorrel, field woodrush, toothwort (*Lathraea squamaria*), giant fescue (*Festuca gigantea*) and tufted hair grass.
A321	Mixed semi-natural plantation woodland with oak, beech, rowan, sitka spruce, Norway spruce, silver birch, hazel, hawthorn and holly.
A322	Active mammal excavations present with mammal pathway.

APPENDIX B: TARGET NOTE DESCRIPTIONS SECTION B

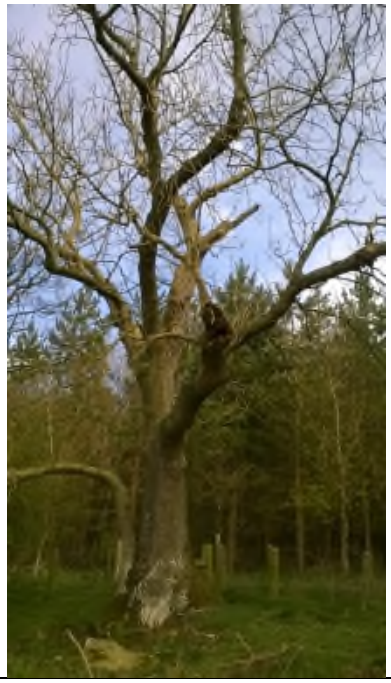
Target Note (TN)	Description of Target Note
B1	Seven brown hare (*Lepus europaeus*) lying up in field.
B2	Mature ash (*Fraxinus excelsior*) with occasional splits and a hole offering bat roost potential, requiring further assessment.
B3	Denwick Burn, 1 m wide and less than 30 cm deep. Very open with species-poor tall ruderal vegetation.
B4	Line of mixed trees including Scots pine (*Pinus sylvestris*) and crack willow (*Salix fragilis*) offering some limited bat roost potential, requiring further assessment.
B5	Very open section of Denwick Burn with species-poor tall ruderal vegetation and occasional scattered bramble (*Rubus fruticosus*) and hawthorn (*Crataegus monogyna*) scrub.
B6	Veteran ash. Deep rot within trunk. One rot pocket was being used as a nest by a jackdaw (*Corvus monedula*).
B7	Wooded embankment bordering a stream. Former hedge which has become defunct and naturalised. Ivy (*Hedera helix*) and primrose (*Primula vulgaris*) were the dominant ground flora. Woody species comprised sycamore (*Acer pseudoplatanus*), elder (*Sambucus nigra*), hazel (*Corylus avellana*) and hawthorn. Roots providing potential holt sites. Stream may be subject to rapid changes in flow judging by hung-up debris.
B8	Skylarks (*Alauda arvensis*) holding territory above field.
B9	Small stream approximately 0. 5 m wide and 10 cm deep. Gravel bed with moderate flow 0.5 m/s^{-1} travelling west to east. No in-stream vegetation. Suitable for water vole (*Arvicola amphibius*) in places as bank substrate good but there were no visible field signs.
B10	Mature ash approximately 20 m in height. Snagged and broken limbs. Extensive ivy cladding may have concealed other features suitable for bats offering bat roost potential, requiring further assessment.
B11	Marshy grassland area with frequent marsh marigold (*Caltha palustris),* meadowsweet (*Filipendula ulmaria)*, creeping buttercup (*Ranunculus repens*) and soft rush (*Juncus effusus*) with occasional patches of water mint (*Mentha aquatica*)*.*
B12	Mature ash with occasional rot holes and splits offering bat roost potential, requiring further assessment.
B13	Remnant semi-natural broadleaved woodland as in TN24 with broadleaved plantation to the west consisting of pedunculate oak (*Quercus robur*), ash and beech (*Fagus sylvatica*).
B14	Denwick Burn 1.5 m wide and less than 20 cm deep in the middle of an arable field. Culverted from the north-west and lined by species-poor tall

Target Note (TN)	Description of Target Note
	ruderal vegetation.
B15	Trip of species-poor grassland dominated by cock's-foot (*Dactylis glomerata*) and perennial rye grass (*Lolium perenne*) with tall ruderal vegetation.
B16	Small species-poor marshy grassland area dominated by soft rush.
B17	Mature ash with large rot holes and splits offering bat roost potential, requiring further assessment.
B18	Semi-mature beech with downward-facing rot pocket from severed limb leading to potential void offering bat roost potential, requiring further assessment.
B19	Sandstone crag with deep fissures in place that offered bat roosting and bird-nesting potential. Ground at the eastern base of the crag comprised a wet flush with marshy grassland and scattered scrub that passed through broadleaved woodland dominated by sycamore, ash and silver birch (*Betula pendula*). To the north the habitat is dominated by mixed semi-natural plantation woodland, with birch, beech, Scots pine and sycamore with an understorey of bluebell (*Hyacinthoides non-scripta*), currant (*Ribes nigrum*), bracken (*Pteridium aquilinum*) and raspberry (*Rubus idaeus*). A WWII bunker was located on top of the crag and formed part of a network built to relay signals from Boulmer RAF station in case of invasion. The top of the crag, which covered an area of approximately 1 ha comprised a strip of Scots pine, rowan (*Sorbus aucuparia*) and occasional oak (*Quercus* sp.) which gives way to a mosaic of bracken, heather (*Calluna vulgaris*), gorse (*Ulex europaeus*), field woodrush (*Luzula campestris*) and bilberry (*Vaccinium myrtillus*). See Figure 3.12. 

Target Note (TN)	Description of Target Note
B20	 Mature ash with large rotted void in main trunk. See Figure 3.12.
B21	Four mature or veteran ash and oaks, two heavily damaged by lightning. All contained rot holes and crevices offering bat roost potential, requiring further assessment. Burrows noted in bank 2 m above water level between the two oaks which were optimum size for water vole but there were no additional field signs.
B22	 Denwick Burn to north; 1 m wide and less than 15 cm deep. Grazed and poached by cattle in places. See Figure 3.12.
B23	Stone pile, potential hibernacula for reptiles and amphibians.
B24	Good line of remnant semi-natural broadleaved woodland along Denwick Burn with coppiced hazel, ash, primrose, lesser celandine (*Ficaria verna*) and dog's mercury (*Mercurialis perennis*).
B25	Shaded and open stream 1 m wide and less than 15 cm deep.
B26	Area of bramble and hawthorn scrub lining Denwick Burn.
B27	Small area of marshy grassland dominated by soft rush.
B28	Mature ash with small rot holes and a split offering bat roost potential, requiring further assessment.
B29	Pond approximately 50 m x 40 m with patchy marginal vegetation

Target Note (TN)	Description of Target Note
	including common reedmace (*Typha latifolia*), soft rush, great willowherb (*Epilobium hirsutum*), meadowsweet and encroaching grey willow (*Salix cinerea*). Aquatic species include pondweed (*Potamogeton sp.*) and brooklime (*Veronica beccabunga*). The pond was mostly very shallow as it evidently suffered heavily from siltation.
B30	Semi-mature ash. Two west-facing rot holes and broken limbs with deep fissures offering bat roost potential, requiring further assessment.
B31	Mature ash. Deeply pitted with crevices in bark and potential for voids that were suitable for crevice dwellers. Tree offers bat roost potential, requiring further assessment.
B32	Small stream approximately 0.5 to 1 m wide and 15 cm deep running through semi-natural broadleaved woodland (beech, ash, elder, and hawthorn). Understorey herb species include bluebell, dog's mercury, meadowsweet, lesser celandine, primrose, sharp rush (*Juncus acutus*) and hedge woundwort (*Stachys sylvatica*).
B33	Unusual area of semi-natural broadleaved woodland with hawthorn standards as well as mature sycamore and ash and shaded wet ditch.
B34	Semi-improved species poor grassland.
B35	Area of dense scrub dominated by blackthorn (*Prunus spinosa*) and elder with some remnant woodland ground flora in more open areas including locally frequent wild garlic (*Allium ursinum*), red campion (*Silene dioica*) and dog's mercury.
B36	Mature ash offering bat roost potential, requiring further assessment.
B37	Shaded wet ditch less than 10 cm deep and 0.5 m wide, with species-poor ground flora.
B38	Species-poor marshy grassland dominated by soft rush.
B39	Veteran ash with occasional rot holes in trunk and occasional splits offering bat roost potential, requiring further assessment.
B40	Small eutrophic dew pond dominated by floating sweet grass (*Glyceria fluitans*).
B41	Mature ash with hole at the base of split limb offering bat roost potential, requiring further assessment.
B42	Scattered lime (*Tilia sp.*), and beech with occasional ash offering bat roost potential, requiring further assessment.
B43	Mature ash with occasional holes and peeling bark offering bat roost potential, requiring further assessment.
B44	Hollow and rocky outcrop which is potentially a small former quarry. Species include scots pine, sycamore, beech and elder.
B45	Rubble pile.
B46	Area of localised dense gorse and tall ruderal vegetation amongst large boulders.
B47	Veteran ash with numerous rot holes and peeling bark offering bat roost

Target Note (TN)	Description of Target Note
	potential, requiring further assessment.
B48	Dying mature beech with numerous splits offering bat roost potential, requiring further assessment.
B49	Dying mature beech offering bat roost potential, requiring further assessment.
B50	Veteran ash with peeling bark and small holes offering bat roost potential, requiring further assessment.
B51	Veteran ash with occasional holes offering bat roost potential, requiring further assessment.
B52	Veteran ash with occasional holes offering bat roost potential, requiring further assessment.
B53	Veteran ash with a number of split limbs offering bat roost potential, requiring further assessment.
B54	Veteran oak on hedge-line, close to wood.
B55	Mature sycamore with rot holes on hedge side offering bat roost potential, requiring further assessment.
B56	Rubble pile, potential hibernacula for reptiles and amphibians.
B57	Line of sycamore and ash offering bat roost potential, requiring further assessment.
B58	Mature ash with occasional splits offering bat roost potential, requiring further assessment.
B59	Mature ash with occasional holes and splits offering bat roost potential, requiring further assessment.
B60	 Veteran collection of oaks which appeared to be part of a former ancient woodland. They were also located on a bank to the south-east. See figure 3.8.
B61	Twin semi-mature oaks in hedgerow. Densely ivy-clad with occasional cracks and splits in smaller limbs offering bat roost potential, requiring further assessment.
B62	Mature ash with rot hole on north side offering bat roost potential, requiring further assessment.
B63	Mature oak with rot holes and split branches offering bat roost potential, requiring further assessment.
B64	Mature oak, almost dead, with lifted bark and rot holes offering bat roost potential, requiring assessment.

Target Note (TN)	Description of Target Note
B65	Mature ash offering bat roost potential, requiring assessment.
B66	Mature oak.
B67	Derelict dry stone wall.
B68	Mature oak with rot holes offering bat roost potential, requiring further assessment.
B69	Dead oak.
B70	Veteran ivy-clad ash at the edge of the wood. Broken limbs and other small cavities may have been hidden under the ivy offering bat roost potential, requiring further assessment.
B71	Veteran ivy-clad ash at the edge of the wood. Broken limbs and other small cavities may have been hidden under the ivy offering bat roost potential, requiring further assessment.
B72	Ash with ripped limbs, calloused holes and rot pockets. Inspection with high-powered binoculars did not indicate substantial depth to these features. Tree offers bat roost potential, requiring further assessment.
B73	 Veteran ash with open-ended broken limbs offering bat roost potential, further requiring assessment. See figure 3.8.
B74	Mature ash with two small downward-facing rot pockets offering bat roost potential, requiring further assessment.
B75	Stream, approximately 1 m wide with slow flow less than 0.5 m/s. Approximately 0.5 m deep. Yellow flag (*Iris pseudacorus*) and great willowherb present. Bank vegetated with grass. No otter (*Lutra lutra*) or water vole field signs.

Target Note (TN)	Description of Target Note
B76	 Collection of nine mature and veteran oaks containing numerous splits, crevices, raised bark and rot pockets offering bat roost potential, requiring further assessment. See Figure 3.8.
B77	Pond 60 x 25 m, marginal vegetation included locally frequent yellow flag and soft rush.
B78	Rock pile.
B79	Mixed woodland consisting of young planted ash and silver birch with sycamore, spruces (*Picea sp.*), yew (*Taxus baccata*) and cherry laurel (*Prunus laurocerasus*). Very dense in places. Ground flora consistent with established woodland including species such as wood sorrel (*Oxalis acetosella*), abundant ferns and mosses.
B80	Stream flowing north, 30 cm wide and less than 10 cm deep. Rush (*Juncus sp.*), willowherb (*Epilobium sp.*) and nettle (*Urtica dioica*) margins. Cherry (*Prunus sp.*), blackthorn, gorse, silver birch, honeysuckle (*Lonicera periclymenum*) and downy birch (*Betula pubescens*) on banks.
B81	Bare ground.
B82	Small area of species-poor marshy grassland dominated by soft rush.
B83	Tall ruderal vegetation dominated by false oat grass (*Arrhenatherum elatius*), cock's-foot and locally frequent bramble.
B84	Semi-natural broadleaved woodland as part of a mosaic with pedunculate oak, sycamore, rowan with occasional alder (*Alnus glutinosa*) along the White House burn and occasional oaks offering bat roost potential, requiring further assessment.
B85	Species-poor marshy grassland dominated by soft rush.
B86	Semi-natural broadleaved woodland dominated by pedunculate oak and sycamore with elder and fairly species-poor ground flora including bluebell, and locally frequent violets (*Viola sp.*).
B87	White House burn, less than 20 cm deep and 1 m wide flowed from the south-east to the north-east.
B88	Mosaic of mixed plantation woodland, wet woodland remnants, semi-natural broadleaved woodland, bramble and gorse scrub with soft rush, lesser celandine and species-poor tall ruderal vegetation.
B89	Species-poor marshy grassland dominated by soft rush with a large area of tall ruderal vegetation used as pheasant cover dominated by reed canary grass (*Phalaris arundinacea*).
B90	Conifer plantation dominated by sitka spruce (*Picea sitchensis*). Occasional broadleaved species included cherry and elder, comprising less than 5% of the total.

Target Note (TN)	Description of Target Note
B91	Oak with features such as holes in lifted bark, some low crevices approximately 1 m above ground level offering bat roost potential, requiring further assessment.
B92	Veteran oak with occasional rot pockets and crevices within broken limbs offering bat roost potential, requiring further assessment.
B93	Wall and hollow within woodland filled with debris.
B94	Hollow within stone wall, small pool 3 m x 2 m with no marginal or aquatic vegetation.
B95	Mosaic of marshy grassland and woodland including silver birch, larch (*Larix decidua*), cherry, oak, and ash with ground flora present including a mix of hard rush (*Juncus inflexus),* soft rush, mosses and ferns as well as wood sorrel and bluebell.
B96	Fairly large area of marshy grassland, species-poor and grazed, dominated by soft rush.
B97	Mixed plantation woodland with sycamore, sitka spruce and ash.
B98	Veteran ash with calloused rot pocket and splits offering bat roost potential, requiring further assessment.
B99	Veteran ash with two rot holes of which one may have led to a void. Low BRP.
B100	Veteran ash with rot holes offering bat roost potential, requiring assessment.
B101	Veteran ash with large split in trunk, rot holes and nesting jackdaw.
B102	Veteran ash with several small rot holes offering bat roost potential, requiring further assessment.
B103	Veteran ash with rot holes, peeling bark and small crevices offering bat roost potential, requiring further assessment.
B104	Veteran ash with numerous rot holes, possible hollow limbs offering bat roost potential, requiring further assessment.
B105	Veteran ash with one rot hole on outer limb offering bat roost potential, requiring further assessment.
B106	Mix of scrub and tall ruderal vegetation enclosed by fence with wet ditch and trees including non-native ornamental species.
B107	Defunct hedge with species-poor tall ruderal vegetation margin.
B108	Derelict farm outbuildings with abandoned farm equipment, earth piles, tall ruderal vegetation and ephemeral grassland.
B109	Grazed large wet flush with marshy grassland present, potentially suitable for snipe.
B110	2 m wide ditch with marginal rushes. Access was not possible at the time of survey but appeared to hold standing water with lush reed sweetgrass (*Glyceria maxima*).

Target Note (TN)	Description of Target Note
B111	 Line of dead and damaged trees with bat potential, not surveyed closely. See figure 3.5.
B112	Veteran ash offering bat roost potential, requiring further assessment.
B113	Veteran ash with large hole offering bat roost potential, requiring further assessment.
B114	Watercourse with potential water vole burrow, with characteristic lawn field sign.
B115	Extensive mammal excavations.
B116	Line of Lombardy poplar (*Populus nigra* 'Italica').
B117	Fenced off damp area, brick surrounding culvert forming a possible soakaway due to its apparent smell. With occasional young grey willow and tall ruderal vegetation including nettle and cock's-foot. Species-poor mixed woodland dominated by sycamore, hawthorn and Scots pine.
B118	 Dense conifer plantation with Scots pine and spruces. Pheasant rearing. Very poor ground flora with an area of rhododendron (*Rhododendron ponticum*). See Figure 3.3.
B119	Mature ash with calloused split to upright limb and potential void offering bat roost potential, requiring further assessment.
B120	Mature ash with east-facing deep hollow fixture in trunk offering bat roost potential, requiring further assessment.

Target Note (TN)	Description of Target Note
B121	 Veteran ash with voids and peeling and lifted bark offering bat roost potential, requiring further assessment. See Figure 3.3.
B122	 Mature veteran oak, exposed, numerous split limbs offering bat roost potential, requiring further assessment. See Figure 3.3.
B123	Mature veteran beech with small north-facing rot holes offering bat roost potential, requiring assessment.
B124	Mixed woodland plantation with semi-mature sycamore, ash and Scots pine dominated with an understorey of hawthorn, cherry laurel, privet (*Lingustrum sp.*) and elder.
B125	Mammal excavations.
B126	Tall ruderal vegetation lining stream 0.5 m wide and less than 15 cm deep.
B127	Sycamore offering bat roost potential, requiring further assessment.
B128	Stream, 1 m wide and less than 20 cm deep with marginal reed canary grass, locally frequent creeping buttercup, nettle and cock's-foot.
B129	Veteran ash with large hole, other holes and split limbs offering bat roost potential, requiring further assessment.
B130	Dense blackthorn and hawthorn scrub.

Target Note (TN)	Description of Target Note
B131	Large (60 m x 40 m) and fairly shallow (20 cm to 1 m), fairly eutrophic ornamental pond, used by domestic ducks and geese. Poor marginal vegetation dominated by nettle, perennial rye grass and cock's-foot. No evident aquatic vegetation.
B132	Mixed woodland with species-poor ground flora and a mature oak with split horizontal and downward limbs and two small holes offering bat roost potential, requiring further assessment.
B133	Tall ruderal vegetation dominated by cock's-foot and false oat grass.
B134	Mixed woodland dominated by sycamore and Scots pine with bramble scrub and species-poor ground flora.
B135	Mixed plantation with Scots pine, larch, sycamore, and ash with hawthorn understorey and bluebell ground flora.
B136	Scots pine dominated plantation woodland, briefly searched for red squirrel (*Sciurus vulgaris*) feeding remains but none found.
B137	Fly tipping, building material refuse.
B138	Semi-natural broadleaved woodland to the north with sycamore, silver birch, holly (*Ilex aquifolium*), and ground flora such as dog's mercury and herb robert (*Geranium robertianum*). Mixed woodland in the southern half with Scots pine and larch. Three bat boxes were present.
B139	Semi-natural broadleaved woodland along stream with similar species to TN138, dominated by sycamore.
B140	Two areas of dense gorse within grazed improved field.
B141	Wet flush sourced by natural spring, heavily grazed.
B142	Two veteran ash with numerous rot holes of low BRP. One with large cavity, split limbs and other occasional holes offering bat roost potential, requiring further assessment.
B143	Wet ditch with tall ruderal vegetation including locally frequent reed sweet-grass, Yorkshire fog (*Holcus lanatus*) and species-poor hedge.
B144	Earth bank approximately 2 m wide, former boundary with species-poor grassland including cock's-foot, false oat grass, ground elder (*Aegopodium podagraria*).
B145	Mature ash with occasional rot holes and split limbs.
B146	Poor semi-improved neutral grazed grassland with frequent crested dog's-tail (*Cynosurus cristatus*) and locally frequent field woodrush.
B147	Semi-natural broadleaved woodland dominated by sycamore and wych elm with red campion, nettle and locally frequent yellow archangel (*Lamium galeobdolon*).
B148	Mixed woodland with ash, sycamore with holly and bramble understorey and some evidence of established woodland with lesser celandine and bluebell.
B149	Scattered beech, ash and sycamore.

Target Note (TN)	Description of Target Note
B150	Newly planted broadleaved plantation adjacent to South Charlton Bog. Tube guards were present but largely devoid of trees, potentially due to foraging by deer.

APPENDIX C: SPECIES LIST

Common Name	Scientific Name
Alder	*Alnus glutinosa*
Apple	*Malus sp.*
Ash	*Fraxinus excelsior*
Aspen	*Populus tremula*
Austrian pine	*Pinus nigra*
Barley	*Hordeum vulgare*
Barren strawberry	*Potentilla sterilis*
Beech	*Fagus sylvatica*
Betony	*Stachys officinalis*
Bifid hemp nettle	*Galeopsis bifida*
Bilberry	*Vaccinium myrtillus*
Bird cherry	*Prunus padus*
Bird's-foot trefoil	*Lotus corniculatus*
Blackcurrant	*Ribes nigram*
Black Bindweed	*Fallopia convolvulus*
Black horehound	*Ballota nigra*
Blackthorn	*Prunus spinosa*
Bloody crane's-bill	*Geranium sanguineum*
Bluebell	*Hyacinthoides non-scripta*
Borage	*Borago officinalis*
Bracken	*Pteridium aquilinum*
Bramble	*Rubus fruticosus agg.*
Broad buckler-fern	*Dryopteris dilatata*
Broad-leaved dock	*Rumex obtusifolius*
Broad-leaved helleborine	*Epipactis helleborine*
Broad-leaved pondweed	*Potamogeton natans*
Broad-leaved willowherb	*Epilobium montanum*
Brooklime	*Veronica beccabunga*
Broom	*Cytisus scoparius*
Bulrush	*Typha latifolia*
Bush vetch	*Vicia sepium*
Butterbur	*Petasites hybridus*
Butterfly bush	*Buddleja davidii*
Cedar	*Cedrus sp.*
Cherry laurel	*Prunus laurocerasus*
Cherry laurel	*Prunus laurocerasus*
Cleavers	*Galium aparine*
Cock's-foot	*Dactylis glomerata*
Colt's-foot	*Tussilago farfara*
Common bent	*Agrostis capillaris*
Common bistort	*Persicaria bistorta*
Common broomrape	*Orobanche minor*
Common comfrey	*Symphytum officinale*
Common cudweed	*Filago vulgaris*
Common dog violet	*Viola riviniana*
Common duckweed	*Lemna minor*

Common Name	Scientific Name
Common evening primrose	*Oenothera biennis*
Common field speedwell	*Veronica persica*
Common figwort	*Scrophularia nodosa*
Common fumitory	*Fumaria officinalis*
Common knapweed	*Centaurea nigra*
Common mouse-ear	*Cerastium fontanum*
Common nettle	*Urtica dioica*
Common privet	*Ligustrum vulgare*
Common ragwort	*Senecio jacobaea*
Common ramping fumitory	*Fumaria muralis*
Common reed	*Phragmites australis*
Common spotted orchid	*Dactylorhiza fuchsii*
Common vetch	*Vicia sativa*
Corn spurry	*Spergula arvensis*
Cotoneaster	*Cotoneaster horizontalis*
Cow parsley	*Anthriscus sylvestris*
Cowslip	*Primula veris*
Cow wheat	*Melampyrum pratense*
Crab apple	*Malus sylvestris*
Crack willow	*Salix fragilis*
Creeping bent	*Agrostis stolonifera*
Creeping buttercup	*Ranunculus repens*
Creeping cinquefoil	*Potentilla reptans*
Creeping soft-grass	*Holcus mollis*
Creeping thistle	*Cirsium arvense*
Crested dog's tail	*Cynosurus cristatus*
Crosswort	*Cruciata laevipes*
Cuckooflower	*Cardamine pratensis*
Curled dock	*Rumex crispus*
Cut-leaved cranesbill	*Geranium dissectum*
Cypress	*Cupressus sp.*
Daisy	*Bellis perennis*
Dandelion	*Taraxacum officinale*
Dog rose	*Rosa canina*
Dog's mercury	*Mercurialis perennis*
Dogwood	*Cornus sanguinea*
Dogwood	*Cornus alba*
Downy birch	*Betula pubescens*
Elder	*Sambucus nigra*
Enchanter's nightshade	*Circaea lutetiana*
English oak	*Quercus robur*
English stonecrop	*Sedum anglicum*
Early purple orchid	*Orchis mascula*
False brome	*Brachypodium sylvaticum*
False fox sedge	*Carex otrubae*
False oat-grass	*Arrhenatherum elatius*
Field bindweed	*Convolvulus arvensis*
Field forget-me-not	*Myosotis arvensis*
Field horsetail	*Equisetum arvense*
Field maple	*Acer campestre*

Common Name	Scientific Name
Field rose	*Rosa arvensis*
Field woodrush	*Luzula campestris*
Floating sweet-grass	*Glyceria fluitans*
Flowering currant	*Ribes sanguineum*
Flowering rush	*Butomus umbellatus*
Fool's water-cress	*Apium nodiflorum*
Foxglove	*Digitalis purpurea*
Garlic mustard	*Alliaria petiolata*
Goat willow	*Salix caprea*
Goat's beard	*Tragopogon pratensis*
Gorse	*Ulex europaeus*
Great horsetail	*Equisetum telmateia*
Great willowherb	*Epilobium hirsutum*
Great woodrush	*Luzula sylvatica*
Greater burdock	*Arctium lappa*
Greater stitchwort	*Stellaria holostea*
Green Alkanet	*Pentaglottis sempervirens*
Grey willow	*Salix cinerea*
Ground elder	*Aegopodium podagraria*
Groundsel	*Senecio vulgaris*
Ground ivy	*Glechoma hederacea*
Guelder rose	*Viburnum opulus*
Hairy woodrush	*Luzula pilosa*
Hard fern	*Blechnum spicant*
Hard rush	*Juncus inflexus*
Hart's-tongue	*Asplenium scolopendrium*
Hawthorn	*Crataegus monogyna*
Hazel	*Corylus avellana*
Heath bedstraw	*Galium saxatile*
Hedge bindweed	*Calystegia sepium*
Hedge woundwort	*Stachys sylvatica*
Hemlock	*Conium maculatum*
Hemlock water dropwort	*Oenanthe crocata*
Herb robert	*Geranium robertianum*
Hogweed	*Heracleum sphondylium*
Holly	*Ilex aquifolium*
Honeysuckle	*Lonicera spp.*
Hop trefoil	*Trifolium campestre*
Horse chestnut	*Aesculus hippocastanum*
Italian alder	*Alnus cordata*
Ivy	*Hedera helix*
Ivy-leaved toadflax	*Cymbalaria muralis*
Japanese knotweed	*Fallopia japonica*
Japanese larch	*Larix kaempferi*
Japanese maple	*Acer palmatum*
Jointed rush	*Juncus articulatus*
Knotgrass	*Polygonum aviculare*
Larch	*Larix decidua*
Lesser burdock	*Arctium minus*
Lesser celandine	*Ficaria verna*

Common Name	Scientific Name
Lesser reedmace	*Typha angustifolia*
Leyland cypress	*Cupressus x leylandii*
Lime	*Tilia sp.*
Lombardy poplar	*Populus nigra 'Italica'*
Mahonia	*Mahonia sp.*
Mare's tail	*Hippurus vulgaris*
Marsh marigold	*Caltha palustris*
Marsh thistle	*Cirsium palustre*
Marsh woundwort	*Stachys palustris*
Meadow buttercup	*Ranunculus acris*
Meadow foxtail	*Alopecurus pratensis*
Meadowsweet	*Filipendula ulmaria*
Meadow vetchling	*Lathyrus pratensis*
Midland hawthorn	*Crataegus laevigata (possible hybrid)*
Moschatel	*Adoxa moschatellina*
Monkey flower	*Mimulus sp.*
Mugwort	*Artemisia vulgaris*
New Zealand flax	*Phormium sp.*
Norway maple	*Acer platanoides*
Norway spruce	*Picea abies*
Oat	*Avena sativa*
Opposite-leaved golden saxifrage	*Chrysosplenium alternifolium*
Orpine	*Sedum telephium*
Osier	*Salix viminalis*
Oxeye daisy	*Leucanthemum vulgare*
Pale sedge	*Carex pallescens*
Pedunculate oak	*Quercus robur*
Perennial rye-grass	*Lolium perenne*
Perennial sow thistle	*Sonchus arvensis*
Pignut	*Conopodium majus*
Pineappleweed	*Matricaria discoidea*
Prickly sow thistle	*Sonchus asper*
Primrose	*Primula vulgaris*
Rape	*Brassica napus*
Ramsons	*Allium ursinum*
Raspberry	*Rubus idaeus*
Redcurrant	*Ribes rubrum*
Red campion	*Silene dioica*
Red clover	*Trifolium pratense*
Red fescue	*Festuca rubra*
Reed canary grass	*Phalaris arundinacea*
Reed sweet grass	*Glyceria maxima*
Rhododendron	*Rhododendron ponticum*
Ribwort plantain	*Plantago lanceolata*
Rosebay willowherb	*Chamerion angustifolium*
Rough hawkbit	*Leontodon hispidus*
Rough meadow grass	*Poa trivialis*
Rowan	*Sorbus aucuparia*
Rusty willow	*Salix cinerea subsp. oleifolia*
Salad burnet	*Sanguisorba minor ssp. minor*

Common Name	Scientific Name
Scentless mayweed	*Tripleurospermum inodorum*
Scot's Pine	*Pinus sylvestris*
Selfheal	*Prunella vulgaris*
Sessile oak	*Quercus petraea*
Sharp rush	*Juncus acutus*
Silver birch	*Betula pendula*
Silverweed	*Potentilla anserina*
Sitka spruce	*Picea stichensis*
Small leaved lime	*Tilia cordata*
Snowberry	*Symphoricarpos albus*
Soft brome	*Bromus hordeaceus*
Soft rush	*Juncus effusus*
Spear thistle	*Cirsium vulgare*
Square-stemmed St John's wort	*Hypericum tetrapterum*
Starwort	*Callitriche sp.*
Sweet chestnut	*Castanea sativa*
Sweet vernal grass	*Anthoxanthum odoratum*
Sycamore	*Acer pseudoplatanus*
Teasel	*Dipsacus fullonum*
Timothy	*Phleum pratense*
Toothwort	*Lathraea squamaria*
Tufted hair grass	*Deschampsia cespitosa*
Tufted vetch	*Vicia cracca*
Upright hedge parsley	*Torilis japonica*
Valerian	*Valeriana officinalis*
Wavy hair grass	*Deschampsia flexuosa*
Water avens	*Geum rivale*
Water-cress	*Rorippa nasturtium-aquaticum*
Water figwort	*Scrophularia auriculata*
Water mint	*Mentha aquatica*
Waterweed	*Elodea sp.*
Weld	*Reseda lutea*
Wheat	*Triticum sp.*
White bryony	*Bryonia dioica*
White campion	*Silene latifolia*
White clover	*Trifolium repens*
White dead nettle	*Lamium album*
Wild angelica	*Angelica sylvestris*
Wild cherry	*Prunus avium*
Wild privet	*Ligustrum vulgare*
Wood anemone	*Anemone nemorosa*
Wood avens	*Geum urbanum*
Wood millet	*Milium effusum*
Wood sedge	*Carex sylvatica*
Wood sorrel	*Oxalis acetosella*
Woodruff	*Galium odoratum*
Wych elm	*Ulmus glabra*
Yarrow	*Achillea millefolium*
Yellow archangel	*Lamium galeobdolon*
Yellow Iris	*Iris pseudacorus*

Common Name	Scientific Name
Yew	*Taxus baccata*
Yorkshire fog	*Holcus lanatus*
Zig-zag clover	*Trifolium medium*

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