

A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010041

6.7 Environmental Statement – Appendix 9.13 Breeding Bird Survey Report

Part A

APFP Regulation 5(2)(a)

Planning Act 2008

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



### Infrastructure Planning

### Planning Act 2008

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

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# A1 in Northumberland

Breeding Bird Survey Report

Version 2

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Version: 2		
Issued: April 2018	i	

### **CONTENTS**

### **Executive Summary**

1	Introduction	4
1.1 1.2 1.3	Scheme BackgroundReport RationaleLegislative and Biodiversity Framework Background	5
1.5 <b>2</b>		
	Methodology	
2.1 2.2	Objectives  Desk Study	
2.2	Field Survey	
2.4	Evaluation of Ecological Features	10
2.5	Limitations	11
3	Baseline	13
3.1	Desk Study	13
3.2	Field Survey	
3.3	Incidental Observations	28
4	Evaluation	30
4.2	Section A (Morpeth to Felton)	
4.3	Section B (Alnwick to Ellingham)	
4.4	Conclusion	
5	References	36
Figu	ıres	37
App	endix A: Legislation, Planning Policy and Biodiversity Background	38
	endix B: Field Survey Visit Dates, Times, Weather Conditions and Observers	
	•	
	endix C: British Trust for Ornithology (BTO) Bird Species Codes	
App	endix D: Desk Study Results	47
App	endix E: Breeding Bird Survey Results	56
App	endix F: Population Status of Breeding Birds of Conservation Concern in	
	thumbria	64

#### **EXECUTIVE SUMMARY**

This technical report provides a summary of ecological information obtained from a desk study and the findings of breeding bird surveys that were undertaken between mid-March and early July 2016 by Jacobs UK Ltd. (Jacobs) on behalf of Highways England. The aim of the surveys was to establish an ecological baseline for breeding birds to inform an Environmental Impact Assessment (EIA) for the proposed upgrade to dual carriageway of the A1 between Morpeth and Ellingham ('the scheme'). The proposals comprised two discrete sections:

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

Surveys were based on current best practice guidance (the Common Birds Census methodology (Marchant 1983) and the British Trust for Ornithology (BTO) Breeding Bird Survey (BBS) methodology (detailed in Gilbert *et al.* 1998)). Surveyors walked transect routes covering areas of suitable habitat within a 500 m survey area of the proposals, where accessible. Three survey visits were made to each transect.

#### Section A – Morpeth to Felton

Desk study records were obtained for 115 bird species, representative of a wide range of habitats, within a 2 km study area of the proposals for Section A. Species associated with farmland, woodland and gardens were particularly well-represented. Evidence of breeding was obtained for 92 of the 115 species recorded. The dataset included 69 species of conservation concern.

Including incidental records, a total of 90 species were recorded within the Section A survey area during the surveys detailed within this report, including 50 species of conservation concern. Of the 90 species recorded, 76 were considered likely to be breeding within the survey area.

Based on the results of the 2016 breeding bird surveys, the breeding bird assemblage within the survey area is considered to be of **District Importance**. However, the assemblage is considered to be of **County Importance** overall due to the populations of yellow wagtail and willow tit, both of which represent substantially more than 1 % of their respective Northumbria populations.

#### Section B – Alnwick to Ellingham

Desk study records were obtained for 108 bird species, representative of a wide range of habitats, within a 2 km study area of the proposals for Section B. Species associated with farmland, woodland and gardens were particularly well-represented. Evidence of breeding was obtained for 92 of the 108 species recorded. The dataset included 61 species of conservation concern.

Including incidental records, a total of 84 species were recorded within the Section B survey area during the surveys detailed within this report, including 46 species of conservation concern. Of the 84 species recorded, 69 were considered likely to be breeding within the survey area. Two Schedule 1 species (*i.e.* species with additional protection) were recorded for which evidence of breeding was observed: barn owl and common crossbill.

Based on the results of the 2016 breeding bird surveys, the bird assemblage within the survey area is considered to be of **District Importance**. The population of gadwall recorded is considered to be of **Regional Importance** as it represents almost 4% of the north east region population.

\_\_\_\_\_ Version: 2 3 Issued: April 2018

#### 1 INTRODUCTION

### 1.1 Scheme Background

- 1.1.1 Following the outcomes of the 2014 A1 North of Newcastle Feasibility Study, the Department for Transport confirmed in its first Roads Investment Strategy the intention to upgrade 21 km 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 and illustrated in Figures 1.1 and 1.2 respectively.
- 1.1.3 Note that the surveys were carried out during PCF Stage 1. At that stage, three route options were under consideration for both Section A and Section B, and the scope of surveys covered all three options. In consequence, the survey area for Section B is wider than strictly required for the online route alone. Subsequently, during PCF Stage 2, a preferred route has been identified for each section.

#### **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 to be maintained 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 a number of accommodation bridges
  would be provided to improve connectivity and allow access to farm units.
- 1.1.4 An offline option was also under consideration for Section B at the time breeding bird surveys were conducted. The 500 m buffer zone around the offline option included a wider area than that for the online option only in the northern half of Section B, to the west of the A1. This additional area is included in the desk study and breeding bird survey results presented within this report. However, its inclusion is not considered to have influenced the overall evaluation of the importance of the scheme for breeding birds (Section 4).
- 1.1.5 Collectively, the options described above are henceforth referred to as 'the scheme' within this report. Distinctions are made between the two areas of the scheme Section A and Section B throughout, and the survey results for each section are treated separately.

Version: 2

4 Issued: April 2018

#### 1.2 Report Rationale

- 1.2.1 The aim of this report is to present the results of the breeding bird surveys undertaken in relation to the scheme between mid-March and early July 2016 by Jacobs (UK) Ltd. ('Jacobs') for Highways England. The information presented will be used to inform further development of the design of the preferred option and identify any requirements for additional surveys to be completed at PCF Stage 3. The data will ultimately inform the Environmental Impact assessment (EIA) for the preferred option.
- 1.2.2 Separate reports will be prepared for the scheme in respect of barn owl (*Tyto alba*) and wintering birds.

### 1.3 Legislative and Biodiversity Framework Background

- 1.3.1 The legislative and biodiversity frameworks for bird species are listed below. Further details on these frameworks are provided in Appendix A, and the legislation can also be obtained from <a href="https://www.legislation.gov.uk">www.legislation.gov.uk</a>.
- 1.3.2 Many UK bird species and their habitats are protected by legislation. The key articles of relevance to this scheme include:
  - Council Directive 2009/147/EC (as amended) on the conservation of wild birds (the 'Birds Directive');
  - Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive');
  - Wildlife and Countryside Act 1981 (WCA) (as amended);
  - Countryside and Rights of Way (CRoW) Act 2000; and,
  - Natural Environment and Rural Communities (NERC S.41 Species of Principal Importance (SoPI)) Act 2006.
- 1.3.3 The following biodiversity frameworks are relevant to bird species:
  - Local Biodiversity Action Plan (Northumberland LBAP); and,
  - Birds of Conservation Concern Red and Amber Lists Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man (Eaton et al. 2015).

 Version: 2

 5
 Issued: April 2018

#### 2 METHODOLOGY

### 2.1 Objectives

- 2.1.1 The key objectives of the surveys detailed within this report were to provide data to:
  - Identify the range and abundance of breeding bird species, including those of conservation concern and Schedule 1 species, in the area surrounding the proposed improvement works;
  - Identify patterns of habitat utilisation within the survey area (i.e. land within 500 m of the scheme) by groups breeding birds (as discussed in Section 3.1.13 onwards);
  - Evaluate the ecological importance of the breeding bird population and assemblage in the survey area;
  - Inform the assessment of potential impacts on breeding birds associated with the scheme (as detailed within the Environmental Statement (ES) for the scheme); and,
  - Inform the development of appropriate mitigation if necessary (as detailed in the ES).

#### 2.2 Desk Study

- 2.2.1 A desk study exercise was undertaken in 2016 to obtain ecological information about the study area and surrounding landscape. This included information on habitats and the presence of any statutory and non-statutory sites (see the Extended Phase 1 Habitat Survey report for the scheme (Jacobs 2016) for further details), and bird records within the 2 km desk study area. The search area was extended to 5 km (*i.e.* the 5 km desk study area) for nationally and internationally designated sites and records of bird species for which those sites are designated. The desk study was updated in September 2016 to reflect changes to the potential scheme options, which resulted in minor extensions to the desk study search areas.
- 2.2.2 Records were primarily sought for bird species included within:
  - Schedule 1 of the WCA 1981 (as amended) ('Schedule 1 species');
  - Annex 1 of the Birds Directive ('Annex 1 species');
  - Section 41 of the NERC Act 2006 ('species of principal importance');
  - The Northumberland LBAP (Refer to Appendix A for further information); and,
  - The Birds of Conservation Concern (BoCC) Red and Amber lists (Eaton et al. 2015).
- 2.2.3 These designated species are referred to in this report as species of conservation concern. Species which were not listed under any of these designations (e.g. birds listed only on the BoCC Green list) were not considered in detail as part of the desk study.
- 2.2.4 Data were obtained from the following data sources and organisations:
  - National Biodiversity Network NBN Gateway<sup>1</sup>;
  - the Multi Agency Geographic Information for the Countryside website<sup>2</sup>;

<sup>2</sup> http://www.magic.gov.uk/

Version: 2 Issued: April 2018

<sup>1</sup> https://data.nbn.org.uk/

- Google Maps (satellite photography was used to assess the layout of the scheme and provide context for the preliminary ecological walkover survey, in addition to a broad assessment of habitat types and locations)<sup>3</sup>;
- Alnwick Wildlife Group;
- The Environmental Records Information Centre North East (ERIC North East); and,
- Northumberland and Tyneside Bird Club (NTBC).
- 2.2.5 The data provided by NTBC were the summarised results from the British Trust for Ornithology (BTO)/NTBC atlas survey of breeding and wintering birds of Northumbria (2007-2011) (Dean *et al.* 2015). Data were provided for each species recorded in each tetrad within the desk study areas, in the form of breeding status and numbers of individuals.
- 2.2.6 Breeding bird records, which were taken as those sighted between the months of March to August (inclusive), were selected within the data set provided by ERIC North East. Records more than 10 years old (*i.e.* 2005 or earlier) were considered to be historical and were discarded from the analysis. Where records were not associated with a specific date a conservative approach was adopted, and those birds were assumed to have been recorded during the breeding season.
- 2.2.7 In addition to the data obtained from the above sources, a review of data collected during independently commissioned surveys of part of the survey area for Section A (land around Causey Park Farm, to the west of the A1) was undertaken (Cadwallender & Cadwallender 2016).

#### 2.3 Field Survey

#### Survey Area

- 2.3.1 A variety of suitable habitats for breeding birds were identified in proximity to the scheme during the desk study exercise. Open farmland dominated the landscape surrounding the scheme, and comprised a mosaic of arable and pastoral farmland with associated hedgerows, and patches of woodland. Other habitats present within the survey area included amenity land (e.g. a golf course and an airfield), parkland, small waterbodies and water courses (notably including the River Coquet, at the northern end of Section A). Such habitats were particularly prevalent in the northern half of Section A, whilst Section B was largely dominated by farmland throughout.
- 2.3.2 A number of farm complexes and residential properties, which were mostly isolated or in small settlements, were distributed across the survey area. Several minor roads were located within the survey area, often associated with these properties, and generally formed junctions with the A1.
- 2.3.3 Woodland, scrub and linear habitats identified within the survey area during the Extended Phase 1 Habitat Survey are presented in Figures 2.2-2.23 (Section A) and 3.2-3.15 (Section B), in relation to the survey transects and scheme options. Further details on the habitats present can be found in the Extended Phase 1 Habitat Survey report for the scheme (Jacobs 2016).
- 2.3.4 Surveys were undertaken within a 500 m buffer of the scheme ('the survey area'). Transects were designed to cover accessible land within the survey area, with a focus on areas closer to the potential scheme options. The transect route design also aimed to include a representative sample of the habitat types present. Ten transect routes were

Version: 2

Issued: April 2018

<sup>3</sup> https://www.google.co.uk/maps

used to survey Section A (see Figures 2.1 and 2.2-2.23), and six for Section B (see Figures 3.1 and 3.2-3.15).

#### Survey Methodology

- 2.3.5 Breeding bird surveys were undertaken between mid-March and late May inclusive, at approximately monthly intervals. An additional visit to areas omitted during one of the previous survey visits was made in early July to ensure that all transects were covered on three occasions. Thus, three complete surveys of each transect were carried out during the breeding season. Three survey visits were deemed sufficient to detect most, if not all, species regularly occurring within the areas surveyed during the breeding season. However, it should be noted that not all birds had commenced breeding during the first survey visit (see Section 2.5.5).
- 2.3.6 Due to the large size of the survey area each survey visit was split over a period of up to ten days (two consecutive working weeks). Two surveyors covered separate transects concurrently on a number of survey dates in order to minimise the time taken to complete each visit. A summary of survey dates is provided below in Table 1 (see Appendix B for full details of survey dates, times and weather conditions).

Table 1: Breeding bird survey dates

Walt Name an	D-/-	Transec	ts Surveyed
Visit Number	Date	Section A	Section B
	14 <sup>th</sup> March 2016		11*, 16*
	15 <sup>th</sup> March 2016		11*, 12, 13, 16*
1	16 <sup>th</sup> March 2016	1, 10	14, 15
	17 <sup>th</sup> March 2016	2, 3, 8	
	18 <sup>th</sup> March 2016	4, 5, 7	
	12 <sup>th</sup> April 2016	1, 2*, 10	
	13 <sup>th</sup> April 2016	2*, 3, 7, 9	
2	14 <sup>th</sup> April 2016	4, 5, 6, 8	
2	15 <sup>th</sup> April 2016		13, 14, 15
	19 <sup>th</sup> April 2016		11, 12
	20 <sup>th</sup> April 2016		16
	17 <sup>th</sup> May 2016		13, 14
	18 <sup>th</sup> May 2016		12, 16
	19 <sup>th</sup> May 2016	2, 8	
3	20 <sup>th</sup> May 2016	1, 10	
	24 <sup>th</sup> May 2016	4, 5, 6	
	25 <sup>th</sup> May 2016	3, 9	15
	27 <sup>th</sup> May 2016	7	11
	5 <sup>th</sup> July 2016	6, 8	
4	7 <sup>th</sup> July 2016	2, 9	
	8 <sup>th</sup> July 2016	1	16

<sup>\*</sup>Transects split over two consecutive survey days.

2.3.7 Surveys were based on the Common Bird Census (CBC) method, devised jointly by the BTO and JNCC (Marchant 1983), and the Breeding Bird Survey (BBS) method, devised jointly by the BTO, the Royal Society for the Protection of Birds (RSPB) and the Joint Nature Conservancy Council (JNCC) (Gilbert *et al.* 1998). Surveys were planned to take place at the optimal time of day for bird activity, beginning approximately an hour after dawn and finishing by late morning/early afternoon. During the first survey visit evening

Version: 2 8 Issued: April 2018

### A1 in Northumberland

#### Breeding Bird Survey Report

surveys were conducted on Transects 11 and 16 (both Section B; see Figure 1), in line with Marchant (1983), to minimise the time taken to complete the visit. However, no evening surveys were subsequently undertaken as bird activity was found to be much greater in the morning. Survey visits were planned to avoid adverse weather conditions such as heavy rain and strong wind (but see Section 2.5.8), as this can reduce bird activity and detectability.

- 2.3.8 During each visit surveyors walked along each pre-determined transect route at a slow walking pace. The route direction was varied throughout the visits in order to reduce survey bias.
- 2.3.9 Surveyors recorded all birds heard or seen, with the aid of binoculars. Registrations, which are records of individual birds (identified either by call, song or visually), were recorded on field maps using standard British Trust for Ornithology (BTO) species codes (Appendix C). Care was taken to avoid double counting. Longer periods of observations were made in areas of high bird activity. Bird registrations are shown on Figures 4.1-4.36 (Visit 1), Figures 5.1-5.36 (Visit 2), Figures 6.1-6.36 (Visit 3), Figures 7.1-7.36 (Visit 4).
- 2.3.10 During each of the survey visits the following details were recorded:
  - Bird numbers, species, age and sex; and
  - Bird behaviour *e.g.* in flight, singing, or feeding, paying particular attention to evidence of breeding.
- 2.3.11 Using these data breeding statuses were categorised as 'confirmed', 'probable', or 'possible' breeding, or as 'non-breeding', in accordance with the BTO's Bird Atlas 2007-2011 (Balmer *et al.* 2013) criteria. Evidence for these categories is outlined below:

#### • Non-breeding:

- Flying over;
- Species observed but suspected to be still on migration, and;
- Species observed but suspected to be summering non-breeder.

#### Possible breeder:

- Species observed in breeding season in suitable nesting habitat, and;
- Singing male present (or breeding calls heard) in breeding season in suitable breeding habitat.

#### Probable breeding:

- Pair observed in suitable nesting habitat in breeding season;
- Permanent territory presumed through registration of territorial behaviour (song etc) on at least two different days a week or more apart at the same place or many individuals on one day;
- Courtship and display (judged to be in or near potential breeding habitat; be cautious with wildfowl);
- Visiting probable nest site;
- Agitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby;
- Brood patch on adult examined in the hand, suggesting incubation, and;
- Nest building or excavating nest-hole.

\_\_\_\_\_ Version: 2 9 Issued: April 2018

#### Confirmed breeding:

- Distraction-display or injury feigning;
- Used nest or eggshells found (occupied or laid within period of survey);
- Recently fledged young (nidicolous species) or downy young (nidifugous species). Careful consideration should be given to the likely provenance of any fledged juvenile capable of significant geographical movement. Evidence of dependency on adults (e.g. feeding) is helpful;
- Adults entering or leaving nest-site in circumstances indicating occupied nest (including high nests or nest holes, the contents of which cannot be seen) or adults seen incubating;
- Adult carrying faecal sac or food for young;
- Nest containing eggs, and;
- Nest with young seen or heard.

#### 2.4 Evaluation of Ecological Features

- 2.4.1 Ecological Impact Assessment (EcIA) uses a hierarchical geographic framework to assign importance to ecological features. This is based on an understanding of how the ecological feature may contribute to the conservation status or distribution of the species or habitat at a particular geographical scale. It involves an assessment of the biodiversity importance of ecological features and also involves consideration of other factors that can be attached to ecological features including ecosystem services and natural capital (CIEEM 2016).
- 2.4.2 Current good practice guidance for resource valuation in EcIA includes the Highways Agency's Interim Advice Note (IAN) 130/10 (Highways Agency 2010) and the Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater and Coastal, 2<sup>nd</sup> edition (CIEEM, 2016). The following frame of reference is therefore used to assess the value of breeding birds within the survey area:
  - International;
  - National:
  - Regional (North East);
  - County (Northumberland):
  - District (Section A Castle Morpeth (and Alnwick, for land north of the River Coquet); Section B – Alnwick (and Berwick-upon-Tweed, for land north of South Charlton));
  - · Local, and;
  - Less than Local (within the scheme footprint).
- 2.4.3 In order to assess the value of breeding birds within the survey area comparisons have been made between the results of the breeding bird surveys detailed within this report and population estimates at relevant geographical levels (where available). A population has been deemed significant if it exceeds 1 % of the population of that species at a given geographical level (1 % is a commonly used threshold for the designation of sites of ornithological importance at a variety of geographical levels (Bainbridge *et al.* 2013)). Where population estimates were unavailable a combination of professional judgment, local knowledge and comparisons with population estimates at higher geographical levels

\_\_\_\_\_ Version: 2
10 Issued: April 2018

has been used to inform the evaluation. Population data were not available to enable comparative quantification of bird populations at the District level and below.

#### 2.5 Limitations

#### **Access Constraints**

- 2.5.1 Access restrictions resulted in incomplete coverage of the survey area for both Section A and Section B (see Figures 2.1-2.23 and 3.1-3.15 respectively for transect coverage). However, the information obtained regarding the bird assemblage is considered sufficiently robust to inform the assessment based on the number of species recorded and the similar representative habitats surveyed throughout the survey area.
- 2.5.2 Health and safety considerations (e.g. lack of safe parking or physical boundaries such as streams that were unsafe to cross) also influenced transect routes. Such considerations are not generally considered to have had a significant impact on survey coverage, with the notable exception of woodland on the southern bank on the River Coquet to the east of the A1.
- 2.5.3 In addition to constraints which prevented access throughout the survey period, other constraints temporarily affected areas of the scheme which were covered during the breeding bird surveys. As a result, certain transects or sections of transects were excluded during one of the planned survey visits. This occurred for a number of reasons, primarily involving lack of landowner permission (which particularly affected the first survey visit), or presence of sensitive or potentially dangerous livestock on parts of the transect routes. Such constraints also entailed minor deviations from a number of the transect routes which were originally planned, and precluded survey coverage of other small areas of land. This resulted in less comprehensive coverage of the survey area. However, transects which were significantly affected by these types of constraints were surveyed more fully during an additional survey visit (Visit 4) in early July (see Appendix B), which ensured that each transect was fully covered three times during the breeding season:

#### **Section A**

- Transect 1 (Figures 2.2-2.4): approximately 20 % of the transect route, in the centre of the transect, was excluded from Visit 3 due to livestock issues:
- Transect 2 (Figures 2.10-2.15): approximately 30 % of the transect route, in the south of the transect, was excluded from Visit 2 due to a lack of land owner permission;
- Transect 6 (Figures 2.22-2.23): the transect was excluded from Visit 1 due to a lack of land owner permission;
- Transect 8 (Figures 2.16-2.18): approximately 70 % of the transect route, comprising the south and centre of the transect, was excluded from Visit 1 due to a lack of land owner permission:
- Transect 9 (Figures 2.9-2.13): the transect was excluded from Visit 1 due to a lack of land owner permission.

#### **Section B**

• Transect 16 (Figures 3.2-3.6): approximately 15 % of the transect route, in the centre of the transect was excluded from Visit 3 due to livestock issues.

#### **Survey Timing**

2.5.4 Although survey timings were based on standard guidance (Marchant 1983 and Gilbert et al. 1998), surveys commenced relatively early in the breeding season. During the first

Issued: April 2018

Version: 2

survey visit in March, observations of bird activity, such as relatively large flocks of farmland passerines, suggested that a number of species had not yet paired and established breeding territories. Summer migrant species were also largely absent during the first survey visit. However, territorial activity was nonetheless observed for the majority of species encountered during the first visit. Furthermore, with the exception of summer migrants, the assemblage of species recorded during Visit 1 did not differ markedly from that recorded during subsequent survey visits. It is therefore considered likely that most species regularly occurring within the survey area during the breeding season were detected during the surveys detailed within this report. However, certain summer migrants which typically arrive on their breeding areas later in the survey season (such as yellow wagtail (*Motacilla flava*) and swift (*Apus apus*) may have been under-recorded in those areas not covered during Visit 4.

- 2.5.5 The timing of Visit 4 in July, relatively late in the breeding season, may have influenced the comparability of the results between different areas of the scheme (e.g. due to the presence of fledged juveniles or late-arriving summer migrants during Visit 4). However, in general, the distribution of concentrations of birds and local species assemblages in the areas covered during Visit 4 were generally consistent with those recorded during the earlier survey visits (considering the limitations relating to survey timing discussed in Section 2.5.5 above). Exceptions to this were shifts in the distribution of concentrations of species of conservation concern on Transect 2 (Figures 4.9-4.11, 6.9-6.11 and 7.9-7.11) and Transect 8 (Figures 5.13-5.16, 6.13-6.16 and 7.13-7.16). These differences did not have a significant impact on the evaluation of Section A, however, because the broad areas of importance for breeding birds were similar to those identified during previous survey visits. Consequently, this is not considered to be a significant limitation.
- 2.5.6 Due to the size of the survey area surveys were spread over a two-week period. This increased the likelihood of birds moving into or out of the survey area or between different parts of the survey area during a visit and may have resulted in over- or under-counting of birds depending on the direction of their movements. A similar effect may also have arisen during surveys of Transects 11 and 16 (Visit 1) and Transect 2 (Visit 2) as these surveys were split over two days (Table 1). However, the effect of bird movements during each visit is not considered to be a significant limitation overall, as birds holding breeding territories are relatively site-faithful throughout the breeding season. Furthermore, the survey results in general showed that, concentrations of birds and local species assemblages remained relatively consistent throughout the course of the surveys, considering the limitations relating to survey timing discussed in Sections 2.5.5 and 2.5.6 above.

#### Weather

2.5.7 Although surveys were undertaken following standard guidelines (Marchant, 1983), surveys were occasionally undertaken in damp conditions, with periods of drizzle or light rain. In general, this was not considered to have significantly affected the survey results, given that bird activity remained consistent across all survey visits. Poor weather affected the results for Transect 16 during Visit 4 (see Figures 7.24 -7.27), which took place to cover the section of the transect missed due to livestock presence during Visit 3. Rain during the survey reduced bird activity and detectability. However, as the majority of the transect was covered in good weather during Visit 3, this is not considered a major limitation of the overall survey results.

\_\_\_\_\_\_ Version: 2 12 Issued: April 2018

#### 3 BASELINE

#### 3.1 Desk Study

#### **Section A**

#### **Designated Sites**

- 3.1.1 There are ten designated sites within the 2 km desk study area, of which five are statutory and five non-statutory. There are no other statutory designated sites within the 5 km desk study area. Further information on designated sites can be found in the Extended Phase 1 Habitat Survey report for the scheme (Jacobs 2016).
- 3.1.2 Of the statutory designated sites of national importance or greater, two are partly designated for breeding birds:
  - The River Coquet and Coquet Valley Woodlands SSSI (located within the scheme footprint); and
  - Longhorsley Moor SSSI (located 1.8 km west of the scheme).
- 3.1.3 The River Coquet and Coquet Valley Woodlands SSSI supports a high diversity of breeding birds which depend on riverine habitats. The birdlife associated with the Coquet includes large numbers of common sandpipers (*Actitis hypoleucos*), grey wagtails (*Motacilla cinerea*) and yellow wagtails which nest and feed in high densities along or near the river above Alwinton. Oystercatchers (*Haematopus ostralegus*), ringed plover (*Charadrius hiaticula*), lapwing (*Vanellus vanellus*), snipe (*Gallinago gallinago*) and redshank (*Tringa totanus*) all breed on the haugh land, or floodplain. Dippers (*Cinclus cinclus*) are common along the entire length and, unusually for a northern river; kingfishers (*Alcedo atthis*) hold several nesting territories in the lower reaches.
- 3.1.4 Longhorsley Moor SSSI supports a mosaic of heathland, scrub and woodland habitats which provide cover for breeding birds including whinchat (Saxicola rubetra), linnet (Linaria cannabina), yellowhammer (Emberiza citrinella), willow warbler (Phylloscopus trochilus), grasshopper warbler (Locustella naevia) and reed bunting (Emberiza schoeniclus).
- 3.1.5 In addition to the designated sites listed above, the Northumbria Coast SPA and Ramsar site lies approximately 10 km northeast of the scheme. The SPA is designated for its breeding population of little tern (*Sterna albifrons*) and wintering populations of purple sandpiper (*Calidris maritima*) and turnstone (*Arenaria interpres*). It also supports nationally important populations of wintering sanderling (*Calidris alba*), ringed plover and redshank. In addition, the SPA supports a number of Annex 1 birds below the 1 % qualifying level, including arctic tern (*Sterna paradisaea*) in summer and golden plover (*Pluvialis apricaria*) in winter. The Ramsar site is designated for little tern during the breeding season, and for purple sandpiper and turnstone in winter. It also supports nationally important breeding populations of cormorant (*Phalacrocorax carbo*), kittiwake (*Rissa tridactyla*) and arctic tern, and golden plover during spring/autumn. During the winter, the Ramsar site supports nationally important populations of eider (*Somateria mollissima*) and sanderling.

#### **Breeding Birds**

3.1.6 A total of 53 records of birds observed during the breeding season were provided by ERIC North East, comprising 19 species within the 2 km desk study area (refer to Appendix D for details, including scientific names). Records of 113 species in tetrads (*i.e.* 2 km² areas defined within the Ordnance Survey national grid) within the 2 km desk study area were

\_\_\_\_\_\_ Version: 2 13 Issued: April 2018

obtained from NTBC (refer to Appendix D). In total, records of 115 species were obtained, of which 69 were species of conservation concern<sup>4</sup>, including:

- nine species listed on Annex 1 of the Birds Directive;
- fifteen species listed on Schedule 1 of the WCA 1981 (as amended):
- twenty-five species of principal importance (NERC Act 2006):
- thirty-six of the 70 species in the Northumberland LBAP:
- thirty-one species on the BoCC Red list; and
- thirty species on the BoCC Amber list.
- 3.1.7 The data contained records of species from a wide range of habitats, with those typically associated with farmland, woodland and gardens being particularly well-represented. Notably, farmland specialists were well distributed and relatively abundant across the 2 km desk study area these species are discussed further later in this report. Waterbird records were poorly represented within the dataset. Although a number of other specialist species were recorded, numbers and, to a lesser extent, the distributions of such species were generally sparse.
- 3.1.8 Data provided by NTBC included an indication of breeding status (possible, probable or confirmed) for 92 of the 115 species identified in the desk study (See Appendix D for details). Confirmed breeding records were provided for three Schedule 1 species (barn owl, common crossbill (Loxia curvirostra) and kingfisher), with probable breeding recorded for quail. All four species were recorded in multiple tetrads within the 2 km desk study area.
- The report produced by Cadwallender Ornithology (Cadwallender & Cadwallender 2016), 3.1.9 based on independently commissioned surveys of part of the survey area for Section A (land around Causey Park Farm, to the west of the A1) carried out between November 2015 and June 2016, recorded 16 species from the BoCC Red list. In addition the report states that 13 species from the BoCC Amber list were recorded. With the exception of snipe (BoCC Amber list; Northumberland LBAP), all of these species were present within the dataset provided by NTBC. The report also highlighted that the smaller fields with Causey Park with well-established boundaries tend to support concentrations of passerines, and that concentrations of birds were found in such areas.

#### **Section B**

#### **Designated Sites**

- Hulne Park LNR is the only designated site within the 2 km desk study area. No other 3.1.10 statutory designated sites lie within the 5 km desk study area. Further information on designated sites can be found in the Extended Phase 1 Habitat Survey report for the scheme (Jacobs 2016).
- 3.1.11 No statutory designated sites of national importance or greater which are designated for breeding birds were identified within the 5 km desk study area.
- In addition to the designated sites listed above, the Northumbria Coast SPA and Ramsar site lies approximately 10 km northeast of the scheme. Please refer to Paragraph 3.1.5 for a summary of the importance of this site to bird populations.

14

Version: 2 Issued: April 2018

<sup>&</sup>lt;sup>4</sup> The total number of species of conservation concern recorded takes into consideration species that are listed under multiple conservation designations.

#### **Breeding Birds**

- 3.1.13 A total of 40 records of birds from the breeding period were provided by ERIC North East, comprising 14 species within the 2 km desk study area (refer to Appendix D for details, including scientific names). Records of 107 species in tetrads within the 2 km desk study area were obtained from NTBC (refer to Appendix D). In total, records of 108 species were obtained, of which 61 were species of conservation concern<sup>6</sup>, including:
  - four species listed on Annex 1 of the Birds Directive;
  - nine species listed on Schedule 1 of the WCA 1981 (as amended);
  - twenty-two species of principal importance (NERC Act 2006);
  - thirty-three of the 70 species in the Northumberland LBAP;
  - twenty-three species on the BoCC Red list; and
  - thirty species on the BoCC Amber list.
- 3.1.14 The assemblage of species within the dataset was similar to that for Section A, with records of species from a wide range of habitats. However, the majority of species were present in relatively low numbers, with the exception of farmland birds and generalist species typically associated with woodlands and gardens. Farmland specialists were well distributed and relatively abundant across the 2 km desk study area. Although a number of other specialist species were recorded, numbers and distributions of such species were generally sparse.
- 3.1.15 Evidence of breeding (possible, probable or confirmed) was obtained for 92 of the 108 species recorded. Confirmed breeding records were provided for two Schedule 1 species (barn owl and common crossbill). Probable breeding was recorded for quail, and possible breeding for hen harrier (*Circus cyaneus*). Barn owl, common crossbill and quail were all recorded in multiple tetrads within the 2 km desk study area.

#### 3.2 Field Survey

#### **Section A**

- 3.2.1 A total of 86<sup>5</sup> bird species were recorded within the survey area during survey Visits 1-4. These included 46 species of conservation concern<sup>6</sup> including:
  - two species listed on Annex 1 of the Birds Directive;
  - four species listed on Schedule 1 of the WCA 1981 (as amended);
  - twenty-one species of principal importance (NERC Act 2006);
  - twenty-nine of the 70 species in the Northumberland LBAP;
  - twenty-three species on the BoCC Red list, and;
  - twenty species on the BoCC Amber list.
- 3.2.2 All bird species listed on the BoCC Red list and Amber list are referred to as either 'Red listed' or 'Amber listed' throughout the remainder of this report.
- 3.2.3 Of the 86 bird species recorded, 74 were considered likely to be breeding (*i.e.* classified as confirmed, probable or possible breeding in accordance with the BTO's Bird Atlas

Version: 2 Issued: April 2018

15

<sup>&</sup>lt;sub>5</sub> These results do not include the incidental records described in Section 3.3.

<sup>&</sup>lt;sup>6</sup> The total number of species of conservation concern recorded takes into consideration species that are listed under multiple conservation designations.

### A1 in Northumberland

#### Breeding Bird Survey Report

2007-2011 criteria (Balmer et al. 2013) as outlined in Section 2.3.11 of this report. Of these species 32 were confirmed breeding, 29 probably breeding and 13 possibly breeding.

- 3.2.4 All species recorded during each of the survey visits, their numbers and conservation status' are presented in Appendix E, together with an assessment of the breeding status of each species (confirmed, probable or possible breeding, or non-breeding). The locations of the registrations of all species of conservation concern are presented in Figures 4.1-4.22, 5.1-5.22, 6.1-6.22 and 7.1-7.22.
- 3.2.5 Further detail in relation to the species of conservation concern recorded is provided below.

#### Wildfowl

3.2.6 Five species of wildfowl of conservation concern were recorded during the surveys (Table 2). All five species were recorded in low numbers relative to the size of the survey area. Evidence of breeding was recorded only for mallard (*Anas platyrhynchos*).

Table 2: Counts and breeding statuses of wildfowl of conservation concern recorded in Section A

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Greylag goose	Anser anser	Non-breeding			2	2
Mallard	Anas platyrhynchos	Probable	22	16	25	
Mute swan	Cygnus olor	Non-breeding	3			
Pink-footed goose	Anser brachyrhynchus	Non-breeding	2	1		
Shelduck	Tadorna tadorna	Non-breeding		2		

- 3.2.7 Two greylag geese (Anser anser) (Amber listed) were observed in the far south of the survey area, on Transect 1, during Visit 3 (Figure 6.1), and two were observed flying over the site to the north of Transect 9 during Visit 4 (Figure 7.10). No evidence to suggest breeding was observed.
- 3.2.8 Mallard (Amber listed) were observed at several locations across the survey area, usually singly or in pairs. Moderate numbers of birds were observed, reflecting the availability of suitable habitat. Breeding was suspected in several locations where pairs were observed in suitable habitat (for example on Transects 1 (Figures 4.3, 5.3 and 6.3) and 3 (Figures 4.16, 5.16 and 6.16)). Several birds, including a flock of 12, were observed on Transect 1 during Visit 3 (Figure 6.3).
- 3.2.9 Mute swan (Amber listed) was only observed during Visit 1, when three birds were observed flying south over the survey area in the south of Transect 2 (Figure 4.9). No evidence to suggest breeding was observed.
- 3.2.10 Two pink-footed geese (Anser brachyrhynchus) (Amber listed; Northumberland LBAP (coastal birds action plan)) were observed flying north over the survey area during Visit 1, in the north of Transect 9 (Figure 4.12). A single bird was also seen flying northwest over Transect 7 during Visit 2 (Figure 5.18). No evidence to suggest breeding was observed; it was considered likely that these birds were on passage.
- Two shelduck (Tadorna tadorna) (Amber listed: Northumberland LBAP (coastal birds 3.2.11 action plan)) flew south over Transect 9 during Visit 2 (Figure 5.10). No evidence to suggest breeding was observed.

#### Waders

3.2.12 Five wader species were recorded within the survey area (Table 3). All five species are of conservation concern. Evidence of breeding, or potential breeding, was recorded for oystercatcher (Amber listed), and woodcock (Scolopax rusticola) (Red listed;

> Version: 2 16 Issued: April 2018

Northumberland LBAP), curlew (*Numenius arquata*) and lapwing (both Red listed; species of principal importance; Northumberland LBAP).

Table 3: Counts and breeding statuses of waders of conservation concern recorded in Section A

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Curlew	Numenius arquata	Probable	8	17	3	4
Golden plover	Pluvialis apricaria	Non-breeding		95		
Lapwing	Vanellus vanellus	Confirmed	43	30	28	19
Oystercatcher	Haematopus ostralegus	Probable		6	7	2
Woodcock	Scolopax rusticola	Possible	1			

- 3.2.13 Curlew is suspected to have bred ("Probable breeding" according to the criteria set out in Section 2.3.11 of this report) in relatively low numbers at several locations within or close to the survey area, with birds regularly observed in the same areas during the survey (for example around Transect 1 (Figures 4.3, 5.3, 6.3 and 7.3), Transect 2 (Figures 4.9, 4.14 and 5.14), Transect 9 (Figures 5.10 and 7.10) and Transect 10 (Figures 4.4 and 5.4)). For the majority of pairs their breeding locations was not discovered, although alarm calls from a pair at the northern end of Transect 1 indicated that young were present. A large proportion of records involved birds flying over the survey area, although scattered observations of single birds or pairs were also made in other parts of the survey area (for example in suitable breeding habitat on Transect 4 (Figure 5.20)). Due to the mobile nature of the species it is considered that the peak count of 17 birds may be an overestimate, with the same birds recorded on more than one occasion.
- 3.2.14 Two flocks of golden plover (Annex 1, Northumberland LBAP), one comprising 25 birds and the other 70 birds, were observed flying southwest over the survey area during Visit 2 (Figure 5.12). A flock of approximately 90 birds was also observed in flight outside the survey area, to the east of Transect 2, during Visit 1. No evidence to suggest this species bred within the survey area was observed, and it is considered likely that all sightings involved birds on passage.
- 3.2.15 Breeding was confirmed for lapwing at several locations within the survey area. However, records were localised; where birds were present they were often observed breeding in high densities, mostly on arable farmland. Key areas of the scheme where breeding lapwing were recorded were located to the north and in the centre of Transect 1, where the number of pairs reached double figures (approximately 15 pairs) (Figures 4.2-4.3, 5.2-5.3, 6.2-6.3), the south of Transect 3 (Figure 4.16), the centre of Transect 7 (Figures 4.19, 5.19 and 6.19) and the east of Transect 8, where 19 birds, including eight juveniles, were observed during Visit 4 (Figure 7.15). Occasional scattered birds were recorded in other parts of the survey area, primarily on arable farmland, but also in improved grassland.
- 3.2.16 Although breeding was not confirmed, single pairs of oystercatcher appeared to be holding territory in the north of Transect 1 (Figures 5.3 and 6.3), at Eshott airfield in the centre of Transect 7 (Figure 5.18), and in the south of Transect 9 (Figures 6.8 and 7.8). It is thought that the species probably bred in low numbers within the survey area.
- 3.2.17 A single woodcock was flushed from Transect 3 during the first survey visit (Figure 4.18). No evidence to suggest breeding was observed, and no woodcock were recorded in the locality on subsequent survey visits. However, the open woodland around the golf course may constitute suitable breeding habitat for the species. Furthermore, woodcock display before sunrise and around sunset (Cramp & Simmons 2004), thus definitive breeding evidence is unlikely to have been observed during the surveys detailed within this report, which mostly took place during the daytime. A conservative approach has therefore been taken, and woodcock classified as a possible breeder.

\_\_\_\_\_ Version: 2 17 Issued: April 2018

#### Gulls

3.2.18 Four species of gull of conservation concern were recorded within the survey area (Table 4), all in relatively low numbers. Evidence of possible breeding was recorded only for black-headed gull (*Chroicocephalus ridibundus*); with the other species either recorded flying over or loafing and feeding in fields. Black-headed gull, common gull (*Larus canus*) and lesser black-backed gull (*Larus fuscus*) are all Amber listed, whilst herring gull (*Larus argentatus*) is a Red listed species of principal importance.

Table 4: Counts and breeding statuses of gulls of conservation concern recorded in Section A

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Black-headed Gull	Chroicocephalus ridibundus	Possible	59	26	194	7
Common Gull	Larus canus	Non-breeding	29	24	1	50
Herring Gull	Larus argentatus	Non-breeding	48	21	8	2
Lesser Black-backed Gull	Larus fuscus	Non-breeding	1	8	16	

- 3.2.19 Black-headed gulls were primarily observed singly or in small flocks, with the largest flocks comprising 35 birds in the north of Transect 8 (Figure 6.16) and 34 on Transect 6 (Figure 6.21) during Visit 3. Although many of the records involved birds flying over the survey area, birds were also recorded loafing or feeding in improved grassland fields (for example on Transect 1 (Figures 4.2-4.3), to the north of Transect 7 (Figure 5.19), and around Transects 5 and 6 (Figure 6.21). A pair of black-headed gulls appeared to be holding territory on Eshott airfield (Transect 7, Figures 5.18, 6.18). Although breeding of this species was not confirmed it is assessed as "Possible breeders" on a precautionary basis given the territorial behaviour observed at Eshott airfield.
- 3.2.20 Occasional small to medium-sized flocks of common gull (*Larus canus*) were recorded across the survey area, often in association with other gull species. Consequently, records occurred in similar areas to the other gulls, for example on Transect 1 (Figures 4.2) and Transect 7 (Figure 5.19). Flocks were also recorded using improved grassland fields in the southern part of Transect 9, where the largest flock of 50 birds was recorded (Figure 7.8). Most records of common gull involved birds loafing or feeding in improved grassland fields. No evidence to suggest this species bred within the survey area was observed.
- 3.2.21 Low numbers of herring gulls were observed within the survey area, with the largest flock comprising only 11 birds. Small flocks were observed loafing or feeding in a few locations within the survey area, typically in association with other gulls on improved grassland, for example on Transects 1 (Figures 4.2-4.3 and 5.2), 7 (Figures 4.19 and 5.19) and 9 (Figure 5.10). Other records predominantly involved single birds flying over the survey area. No evidence to suggest breeding was observed.
- 3.2.22 The distribution of lesser black-backed gull was similar to that of herring gull, but this species occurred in lower numbers, with most records involving single birds and no more than three birds observed concurrently. The majority of observations were of birds flying over the site, or loafing or feeding with other gull species (for example to the north of Transect 7 (Figures 4.19 and 5.19) and on Transect 9 (Figure 5.10). No evidence to suggest this species bred within the survey area was observed.

#### **Other Non-passerines**

3.2.23 Other non-passerine species of conservation concern predominantly comprised species associated with farmland (Table 5).

\_\_\_\_\_\_ Version: 2
18 Issued: April 2018

Table 5: Counts and breeding statuses of other non-passerines of conservation concern recorded in Section A

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Cuckoo	Cuculus canorus	Possible			2	
Grey Partridge	Perdix perdix	Probable	6	7	3	
Kestrel	Falco tinnunculus	Confirmed	4	5	3	1
Kingfisher	Alcedo atthis	Possible			1	
Stock Dove	Columba oenas	Probable		12	8	10
Swift	Apus apus	Possible			16	23

- 3.2.24 Cuckoo (*Cuculus canorus*) (Red listed; species of principal importance; Northumberland LBAP) was recorded in two locations during Visit 3: a female on Transect 7 (Figure 6.18), and a bird alarm-calling on Transect 3 (Figure 6.17). Additionally, a male was heard singing outside the survey area to the west of Transect 1, also during Visit 3. Based on these observations cuckoo was classified as possibly breeding within the survey area, in low numbers.
- 3.2.25 Grey partridge (*Perdix perdix*) (Red listed; species of principal importance; Northumberland LBAP) was recorded singly or in pairs on arable farmland within the survey area. Pairs of birds were observed on Transect 1 (Figures 4.2 and 5.1), Transect 2 (Figures 4.11 and 5.11), Transect 7 (figure 4.18), Transect 9 (figure 6.8) and Transect 10 (figure 5.6). Grey partridge probably bred in low numbers within the survey area.
- 3.2.26 Kestrel (*Falco tinnunculus*) (Amber listed; Northumberland LBAP) was observed in a small number of locations scattered across the survey area. A suspected breeding territory was identified on Transect 7 (figures 4.19, 5.19 and 6.19), and breeding was confirmed on Transect 2 (Figures 5.14 and 6.14), where a pair nested in the grounds of a residential property adjacent to the A1.
- 3.2.27 The only record of kingfisher was of a bird flying along the River Coquet during Visit 3 (Figure 6.21). Kingfisher is Amber listed, and is listed on both Schedule 1 of the WCA and Annex 1 of the Birds Directive. Kingfisher is also a feature of interest associated with the River Coquet and Coquet Valley Woodlands SSSI (although it is not a notified feature). Kingfisher has been classified as a possible breeder on a precautionary basis given the timing of the sighting in the breeding season (during Visit 3 mid -late May 2016) and the suitable habitat present. as. It should be noted that surveys of the River Coquet for otter and water vole, carried out in connection with the scheme, did not identify any incidental records of kingfisher nests.
- 3.2.28 Stock dove (*Columba oenas*) (Amber listed) was observed in a small number of locations across the survey area. A number of pairs were recorded, and several birds were occasionally observed in the same area. A key area for stock dove appeared to be Transect 9 during Visit 4 (Figure 7.8)). The species probably bred in low numbers within the survey area.
- 3.2.29 Swifts (Amber listed; Northumberland LBAP) were recorded infrequently, and records predominantly comprised birds on passage flying over the survey area. However, it is possible that birds were under-recorded due to the early timing of surveys. The peak count was made during Visit 4, despite the fact that only a small part of the survey area was covered during the visit. No nests were identified; however multiple swifts were noted flying around buildings in the south of Transect 9 during this visit. This behaviour is potentially suggestive of nests at this location therefore on a precautionary basis swifts are assessed as being a possible breeder.

\_\_\_\_\_ Version: 2

19 Issued: April 2018

#### **Passerines**

3.2.30 In total 26 passerines of conservation concern were recorded (Table 6). The assemblage included several farmland and woodland specialists, as well as species typically associated with a number of other habitats. Breeding evidence was recorded for 24 passerine species (12 confirmed, nine probable and three possible). The majority of species were Red listed, and many were also listed on Section 41 and/or the Northumberland LBAP. Three Schedule 1 species were observed: common crossbill, fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*). Common crossbill was classified as a probable breeder based on observations of courtship behaviour. The lack of records for fieldfare and redwing after Visit 2 suggested that all records of these species were of longer-staying elements of larger flocks of winter migrant birds. No evidence to suggest that either of these species bred within the survey area was observed.

Table 6: Counts and breeding statuses of passerines of conservation concern recorded in Section A

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Bullfinch	Pyrrhula pyrrhula	Probable	8	6	7	2
Common Crossbill	Loxia curvirostra	Probable	12		1	
Dunnock	Prunella modularis	Confirmed	75	56	98	50
Fieldfare	Turdus pilaris	Non-breeding	13	8		
Grey Wagtail	Motacilla cinerea	Possible	6			
House Martin	Delichon urbicum	Confirmed			52	22
House Sparrow	Passer domesticus	Confirmed	73	139	155	74
Lesser Redpoll	Acanthis cabaret	Probable		1	17	2
Linnet	Linaria cannabina	Confirmed	11	42	87	27
Marsh Tit	Poecile palustris	Possible	1		1	
Meadow Pipit	Anthus pratensis	Probable	10	40	5	9
Mistle Thrush	Turdus viscivorus	Confirmed	17	6	5	5
Redstart	Phoenicurus phoenicurus	Confirmed			4	2
Redwing	Turdus iliacus	Non-breeding	209	2		
Reed Bunting	Emberiza schoeniclus	Probable	11	4	5	3
Skylark	Alauda arvensis	Confirmed	52	87	103	9
Song Thrush	Turdus philomelos	Confirmed	41	33	58	15
Spotted Flycatcher	Muscicapa striata	Confirmed			2	2
Starling	Sturnus vulgaris	Confirmed	194	74	192	35
Swallow	Hirundo rustica	Confirmed		1	186	72
Tree Pipit	Anthus trivialis	Possible			1	
Tree Sparrow	Passer montanus	Confirmed	41	11	57	24
Willow Tit	Poecile montana	Probable		2	2	1
Willow Warbler	Phylloscopus trochilus	Probable		4	55	10
Yellow Wagtail	Motacilla flava	Probable			5	4
Yellowhammer	Emberiza citrinella	Probable	101	65	84	31

3.2.31 In general, passerine species of conservation concern were widely distributed throughout the survey area. The numbers of birds observed were mostly congruent with what would be expected in the context of the habitats available. The more ubiquitous species such as house sparrow (*Passer domesticus*), dunnock (*Prunella modularis*) and starling (*Sturnus vulgaris*), which are typically associated with a number of habitats, were amongst the most

Version: 2
20 Issued: April 2018

abundant, although several farmland specialists, including linnet, skylark (*Alauda arvensis*), yellowhammer and tree sparrow (*Passer montanus*), also occurred in high numbers due to the prevalence of suitable arable farmland habitat. Of particular note were the numbers of yellow wagtail recorded during Visits 3 and 4, which were of significance in the context of the county population of this species as yellow wagtail is a relatively scarce breeder in Northumberland (see Appendix F) (see Section 3.2.35 below). Woodland species of conservation concern were generally less abundant, with the most frequently recorded being those associated with several habitat types, such as song thrush (*Turdus philomelos*), or which are less dependent on large expanses of woodland (for example, willow warbler). However, the number of willow tits recorded was of significance in the context of the county population of this species (see Section 3.2.35 below).

- 3.2.32 Figures 4-7, together with Appendix E show that numbers of birds in general were higher during Visit 3. Although Table 6 suggests there were few clear patterns of seasonal abundance amongst passerines of conservation concern, Figures 4-7 show that these species were more prevalent within farmland and woodland habitats across the survey area during Visit 3. It is considered likely that this was due to the arrival of summer migrants, such as swallow (*Hirundo rustica*), house martin (*Delichon urbicum*) and willow warbler, and because birds had moved into breeding territories and fully commenced breeding activity by that stage in the season.
- 3.2.33 The highest densities of passerines of conservation concern were often found around houses and farmsteads, where a mosaic of habitats supported a variety of species. Features such as patches of woodland, waterbodies, tall and dense hedgerows and fallows also tended to support relatively high densities of species of conservation concern. Species of conservation concern were often found quite sparsely in more open habitats, with the exception of certain areas of arable farmland (particularly those with well-developed hedgerows and fallows). Improved grassland fields and extensive patches of woodland generally supported low numbers of species of conservation concern. However, the latter often supported relatively high numbers birds in general, albeit primarily Green listed species. The woodland around the River Coquet (Transects 5 and 6; Figures 4.21, 5.21, 6.21 and 7.21) was a particularly noteworthy example of an area of good quality woodland habitat where this pattern was observed. The woodland around Felton Park (Transect 3; Figures 4.16-4.18, 5.16-5.18 and 6.16-6.18), although less extensive than the Coquet woodlands, was also considered to be of good quality.
- 3.2.34 The following parts of the survey area were identified as particularly important for passerines of conservation concern:
  - The southern and northern sections of Transect 1 (Figures 4.1-4.3, 5.1-5.3, 6.1-6.3 and 7.3).
  - Transect 2 (Figures 4.9-4.14, 5.9-5.14, 6.9-6.14 and 7.9-7.11). This transect was one of the most important for passerines of conservation concern, due to the combination of a diversity of habitats including good quality boundary features and arable farmland.
  - Transect 4 (Figures 4.18-4.20, 5.18-5.20 and 6.18-6.20). This area did not support high densities of passerines of conservation concern, but was particularly important for farmland species.
  - The centre and northern sections of Transect 7 (Figures 4.18-4.19, 5.18-5.19 and 6.18-6.19), which were important for farmland passerines of conservation concern.
  - The southern and northern sections of Transect 8 (Figures 4.15-4.17, 5.13-5.17, 6.13-6.17 and 7.13-7.16).

\_\_\_\_\_ Version: 2
21 Issued: April 2018

### A1 in Northumberland

### Breeding Bird Survey Report

- The southern and northern sections of Transect 9 (Figures 5.8-5.12, 6.8-6.12 and 7.8-7.12).
- The northern half of Transect 10 (Figures 4.4-4.6, 5.4-5.6 and 6.4-6.6).
- In addition to the areas of general importance for passerines of conservation concern, the survey area supported populations of yellow wagtail and willow tit at certain locations. The populations of both these species were considered to be significant in the context of their county populations (see Section 4.2 for discussion). Yellow wagtails were observed in arable farmland on Transect 9 (Figures 6.8, 6.10, 6.12 and 7.8) and Transect 4 (Figure 6.20), and flying over Transect 1 (Figure 7.2). Based on the territorial behaviour observed for this species at least four breeding territories were suspected (three on Transect 9 and one on Transect 4). A maximum of three willow tit (Poecile montana) territories were identified. Territorial behaviour was observed for this species at the following locations: in the north of Transect 8, in woodland at Felmoor Park holiday park, with a pair observed during Visit 2 (Figure 5.16) and a two singing birds in the same area during Visit 3 (Figure 6.17), and on Transect 2 at Causey Park where a bird was recorded singing during Visit 4 (Figure 7.11).
- Common crossbill was the only Schedule 1 species suspected to have bred within the 3.2.36 survey area. Twelve records of this species were made during Visit 1, with the only other record made during Visit 3. Eight birds were observed in three locations on Transect 3 (Figure 4.16), three in the south of Transect 2 (Figure 4.16), and one in the south of Transect 7 (Figure 4.17). One bird was recorded on Transect 5 during Visit 3 (Figure 6.21). Common crossbill was classified as a probable breeder, based on observations of courtship behaviour in the Transect 2 birds, although the precise location of breeding was not established.

#### **Section B**

- A total of 83<sup>7</sup> bird species were recorded within the survey area during the surveys 3.2.37 detailed within this report. These included 45 species of conservation concern<sup>8</sup> including:
  - one species listed on Annex 1 of the Birds Directive;
  - five species listed on Schedule 1 of the WCA 1981 (as amended);
  - sixteen species of principal importance (NERC Act 2006);
  - twenty-six of the 70 species in the Northumberland LBAP;
  - eighteen species on the BoCC Red list, and;
  - twenty-two species on the BoCC Amber list.
- 3.2.38 Of the 83 bird species, 69 species were considered likely to be breeding (i.e. classified as confirmed, probable or possible breeding in accordance with the BTO's Bird Atlas 2007-2011 criteria (Balmer et al. 2013)). Of these species 23 were confirmed breeding, 34 probably breeding and 12 possibly breeding.
- 3.2.39 All species recorded during each of the survey visits, their numbers and conservation statuses are presented in Appendix E, together with an assessment of the breeding status of each species (confirmed, probable or possible breeding, or non-breeding). The locations of the registrations of all species of conservation concern are presented in Figures 4.23-4.36, 5.23-5.36, 6.23-6.36 and 7.23-7.36.

Version: 2 Issued: April 2018

<sup>7</sup> These results do not include the incidental records described in Section 3.3.

<sup>&</sup>lt;sup>8</sup> The total number of species of conservation concern recorded takes into consideration species that are listed under multiple conservation designations.

3.2.40 Further detail in relation to the species of conservation concern recorded is provided below.

#### Wildfowl

3.2.41 Seven species of wildfowl of conservation concern were recorded during the surveys. The numbers of birds recorded (Table 7) were considered to be low to moderate in relation to the size of the survey area. Numbers of wildfowl in Section B were similar to, or higher than, those recorded in Section A. This was considered to reflect the greater availability of suitable wetland habitat within Section B. Breeding evidence was recorded for the majority of species, in contrast to Section A.

Table 7: Counts and breeding statuses of wildfowl of conservation concern recorded in Section B

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Gadwall	Anas strepera	Probable		4	1	
Greylag Goose	Anser anser	Confirmed	45	9	9	
Mallard	Anas platyrhynchos	Probable	72	44	44	
Mute Swan	Cygnus olor	Possible	4	1		
Pink-footed Goose	Anser brachyrhynchus	Non-breeding	1			
Shelduck	Tadorna tadorna	Probable	1	5		
Teal	Anas crecca	Possible	10			

- 3.2.42 One to two pairs of gadwall (*Anas strepera*) were observed during the second survey visit. On Transect 14 evidence of probable breeding was observed. This comprised a male which exhibited agitated behaviour, and a female flushed at close range from suitable nesting habitat (Figure 5.32). On Transect 15 a pair was observed at the same location, in suitable nesting habitat, during both visits 2 and 3 (Figures 5.33 and 6.33). Although it is unknown whether these were the same birds observed on Transect 14 or a different pair a precautionary approach has been taken. For the purposes of the evaluation, it has been assumed that these observations relate to two different pairs (see Section 4.3 for discussion).
- 3.2.43 Greylag geese (Amber listed) were observed almost exclusively around Transect 13, where they frequented a complex of ponds and the surrounding fields. Two pairs were identified, and at least one pair bred successfully, raising two young (Figure 6.28). The 'feral' breeding population of greylag geese in Northumberland, which results from reintroductions, is augmented in winter by wild migratory Icelandic birds (Dean et al. 2015). It was concluded that the higher numbers recorded during Visit 1 including a flock of 21 birds observed in fields in the north of Transect 13 (Figure 4.30), were likely to have involved birds from this migratory wintering population.
- 3.2.44 Mallard (Amber listed) were observed widely, and in moderate numbers, across the survey area on ponds, ditches and waterlogged fields. Although breeding was not confirmed, pairs were observed on numerous occasions, frequenting the same areas, and it was concluded likely that breeding attempts were made at various locations within the survey area.
- 3.2.45 Mute swan (Amber listed) was recorded during visits 1 and 2, on a pond in the east of Transect 14. Four birds were observed during Visit 1 (Figure 4.32) and one bird during Visit 2 (Figure 5.32). No nests were identified, although it was not possible to see the entire pond from the transect route. As these birds were observed in suitable breeding habitat, and due to the status of mute swan as a relatively common breeding species, it was considered a possible breeder within the survey area

\_\_\_\_\_\_ Version: 2
23 Issued: April 2018

### A1 in Northumberland

#### Breeding Bird Survey Report

- 3.2.46 A single pink-footed goose (Amber listed; Northumberland LBAP) was observed with greylag geese on Transect 13, during Visit 1 (Figure 4.28). Pink-footed goose is a winter visitor to the UK (Cramp & Simmons 2004); no evidence to suggest breeding of this species was observed.
- 3.2.47 Shelduck (Amber listed; Northumberland LBAP) was recorded in low numbers within the survey area, with a maximum of five birds observed during Visit 2. This included a pair observed in potentially suitable habitat on Transect 13 (Figure 5.28) and shelduck has therefore been categorised as a probable breeder.
- 3.2.48 Teal (Amber listed) was recorded only during Visit 1, in relatively low numbers. Although several pairs were observed in suitable habitat across the survey area, teal was categorised as a possible, rather than probable, breeder due to the early date of the initial records and lack of subsequent activity. This suggested the pairs of teal recorded during Visit 1 were wintering birds which had paired up on their wintering grounds as is common for this species (Cramp & Simmons 2004).

#### **Waders**

3.2.49 Waders were generally much more numerous in Section B than in Section A. Six species were recorded within the survey area (Table 8), all of which are of conservation concern. Most of these were recorded in low numbers, although numbers of lapwing and oystercatcher were relatively high, with the former approaching levels of county significance. Counts of 90 and 93 lapwing during Visits 2 and 3 respectively represent 0.88 % and 0.91 % of the Northumbria population (the peak count of 136 lapwing during Visit 1 represents 1.33 % of the Northumbria population, but included several wintering flocks). As in Section A, wader records were noticeably concentrated in certain parts of the survey area: in the south of Transect 11 (Figures 4.23, 5.23 and 6.23), the north of Transect 13 and the south of Transect 14 (Figures 4.30 and 4.32, 5.30 and 5.32 and 6.30 and 6.32), and both the south and north of Transect 16 (Figures 4.23, 5.23 and 6.23, and 4.27, 5.27 and 6.27 respectively). These areas were predominantly areas of arable farmland, with some wet grassland in the north of Transect 13. Evidence of breeding was recorded for five of the species (Table 8).

Table 8: Counts and breeding statuses of waders of conservation concern recorded in Section B

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Curlew	Numenius arquata	Possible	6		3	
Golden Plover	Pluvialis apricaria	Non-breeding		3		
Lapwing	Vanellus vanellus	Confirmed	136	90	93	1
Oystercatcher	Haematopus ostralegus	Probable	5	16	21	1
Redshank	Tringa totanus	Possible		9		
Woodcock	Scolopax rusticola	Non-breeding	1			

- 3.2.50 Curlew was observed in low numbers within the survey area, predominantly around Transect 16 (Figures 4.23-4.27 and 6.23-6.27). Although alarm calls, which may indicate breeding, were incidentally heard to the east of Transect 16, it was not possible to confirm breeding by this species. A precautionary approach has therefore been taken and curlew classified as a possible breeder.
- 3.2.51 Breeding was confirmed for lapwing in several locations within the survey area. As in Section A, records here were localised; where birds were present they were often observed breeding in relatively high densities. The main areas of the scheme where breeding lapwing were recorded are the south of Transect 11 (Figures 4.23, 5.23 and 6.23), the north of Transect 13 and the south of Transect 14 (Figures 4.30 and 4.32, 5.30 and 5.32 and 6.30 and 6.32), and both the south and north of Transect 16 (Figures 4.23-

\_\_\_\_\_ Version: 2 24 Issued: April 2018

#### A1 in Northumberland

#### Breeding Bird Survey Report

- 4.27, 5.23-5.27 and 6.23-6.27). These were predominantly areas of arable farmland, with some wet grassland in the north of Transect 13. Lower numbers were also recorded elsewhere, for example, around Transect 17 (Figures 4.33-4.34, 5.33-5.34 and 6.33-6.34).
- 3.2.52 Several pairs of oystercatcher in Section B appeared to be holding territory, although breeding was not confirmed. These pairs were generally recorded in the locations identified in Section 3.2.49 above, but also more widely, including areas of improved grassland where few other waders were recorded (for example in the centre of Transect 16 (Figures 4.25, 6.25 and 7.25). It is thought that oystercatchers probably bred within the survey area.
- 3.2.53 A total of nine redshank were recorded during Visit 2 in the north of Transect 13 (Figure 5.32). One of the records related to a pair of birds close to potential nesting habitat (wet grassland of limited suitability). However, no evidence of breeding was observed and the birds were not observed on subsequent visits. Redshank has therefore been categorised as a possible breeder.
- 3.2.54 A total of three golden plover were recorded flying over the survey area during Visit 2 (Figure 5.26). No evidence to suggest breeding was observed and these birds were considered to have been on passage.
- 3.2.55 A single woodcock was observed during Visit 1, on Transect 13 (Figure 4.28). No evidence to suggest breeding was observed, and no woodcock were recorded in the locality on subsequent survey visits. However, the woodland around Transect 13 may constitute suitable breeding habitat for the species. Furthermore, woodcock display before sunrise and around sunset (Cramp & Simmons 2004), thus breeding evidence is unlikely to have been observed during the surveys detailed within this report, which mostly took place during the daytime. A conservative approach has therefore been taken, and woodcock classified as a possible breeder.

#### Gulls

3.2.56 Five species of gull of conservation concern were recorded within Section B (Table 9). Amber list species comprised black-headed gull, common gull, lesser black-backed gull and great black-backed gull (*Larus marinus*). Red list species comprised herring gull (*Larus argentatus*).

Table 9: Counts and breeding statuses of gulls of conservation concern recorded in Section B

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Black-headed Gull	Chroicocephalus ridibundus	Non-breeding	1124	37	43	1
Common Gull	Larus canus	Non-breeding	3	24		4
Great Black-backed Gull	Larus marinus	Non-breeding		1	3	
Herring Gull	Larus argentatus	Non-breeding	27	188	262	
Lesser Black-backed Gull	Larus fuscus	Non-breeding	2	15	55	3

- 3.2.57 As in Section A, numbers of gulls recorded within the survey area were generally low, with most records involving single birds or small flocks flying over, and occasionally loafing or feeding in fields. Although the majority of records were of birds flying over, probably to access nearby feeding areas, gull activity was often greater around Transects 14 and 15 (Figures 4.32-4.35, 5.32-5.35 and 6.32-6.35), where small numbers of birds were regularly recorded loafing or feeding.
- 3.2.58 Large flocks of gulls were observed loafing and feeding within the survey area on two occasions, when fields were being ploughed. During Visit 1 high numbers of black-headed gulls were observed in the south of Transect 16, where two large flocks were observed (one comprising 280 birds, and the other 800), together with several medium-sized flocks

Version: 2

Issued: April 2018

(Figures 4.23-4.25). During Visit 3, ploughing activity in the southwest of Transect 14 attracted flocks of herring gull, black-headed gull and lesser black-backed gull, with one mixed flock containing 150, 20 and 10 birds of each species respectively.

3.2.59 No evidence of breeding was observed for any of the five species of gull recorded.

#### Other Non-passerines

3.2.60 Other non-passerine species of conservation concern predominantly comprised birds associated with farmland (Table 10). All were recorded in relatively low numbers, with the exception of higher numbers of stock dove observed during Visit 1.

Table 10: Counts and breeding statuses of other non-passerines of conservation concern recorded in Section B

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Barn Owl	Tyto alba	Probable	1			
Grey Partridge	Perdix perdix	Probable	6	2	5	1
Kestrel	Falco tinnunculus	Probable	2		3	1
Stock Dove	Columba oenas	Probable	25	2	8	4
Swift	Apus apus	Non-breeding			4	

- 3.2.61 The only record of barn owl (Northumberland LBAP; Schedule 1) made during Visits 1-4 in either Section A or Section B was from Transect 11 (Section B), during Visit 1 (Figure 4.23). However, a barn owl was incidentally observed entering a barn to the east of Transect 16 during the breeding bird surveys. Barn owl pellets were also found beneath a tree cavity on Transect 16 during the wintering bird surveys in early October 2016. These records suggest that barn owls held territory at least in this part of the survey area in 2016. Anecdotal observations from landowners also suggest that barn owls regularly breed in the area local to Section B. Despite limited field survey evidence a precautionary approach has been adopted and barn owl has been classified as a probable breeder within Section B.
- 3.2.62 Grey partridge (Red listed; Northumberland LBAP) was recorded on arable farmland across the survey area, with the majority of records from Transects 11 and 16 in the far south of the survey area (Figures 4.23-4.27, 5.23-5.27, 6.23-6.27 and 7.25-7.27), and Transect 15 in the northeast (Figures 4.33-4.34, 5.33-5.34 and 6.33-6.34). Observations of pairs indicated that the species probably bred within the survey area.
- 3.2.63 Kestrel (Amber listed; Northumberland LBAP) was observed in a small number of locations in the southern half of the survey area. A pair frequented the area around Transect 16, indicating probable breeding.
- 3.2.64 Stock dove (Amber listed) was observed in several locations across the survey area, and was associated with areas of arable farmland. The higher numbers of birds recorded on Transect 16 during Visit 1 were noteworthy (Figures 4.23-4.27). Based on the numbers and widespread distribution of stock dove across the survey area, behaviour and the numbers recorded it is considered likely that the species bred within the survey area. Therefore, on a precautionary basis stock dove are assessed as being probable breeders.
- 3.2.65 A total of four swifts (Amber listed; Northumberland LBAP) were recorded at three separate locations during Visit 3. No evidence of breeding was observed. It is possible that swifts were under-recorded due to the early timing of visits 1 and 2.

#### **Passerines**

3.2.66 In total 22 passerines of conservation concern, representing a variety of habitat types, were recorded In Section B (Table 11). The assemblage was similar to that recorded on Section A, although fewer woodland specialists were recorded in comparison, and a

Version: 2
26 Issued: April 2018

slightly greater proportion of the records comprised farmland specialists. This was considered to reflect the overall differences in habitat composition between the two Sections. Breeding evidence was recorded for 19 of the 22 species observed (10 confirmed, eight probable and one possible). The majority of species were Red listed, and many were also listed on Section 41 of the NERC Act 2006 and/or the Northumberland LBAP. Four Schedule 1 species were observed: brambling (*Fringilla montifringilla*), common crossbill, fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*). Common crossbill was classified as a possible breeder. As the majority of records for fieldfare and redwing were from Visit 1 (with one additional fieldfare recorded in Visit 3), it was considered that all records were of longer-staying elements of larger flocks of winter migrant birds. There was no evidence that either fieldfare or redwing bred within the survey area. A single brambling was recorded on Visit 2 only and was therefore concluded to be a winter migrant rather than a breeding bird.

3.2.67 Brambling, fieldfare and redwing are winter visitors considered unlikely to have bred within the survey area.

Table 11: Counts and breeding statuses of passerines of conservation concern recorded in Section B

Species	Scientific name	Breeding status	Visit 1	Visit 2	Visit 3	Visit 4
Brambling	Fringilla montifringilla	Non-breeding		1		
Bullfinch	Pyrrhula pyrrhula	Confirmed	2	1	5	
Common Crossbill	Loxia curvirostra	Possible		1	1	
Dunnock	Prunella modularis	Probable	46	69	71	4
Fieldfare	Turdus pilaris	Non-breeding	39		1	
Grey Wagtail	Motacilla cinerea	Confirmed		4	3	
House Martin	Delichon urbicum	Confirmed	1	2	66	
House Sparrow	Passer domesticus	Confirmed	79	76	55	
Lesser Redpoll	Acanthis cabaret	Probable			18	
Linnet	Linaria cannabina	Probable	283	85	58	
Meadow Pipit	Anthus pratensis	Probable	4	46	36	
Mistle Thrush	Turdus viscivorus	Confirmed	4	13	12	2
Redwing	Turdus iliacus	Non-breeding	97			
Reed Bunting	Emberiza schoeniclus	Probable	39	21	14	
Skylark	Alauda arvensis	Confirmed	68	81	80	1
Song Thrush	Turdus philomelos	Confirmed	14	24	33	6
Starling	Sturnus vulgaris	Confirmed	43	24	35	
Swallow	Hirundo rustica	Confirmed		9	103	1
Tree Sparrow	Passer montanus	Confirmed	45	80	41	1
Willow Warbler	Phylloscopus trochilus	Probable		18	41	
Yellow Wagtail	Motacilla flava	Probable			6	1
Yellowhammer	Emberiza citrinella	Probable	90	75	63	2

3.2.68 As for Section A, the most abundant species were farmland specialists, including linnet (he high number of recorded birds during Visit 1 was due to the presence of a single large winter flock), skylark, yellowhammer and tree sparrow, together with other more ubiquitous species such as house sparrow and dunnock, which are typically associated with woodland edges and gardens. Woodland species of conservation concern were generally less abundant, with the most frequently recorded being those associated with several habitat types, such as song thrush (*Turdus philomelos*), or which are less

\_\_\_\_\_ Version: 2
27 Issued: April 2018

### A1 in Northumberland

#### Breeding Bird Survey Report

dependent on larger areas of woodland (for example, willow warbler). This pattern was considered to be more exaggerated in Section B than in Section A, because of the more limited availability of woodland habitat in Section B.

- 3.2.69 The highest densities of passerines of conservation concern were generally found around houses and farmsteads, such as those in the centre of Transect 12 (Figures 4.26, 5.26 and 6.26), the south of Transect 13 (Figures 4.28, 5.28 and 6.28), and the southwest of Transect 14 (Figures 4.32, 5.32 and 6.32), and on arable farmland, particularly in areas with well-developed hedgerows and fallows, such as those on Transects 11 and 16 (Figures 4.23-4.27, 5.23-5.27 and 6.23-6.27). Species of conservation concern were less abundant in areas with a greater prevalence of grazing pasture, such as those around Transect 14 (Figures 4.32, 5.32 and 6.32) and the centre of Transect 16 (Figures 4.25, 5.25, 6.25 and 7.25). As on Section A, the more extensive patches of woodland also supported low numbers of species of conservation concern, despite supporting relatively high numbers birds in general. Examples include woodland in the north of Transect 12 (Figures 4.26, 5.26 and 6.26), on Transect 13 (Figures 4.28-4.30, 5.28-5.30 and 6.28-6.30) and Transect 14 (Figures 4.32-4.35, 5.32-5.35 and 6.32-6.35).
- 3.2.70 The following parts of the survey area were identified as particularly important for passerines of conservation concern, primarily due to the presence of farmland specialists:
  - Transect 11 (Figures 4.23-4.24, 5.23-5.24 and 6.23-6.24).
  - The centre of Transect 12, especially around Heckley Fence farm (Figures 4.26, 5.26 and 6.26).
  - The south and the northern half of Transect 13 (Figures 4.28-4.30, 5.28-5.30 and 6.28-6.30).
  - The southwest and north of Transect 14 (Figures 4.32, 5.32 and 6.32, and 4.35, 5.35 and 6.35 respectively).
  - The north of Transect 15 (Figures 4.34, 5.34 and 6.34).
  - The northern tip and the southern half of Transect 16 (Figures 4.23-4.27, 5.23-5.27, 6.23-6.27 and 7.25-7.27).
- 3.2.71 Of the areas listed in Section 3.2.70, the land around Transect 11, the north of Transect 13 and south of Transect 14, and the northern tip and the southern half of Transect 16 were particularly important for passerines of conservation concern.
- 3.2.72 Besides these areas of general importance for passerines of conservation concern, the survey area supported numbers of yellow wagtail which are of significance in the context of their county population (see Section 4.3 for discussion). Yellow wagtails were observed in arable farmland on Transects 11 (Figure 6.23) and 16 (Figures 6.27 and 7.25). Although it was not possible to identify individual territories definitively based on the data obtained during the breeding bird surveys, at least four breeding territories were suspected (a minimum of two on Transect 11, and two on Transect 16). Numbers of tree sparrow were also high in the context of their county population.
- 3.2.73 The only Schedule 1 species which may have bred within the survey area was common crossbill. Single birds were recorded in suitable habitat in the west of the survey area during visits 2 and 3 (Figures 5.26 and 6.24 respectively). Consequently, common crossbill was classified as a possible breeder.

#### 3.3 Incidental Observations

3.3.1 A number of incidental observations were made during other surveys carried out in relation to the scheme. Incidental observations of species of conservation concern,

\_\_\_\_\_\_ Version: 2
28 Issued: April 2018

including records of species which were not recorded during the surveys detailed within this report, are detailed below.

#### **Section A**

- 3.3.2 A brambling (Schedule 1) was recorded at Causey Park during April, representing the only record of this species in Section A. It was considered that this bird was a lingering wintering individual, and no evidence to suggest breeding was observed.
- 3.3.3 Signs of barn owl (Schedule 1; Northumberland LBAP) were observed at a barn owl box in the southwest of Transect 2 during April. The land owner reported that barn owls have previously bred at this location, although they were uncertain whether the birds bred in 2016. In May a barn owl was recorded emerging from a hole in a mature ash tree in the far northeast of the survey area. Feathers and droppings suggested that the hole had been used regularly by barn owl, possibly for nesting. Consequently, barn owl has been classified as a probable breeder.
- 3.3.4 Dipper (*Cinclus cinclus*) (Amber listed) was observed on the River Coquet on one occasion in late March, and has been classified as a possible breeder as this bird was observed in suitable habitat.
- 3.3.5 Cormorant (*Phalacrocorax carbo*) (Northumberland LBAP) was observed during the Extended Phase 1 Habitat Survey carried out for the scheme. However, no evidence to suggest breeding within the survey area was observed.

#### **Section B**

3.3.6 A party of approximately 12 common terns (*Sterna hirundo*) (Amber listed; Northumberland LBAP; Annex 1) were observed in May on a waterbody adjacent to the A1 the vicinity of Transect 14. However, no evidence to suggest breeding was observed and the species was not recorded subsequently.

Version: 2

29 Issued: April 2018

#### **4 EVALUATION**

- 4.1.1 A summary of the results of the breeding bird surveys carried out in 2016, together with an evaluation of the importance of Sections A and B for breeding birds is provided below. The evaluation for each species has been based on a comparison of the numbers of birds recorded during the breeding bird survey with their populations at a range of spatial scales. The evaluation took into account that not all birds recorded would have bred within the survey area (for example those recorded flying over the survey area, or in winter flocks during Visit 1).
- 4.1.2 No evaluation has been made for barn owl as specific surveys for this species has not been undertaken. Barn owl surveys are proposed for 2017, and the results of these surveys will be reported separately.
- 4.1.3 An assessment of impacts and any mitigation measures required in relation to adverse effects on breeding birds will be presented as part of the ongoing environmental assessment work the scheme.

### 4.2 Section A (Morpeth to Felton)

- 4.2.1 The results of the breeding bird surveys carried out in 2016 generally reflected the findings of the desk study, both in terms of the assemblage of species and the numbers of birds recorded. Including incidental records, a total of 90 bird species were recorded within the survey area. These included 50 species of conservation concern<sup>9</sup> including:
  - Three species listed on Annex 1 of the Birds Directive;
  - Six species listed on Schedule 1 of the WCA 1981 (as amended);
  - Twenty-one species of principal importance (NERC Act 2006);
  - Thirty-one of the seventy species in the Northumberland LBAP;
  - Twenty-three species on the BoCC Red List of Birds of Conservation Concern; and
  - Twenty-one species on the BoCC Amber List of Birds of Conservation Concern.
- 4.2.2 Of the 90 bird species recorded, 76 were considered likely to be breeding (*i.e.* classified as confirmed, probable or possible breeding in accordance with the BTO's Bird Atlas 2007-2011 criteria (Balmer *et al.* 2013)). Of these species 32 were confirmed breeding, 30 probably breeding and 14 possibly breeding. Three Schedule 1 species were recorded for which evidence of breeding was observed: barn owl (probable breeding), common crossbill (probable breeding) and kingfisher (possible breeding).
- 4.2.3 A variety of species were recorded using the survey area, likely a result of the mosaic of habitats present: predominantly a mixture of improved grassland and arable farmland with associated farmsteads, patches of woodland, and occasional other habitats such as amenity land, small waterbodies and water courses. In general, the assemblage of species recorded within the survey area was typical of these habitats, although woodland species of conservation concern were relatively scarce.
- 4.2.4 In general, the numbers of birds of conservation concern recorded within the survey area were typical for the range of habitats in the survey area or low in relation to their Northumbria populations (as defined by NTBC population data). However, whilst certain habitats, such as extensive areas of woodland (for example around Felton Park and the River Coquet in the north of the survey area (Transects 5 and 6 see Figures 4.21, 5.21,

Version: 2 Issued: April 2018

30

<sup>&</sup>lt;sup>9</sup> The total number of species of conservation concern recorded takes into consideration species that are listed under multiple conservation designations.

6.21 and 7.21)) and pastoral farmland (for example to the south of Felmoor Park caravan park in the centre of the survey area (Transect 8 – see Figures 4.15, 5.15 and 6.15), supported few birds of conservation concern, others, such as certain areas of arable farmland, supported high concentrations.

- 4.2.5 Species of conservation concern tended to be aggregated around features such as farmsteads and residential properties, patches of woodland, waterbodies, good quality hedgerows and fallows. However, specialist farmland species were also abundant in areas of arable farmland with fallows and well-developed hedgerows. This was particularly evident around High Highlaws in the south of the survey area (Transect 1 see Figures 4.1-4.3, 5.1-5.3 and 6.1-6.3), around Causey Park in the centre of the survey area (Transect 2 see Figures 4.9-4.14, 5.9-5.14, 6.9-6.14 and 7.9-7.14), and around Eshott airfield in the north of the survey area (Transect 7 see Figures 4.17-4.19, 5.17-5.19 and 6.17-6.19). Areas of bird abundance for Section A are mapped on Figure 8.1.
- 4.2.6 A number of bird species associated with nearby designated sites were recorded. Golden plover is a non-qualifying species of interest for the Northumbria Coast SPA and Ramsar site. Although the SPA is designated for the species in winter, the Ramsar site supports nationally important numbers of the species in spring/autumn. However, although moderate numbers of golden plover were recorded (the peak count of 95 birds during Visit 2 equates to 3.26 % of the Ramsar site population (2911 birds<sup>10</sup>)), the species was only observed on three occasions, and in all cases the birds were flying over rather than using the habitats within the survey area. Consequently, the survey area is considered to be of limited importance for the species during spring passage. Several species associated with the River Coquet and Coquet Valley Woodlands SSSI were recorded during the surveys (grey wagtail, yellow wagtail, oystercatcher, lapwing, dipper and kingfisher) although few records of those species were recorded in close proximity to the SSSI. The records of kingfisher along the River Coquet are of significance given the low numbers of kingfisher present in the county (34 pairs (Dean et al. 2015) and the site's importance for the species. However, breeding of this species within the survey area was not confirmed.
- 4.2.7 As a whole, the numbers of birds recorded in the survey area during the 2016 breeding bird surveys were not considered to represent a significant proportion of the UK or Northumbria populations (see Appendix F for population data). Population data are not available to enable comparative quantification of bird populations at the District level and below. Professional judgment, local knowledge and comparisons with population estimates at higher geographical levels have therefore been used to inform the overall evaluation. Based on these sources, the breeding bird assemblage within the survey area is generally considered to be of District Importance. However, the assemblage is considered to be of **County Importance** overall due to the populations of yellow wagtail and willow tit.
  - Yellow wagtail. At least four breeding territories were suspected, representing 5.56 % of the Northumbria population (72 breeding pairs (Dean et al. 2015)).
  - Willow tit. A maximum of three territories were identified, representing 4.44-6.67 % of the Northumbria population of 45 breeding pairs (Dean *et al.* 2015)).
- 4.2.8 Barn owl also occurred in notably high numbers in the context of the county (the Northumbria population comprises 60 breeding pairs (Dean *et al.* 2015)). However, the survey area population has not been evaluated in this report as specific surveys for the species have not yet been undertaken; such surveys are planned to take place during 2017.

 $_{10}\,http://jncc.defra.gov.uk/pdf/RIS/UK11049.pdf$ 

Version: 2 Issued: April 2018

- 4.2.9 Peak counts of three other species of conservation concern considered likely to have bred within the survey area (*i.e.* those classified as confirmed, probable or possible breeders in accordance with the BTO's Bird Atlas 2007-2011 criteria (Balmer *et al.* 2013)) exceeded 1% of their Northumbria breeding populations (based on Dean *et al.* 2015): black-headed gull (194 birds, representing 2.55 % of the Northumbria population), mallard (25 birds, representing 1.04 % of the Northumbria population) and mute swan (three birds, representing 1.07 % of the Northumbria population). Kingfisher also occurred in significant numbers (one bird, representing 1.47 % of the Northumbria population), and the species has conservatively been classified as a possible breeder based on the criteria within Balmer *et al.* (2013), although surveys of the River Coquet for otter and water vole, carried out in connection with the scheme, did not identify any kingfisher nests.
- 4.2.10 Based on the results of the breeding bird surveys carried out in 2016, the following areas were identified as particularly important for breeding birds.
  - Transect 1. The southern and northern sections held concentrations of passerines
    of conservation concern, whilst the northern half supported high densities of
    breeding waders. Also important for farmland non-passerines.
  - Transect 2. This transect was one of the most important for passerines of conservation concern in general, and also for farmland non-passerines. One willow tit territory and one potential barn owl nest were also located there.
  - Transect 4. This area did not support such high densities of passerines of conservation concern, but was particularly important for farmland species, including a territory of yellow wagtail.
  - Transect 7. The centre and northern sections were important for farmland birds of conservation concern, including passerines and, in the centre, waders.
  - Transect 8. The southern section was important for passerines of conservation concern, especially farmland species, and relatively high densities of lapwing bred in the east. The northern section was important for passerines of conservation concern, and supported one to two pairs of willow tit.
  - Transect 9. The southern and northern sections were important for farmland species of conservation concern, including three suspected territories of yellow wagtail.
- 4.2.11 Areas of bird abundance for Section A are mapped on Figure 8.1.

#### 4.3 Section B (Alnwick to Ellingham)

- 4.3.1 The results of the breeding bird surveys carried out in 2016 generally reflect the findings of the desk study, both in terms of the assemblage of species and the numbers of birds recorded. Including incidental records, a total of 84 bird species were recorded within the survey area. This included 46 species of conservation concern<sup>11</sup> including:
  - Two species listed on Annex 1 of the Birds Directive;
  - Five species listed on Schedule 1 of the WCA 1981 (as amended);
  - Sixteen species of principal importance (NERC Act 2006);
  - Twenty-seven of the 70 species in the Northumberland LBAP;

Version: 2 Issued: April 2018

<sup>11</sup> The total number of species of conservation concern recorded takes into consideration species that are listed under multiple conservation designations.

- Eighteen species on the BoCC Red List of Birds of Conservation Concern; and
- Twenty-three species on the BoCC Amber List of Birds of Conservation Concern.
- 4.3.2 Of the 84 bird species, 69 were considered likely to be breeding (*i.e.* classified as confirmed, probable or possible breeding in accordance with the BTO's Bird Atlas 2007-2011 criteria (Balmer *et al.* 2013)). Of these species 23 were confirmed breeding, 34 probably breeding and 12 possibly breeding. Two Schedule 1 species were recorded for which evidence of breeding was observed: barn owl (probable breeding) and common crossbill (possible breeding).
- 4.3.3 The species assemblage was typical of the habitats present. This predominantly comprised arable farmland with patches of improved grassland, farmsteads, occasional patches of woodland and small waterbodies. In contrast to Section A, the habitats present in Section B were more homogenous, with more continuous tracts of farmland. In comparison with Section A, the assemblage of species recorded in Section B was similarly diverse, although the composition differed slightly, reflecting differences in the habitats present in the two Sections. A greater variety of wildfowl and waders were recorded in Section B, largely due to the presence of marshy areas and waterbodies around Transects 12, 13 and 14 to the west of the A1. Conversely, Section A supported a greater diversity of woodland specialists, such as marsh tit (*Poecile palustris*), willow tit and spotted flycatcher (*Muscicapa striata*).
- 4.3.4 Although species of conservation concern were recorded widely across the survey area, certain areas of arable farmland supported particularly high concentrations. These included land around Transect 11 (Figures 4.23-4.24, 5.23-5.24 and 6.23-6.24), the north of Transect 13 and south of Transect 14 (Figures 4.30-4.32, 5.30-5.32 and 6.30-6.32), and especially the northern tip and the southern half of Transect 16 (Figures 4.23-4.27, 5.23-5.27, 6.23-6.27 and 7.25-7.27). This pattern contrasts with that observed on Section A, where species diversity and abundance of birds was influenced more by the greater prevalence of habitat mosaics and features such as farmsteads and residential properties, patches of woodland and waterbodies. In general, the numbers of birds of conservation concern recorded within the survey area were unexceptional or low in the context of their county populations. However, several species, including a number of farmland specialists, occurred in numbers that either exceeded or were close to 1% of their Northumbria populations.
- 4.3.5 Two bird species associated with nearby designated sites were recorded. Golden plover is a non-qualifying species of interest for the Northumbria Coast SPA and Ramsar site. Although the SPA is designated for the species in winter, the Ramsar site supports nationally important numbers of the species in spring/autumn. Redshank is listed as a non-qualifying species of interest for the Northumbria Coast SPA in winter only. Since the only record of golden plover was of three birds flying over, the survey area is considered to be of limited importance for the species during spring passage. Similarly, the nine redshank observed, during one visit only, suggests that the survey area is of limited importance for the species.
- 4.3.6 As a whole, the numbers of birds recorded in the survey area during the 2016 breeding bird surveys were not considered to represent a significant proportion of the UK or Northumbria populations (see Appendix F for population data). Population data are not available to enable comparative quantification of bird populations at the District level and below. Professional judgment, local knowledge and comparisons with population estimates at higher geographical levels have therefore been used to inform the overall evaluation. Based on these sources, the breeding bird assemblage within the survey area is generally considered to be of **District Importance**. It should be noted that the population of gadwall (*Anas strepera*) recorded is considered to be of **Regional Importance**. As it represents almost 4% of the north east region population.

\_\_\_\_\_\_ Version: 2 33 Issued: April 2018

- 4.3.7 Although the UK population has increased significantly in recent years, gadwall was monitored by the rare breeding birds panel until 2010 (Holling *et al.* 2011), and the Northumbria population is still very small (12 breeding pairs (Dean *et al.* 2015). One pair therefore represents 8.33 % of the Northumbria population, whilst two pairs represent 16.67 %. Based on data provided in Holling *et al.* (2011), the population of gadwall recorded within the survey area represents 1.96 % (one pair) to 3.92 % (two pairs) of the North East Region population, which comprised 51 birds in 2009. Therefore, notwithstanding the increasing population of the species, it is considered that the population of gadwall within the survey area is of Regional Importance.
- 4.3.8 The population of yellow wagtail was also of greater than District Importance, as it exceeded the 1 % of the Northumbria breeding population and was therefore valued as of County Importance. At least four breeding territories were suspected, representing 5.56 % of the Northumbria population (72 breeding pairs (Dean *et al.* 2015).
- 4.3.9 Several other farmland specialist species, including tree sparrow, barn owl, oystercatcher and lapwing, also occurred in notably high numbers in the context of the county but did not exceed the 1% threshold.
- 4.3.10 Peak counts of seven other species of conservation concern considered likely to have bred within the survey area (i.e. those classified as confirmed, probable or possible breeders in accordance with the BTO's Bird Atlas 2007-2011 criteria (Balmer et al. 2013)) exceeded 1 % of their Northumbria breeding populations (based on Dean et al. 2015): greylag goose (45 birds, representing 5.11 % of the Northumbria population), lapwing (136 birds, representing 1.33 % of the Northumbria population), mallard (72 birds, representing 3.00 % of the Northumbria population), mute swan (four birds, representing 1.43 % of the Northumbria population), redshank (nine birds, representing 1.15 % of the Northumbria population), shelduck (five birds, representing 2.50 % of the Northumbria population) and teal (10 birds, representing 17.24 % of the Northumbria population). However, the majority of these peak counts are thought to include a significant proportion of wintering or non-breeding individuals. With the possible exception of mallard (for which numerous records of flying birds made it difficult to assess the number of pairs present), the numbers of pairs of these species breeding within the survey area are likely to be below these peak count levels and are not considered to exceed 1 % of their Northumbria populations.
- 4.3.11 Based on the results of the breeding bird surveys carried out in 2016, the following areas were identified as particularly important for breeding birds. Transect 11. Important for farmland species of conservation concern, including passerines (notably yellow wagtail), waders (particularly in the south) and other non-passerines such as grey partridge.
  - Transect 12. Passerines of conservation concern, including several nesting pairs of tree sparrow, were concentrated around Heckley Fence farm
  - Transect 13. In the south a localised concentration of passerines of conservation concern was present around Heiferlaw Bank farm, and the ponds were relatively important for waterfowl. The northern half of the transect was important for farmland passerines, and particularly waders.
  - Transect 14. In the southwest, South Charlton and Brockley Hall farm supported a variety of passerines of conservation concern. A pair of gadwall probably bred in the southeast.
  - Transect 15. A pair of gadwall possibly bred in the south, whilst the north supported several farmland species of conservation concern.
  - Transect 16. One of the best areas of the scheme for farmland species of conservation concern. The north and the southern half were particularly important,

\_\_\_\_\_ Version: 2 34 Issued: April 2018

supporting high numbers of farmland passerines, waders and other non-passerines such as grey partridge and barn owl.

- 4.3.12 It is important to note that this evaluation is based on a survey area that covered three options, and therefore included areas further than 500m from the single option currently under consideration. However, the areas where yellow wagtail and gadwall were observed remain within the current 500 m buffer, and therefore the evaluation given would remain unchanged if only data from within 500m of the online option were taken into account.
- 4.3.13 Areas of bird abundance for Section B are mapped on Figure 8.2.

### 4.4 Conclusion

- 4.4.1 Based on the results of the breeding bird surveys carried out in relation to the scheme during 2016 the breeding bird assemblage in Section A has been evaluated as of **County Importance**, whilst that in Section B has been evaluated as of **District Importance**. It should be noted that the population of gadwall (*Anas strepera*) recorded is considered to be of **Regional Importance**. As it represents almost 4% of the north east region population.
- 4.4.2 It is acknowledged that both the number of important bird areas and the numbers of species with populations above 1 % of their Northumbria populations may fluctuate over time. However, the 2016 surveys covered significant proportions of both Sections A and B and, based on a review of aerial imagery and the results of the Extended Phase 1 Habitat Survey for the scheme, the survey transects are generally considered to have included a representative sample of the habitats present within both Sections A and B. It is therefore considered that the data gathered has provided a reliable characterisation of the breeding bird assemblage within the survey area as a whole. On the basis of this review, together with a review of the breeding bird data captured to date, it is considered unlikely that additional survey work would record new features (e.g. a nationally significant breeding bird population) that could significantly alter the overall valuations for Section A and Section B presented in this report.

Version: 2
35 Issued: April 2018

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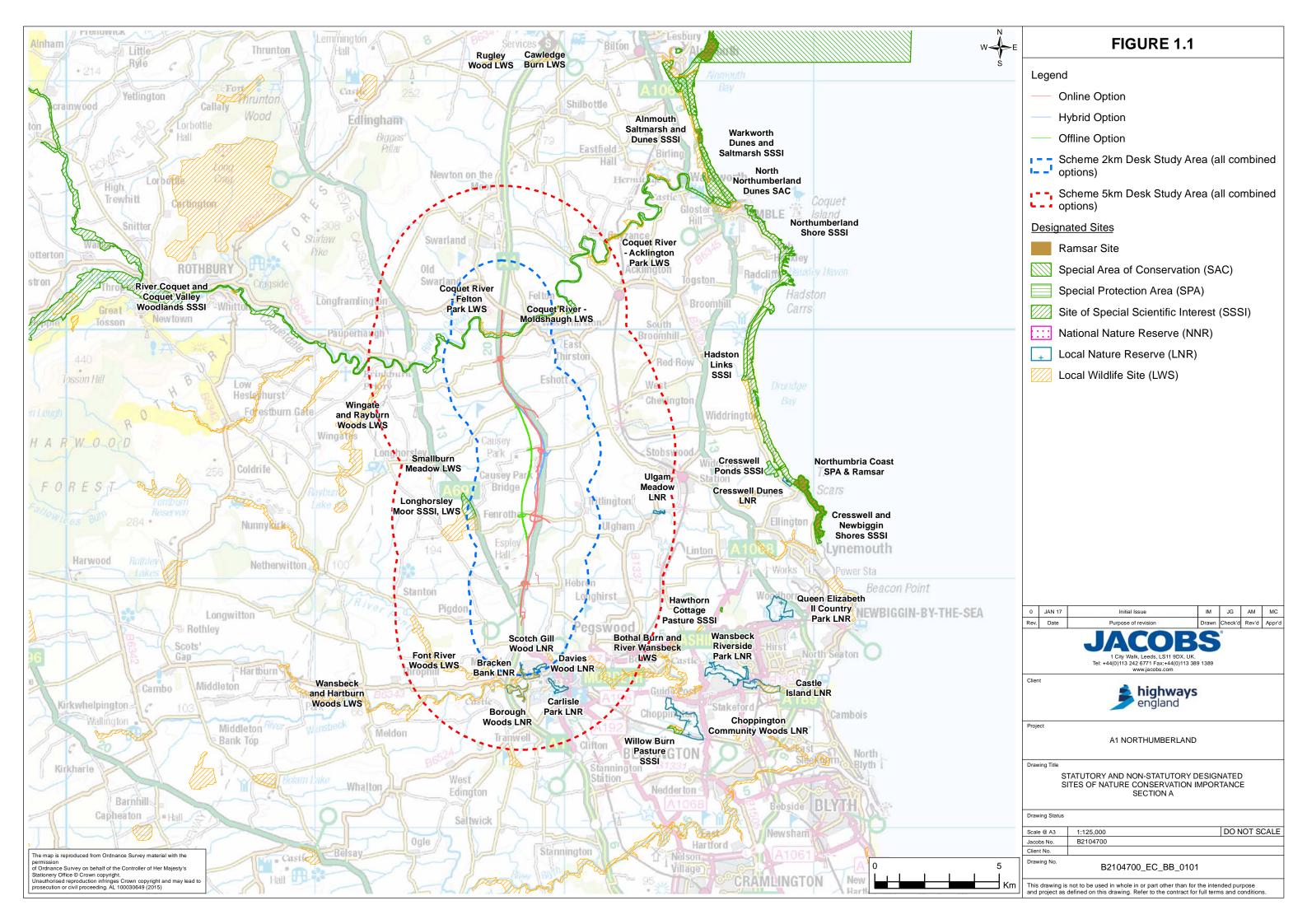
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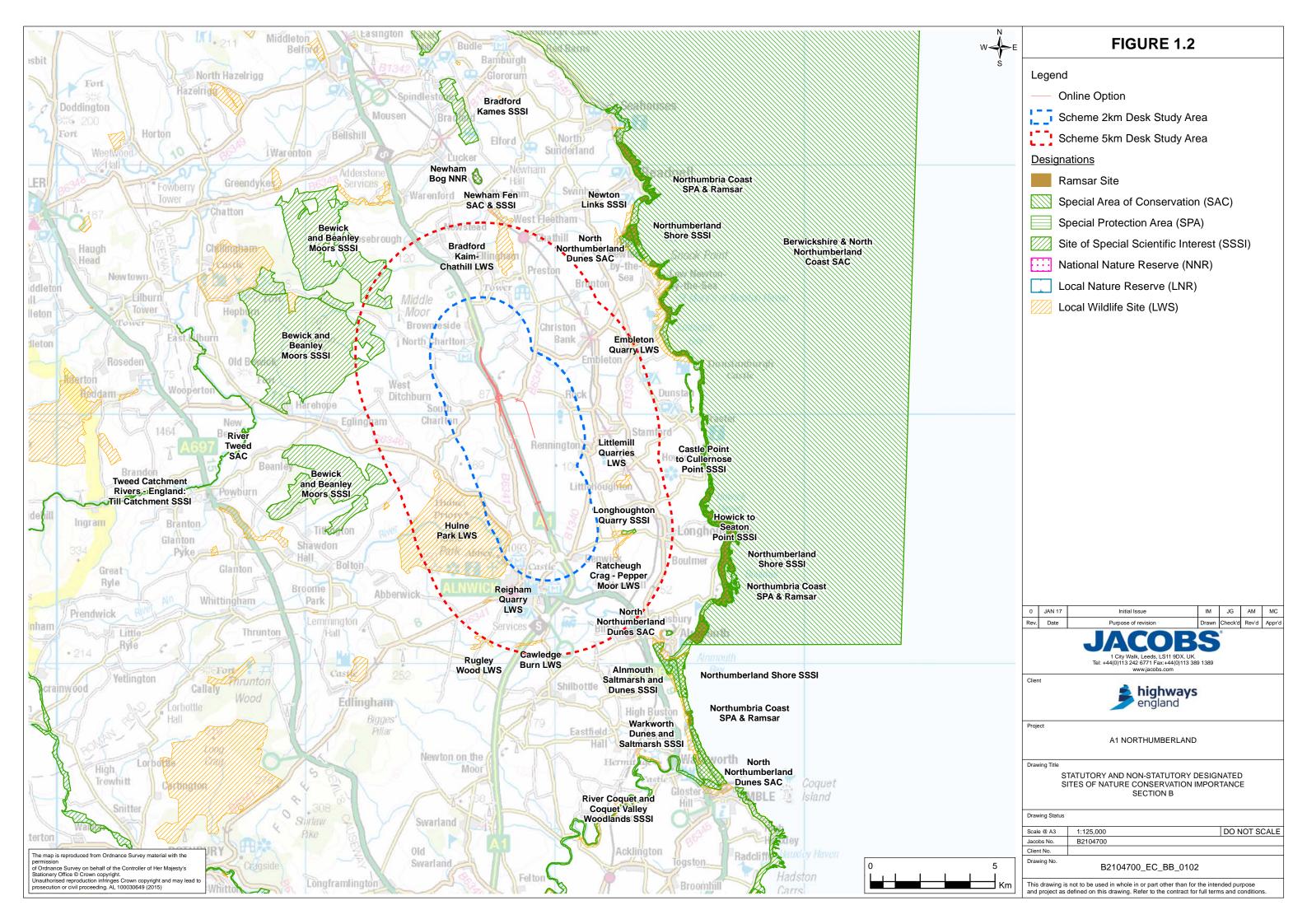
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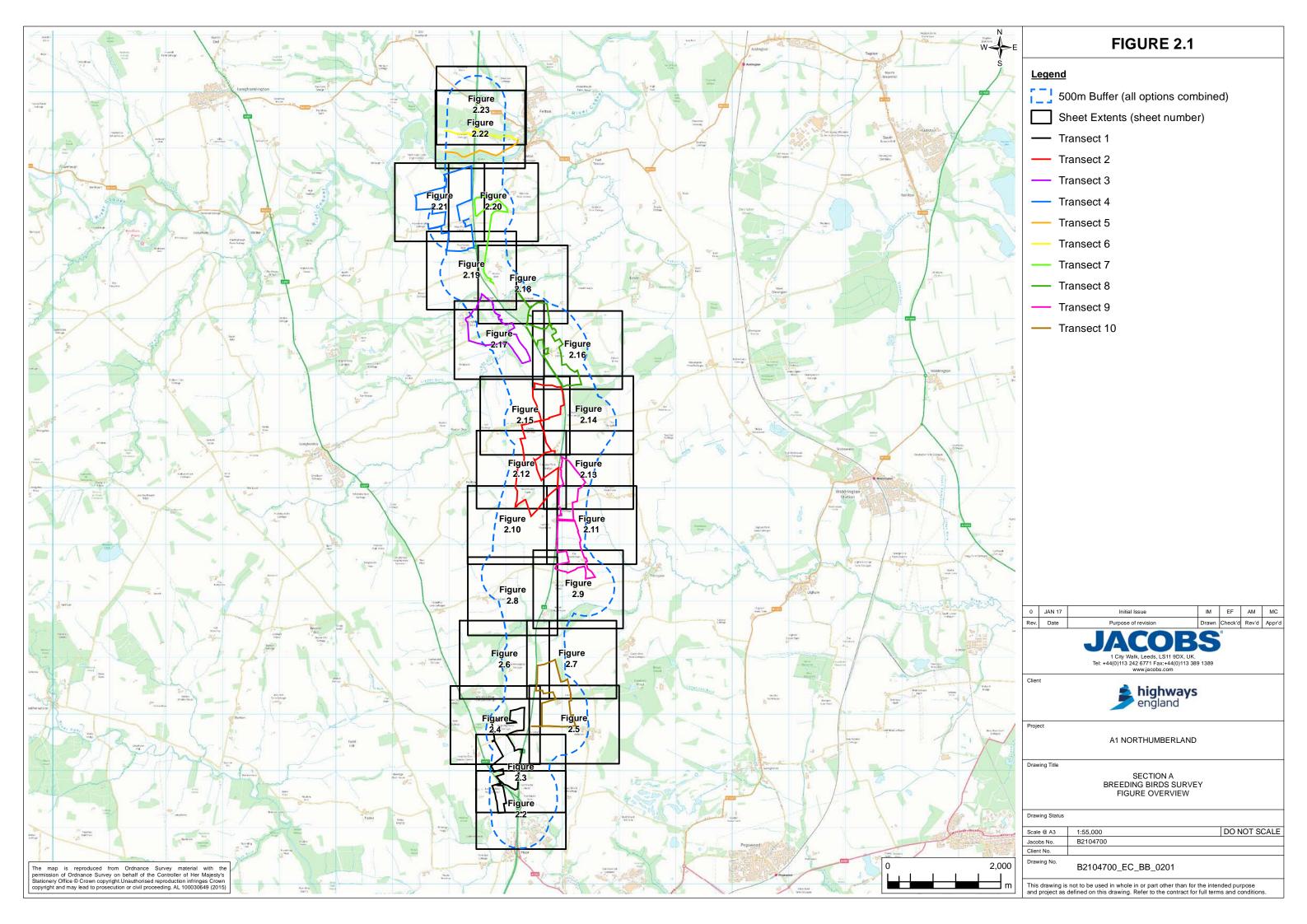
### **FIGURES**

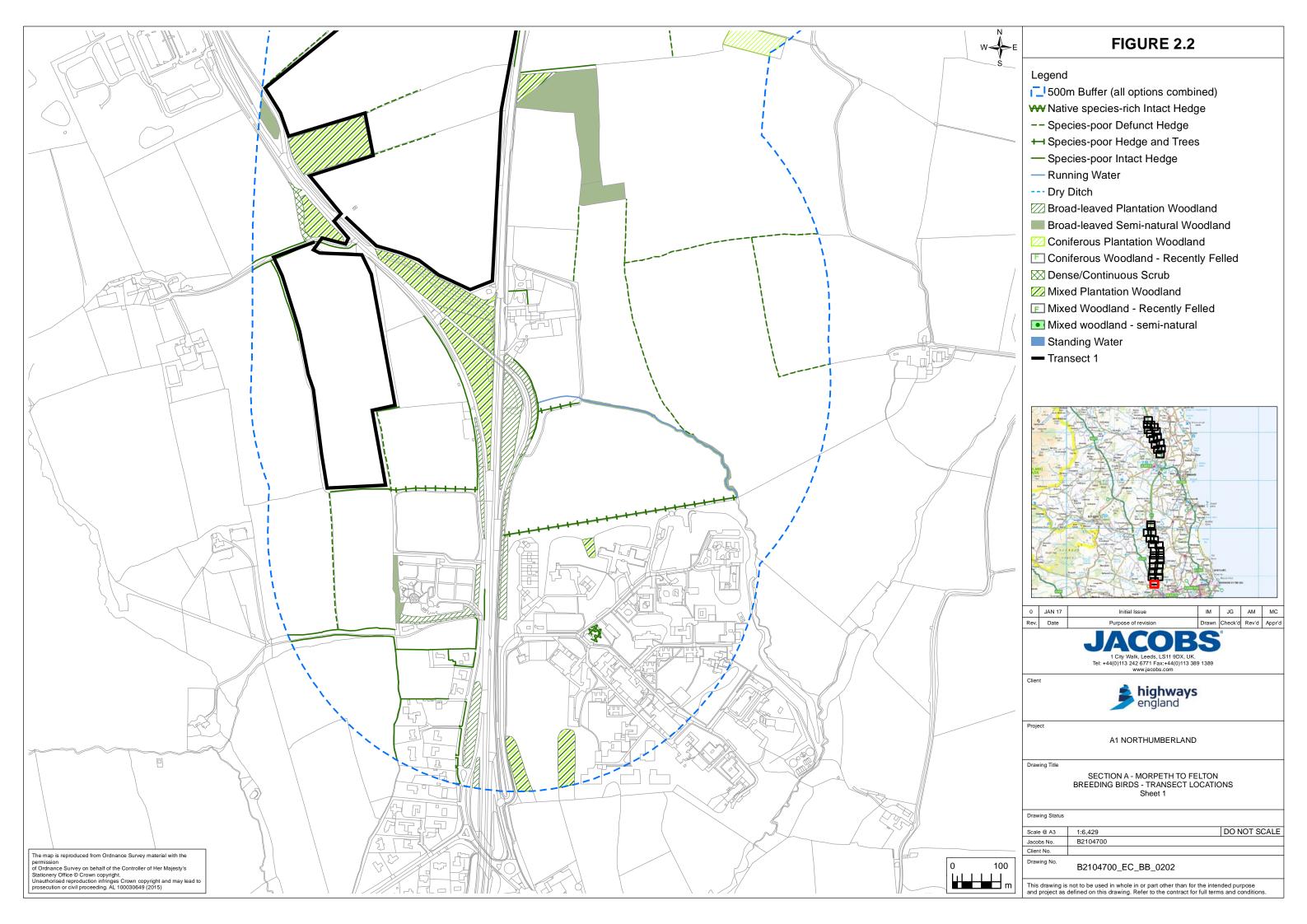
Figure 1.1	Statutory and Non-Statutory Designated Sites of Nature Conservation Importance – Section A
Figure 1.2	Statutory and Non-Statutory Designated Sites of Nature Conservation Importance – Section B
Figure 2.1	Section A – Breeding Birds Survey Figure Overview
Figures 2.2-2.23	Section A – Morpeth to Felton: Breeding Birds – Transect Locations
Figure 3.1	Section B – Breeding Birds Survey Figure Overview
Figures 3.2-3.15	Section B – Alnwick to Ellingham: Breeding Birds – Transect Locations
Figures 4.1-4.22	Section A – Morpeth to Felton: Breeding Birds Survey 1
Figures 4.23-4.36	Section B – Alnwick to Ellingham: Breeding Birds Survey 1
Figures 5.1-5.22	Section A – Morpeth to Felton: Breeding Birds Survey 2
Figures 5.23-5.36	Section B – Alnwick to Ellingham: Breeding Birds Survey 2
Figures 6.1-6.22	Section A – Morpeth to Felton: Breeding Birds Survey 3
Figures 6.23-6.36	Section B – Alnwick to Ellingham: Breeding Birds Survey 3
Figures 7.1-7.22	Section A – Morpeth to Felton: Breeding Birds Survey 4
Figures 7.23-7.36	Section B – Alnwick to Ellingham: Breeding Birds Survey 4
Figure 8.1	Section A – Breeding Bird Abundance
Figure 8.2	Section B – Breeding Bird Abundance

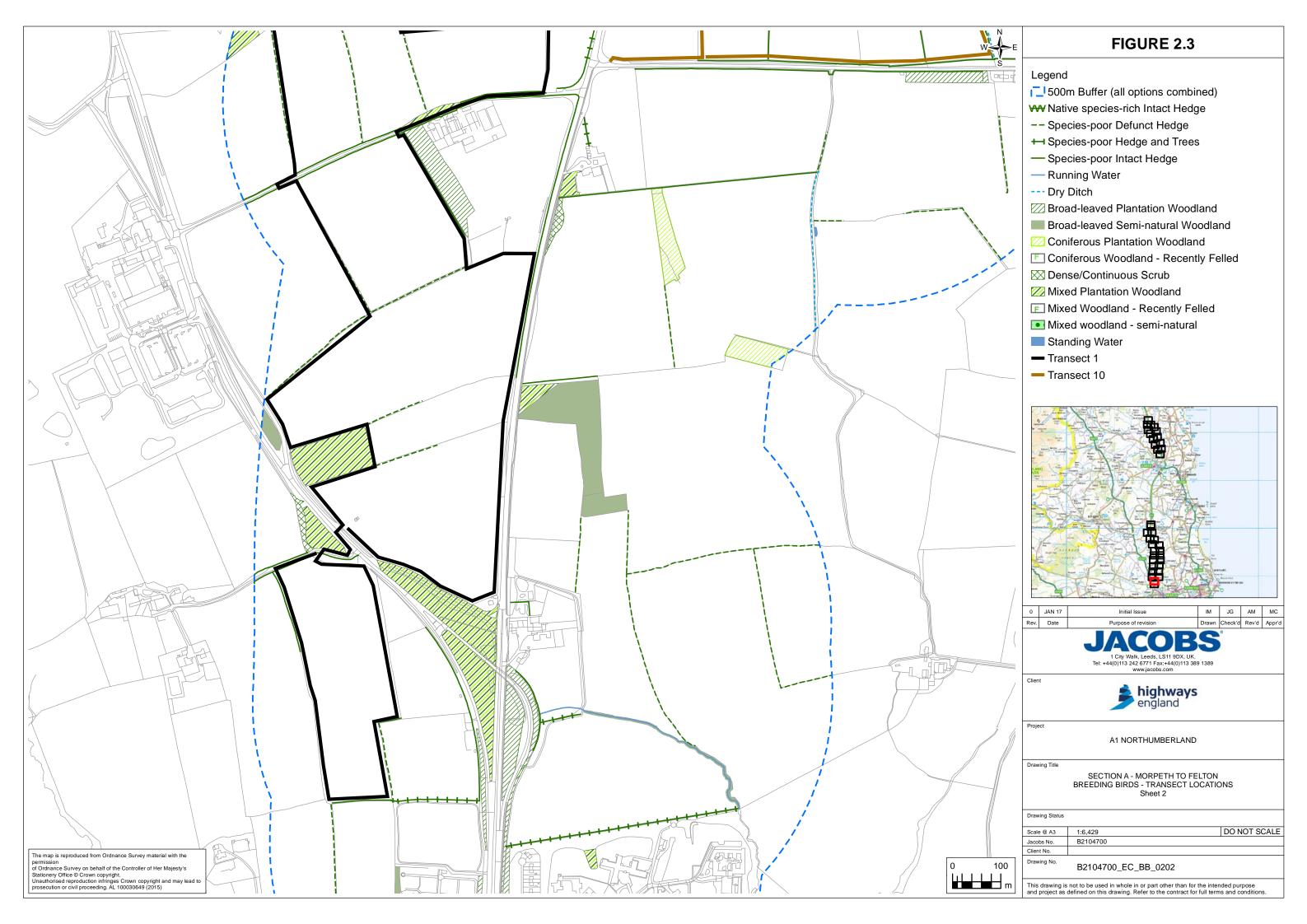
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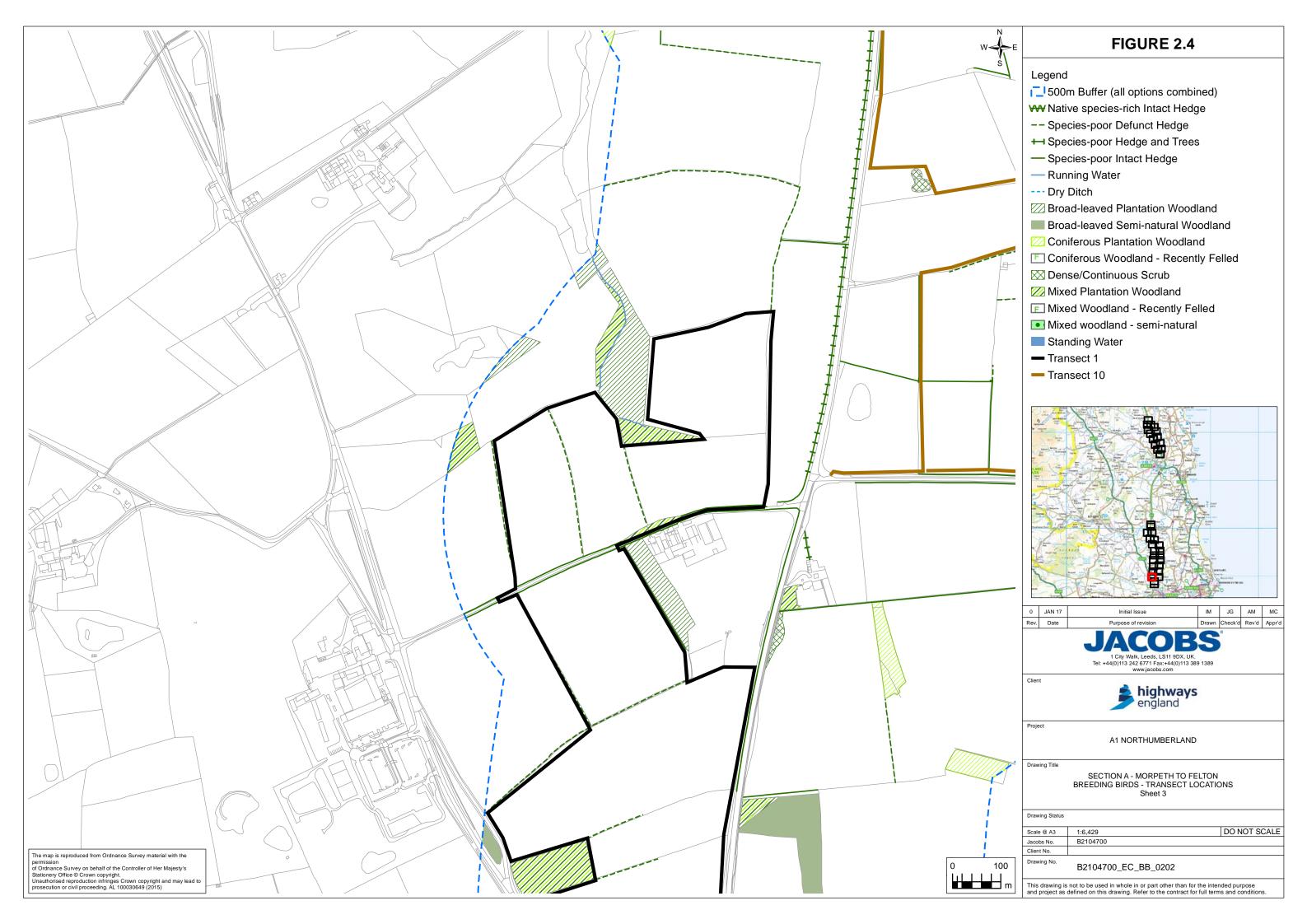


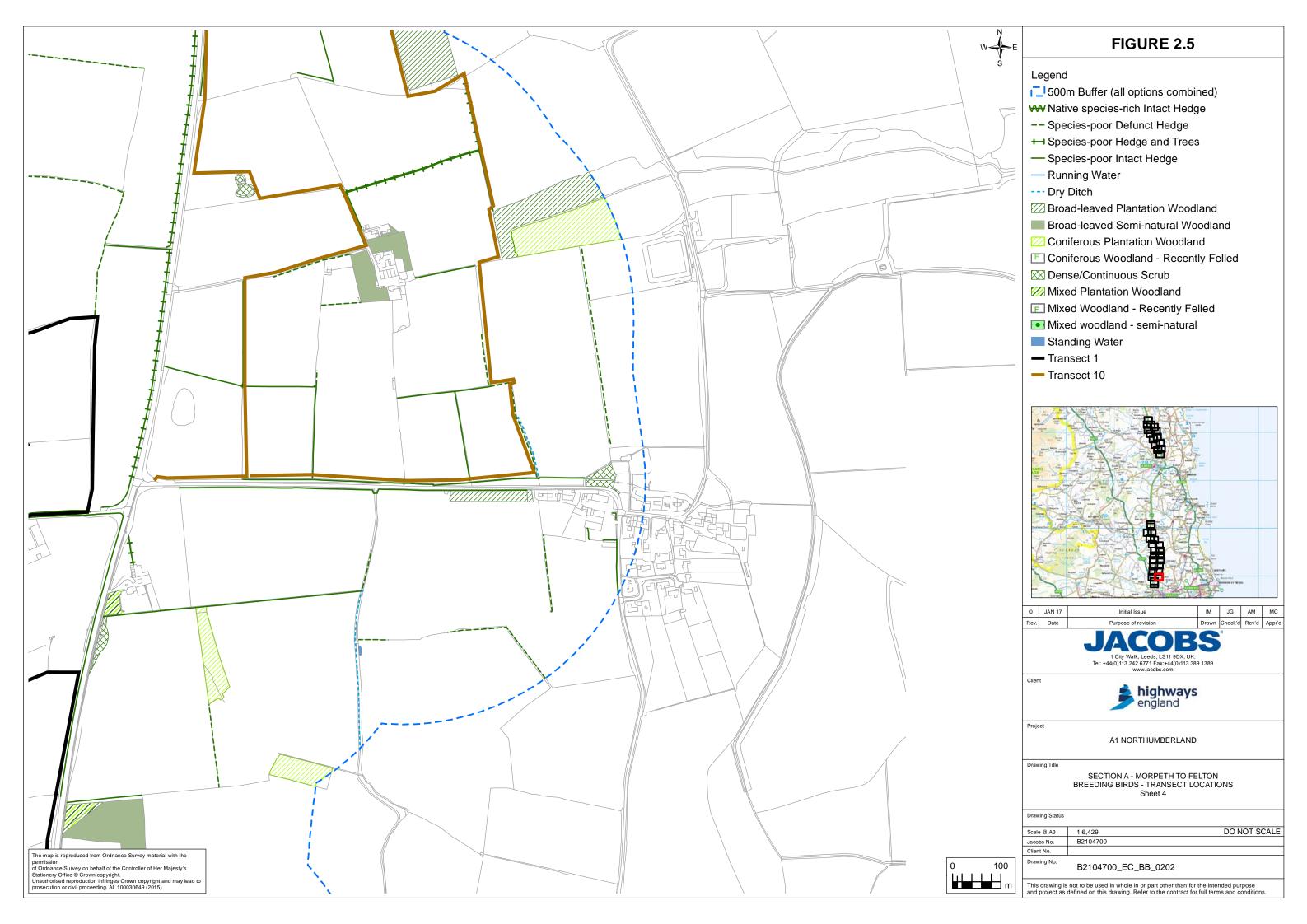


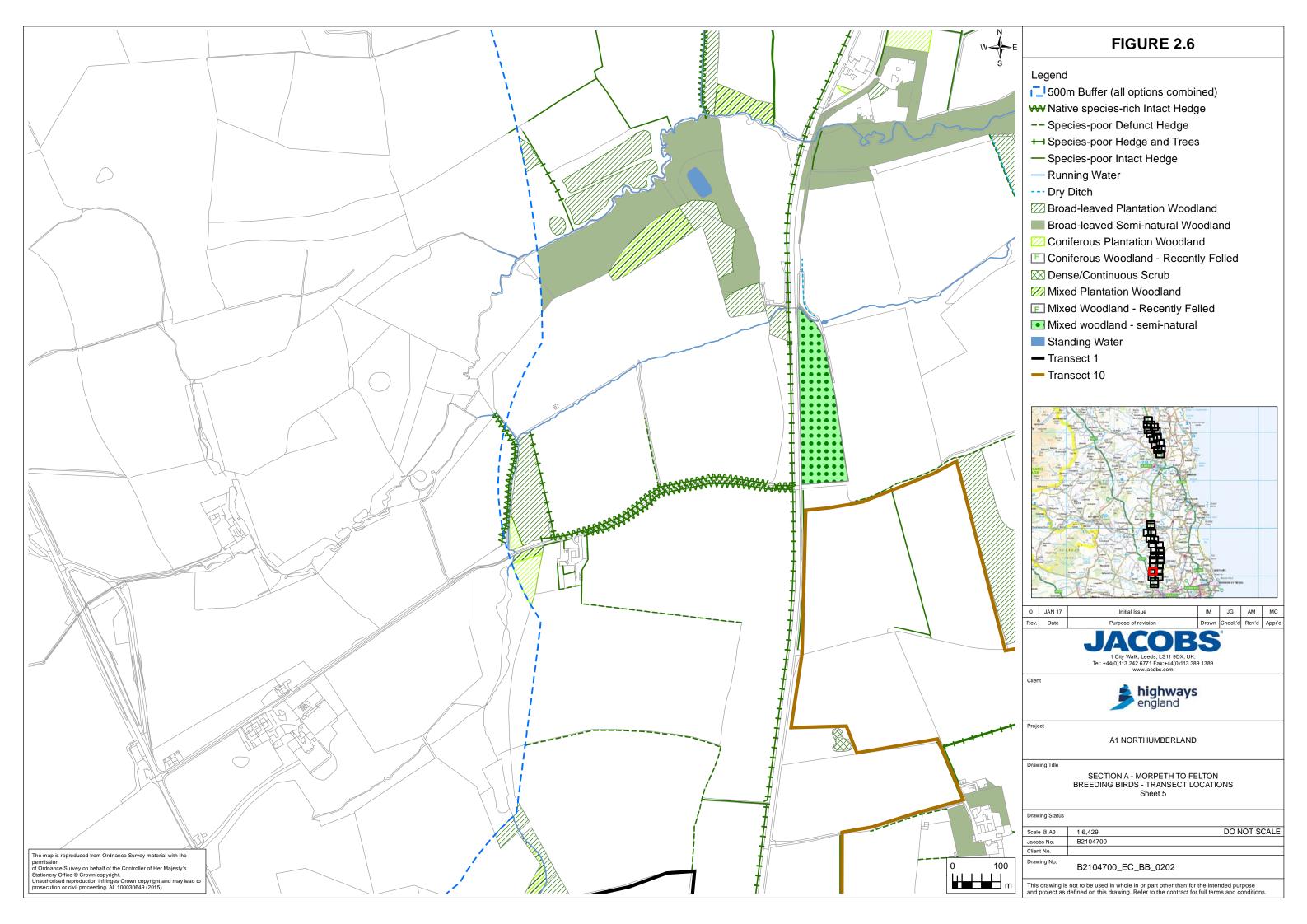


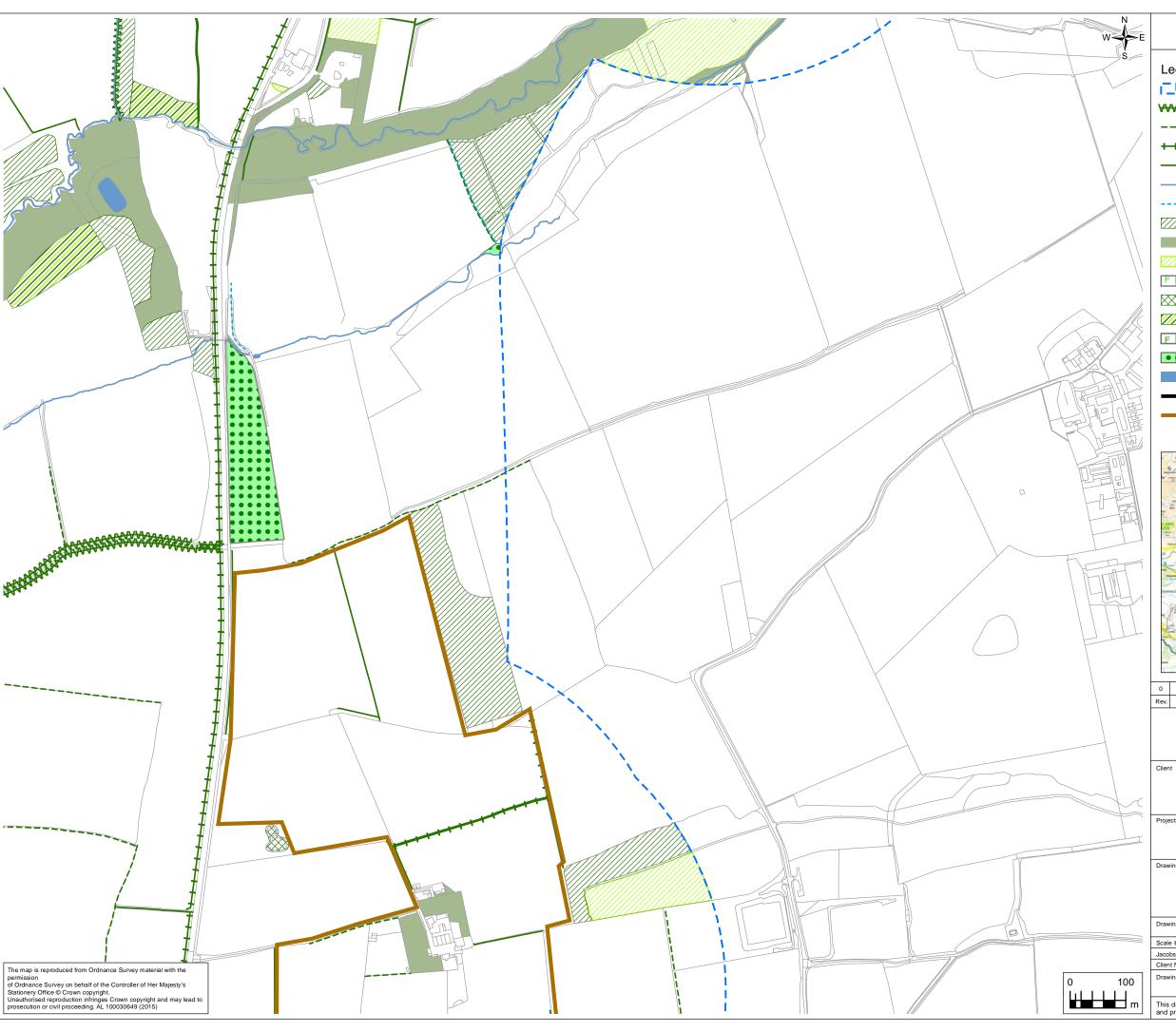












### FIGURE 2.7

### Legend

500m Buffer (all options combined)

₩ Native species-rich Intact Hedge

- -- Species-poor Defunct Hedge
- → Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- --- Dry Ditch
- **Broad-leaved Plantation Woodland**
- Broad-leaved Semi-natural Woodland
- Coniferous Plantation Woodland
- E Coniferous Woodland Recently Felled
- □ Dense/Continuous Scrub
- Mixed Plantation Woodland
- F Mixed Woodland Recently Felled
- Mixed woodland semi-natural
- Standing Water
- Transect 1
- Transect 10



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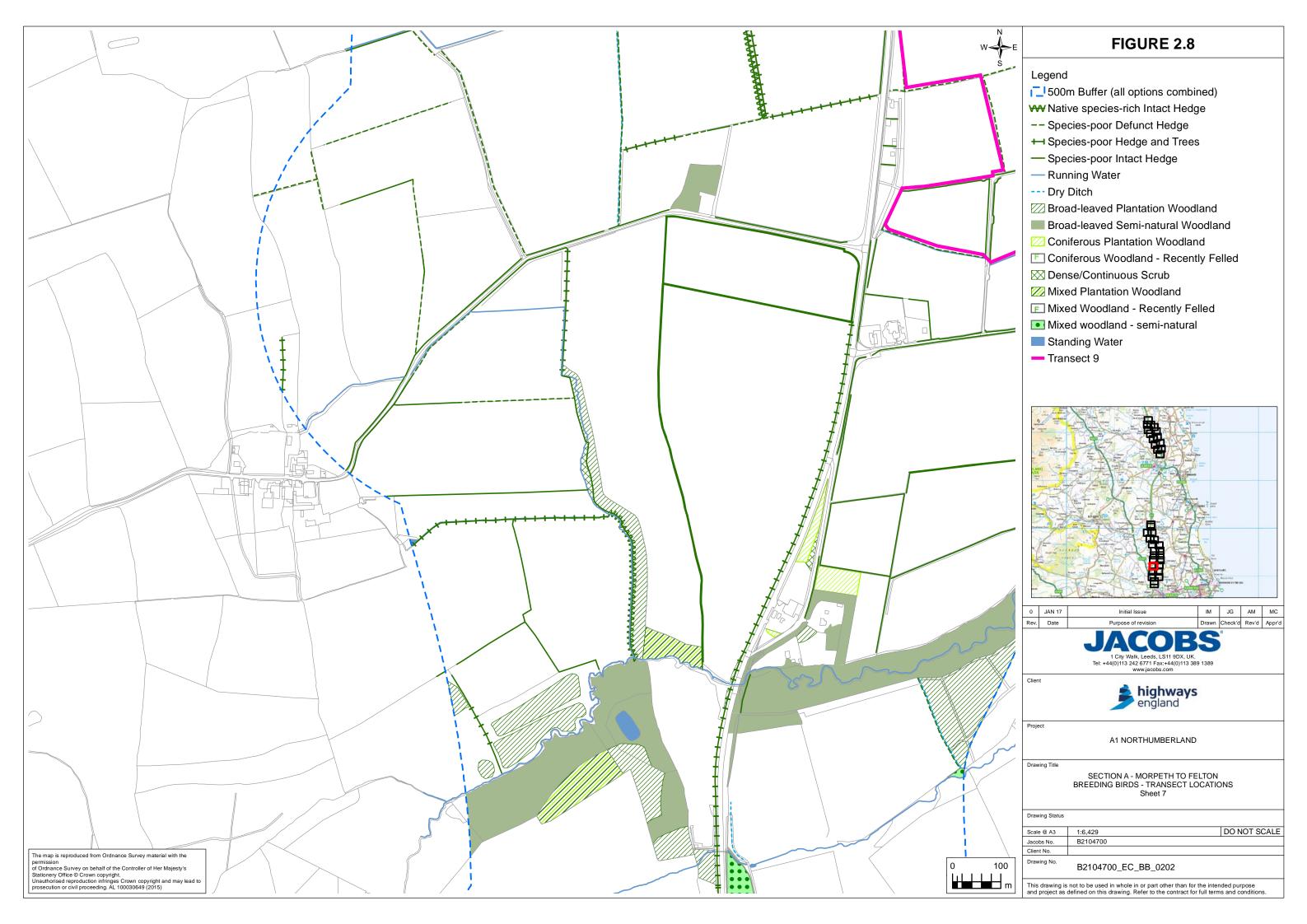
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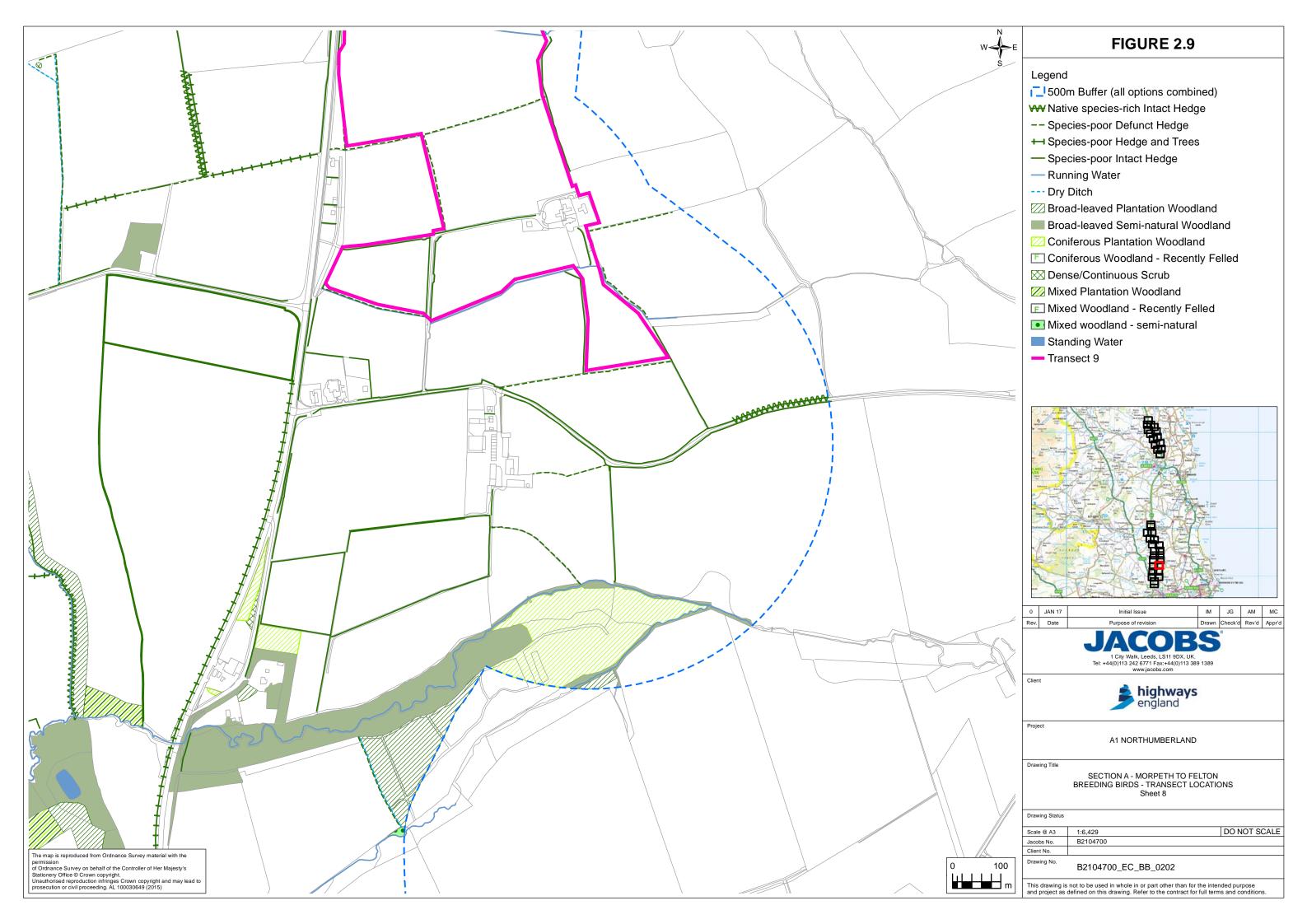
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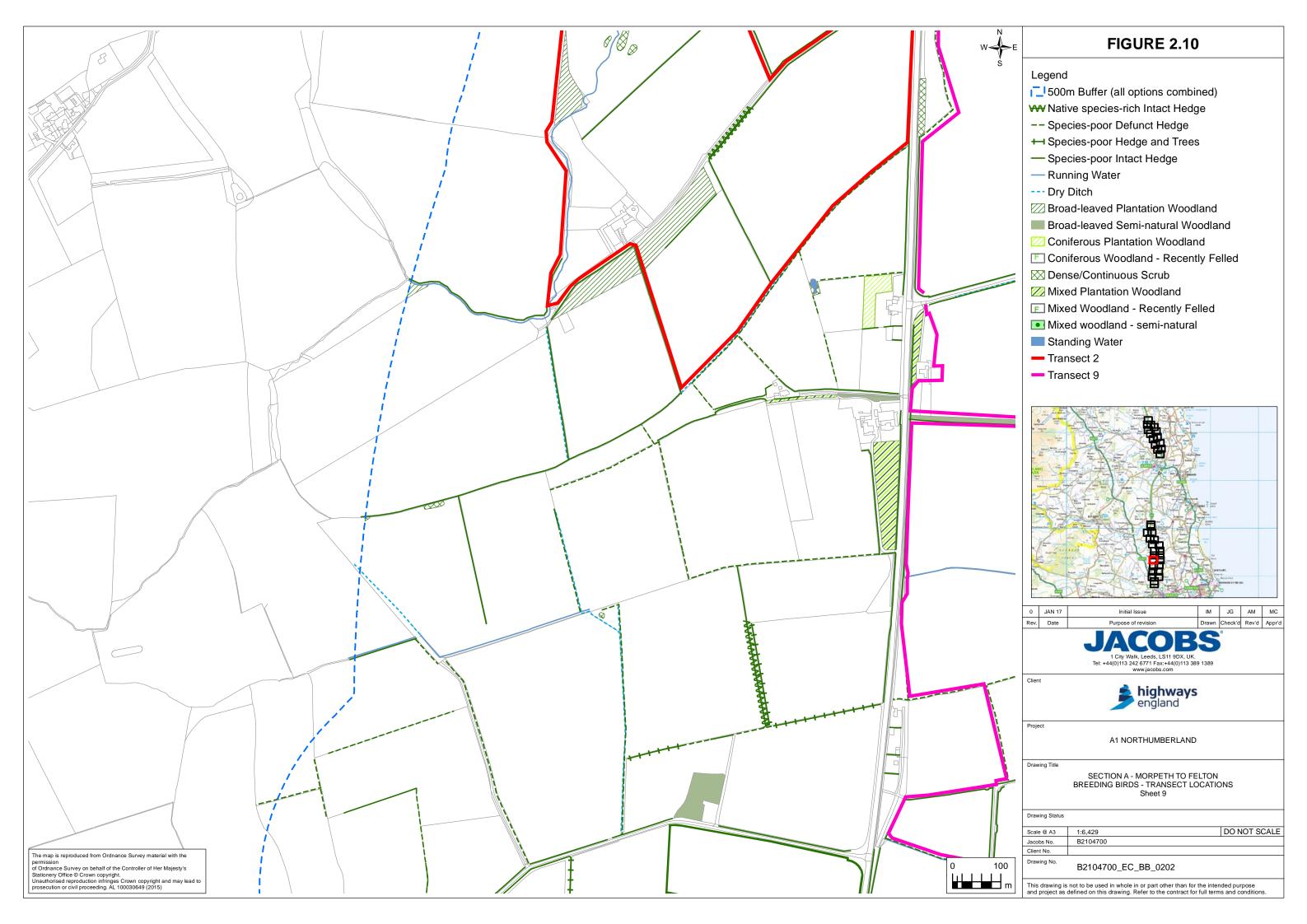
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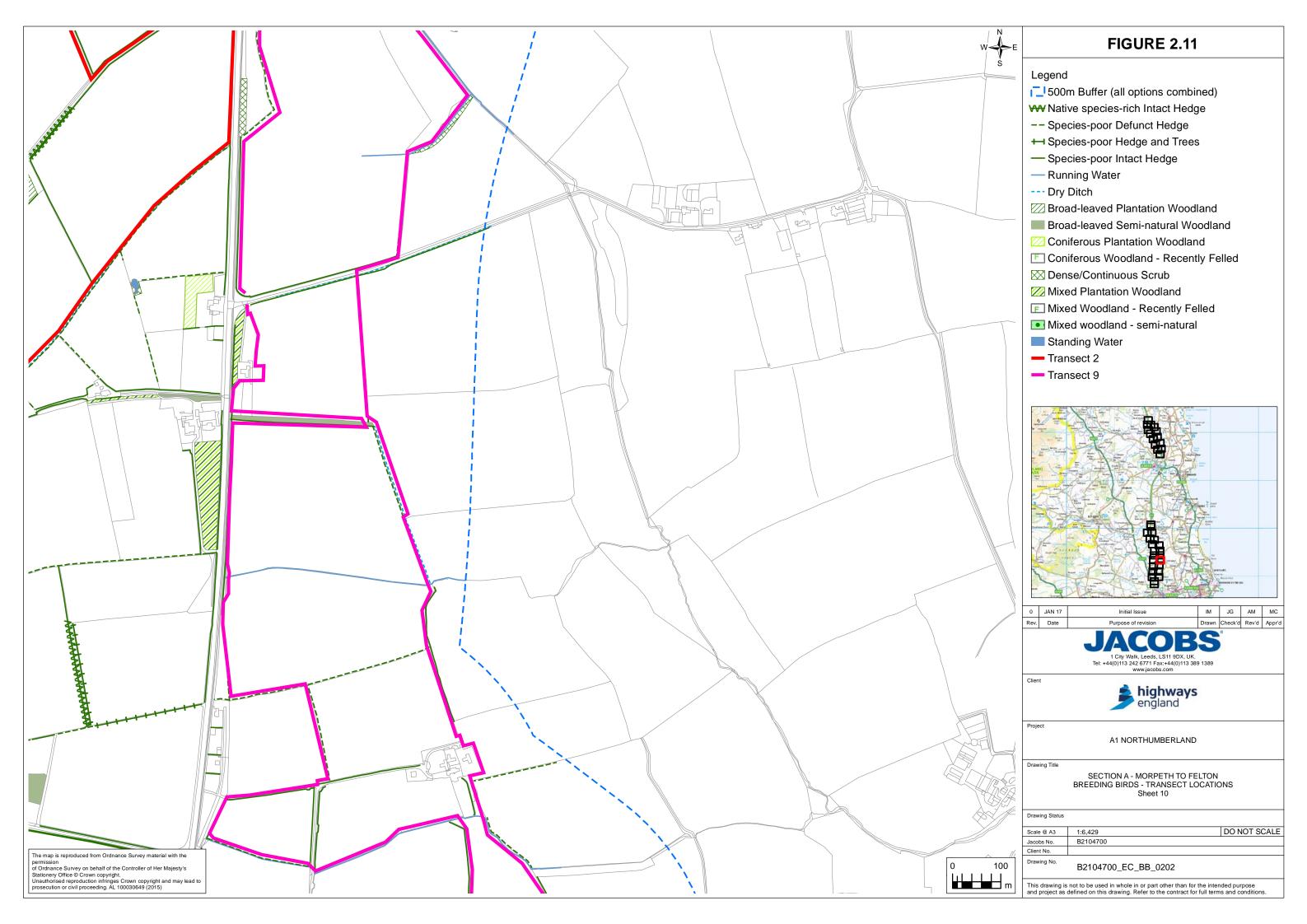
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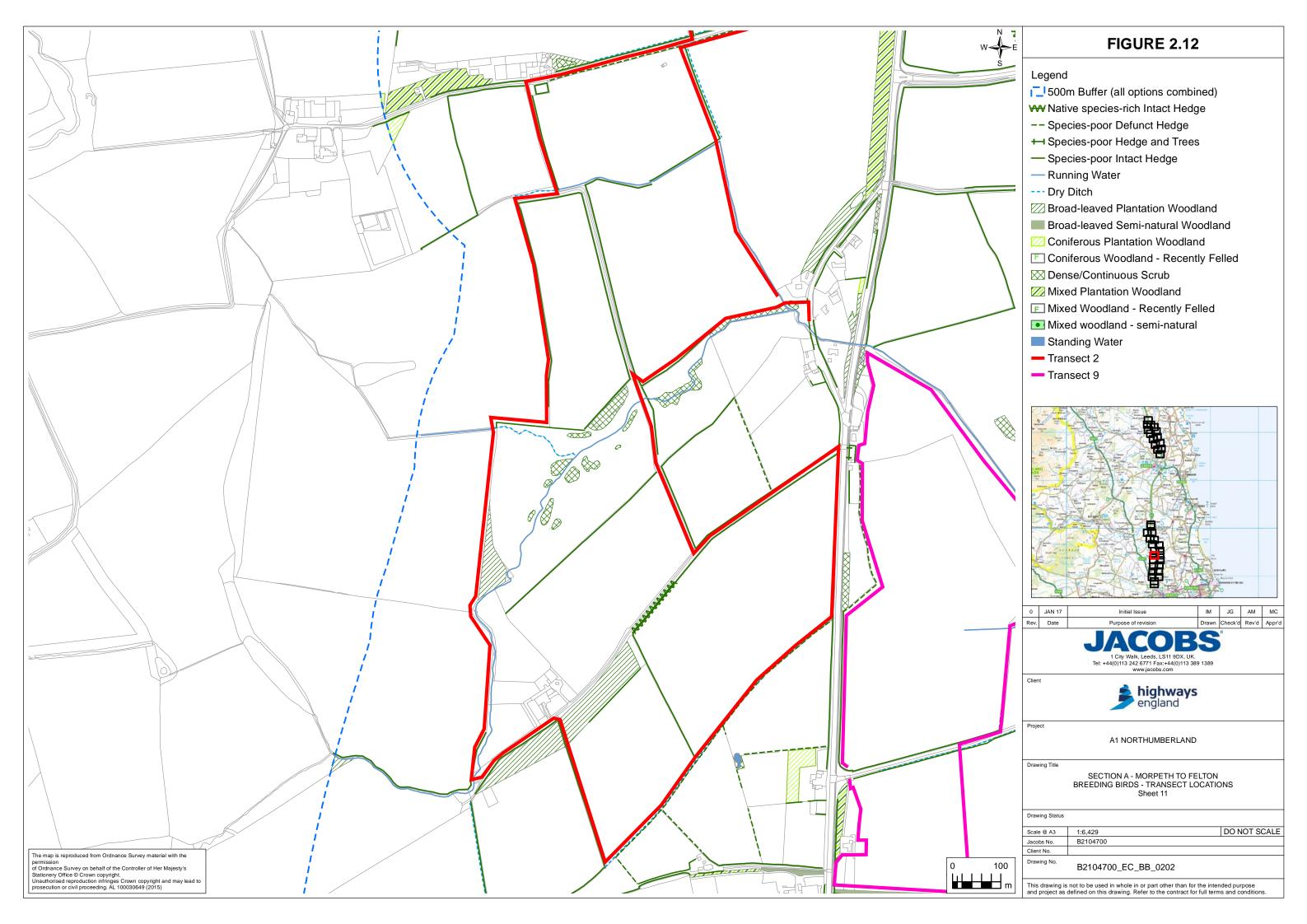
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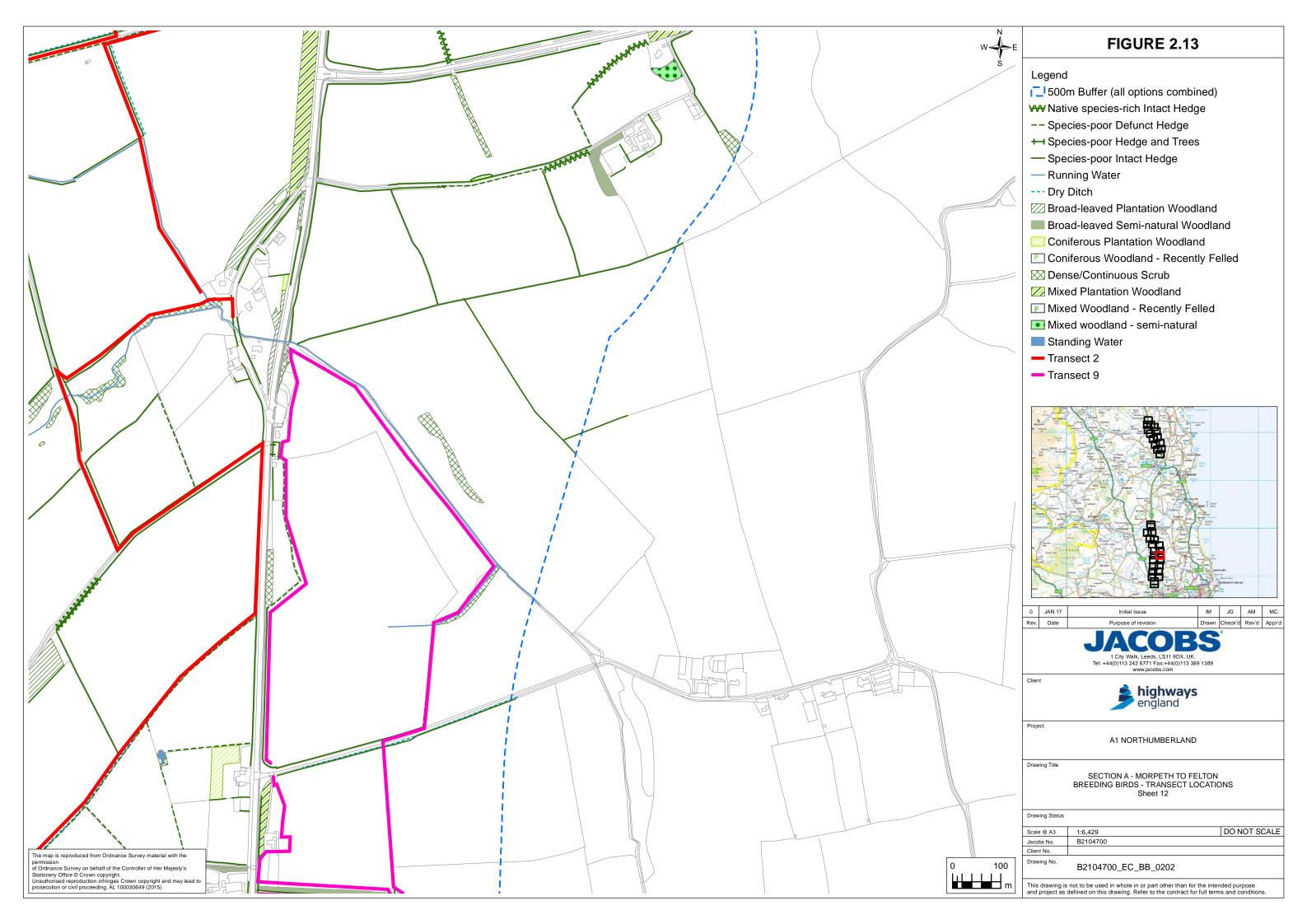


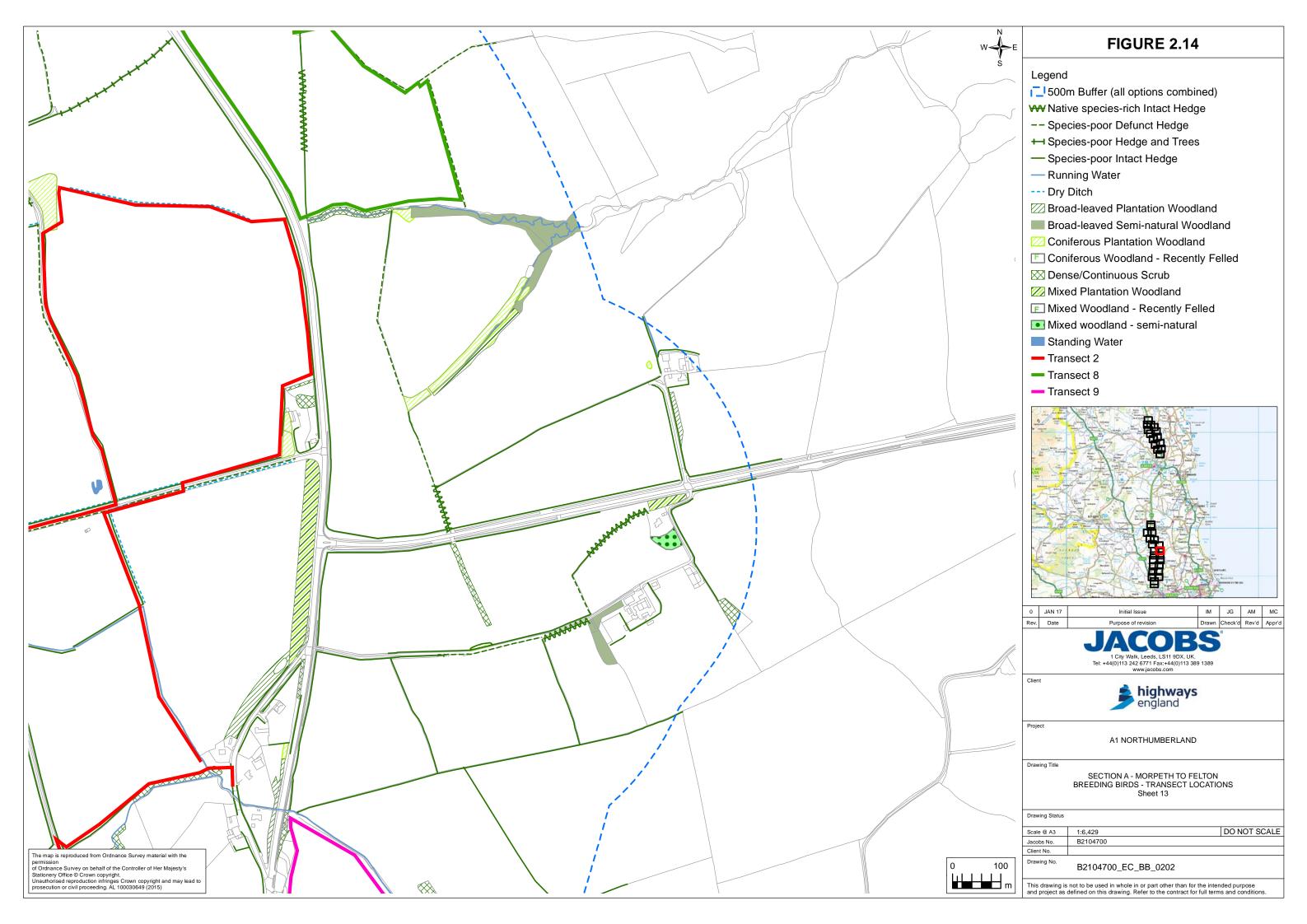


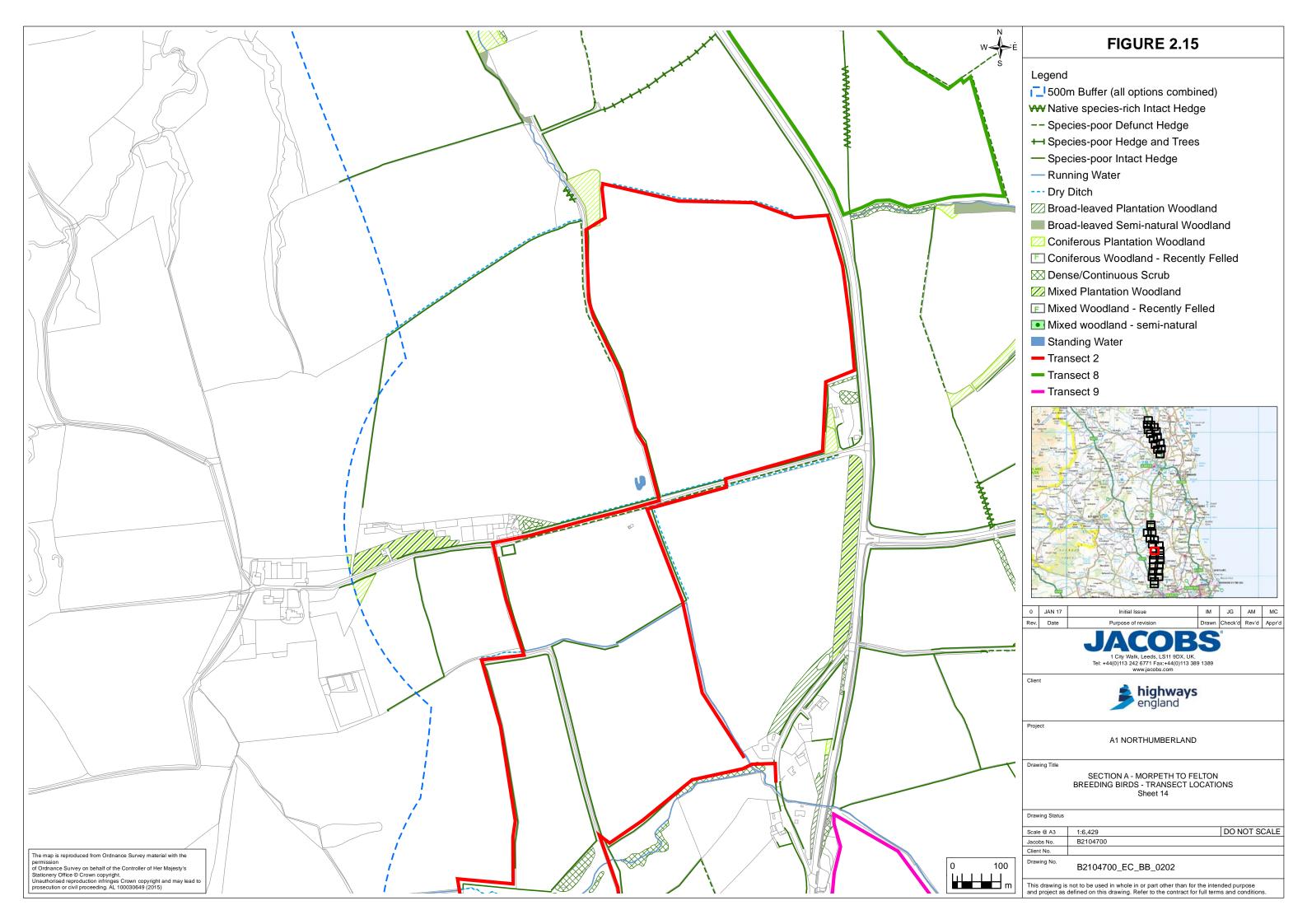


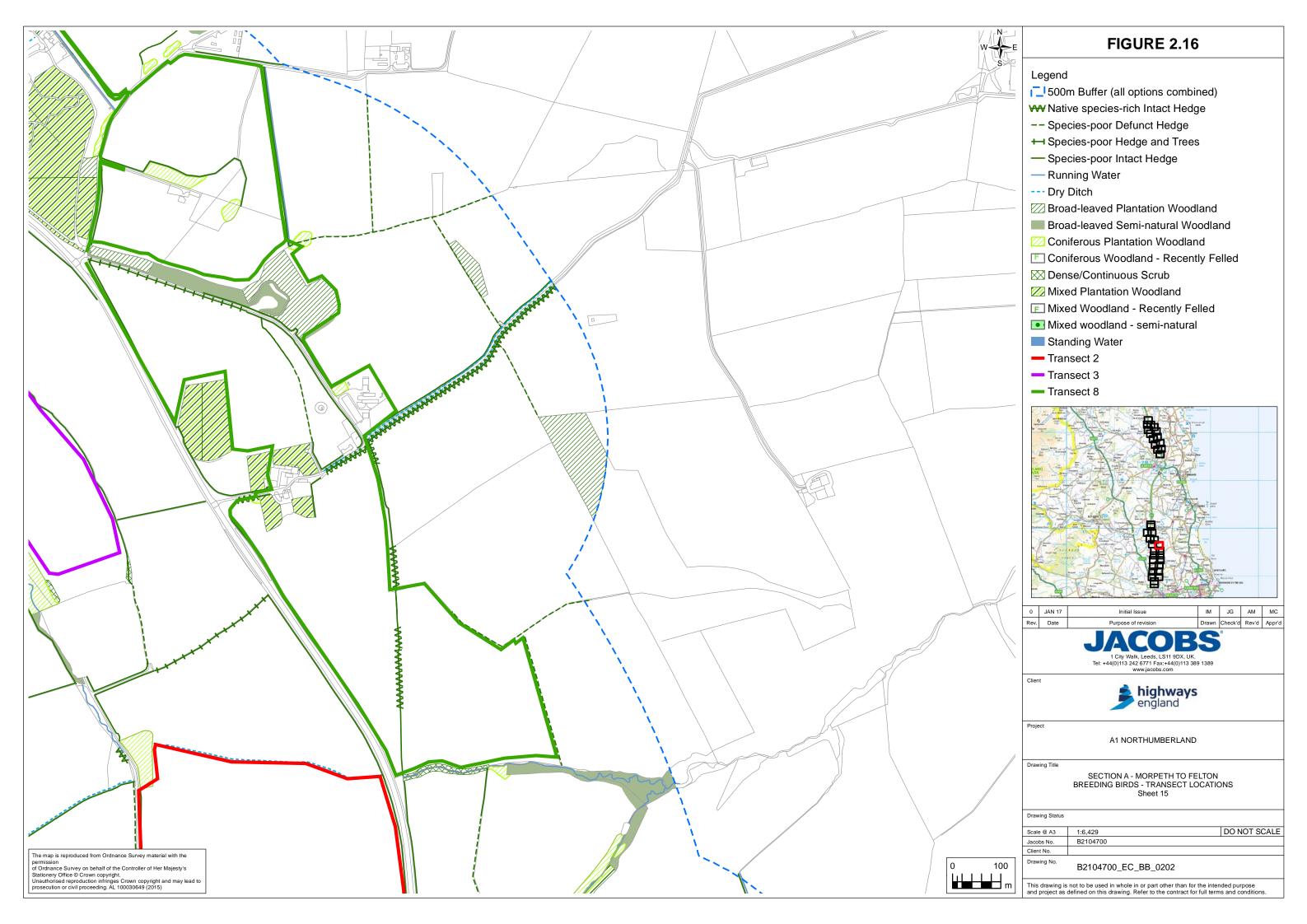


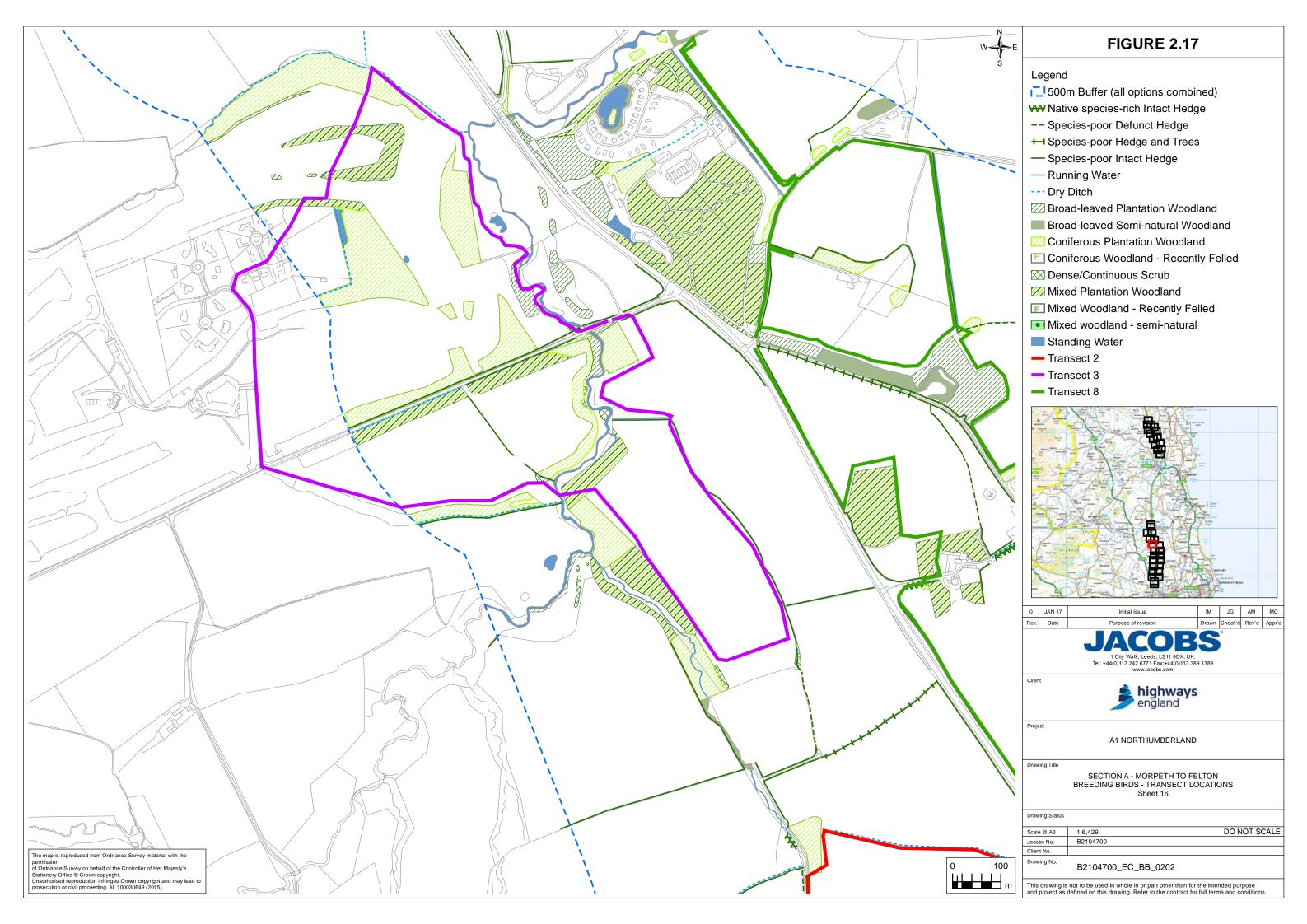


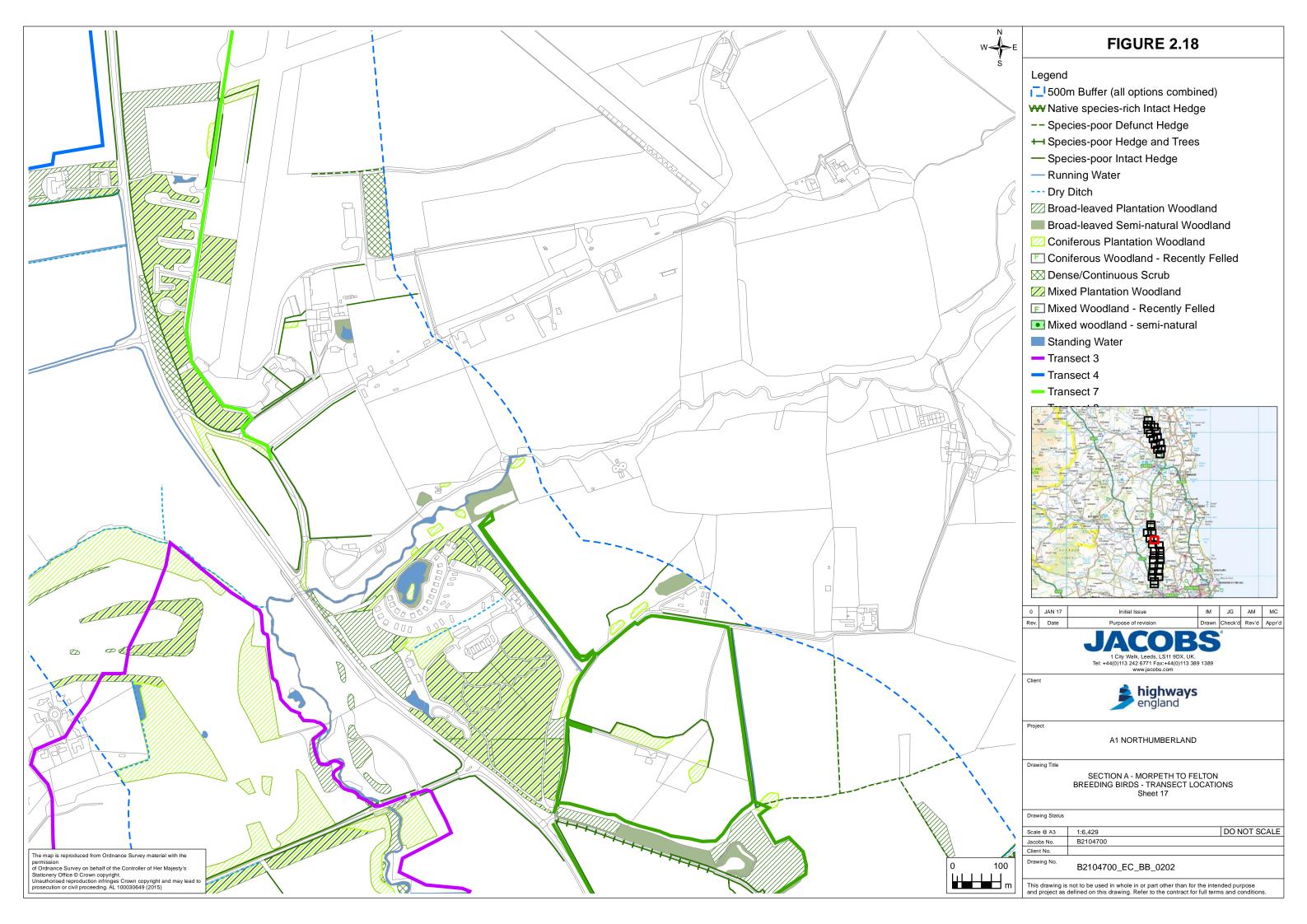


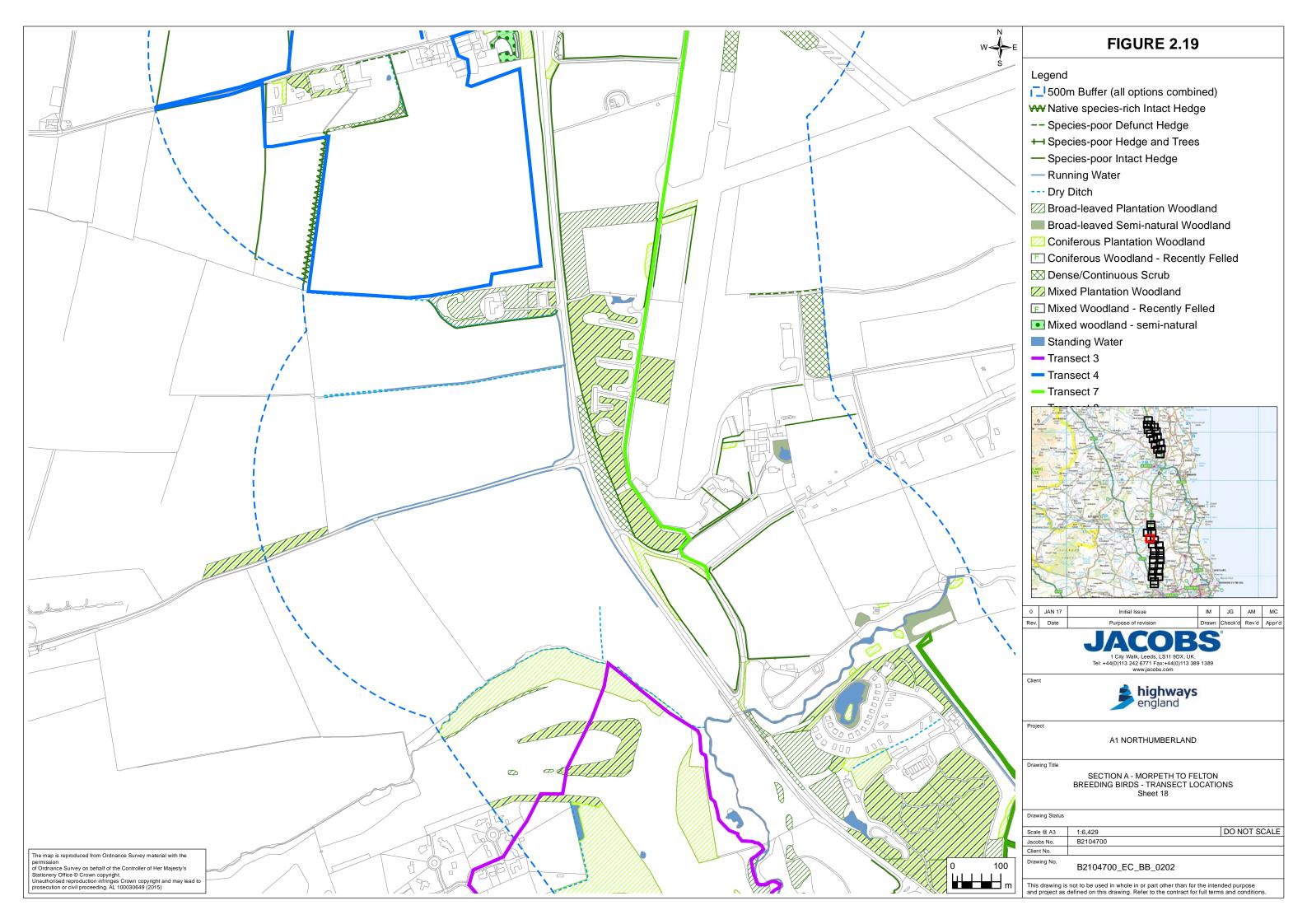


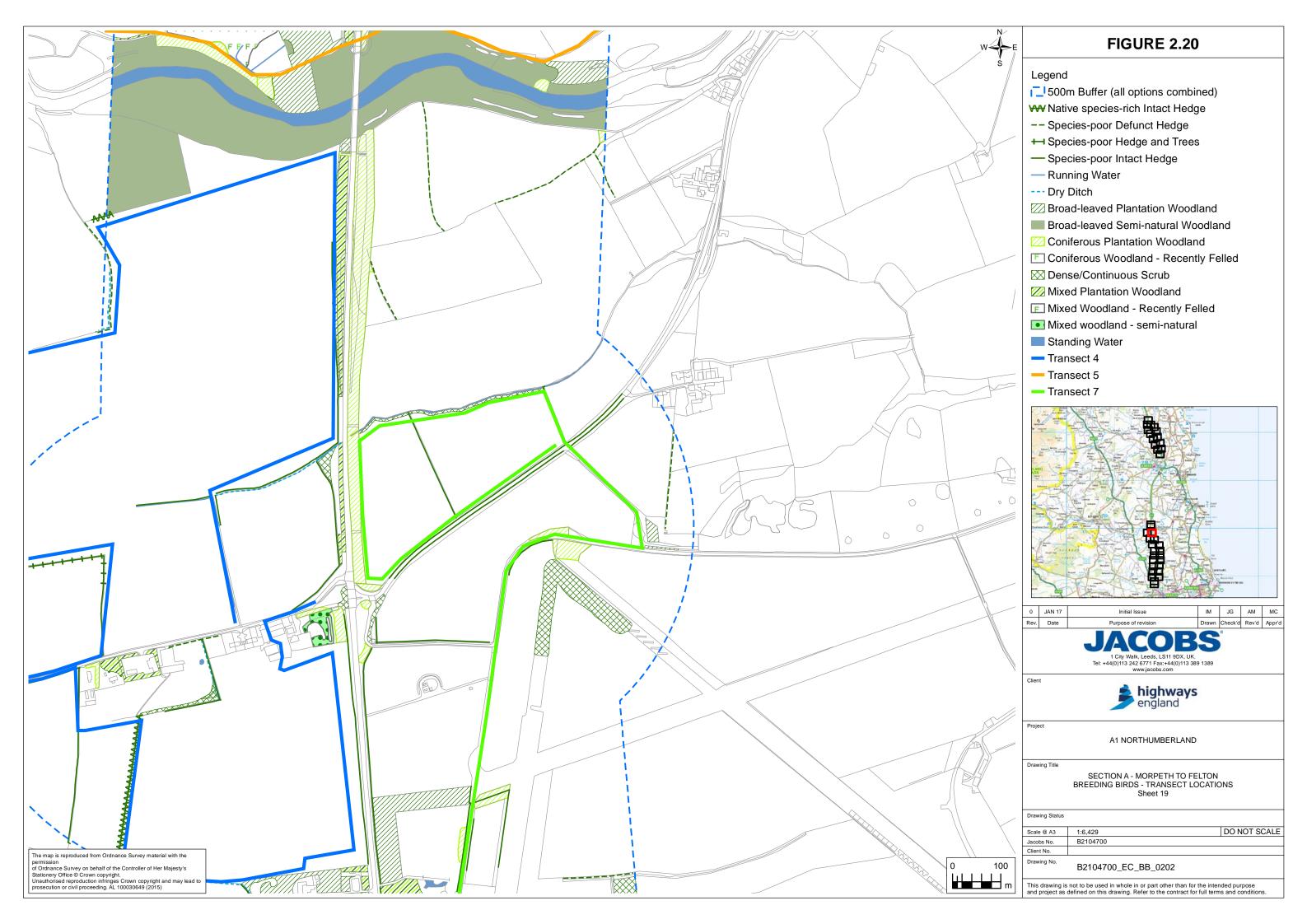


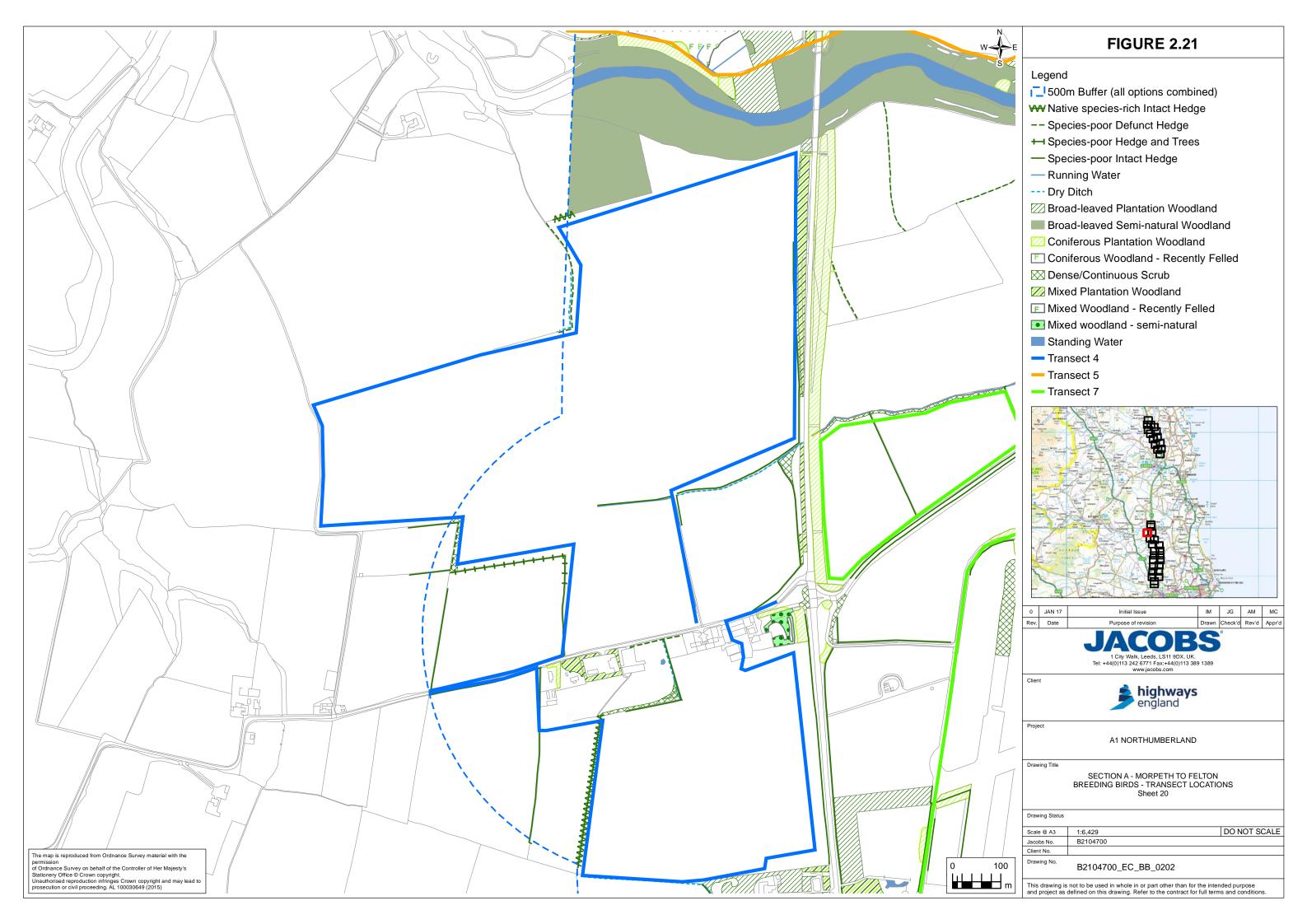


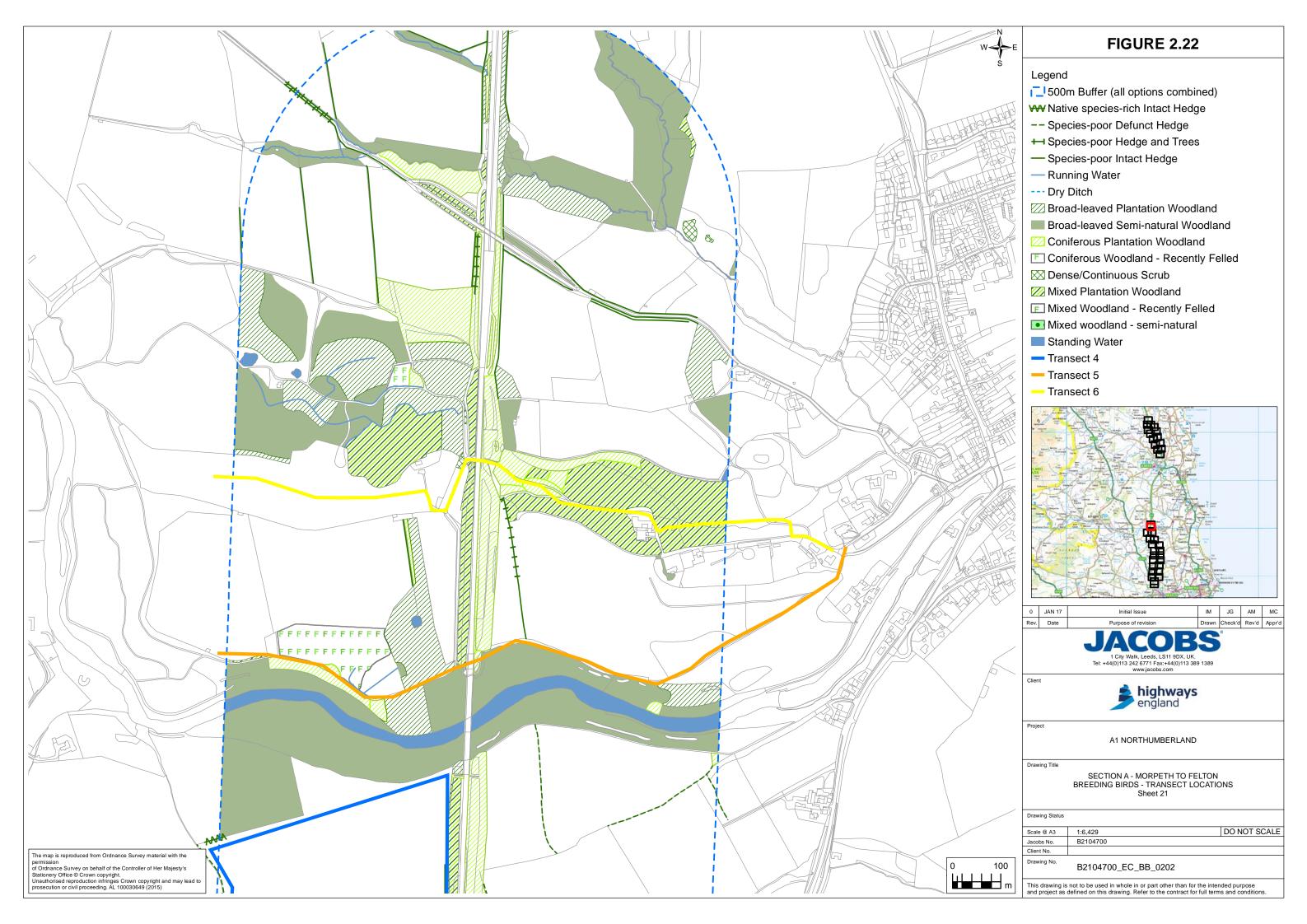


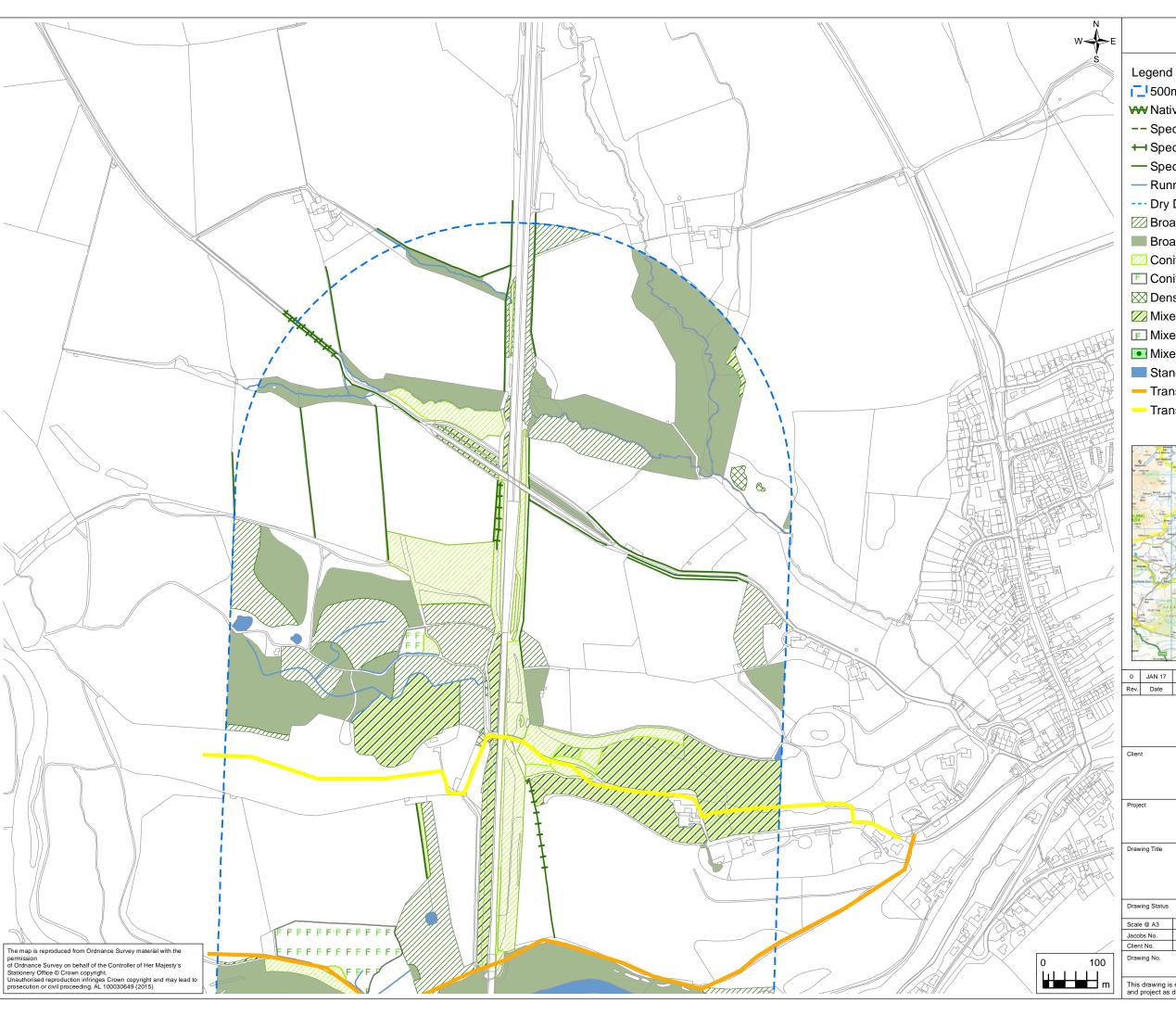












### **FIGURE 2.23**

500m Buffer (all options combined)

₩ Native species-rich Intact Hedge

- -- Species-poor Defunct Hedge
- → Species-poor Hedge and Trees
- Species-poor Intact Hedge
- Running Water
- --- Dry Ditch
- **Broad-leaved Plantation Woodland**
- Broad-leaved Semi-natural Woodland
- Coniferous Plantation Woodland
- E Coniferous Woodland Recently Felled
- □ Dense/Continuous Scrub
- Mixed Plantation Woodland
- F Mixed Woodland Recently Felled
- Mixed woodland semi-natural
- Standing Water
- Transect 5
- Transect 6



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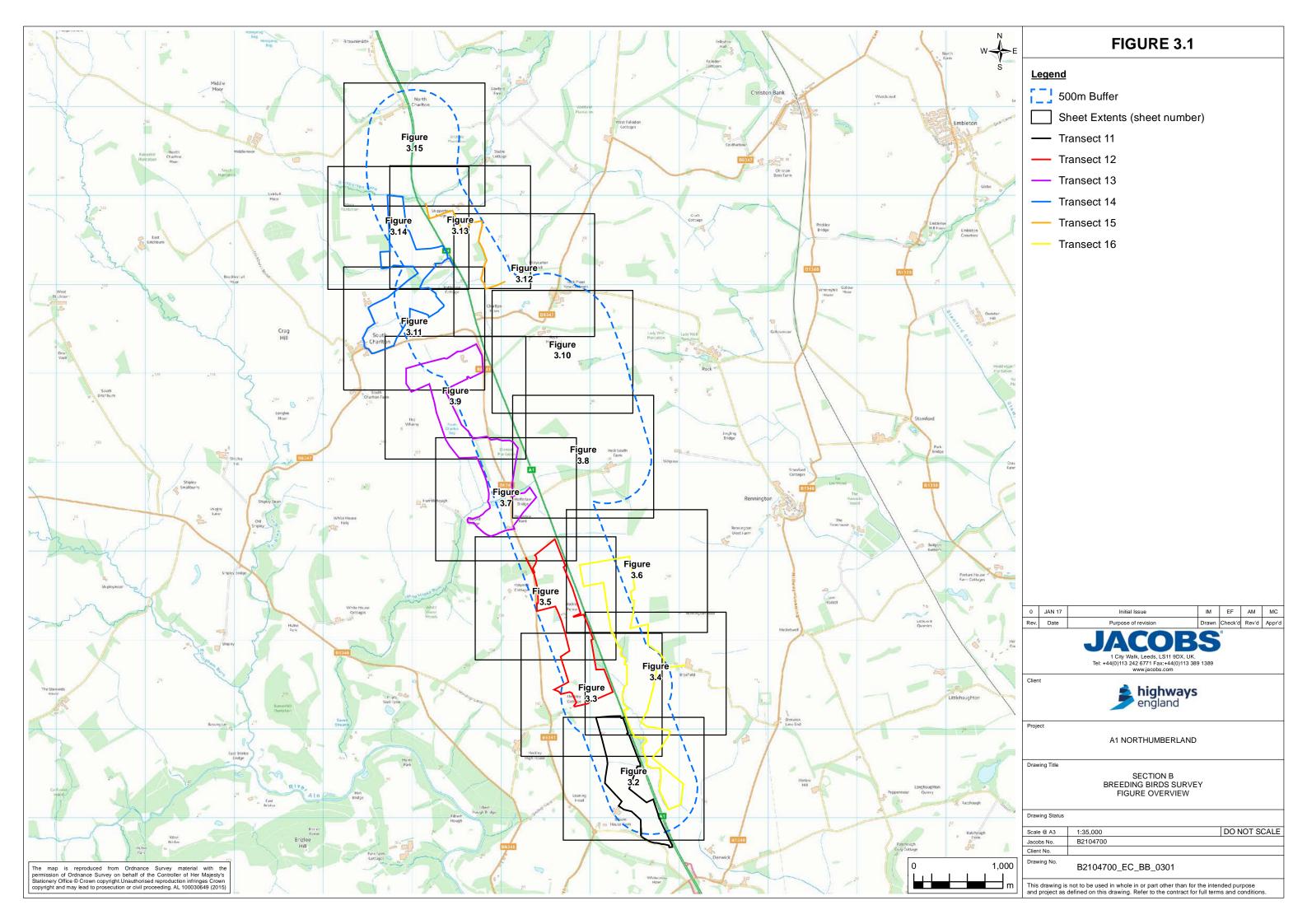
A1 NORTHUMBERLAND

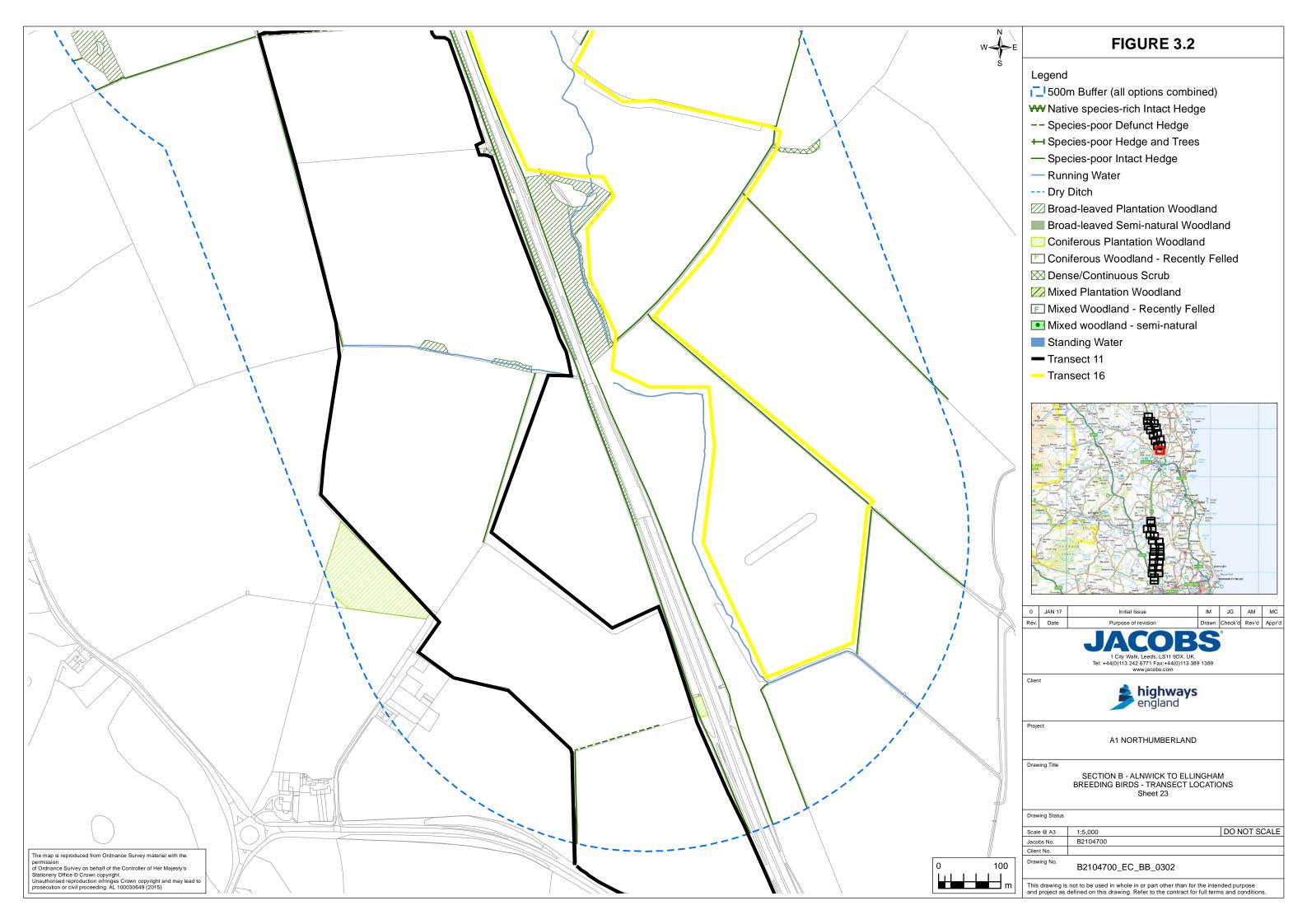
SECTION A - MORPETH TO FELTON BREEDING BIRDS - TRANSECT LOCATIONS Sheet 22

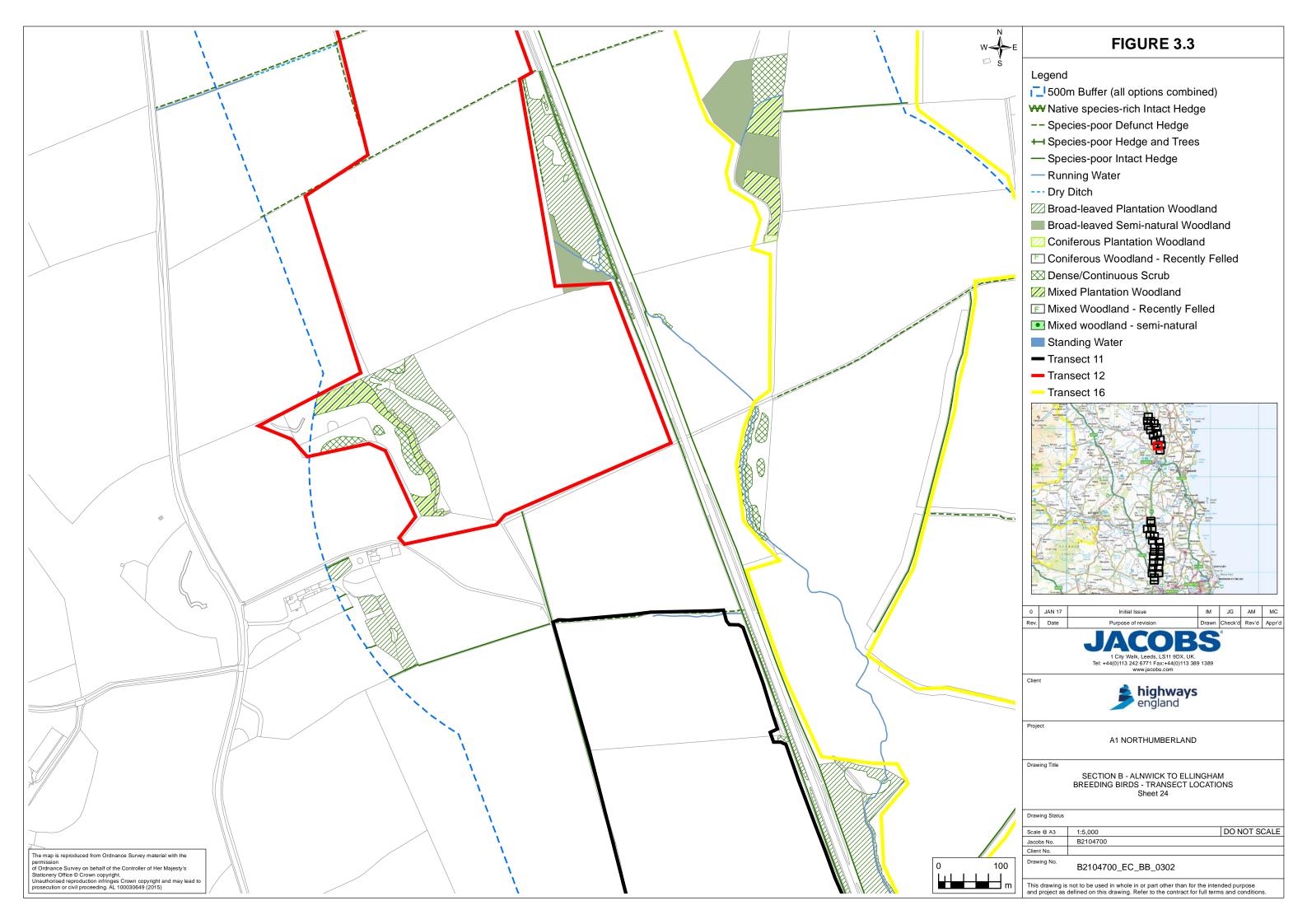
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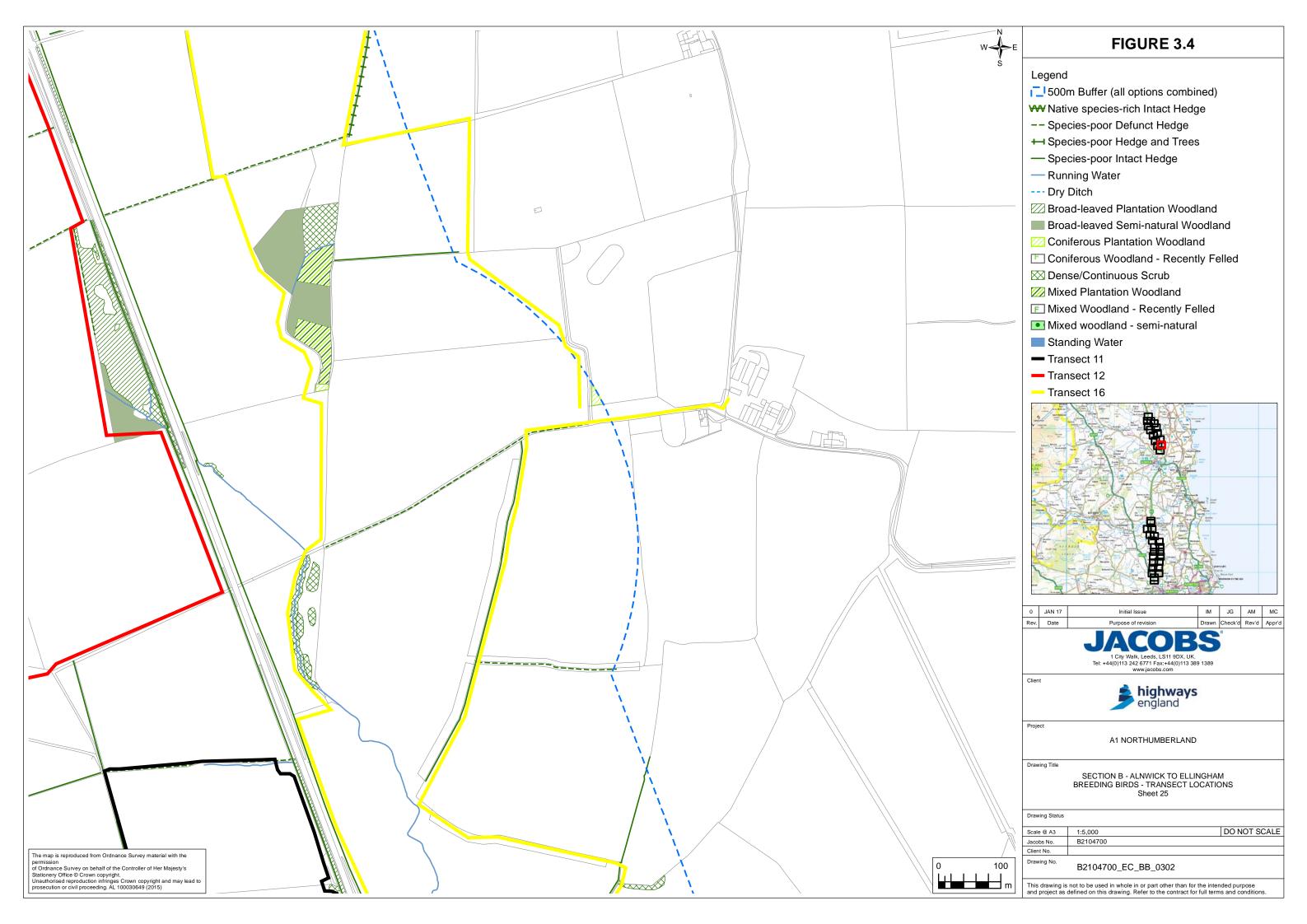
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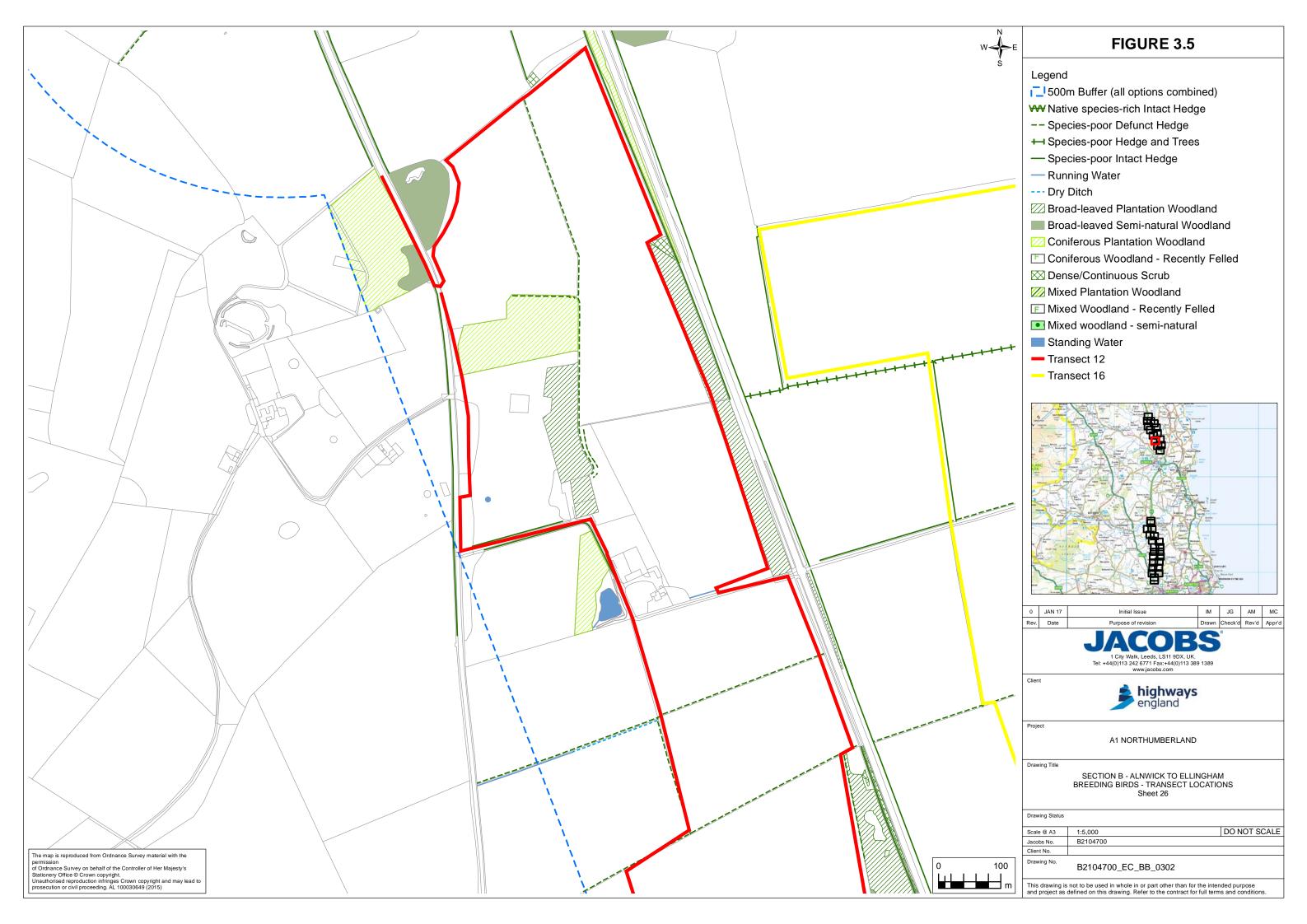
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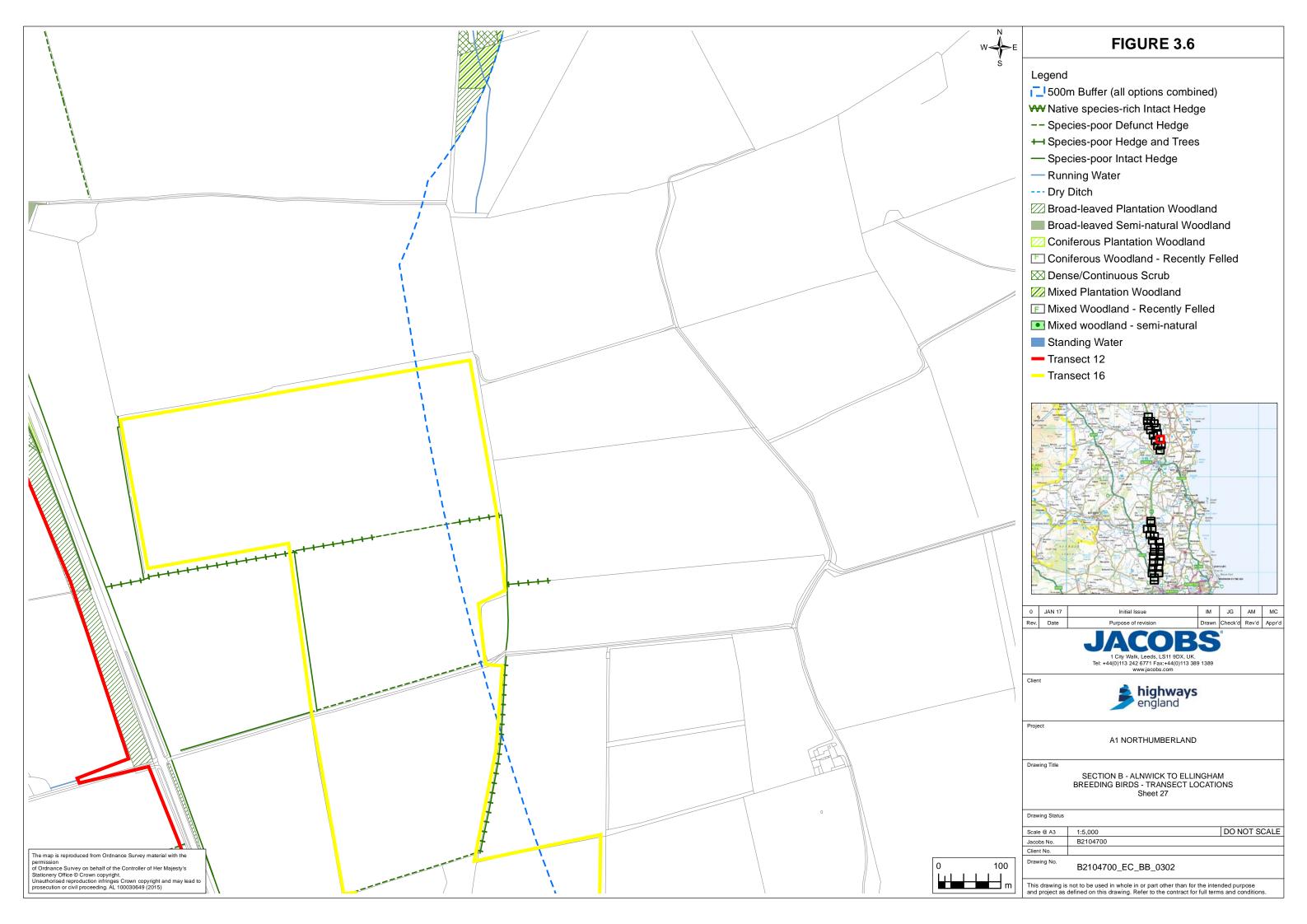


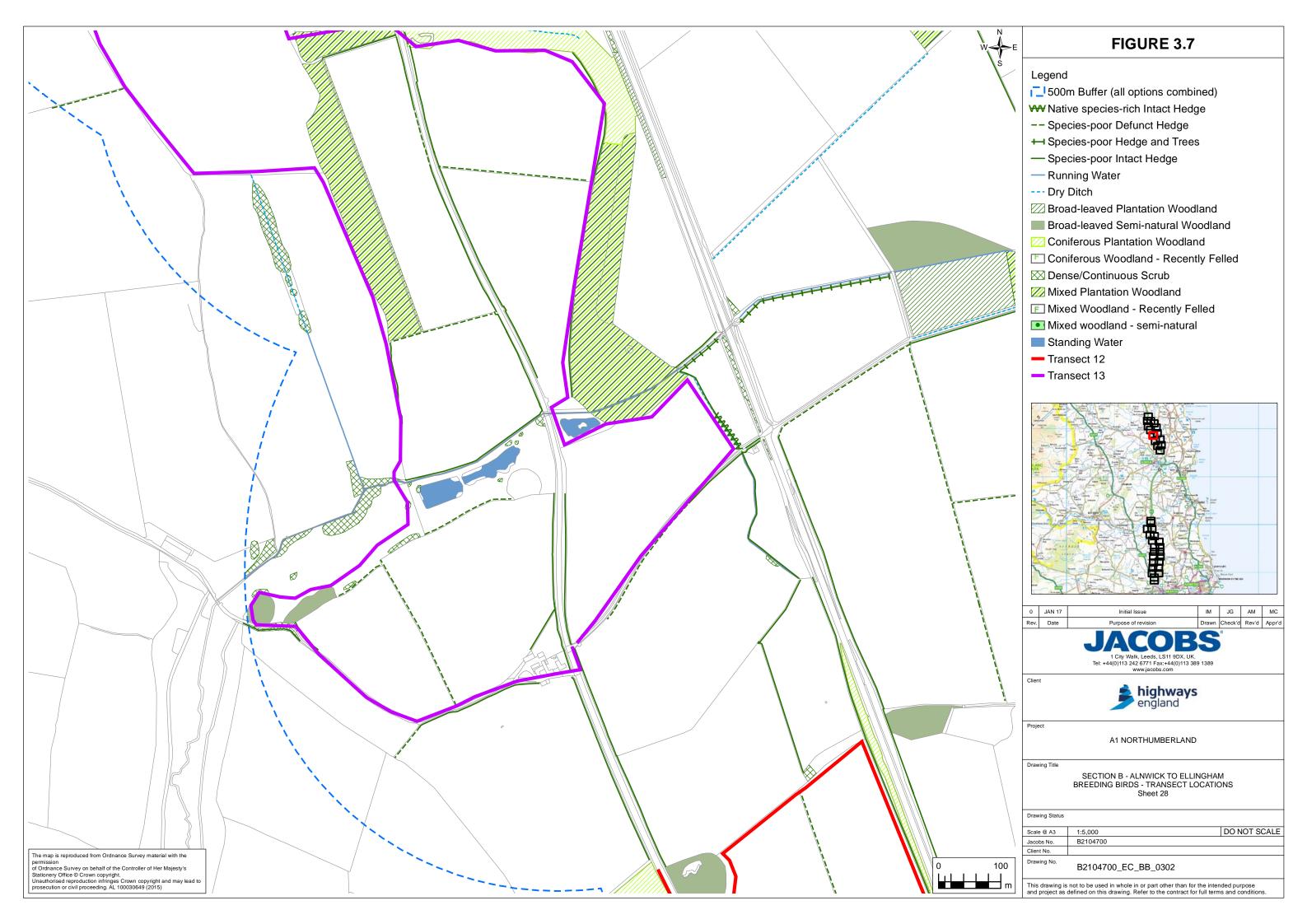


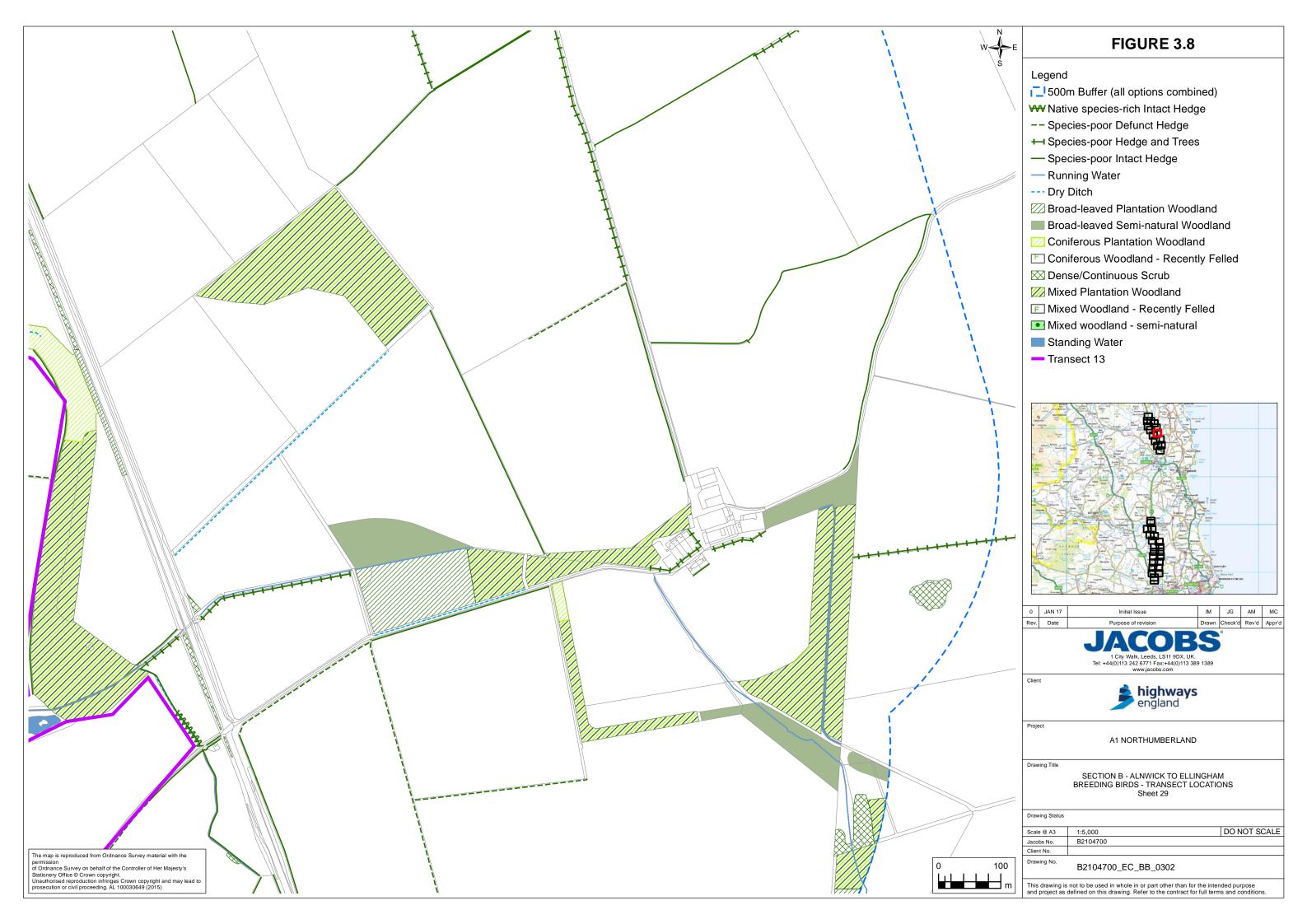


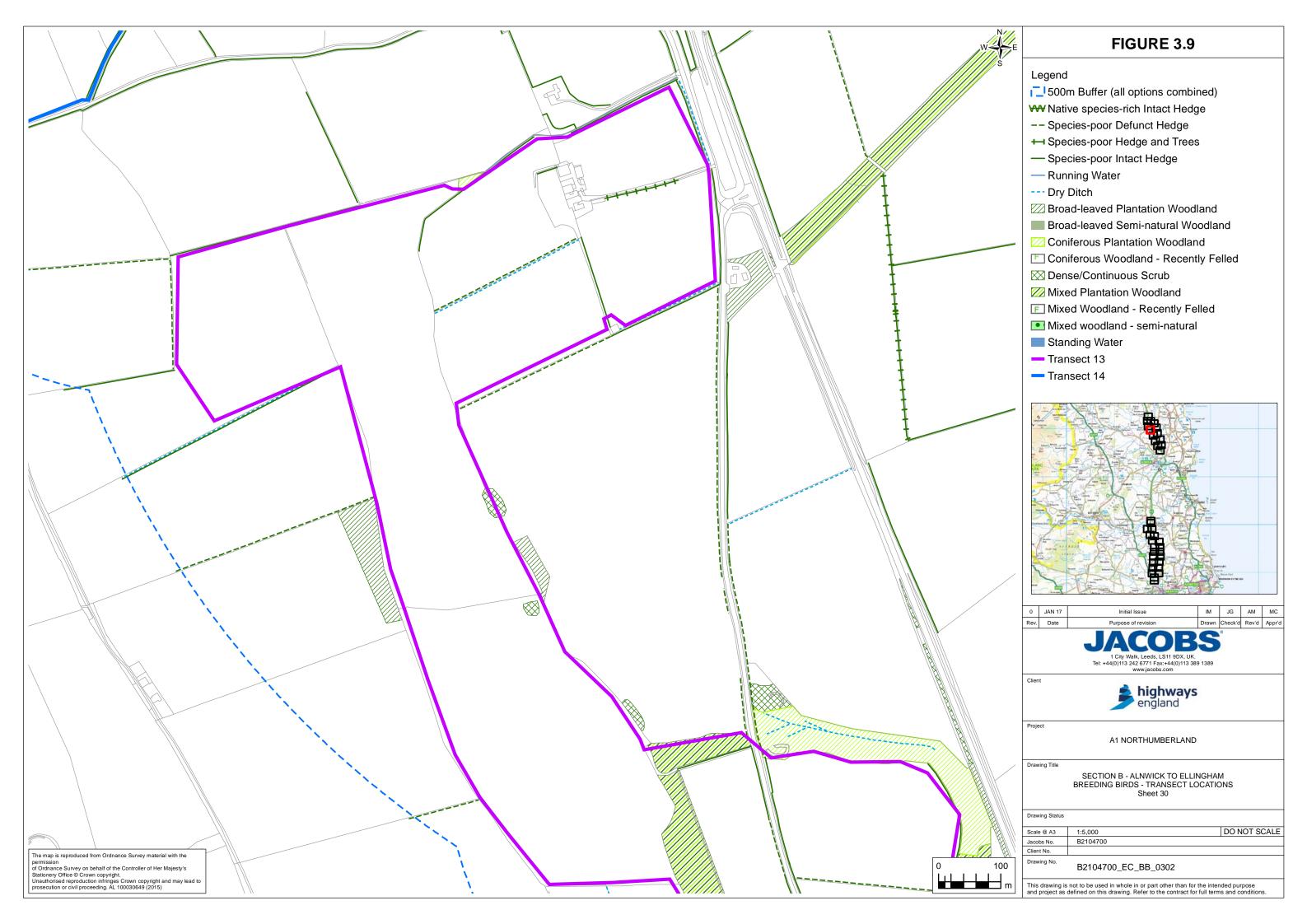


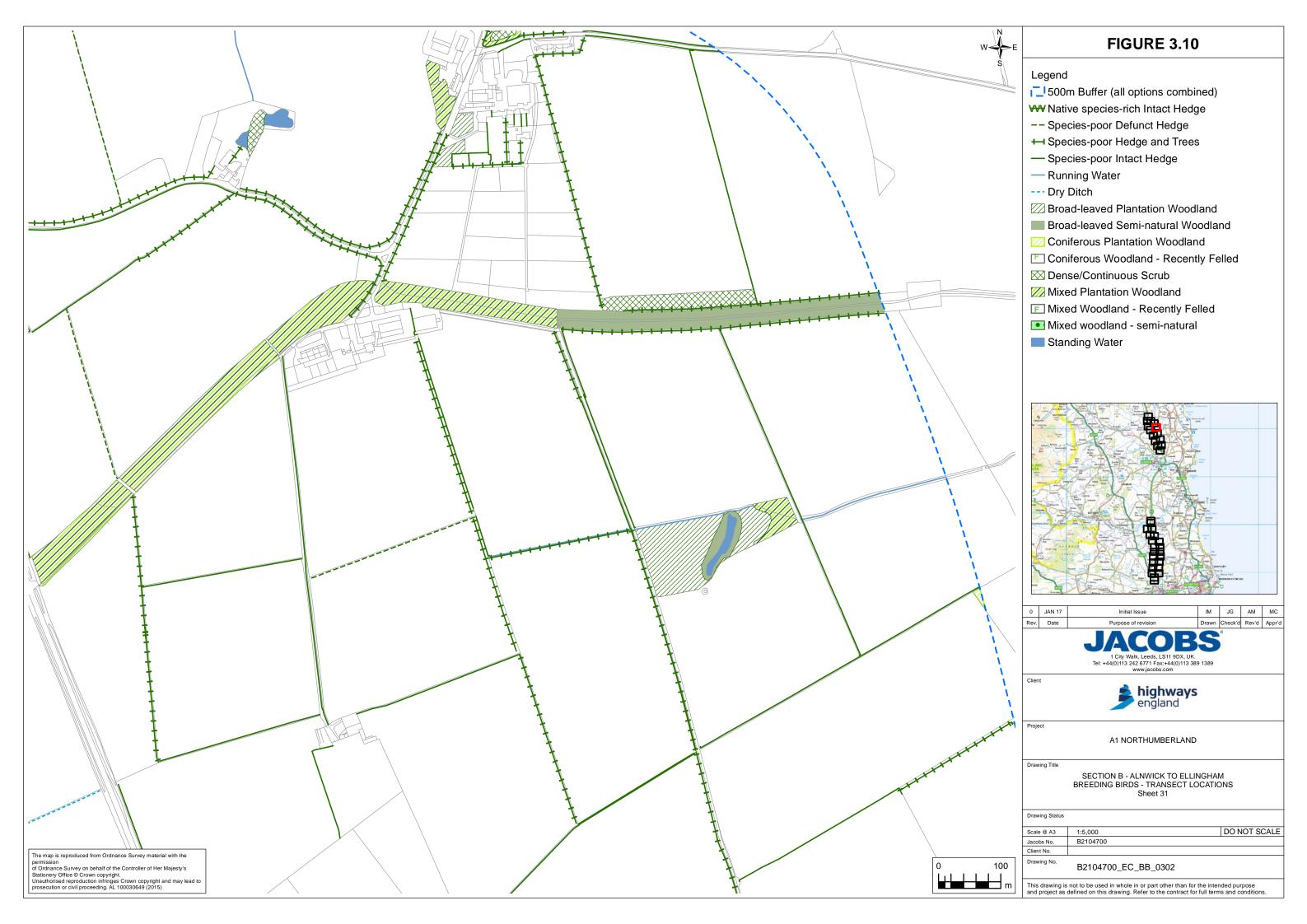


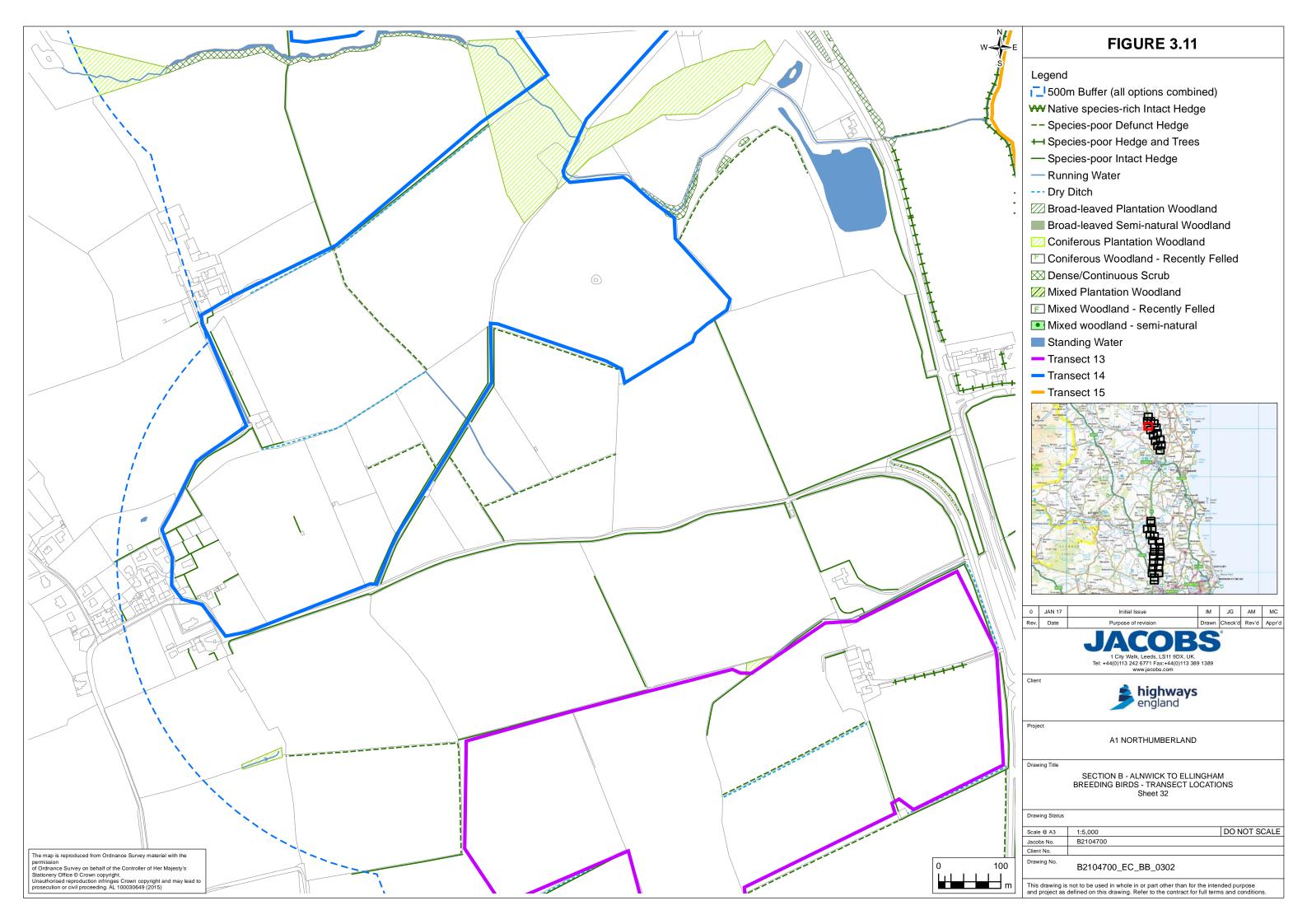


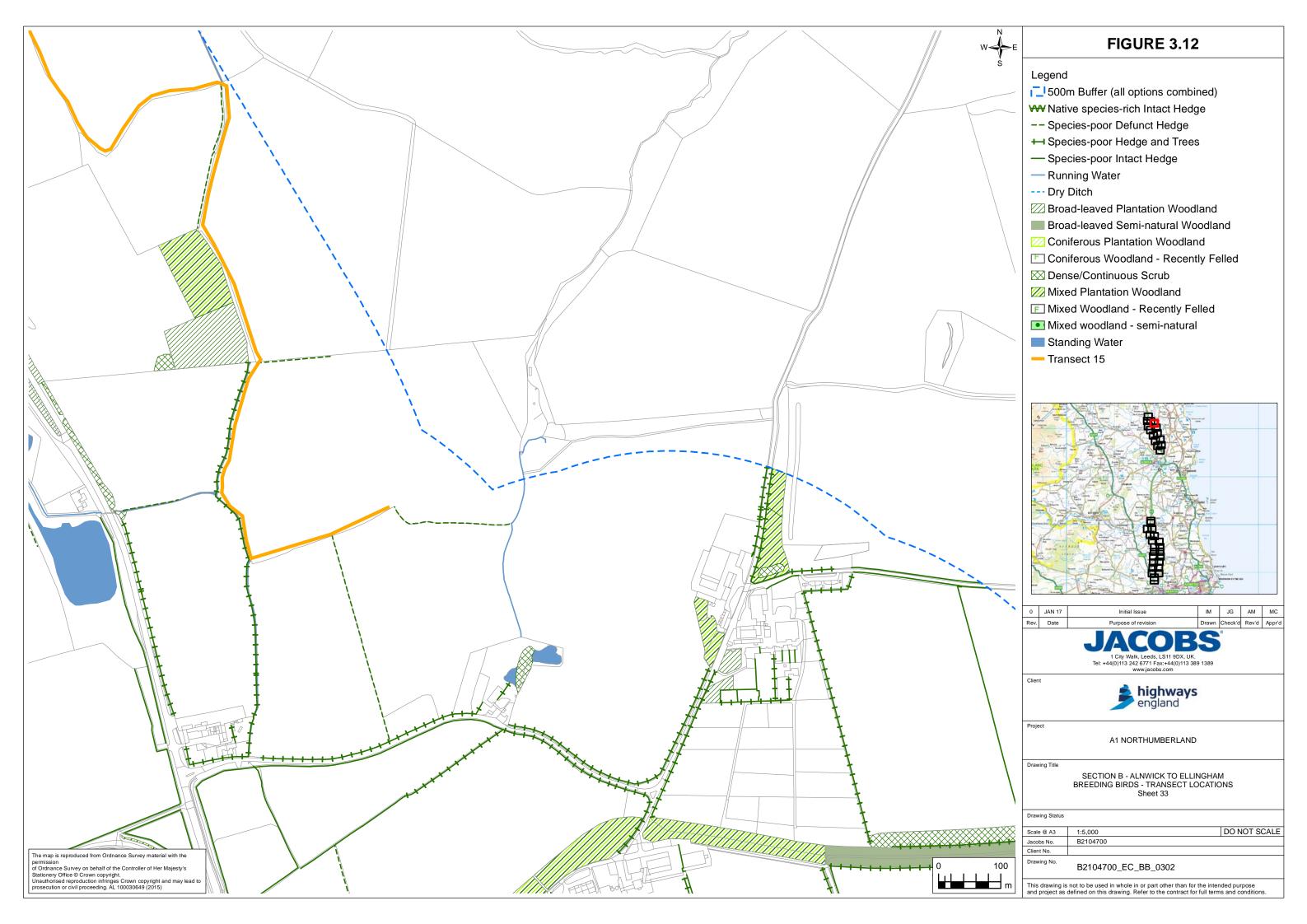


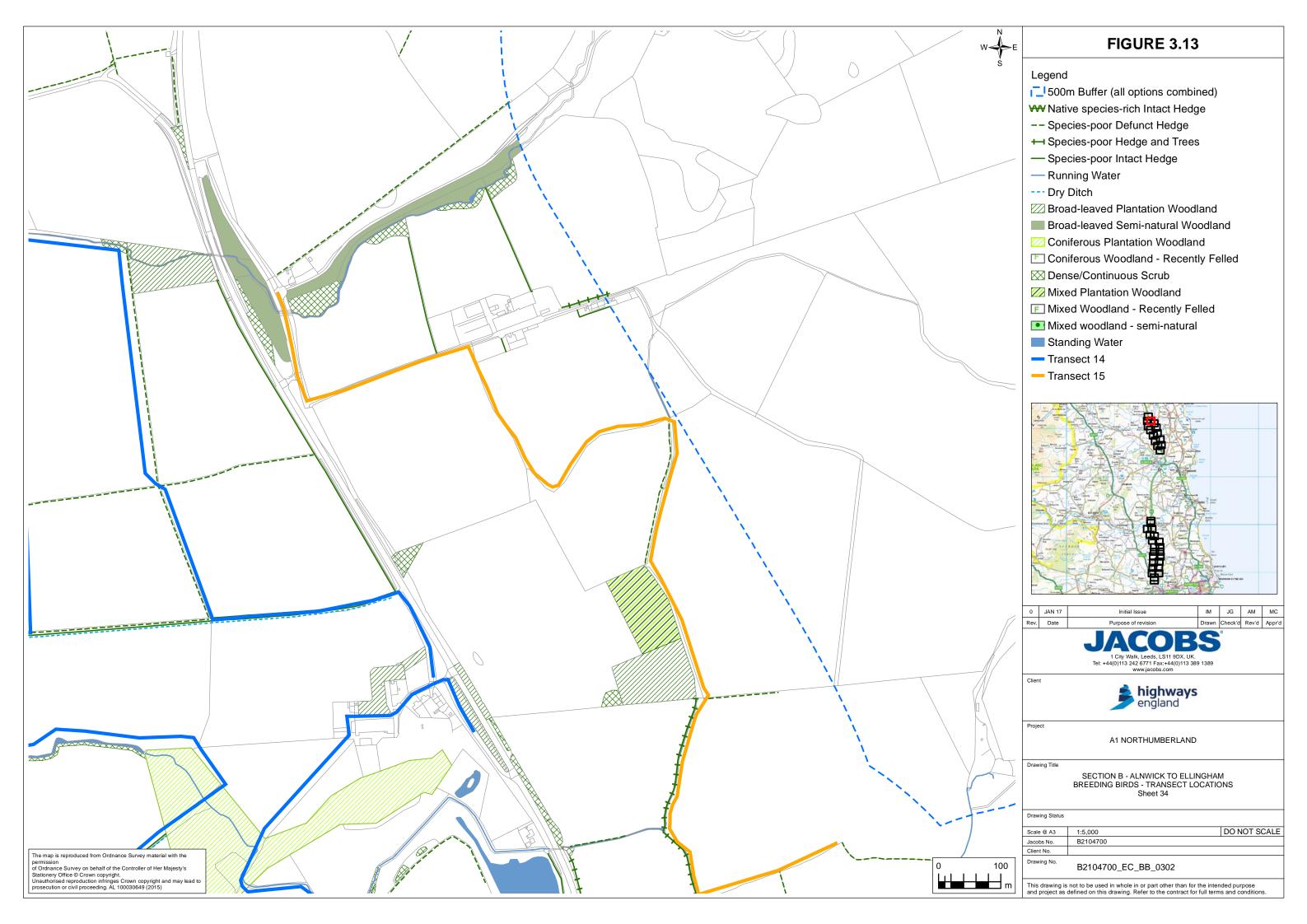


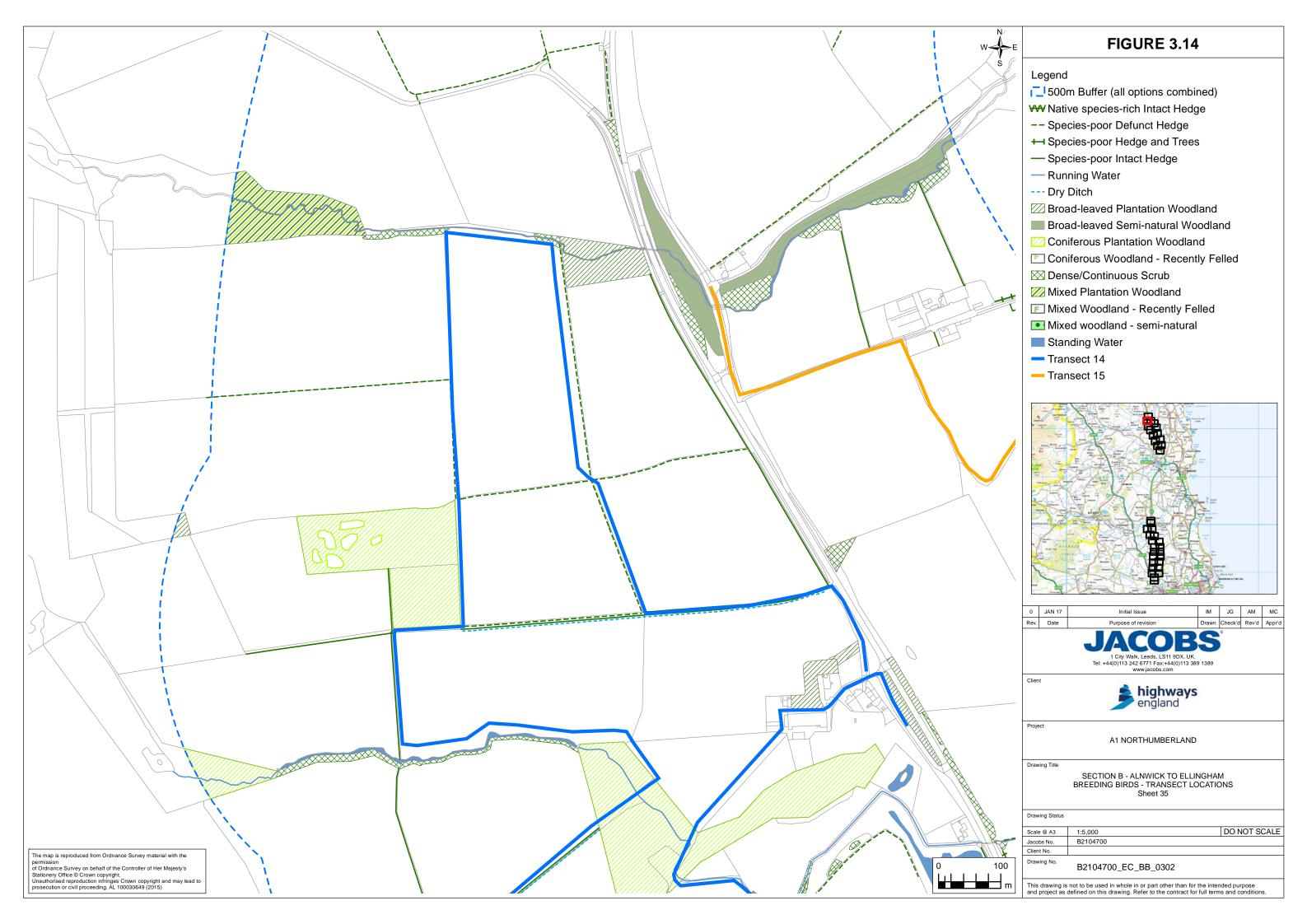


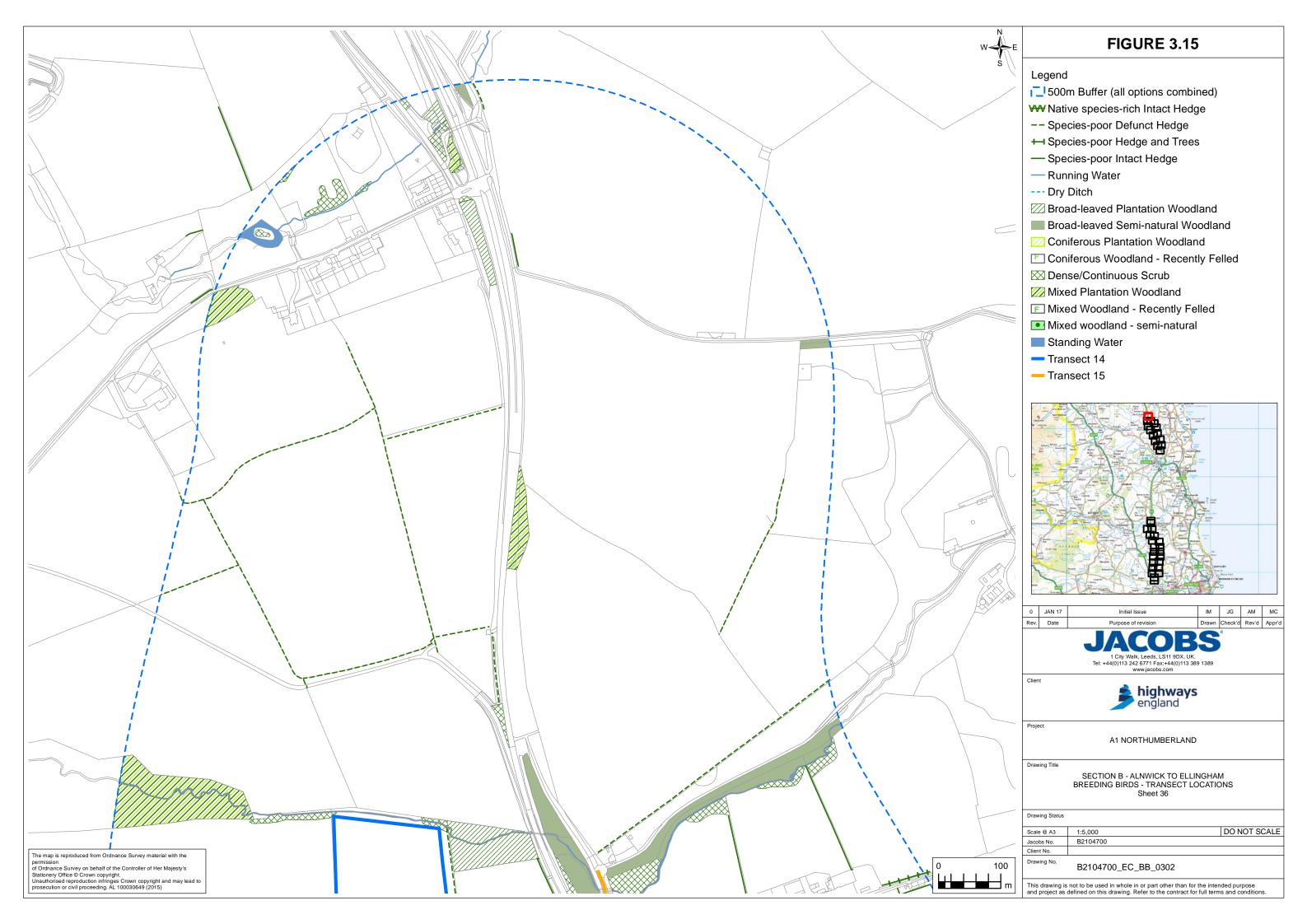


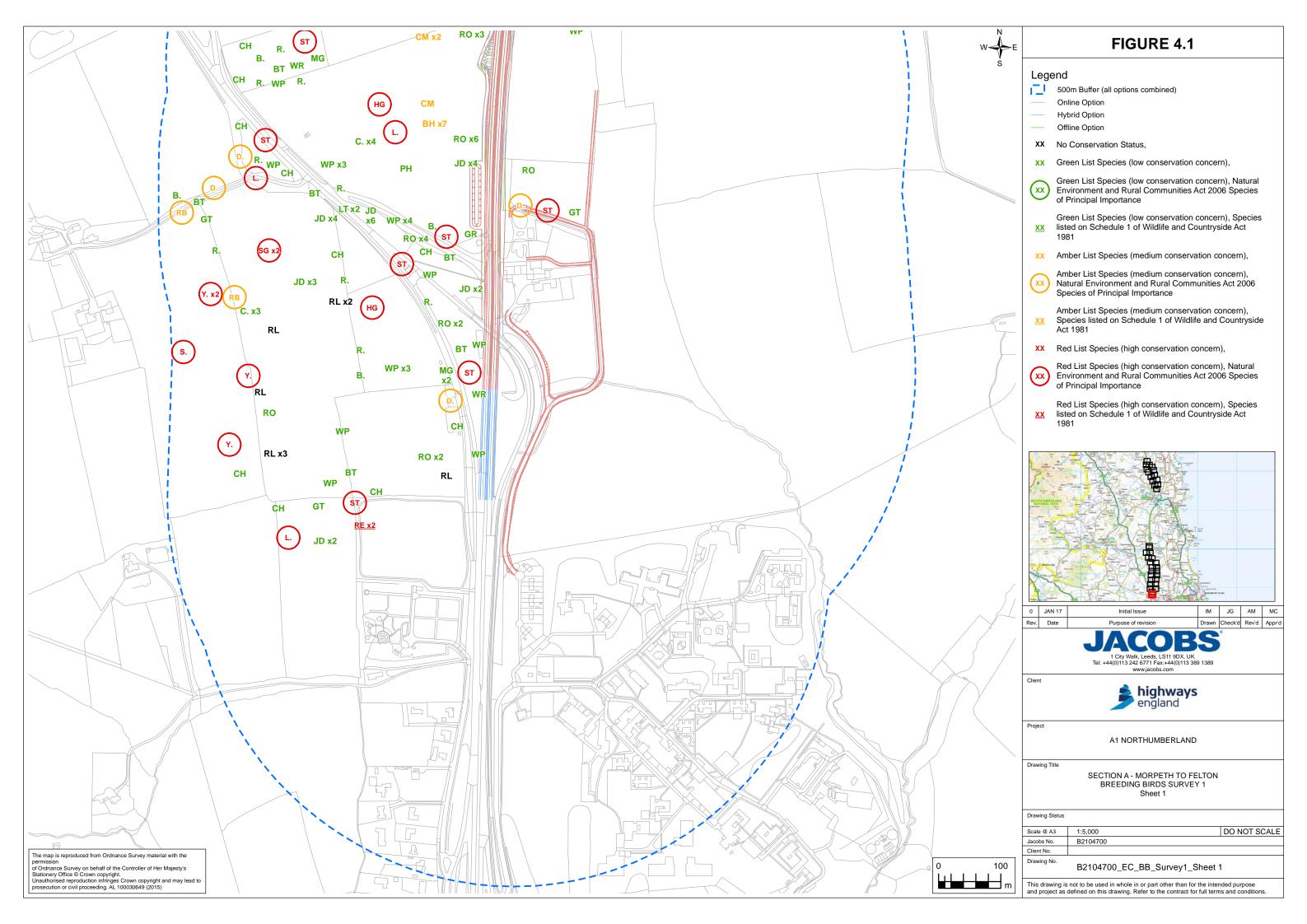


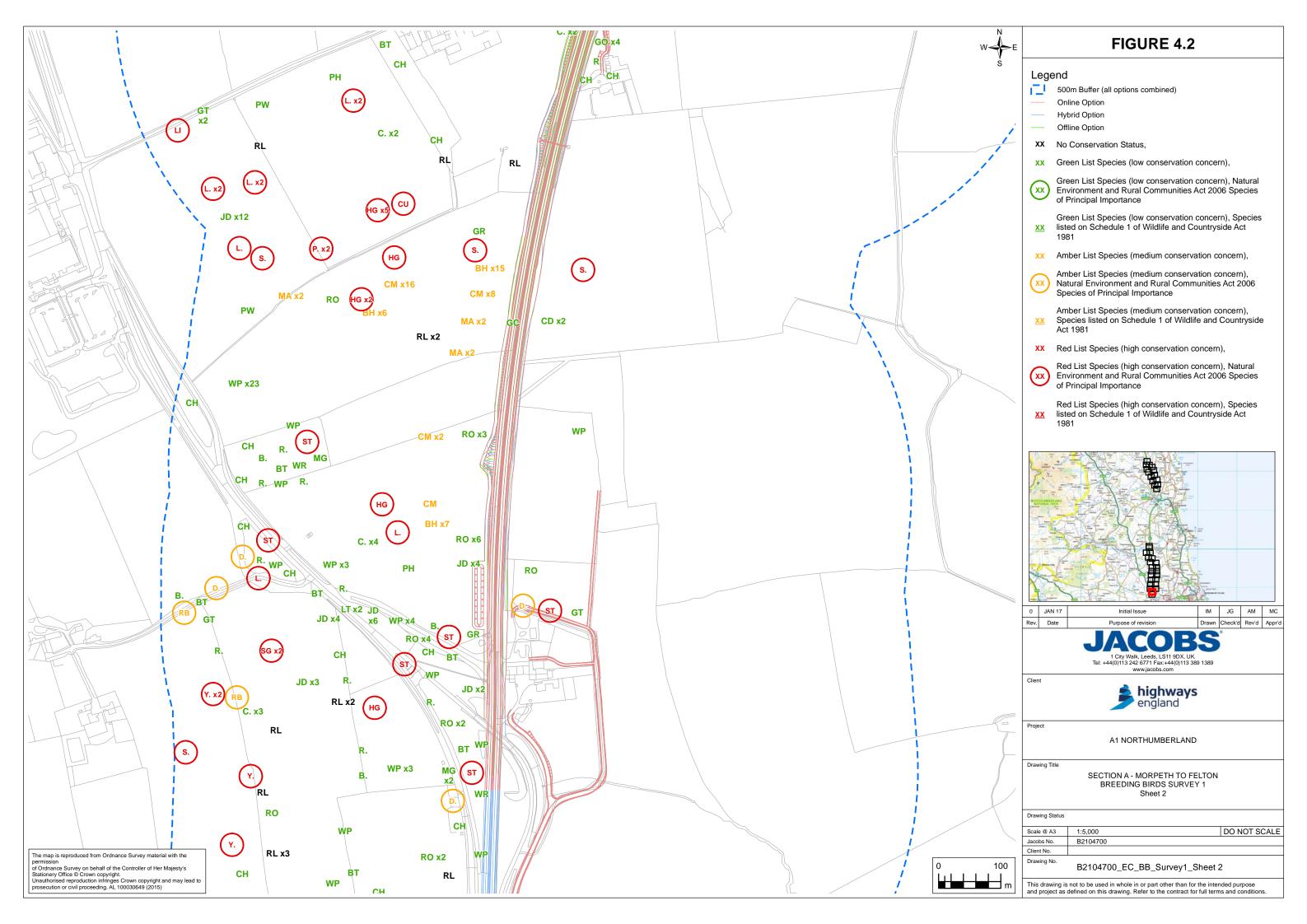


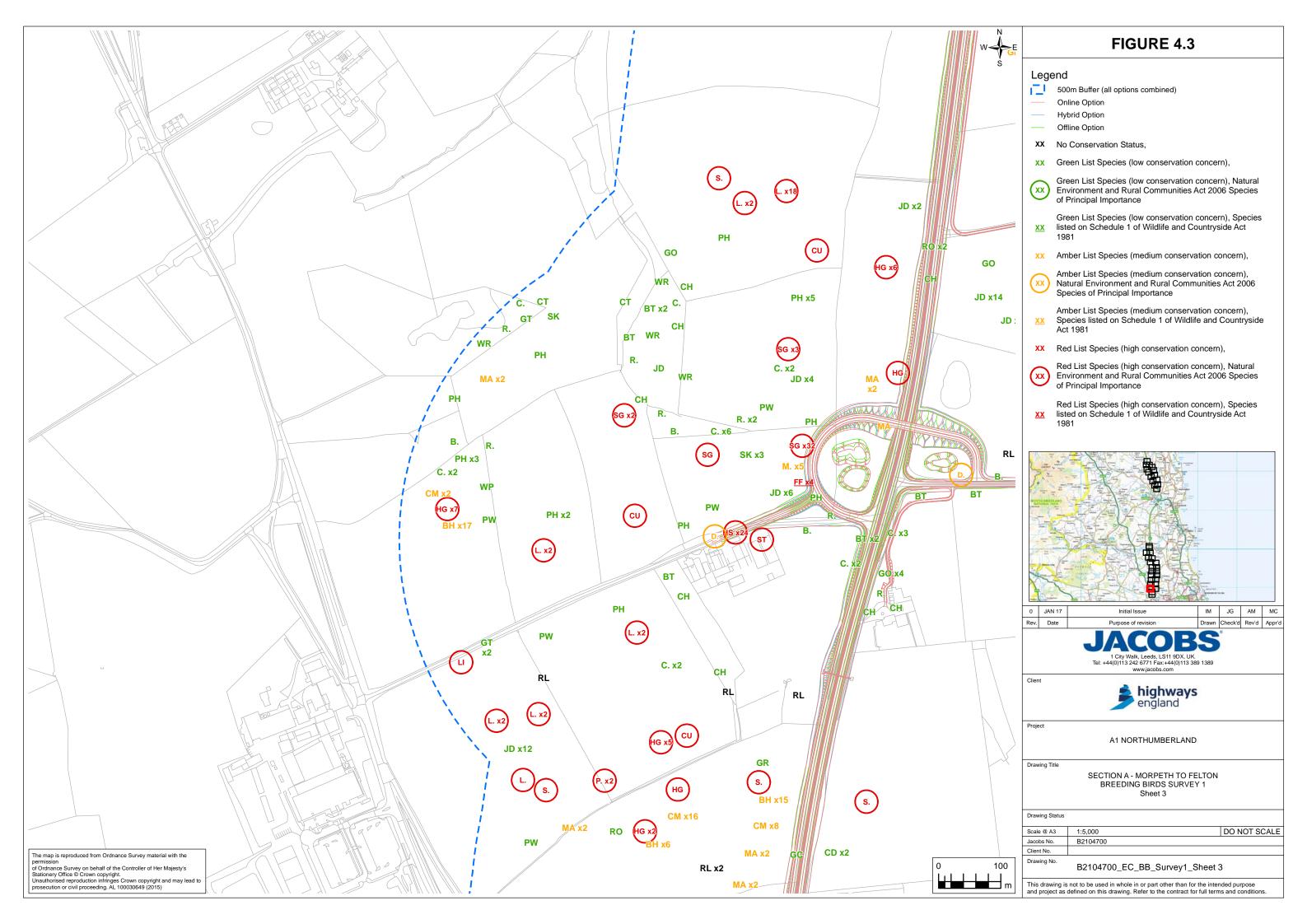


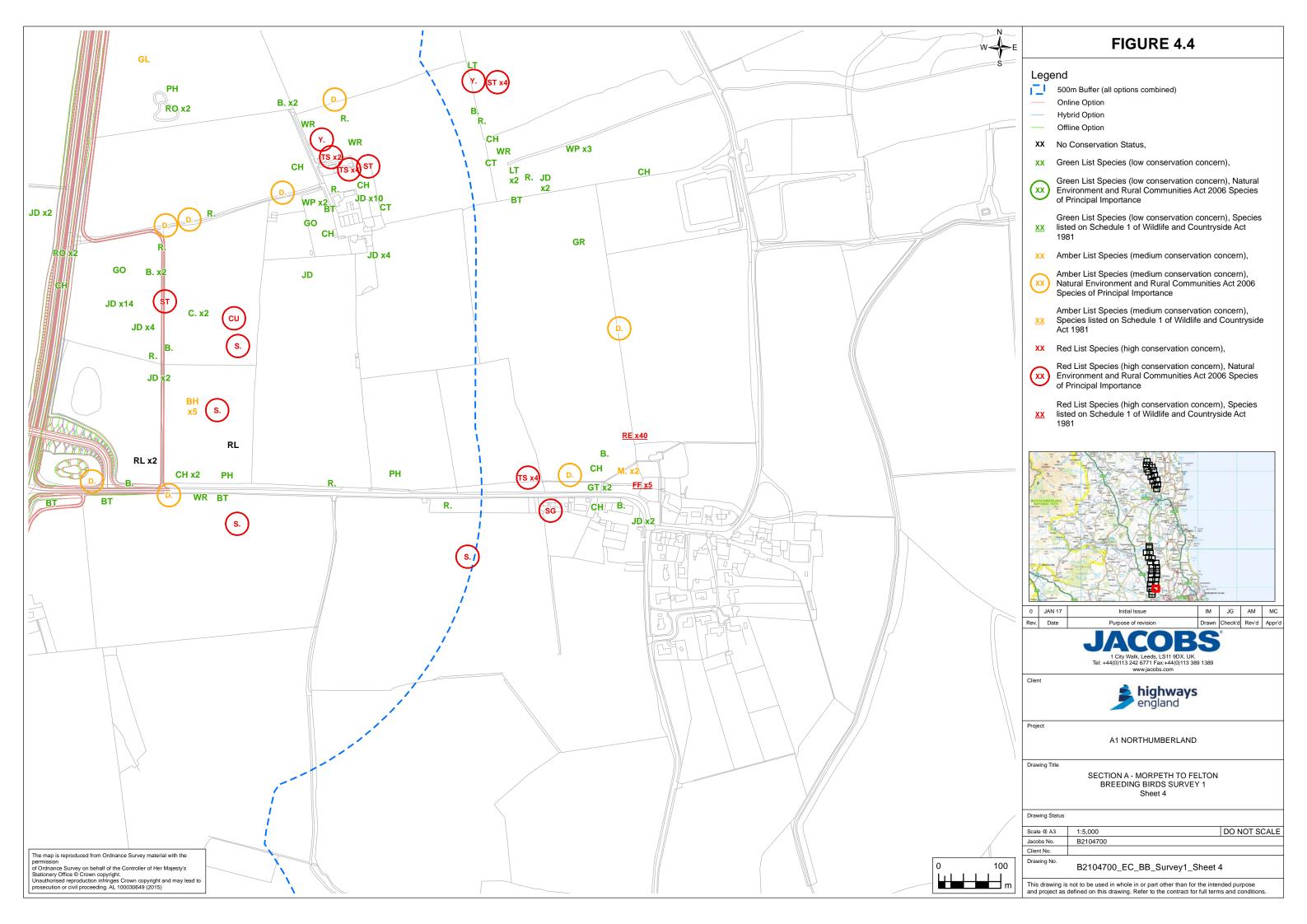


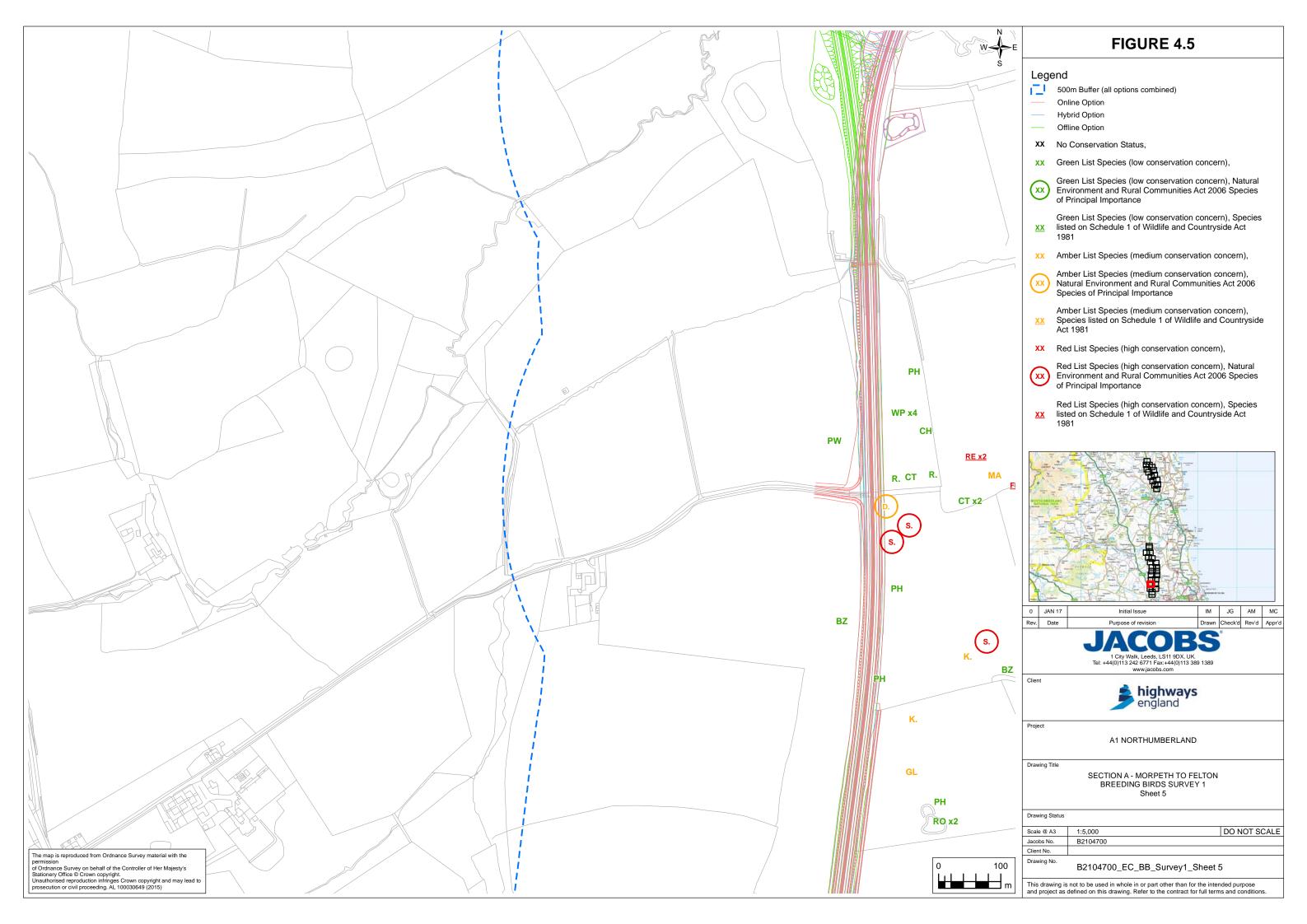


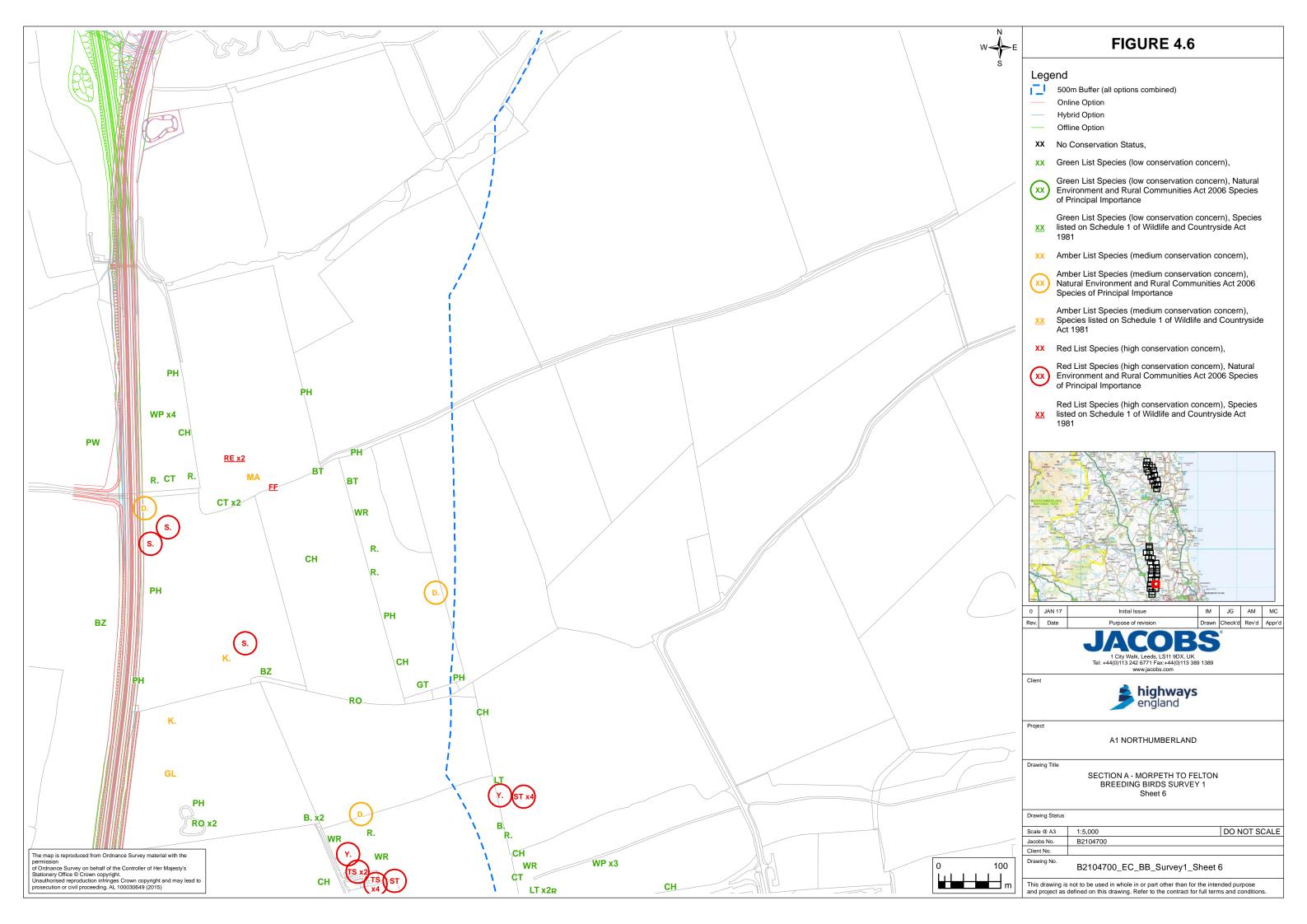


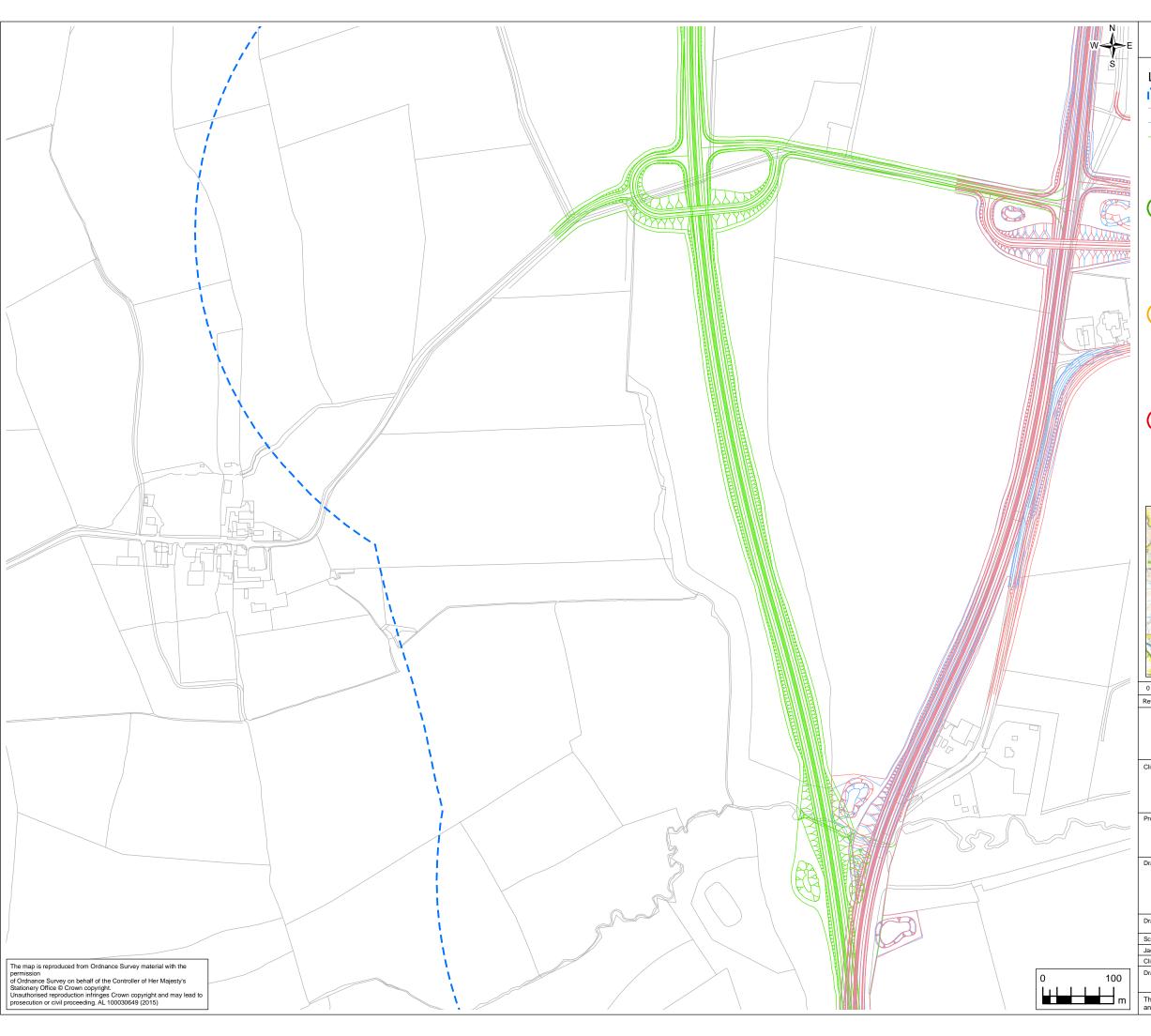












## FIGURE 4.7

## Legend

500m Buffer (all options combined)

Online Option

Hybrid Option

Offline Option

- XX No Conservation Status,
- xx Green List Species (low conservation concern),
- Green List Species (low conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance
- Green List Species (low conservation concern), Species

  ilsted on Schedule 1 of Wildlife and Countryside Act
- XX Amber List Species (medium conservation concern),
- Amber List Species (medium conservation concern),
  Natural Environment and Rural Communities Act 2006
  Species of Principal Importance
- Amber List Species (medium conservation concern),

  Species listed on Schedule 1 of Wildlife and Countryside
- XX Red List Species (high conservation concern),
- Red List Species (high conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance
- Red List Species (high conservation concern), Species listed on Schedule 1 of Wildlife and Countryside Act



 0
 JAN 17
 Initial Issue
 IM
 JG
 AM
 MC

 Rev.
 Date
 Purpose of revision
 Drawn
 Check'd
 Rev'd
 Appr'd

1 City Walk, Leeds, LS11 9DX, UK. Tel: +44(0)113 242 6771 Fax:+44(0)113 389 1389

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Project

A1 NORTHUMBERLAND

Drawing Title

SECTION A - MORPETH TO FELTON BREEDING BIRDS SURVEY 1 Sheet 7

Drawing Status

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 1:5,000
 DO NOT SCALE

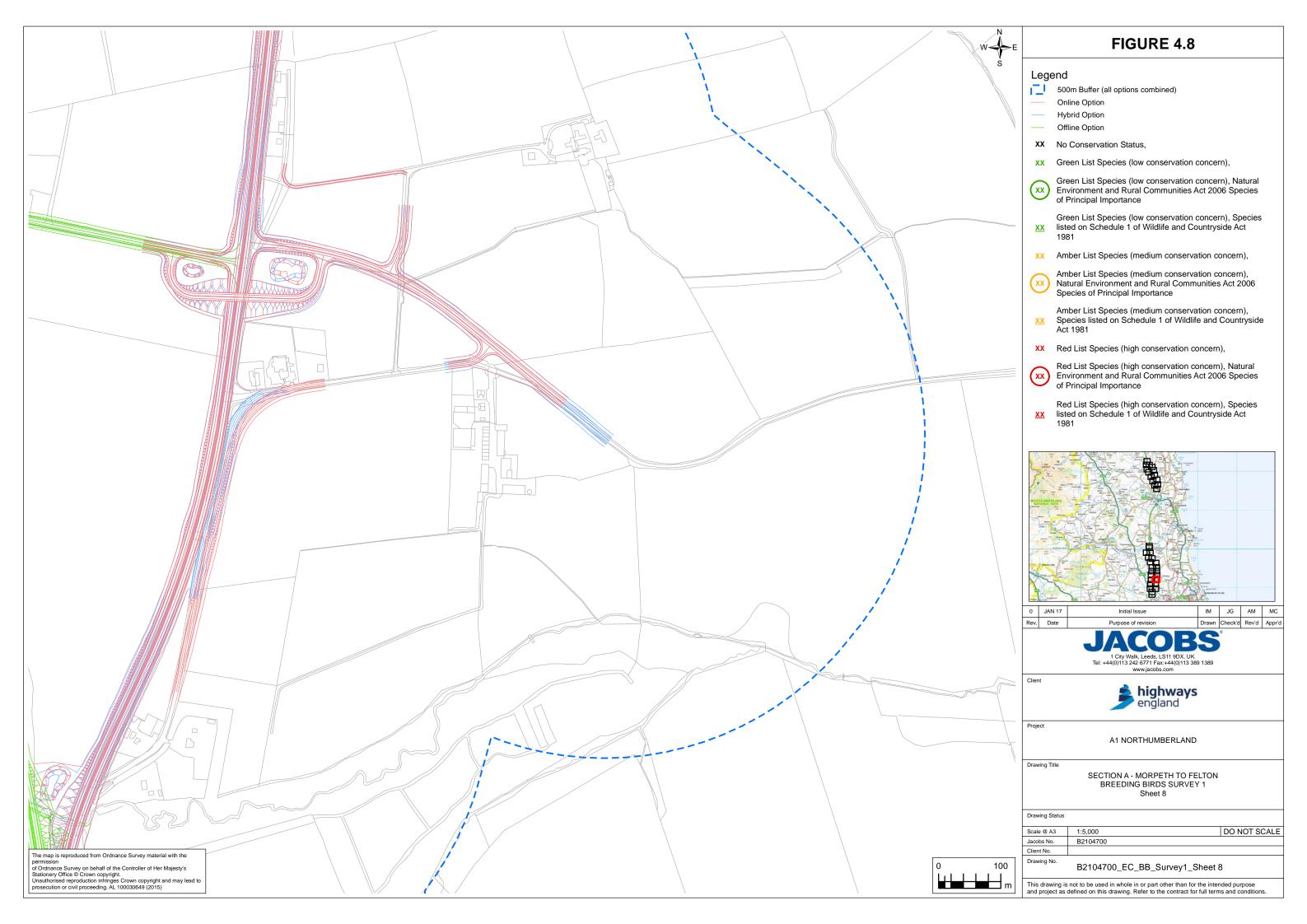
 Jacobs No.
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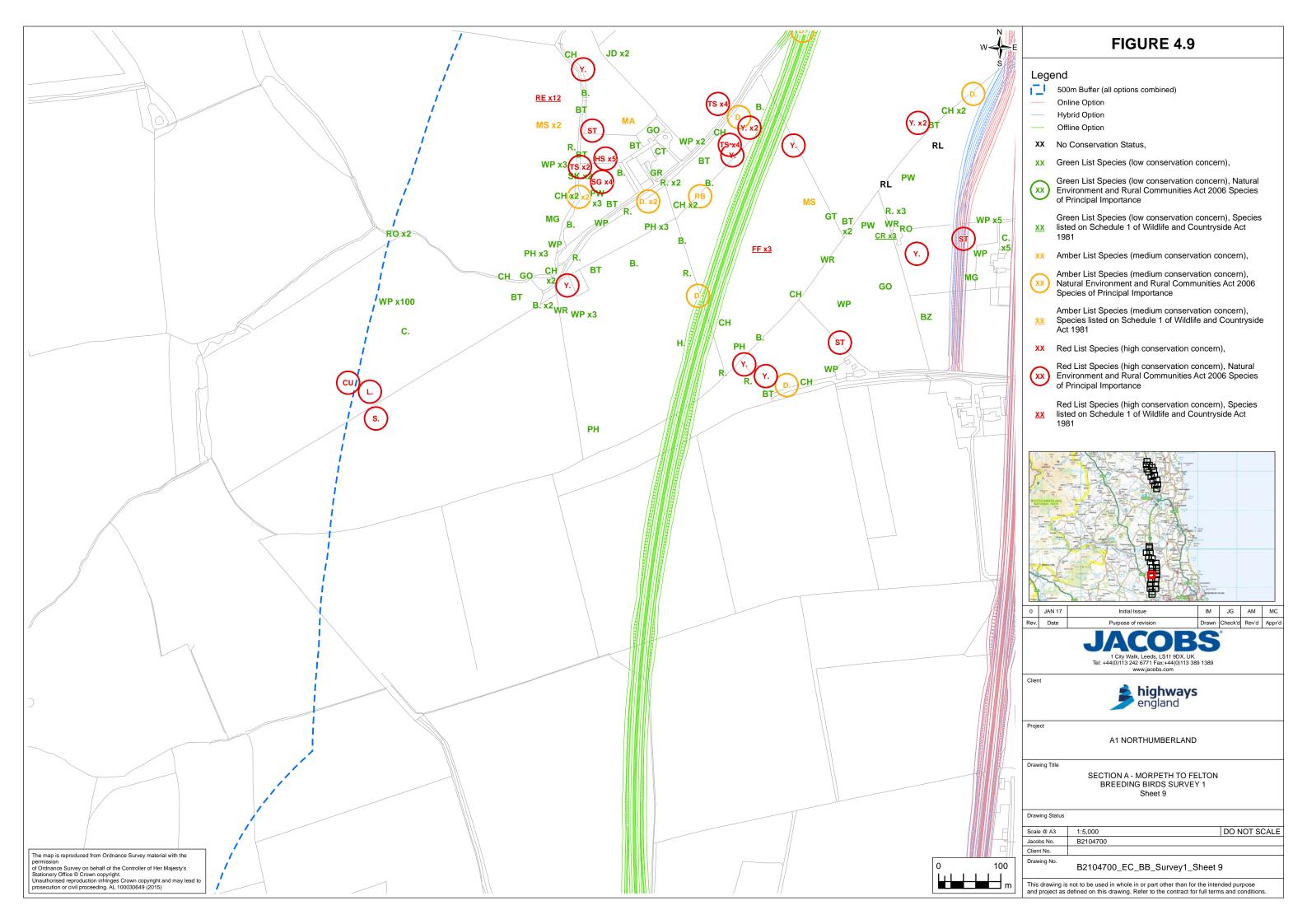
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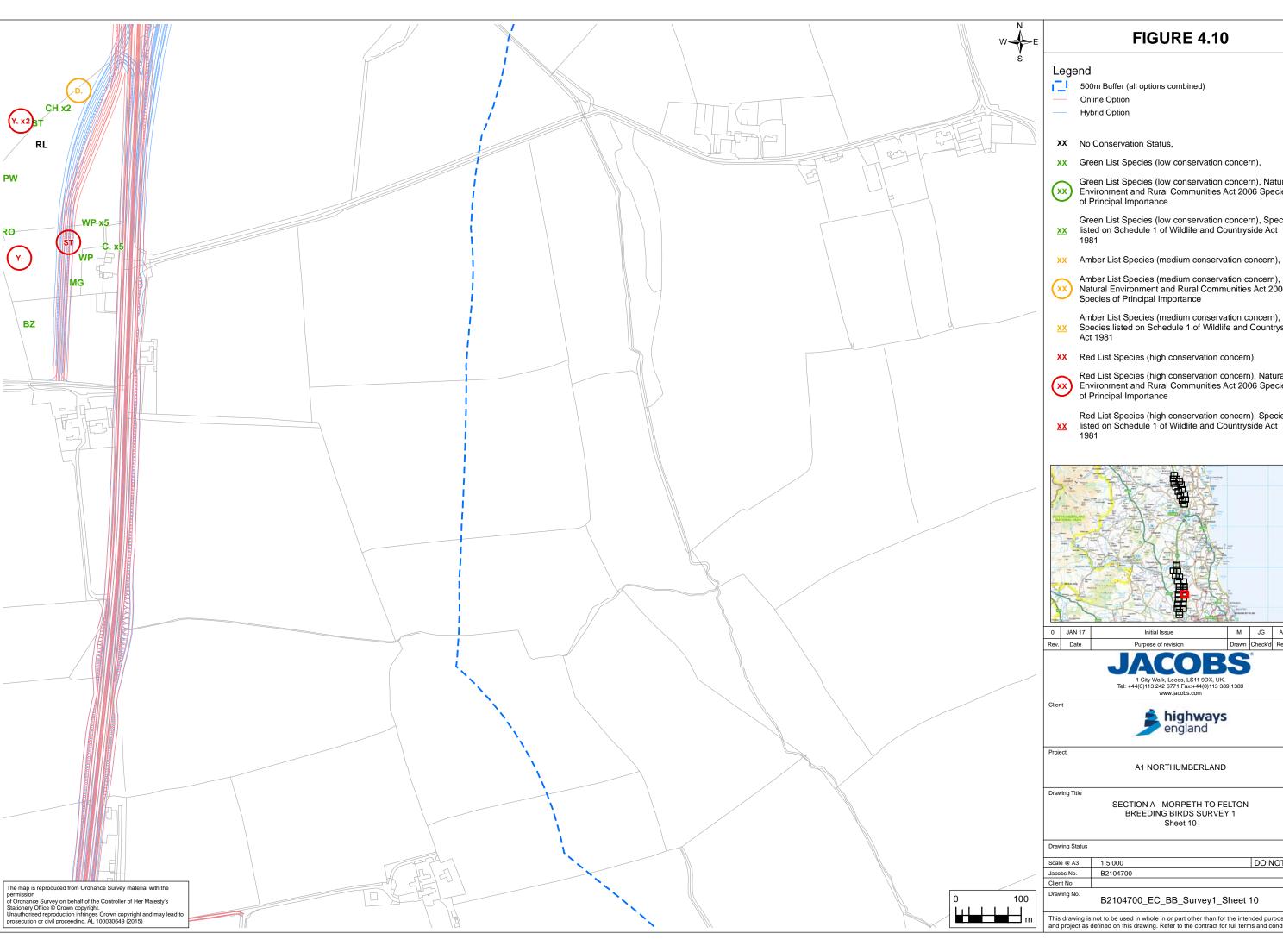
rawing No.

B2104700\_EC\_BB\_Survey1\_Sheet 7

This drawing is not to be used in whole in or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.







## **FIGURE 4.10**

- xx Green List Species (low conservation concern),
- Green List Species (low conservation concern), Natural Environment and Rural Communities Act 2006 Species
- Green List Species (low conservation concern), Species listed on Schedule 1 of Wildlife and Countryside Act
- XX Amber List Species (medium conservation concern),
- Amber List Species (medium conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance
- Species listed on Schedule 1 of Wildlife and Countryside
- XX Red List Species (high conservation concern),
- Red List Species (high conservation concern), Natural Environment and Rural Communities Act 2006 Species
- Red List Species (high conservation concern), Species listed on Schedule 1 of Wildlife and Countryside Act



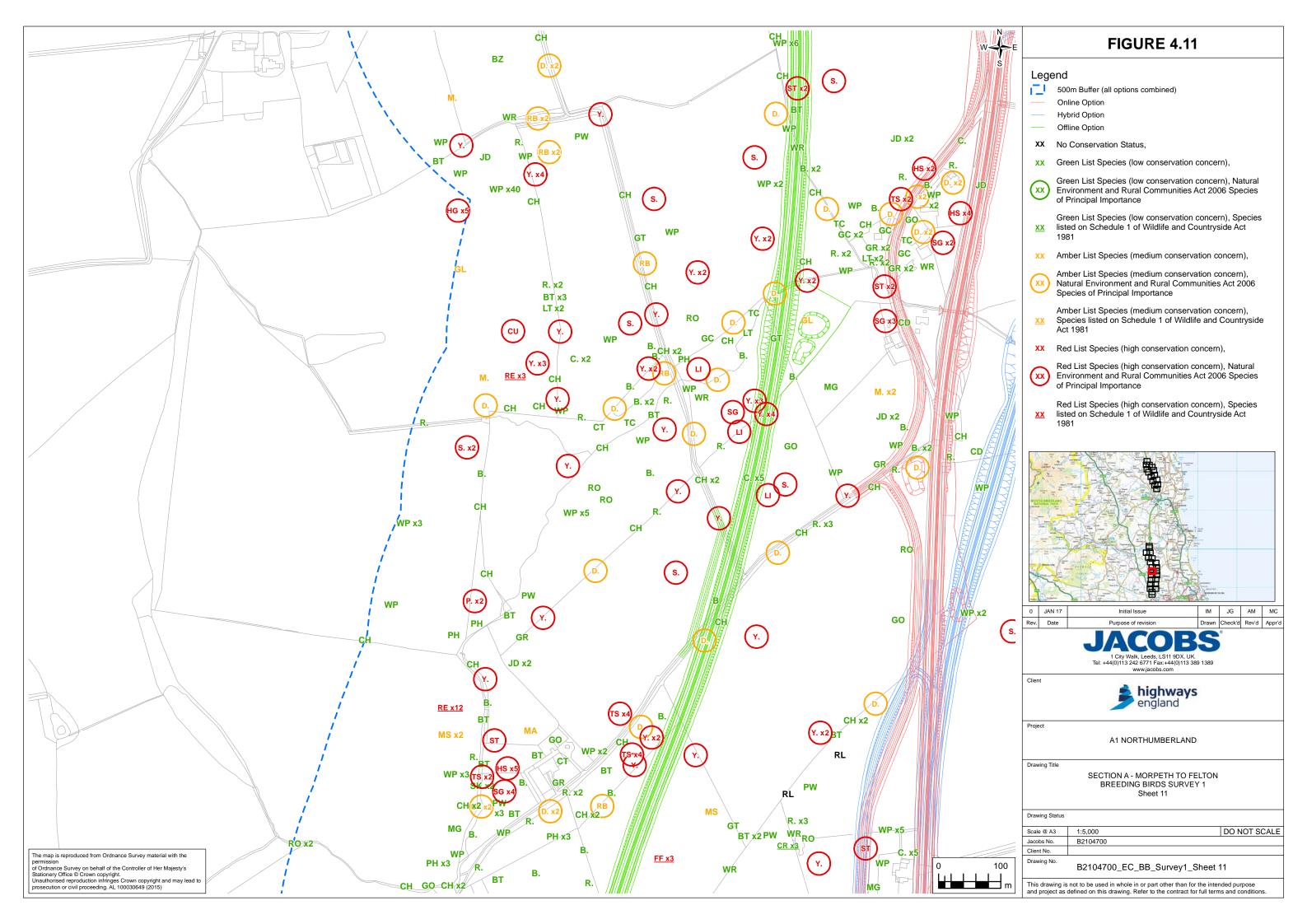


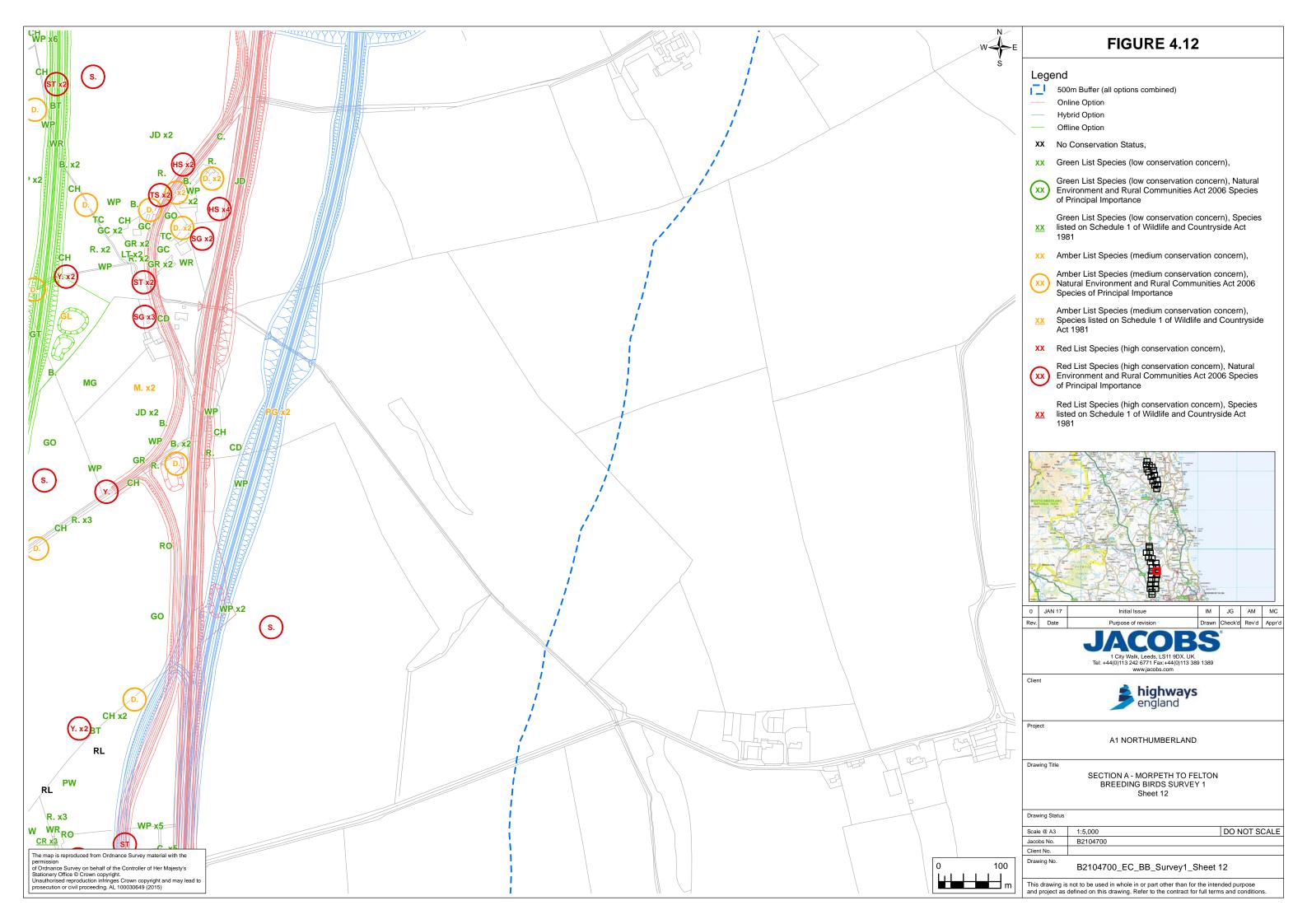
A1 NORTHUMBERLAND

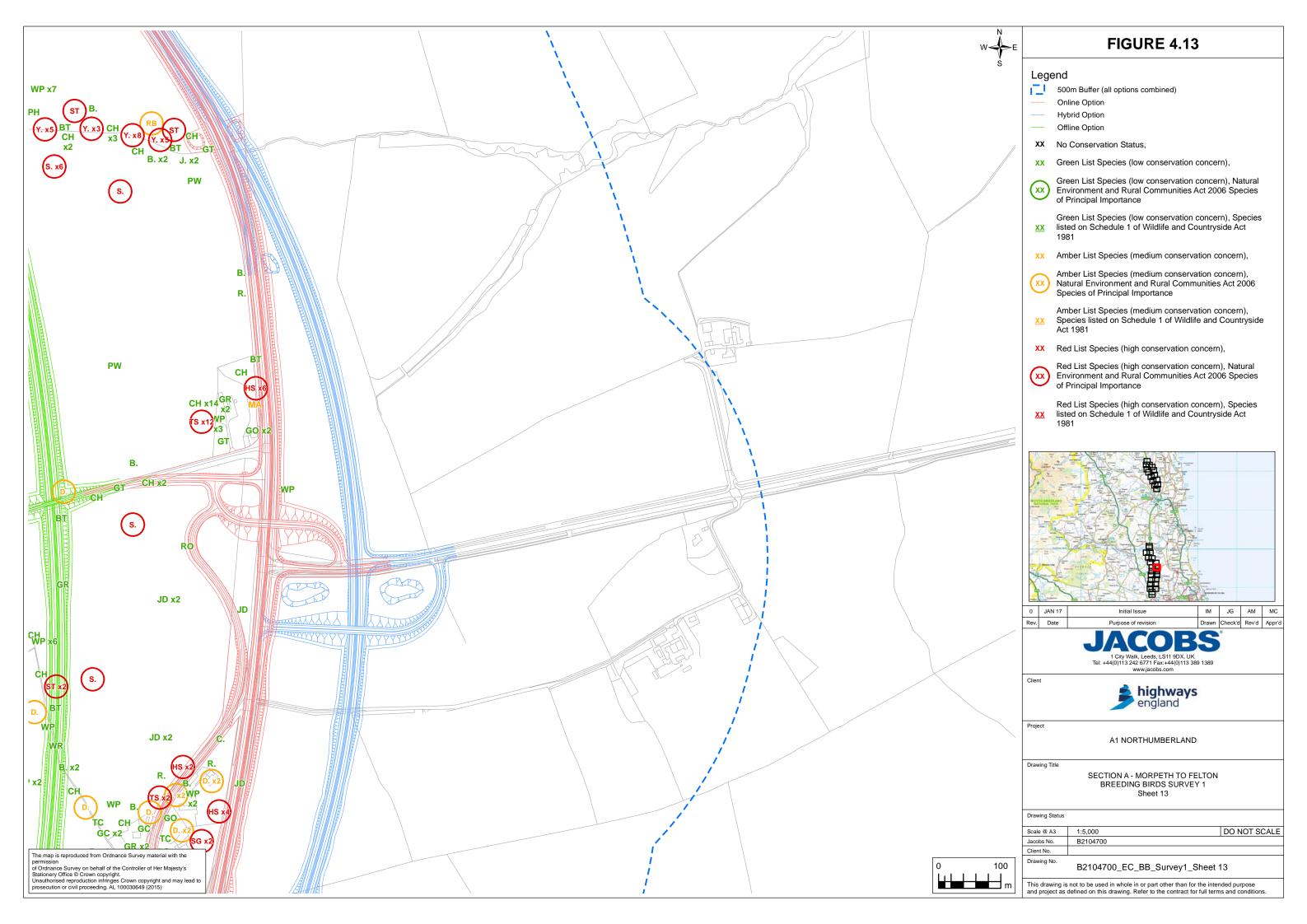
SECTION A - MORPETH TO FELTON BREEDING BIRDS SURVEY 1 Sheet 10

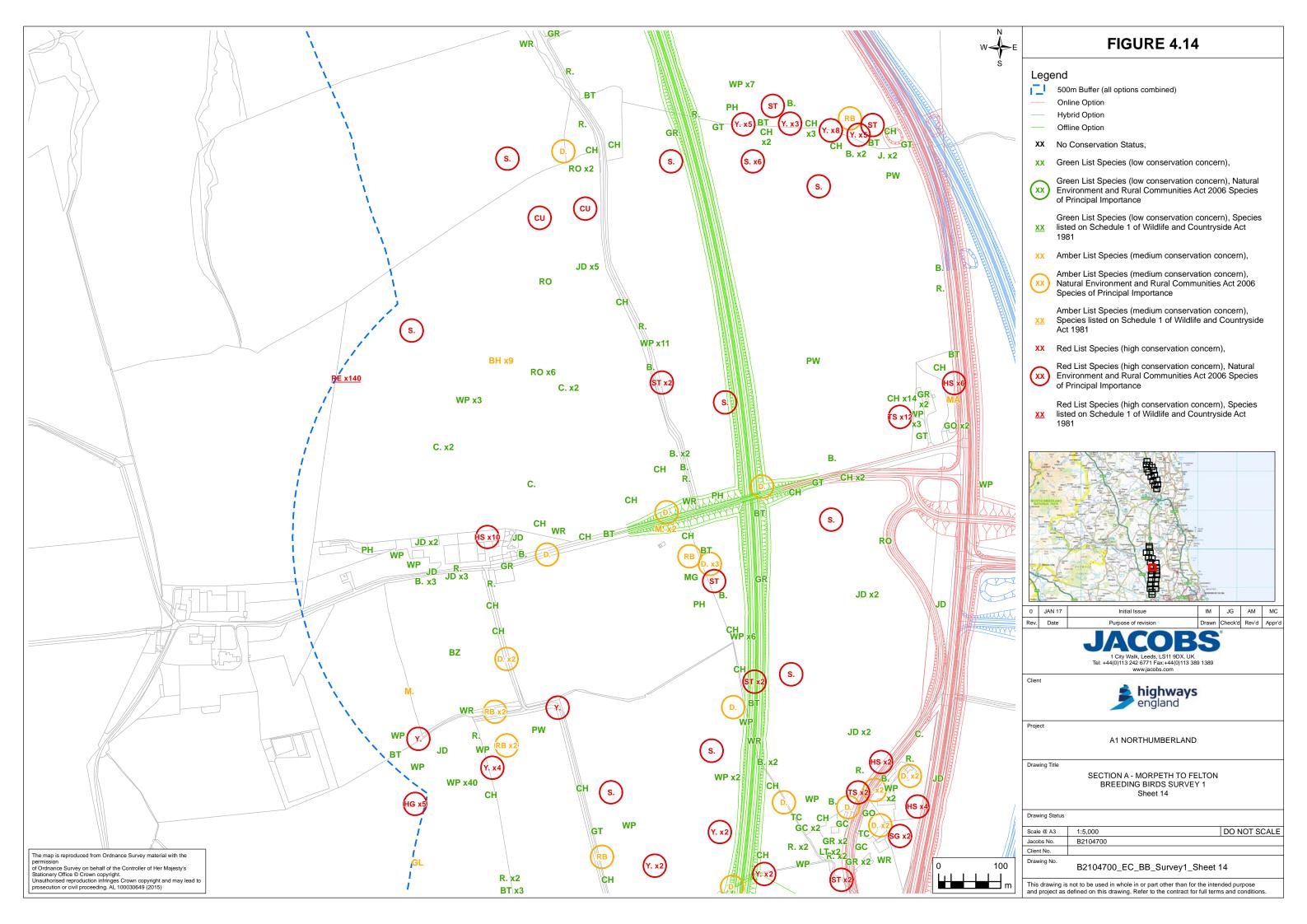
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Jacobs No.	B2104700	
Client No.		
Drawing No.	·	•

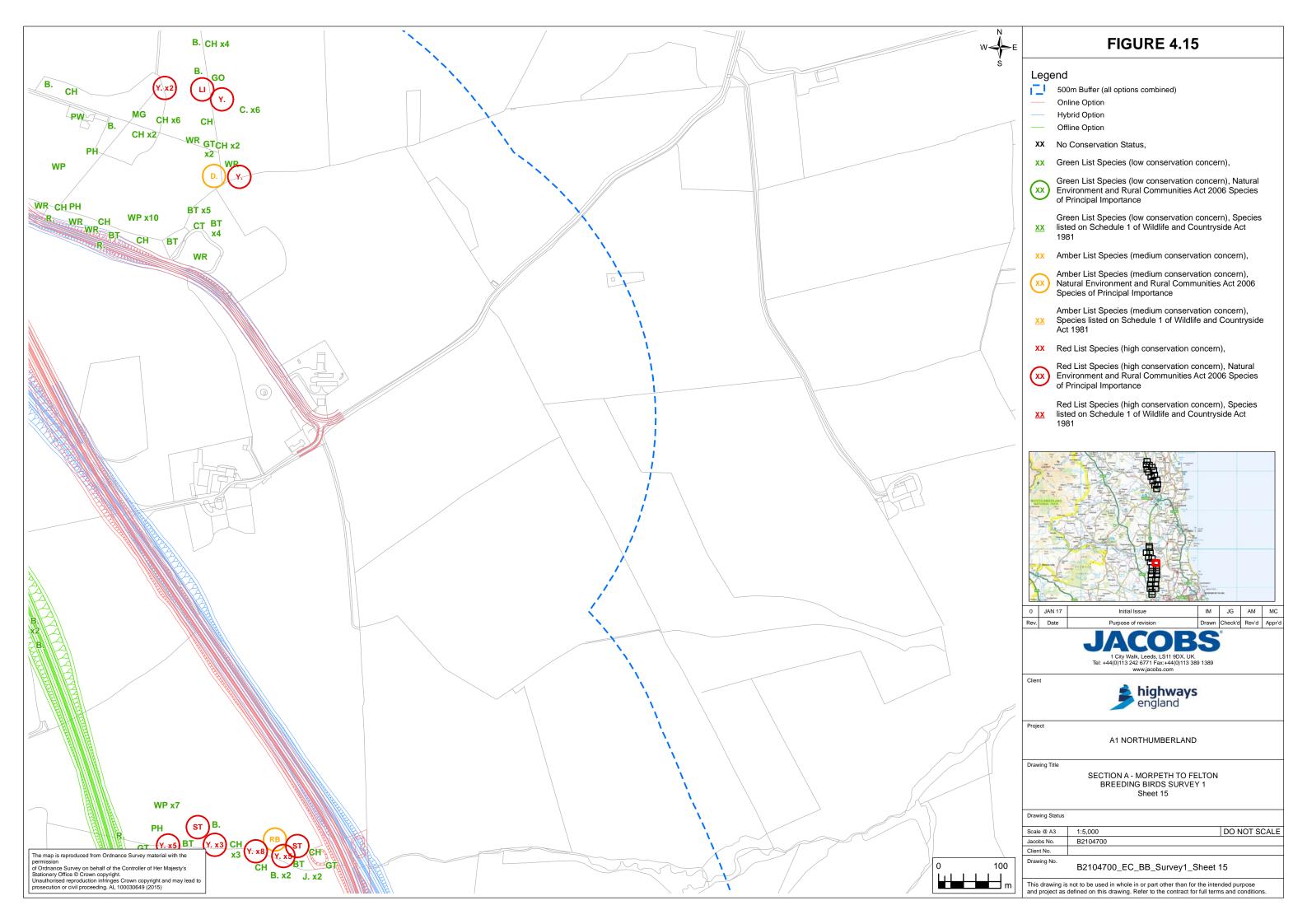
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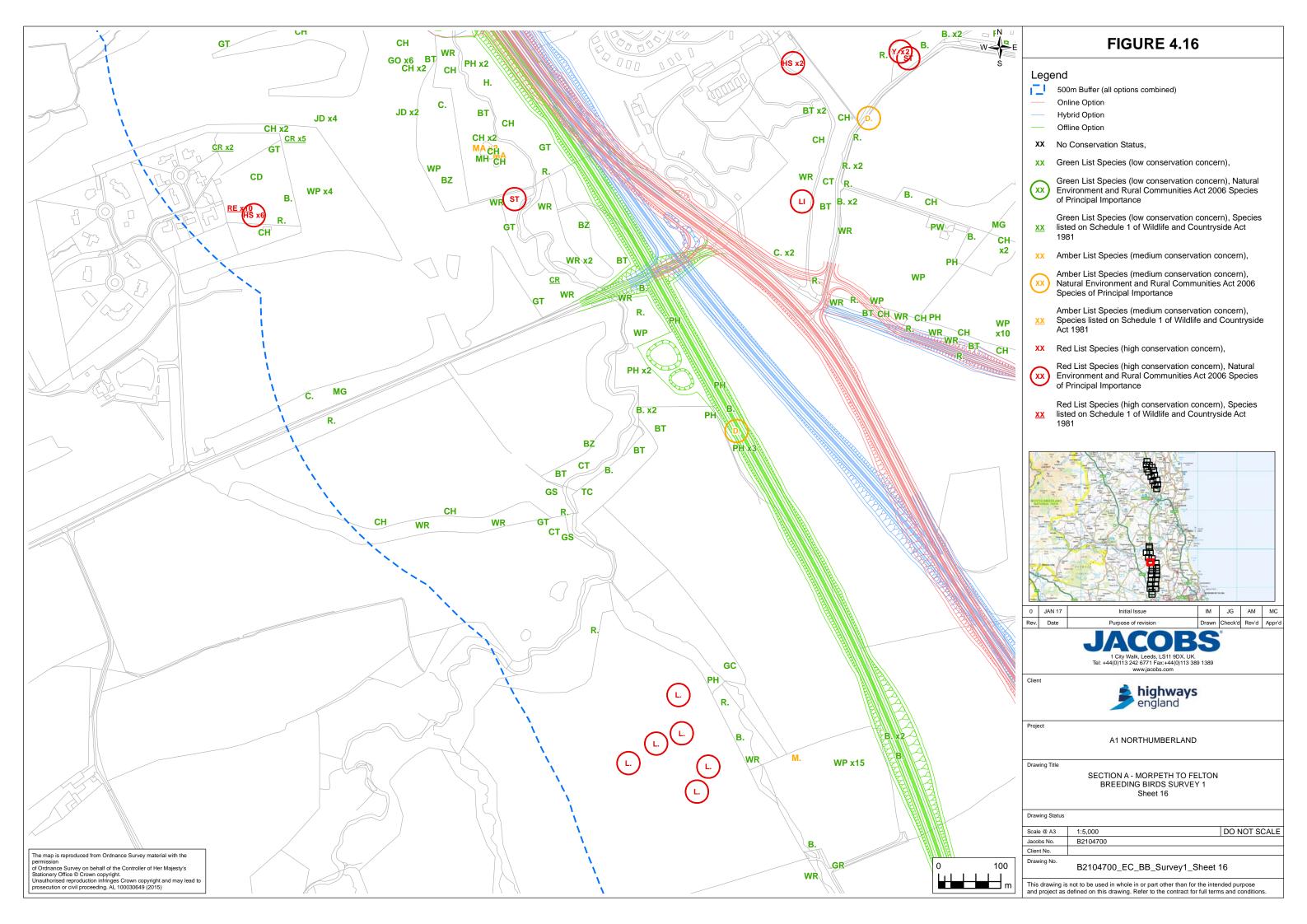


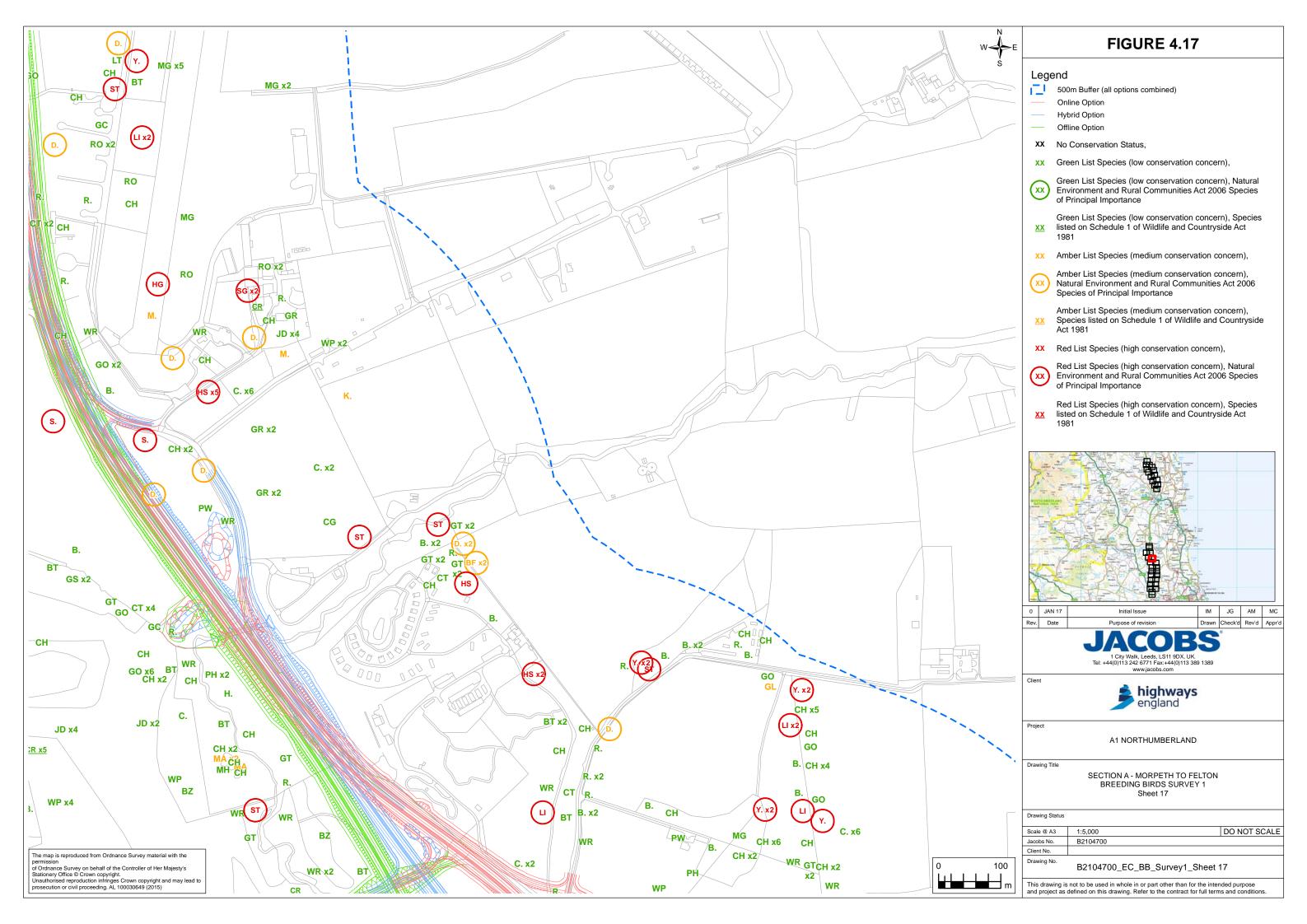


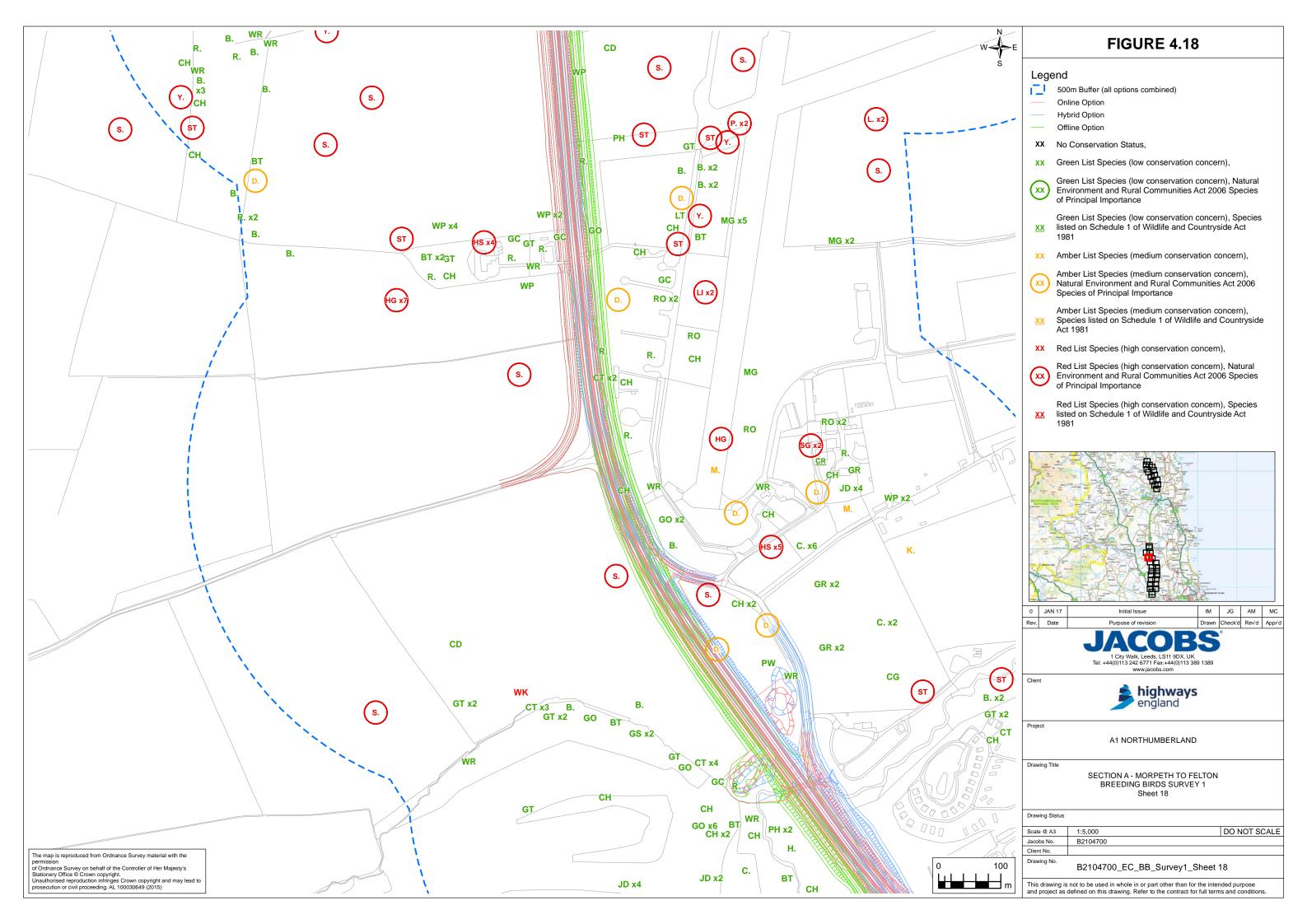


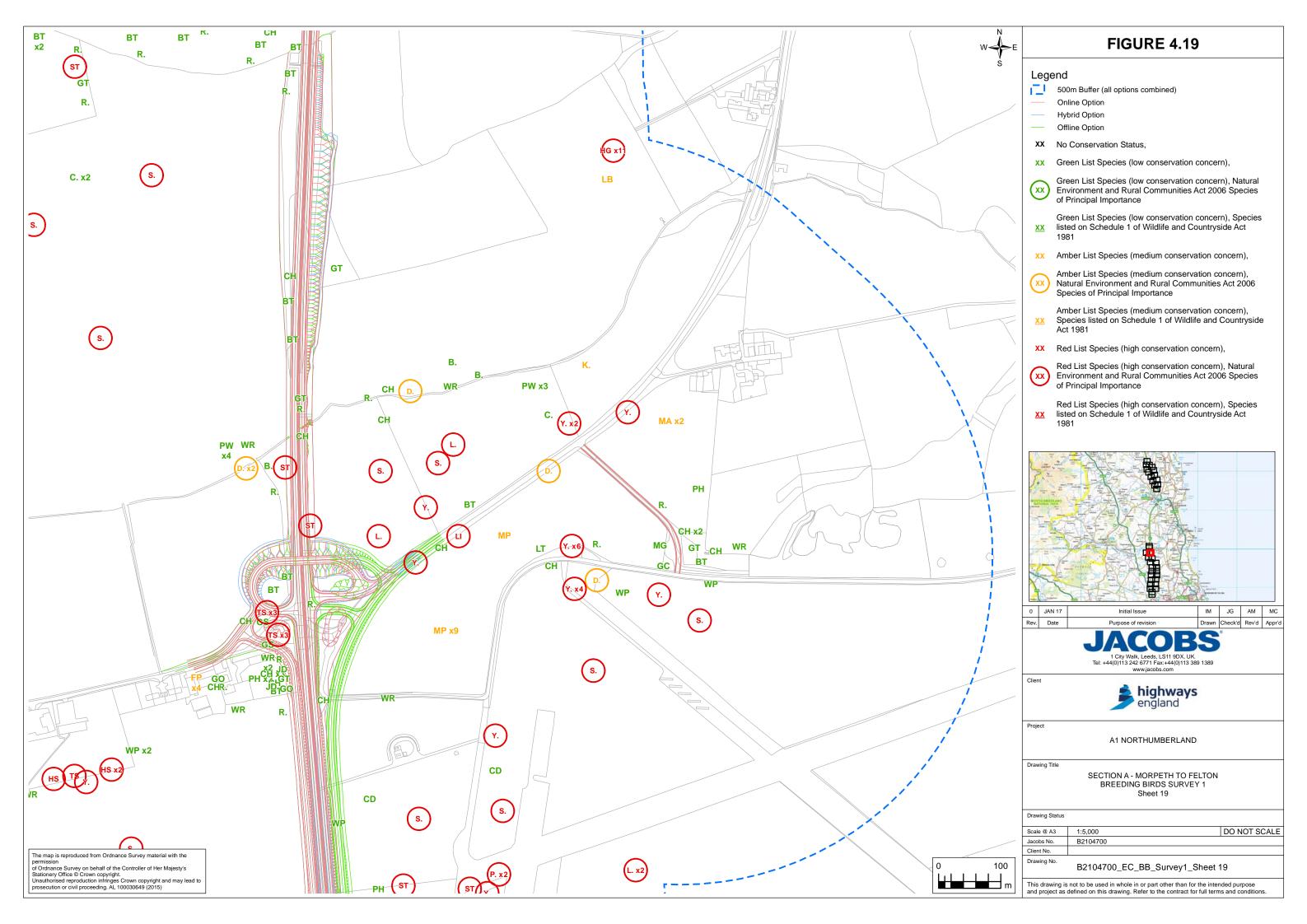


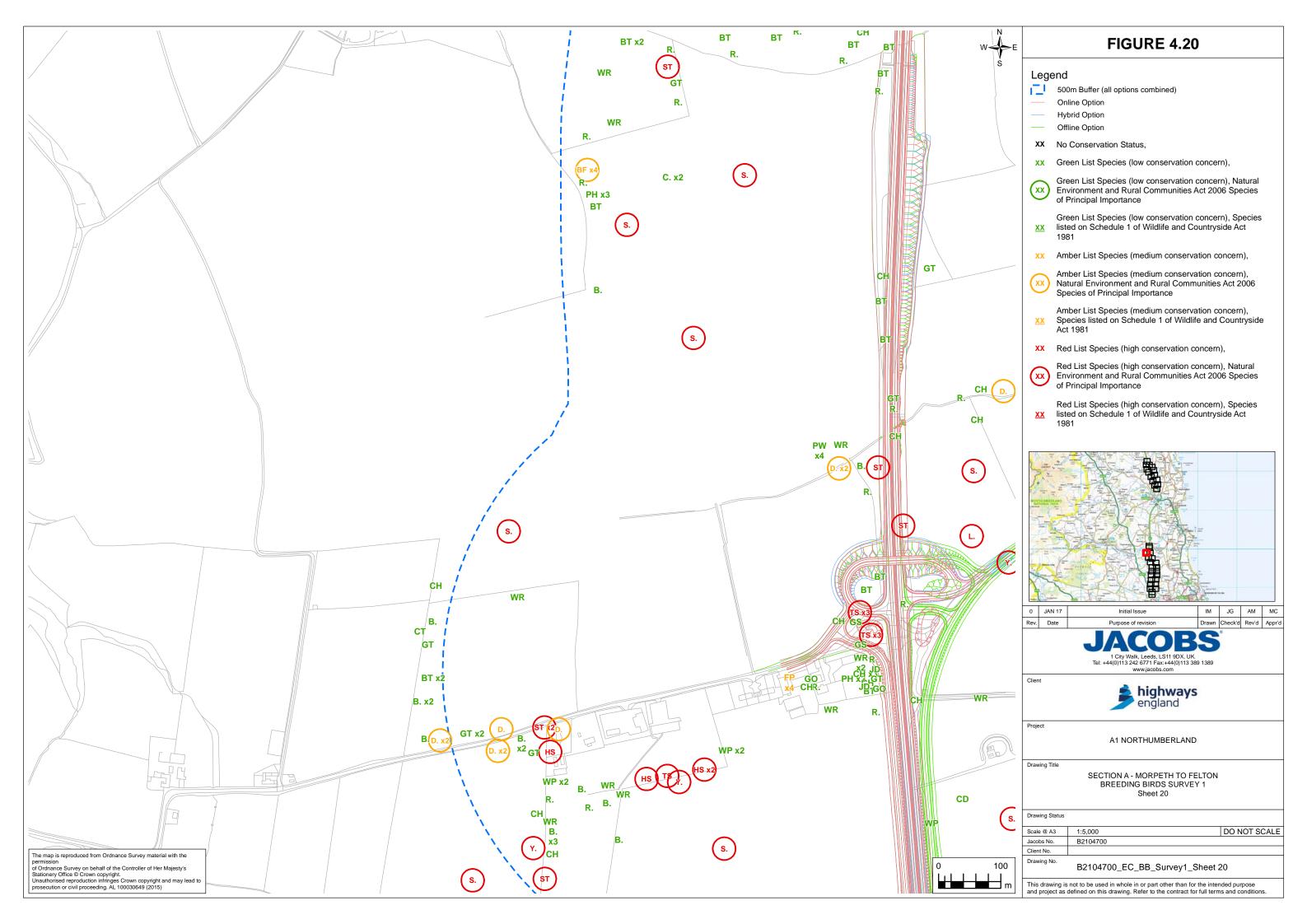


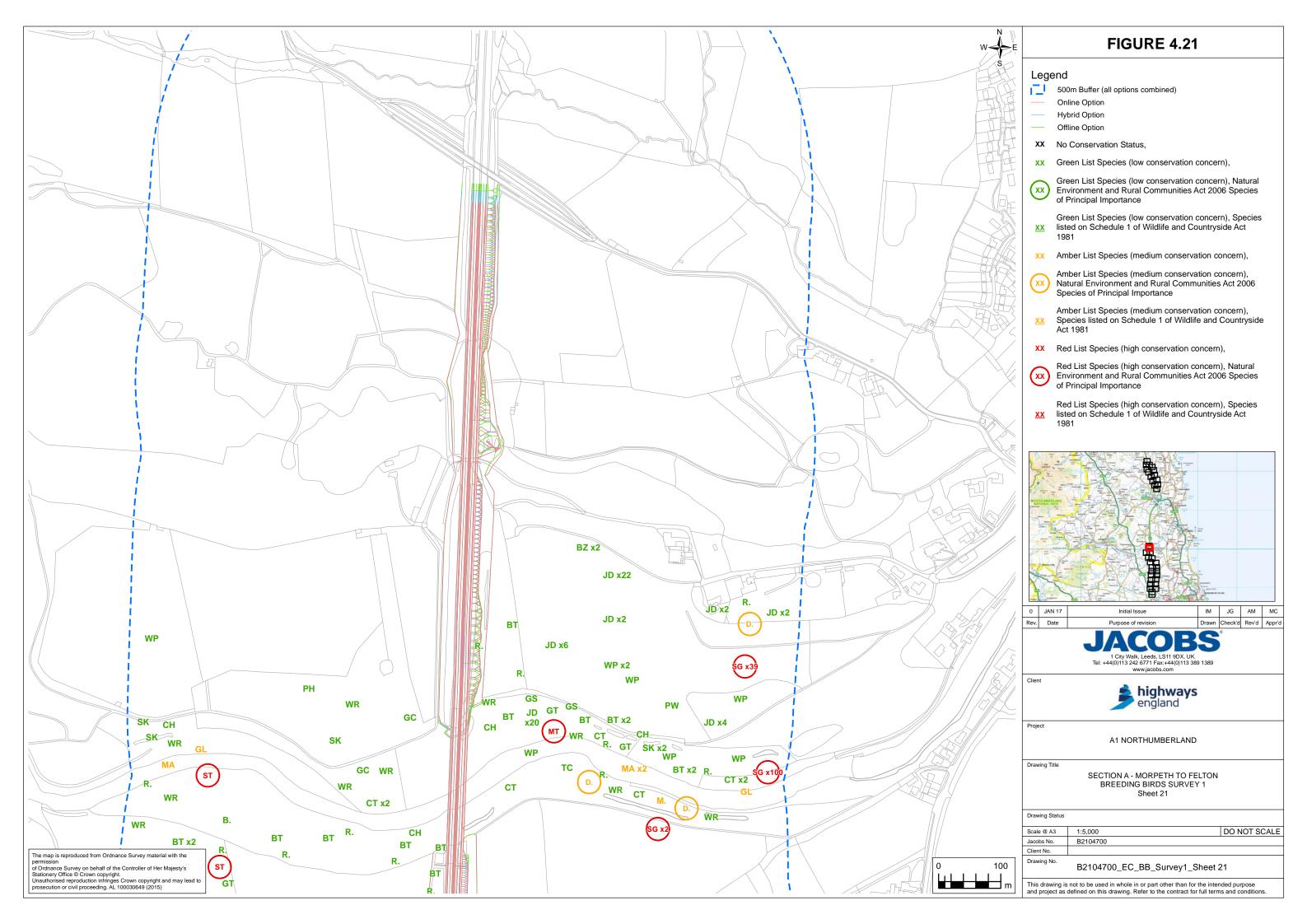


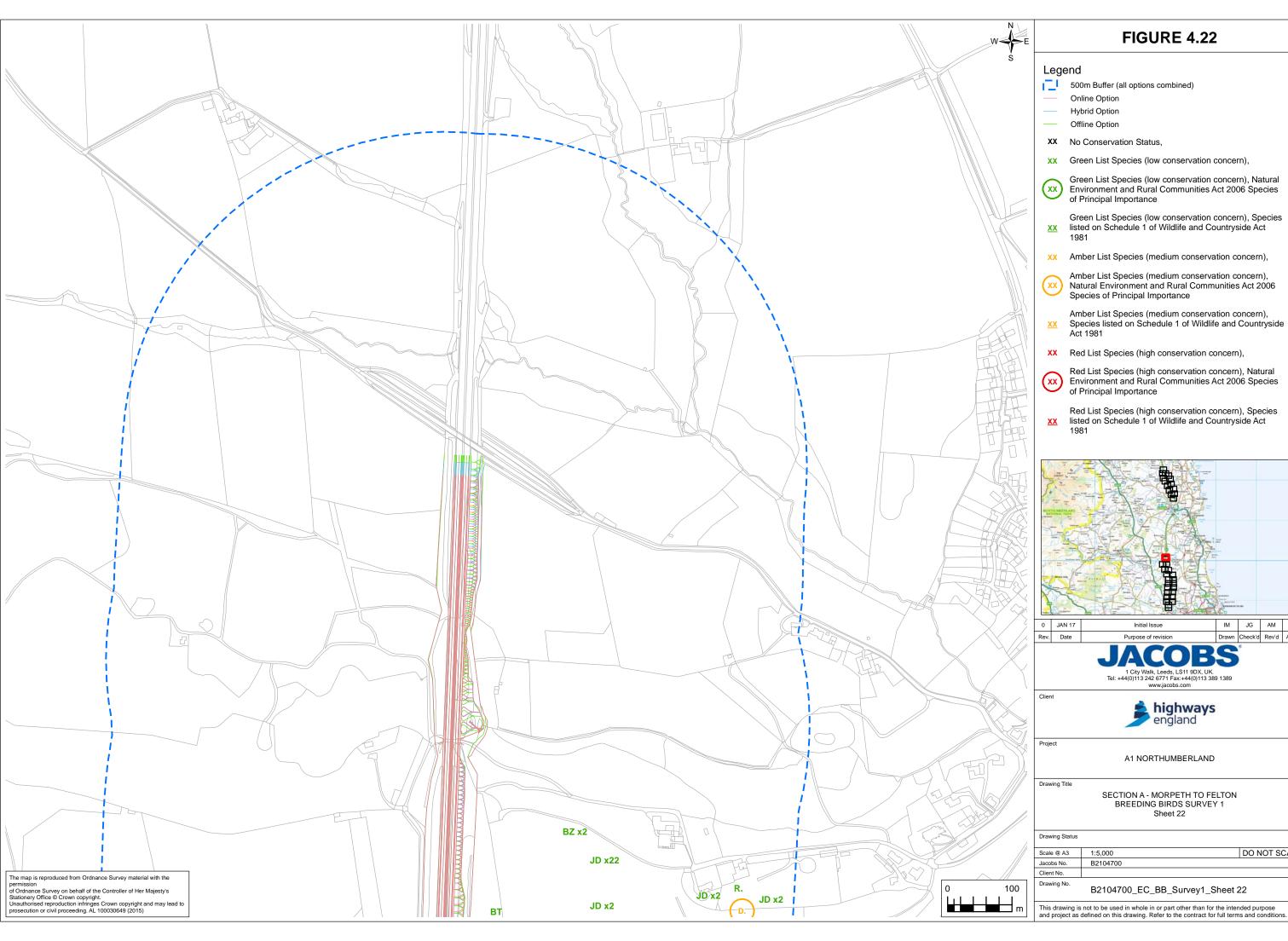












Environment and Rural Communities Act 2006 Species

Natural Environment and Rural Communities Act 2006

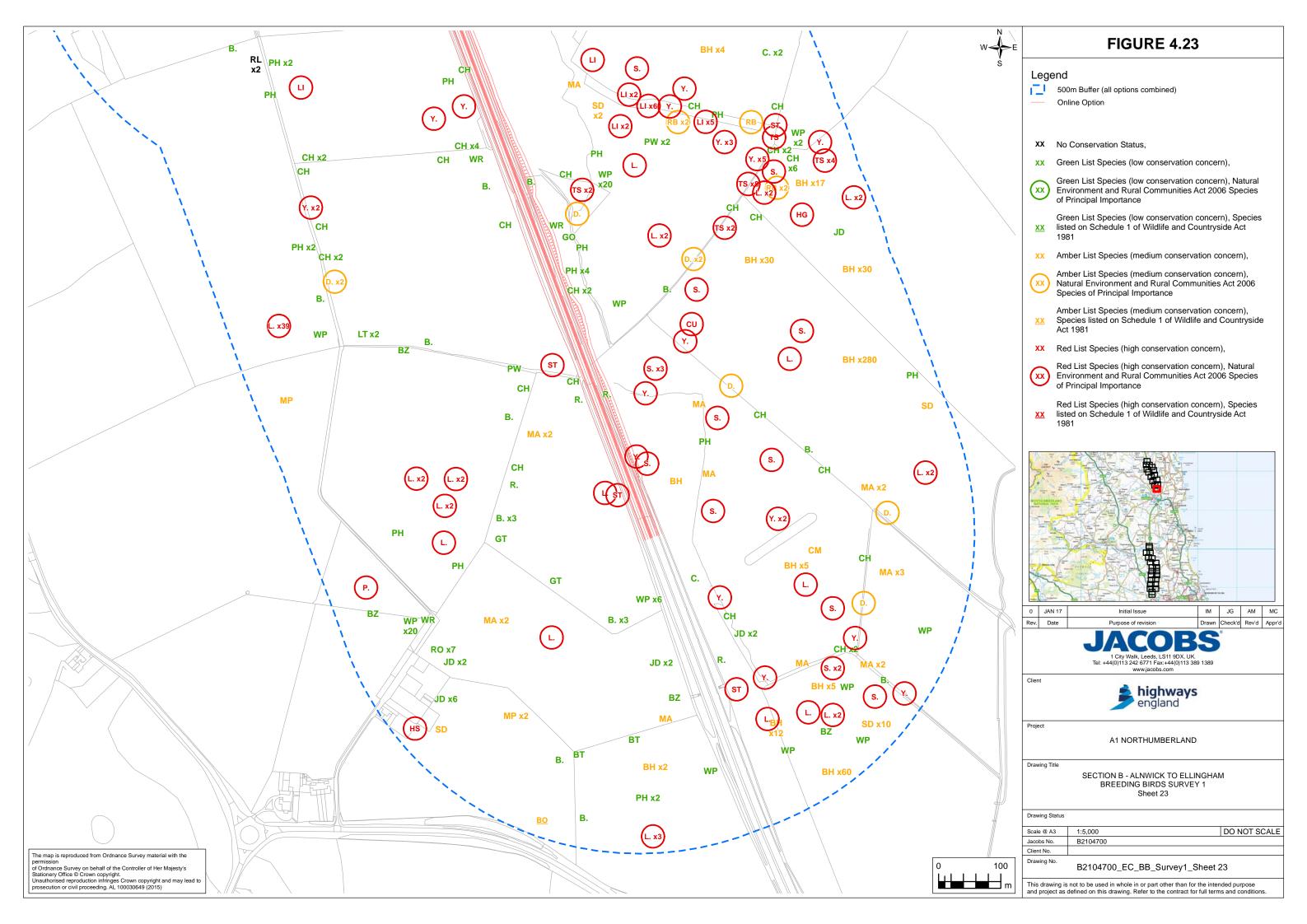
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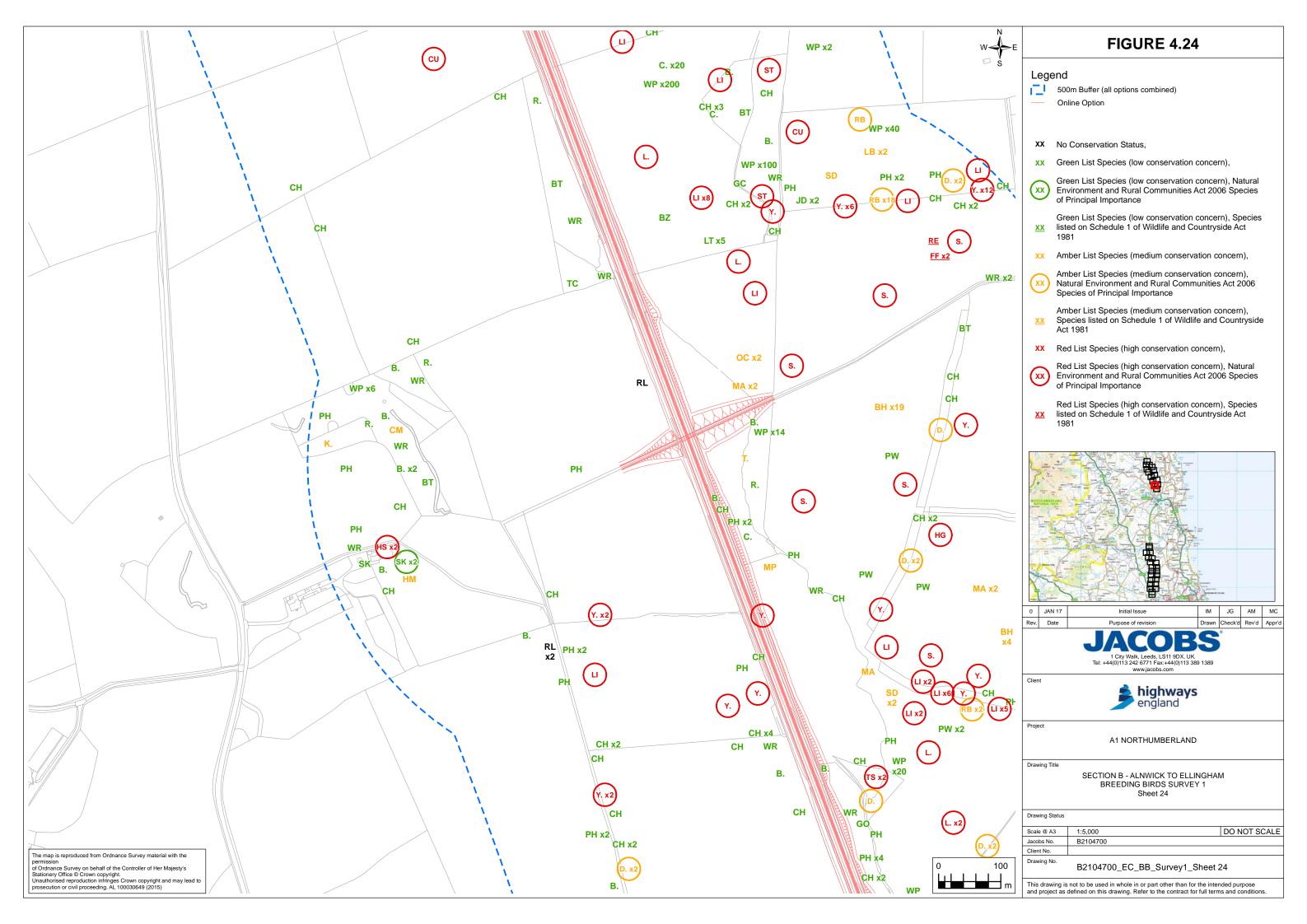
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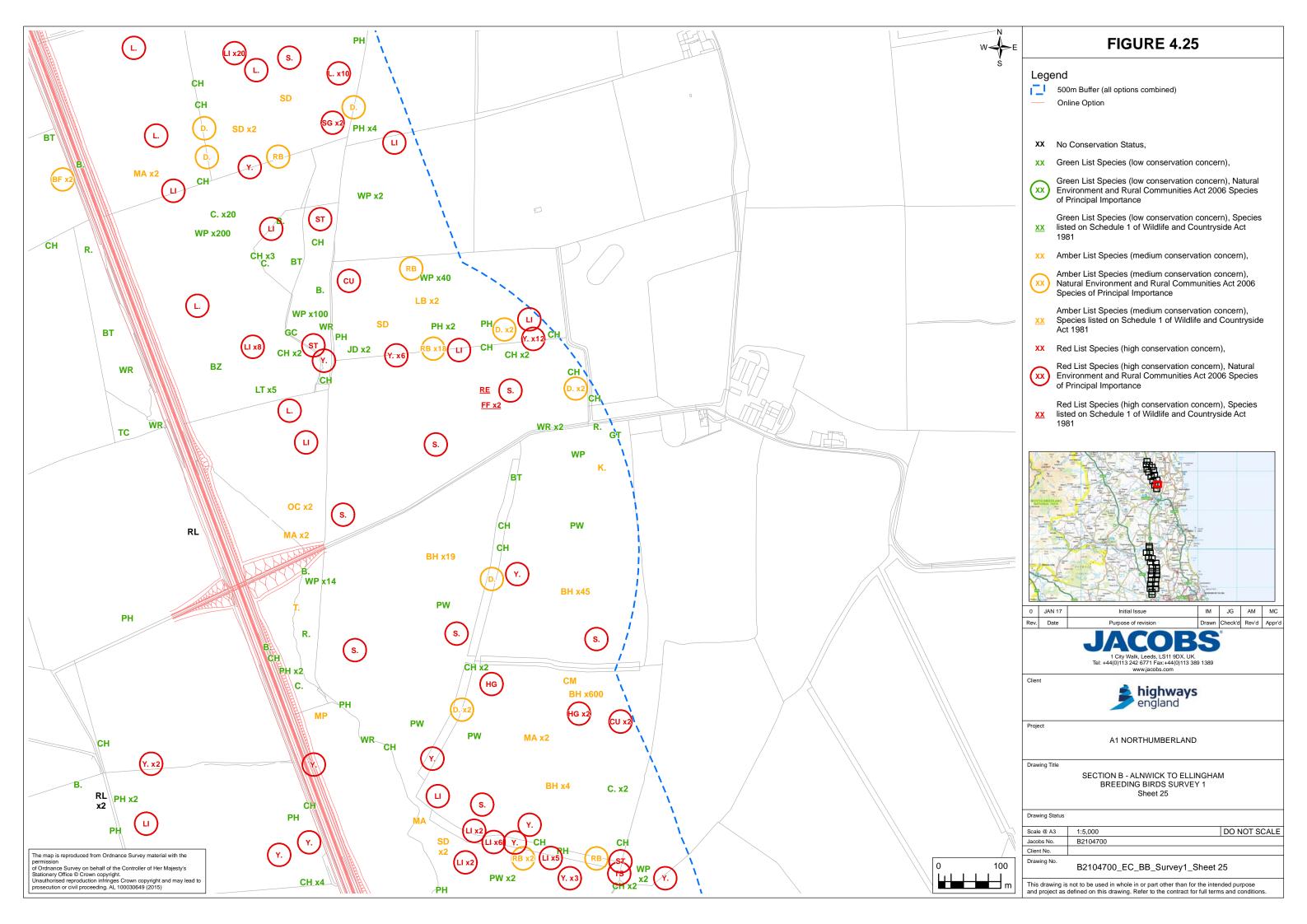


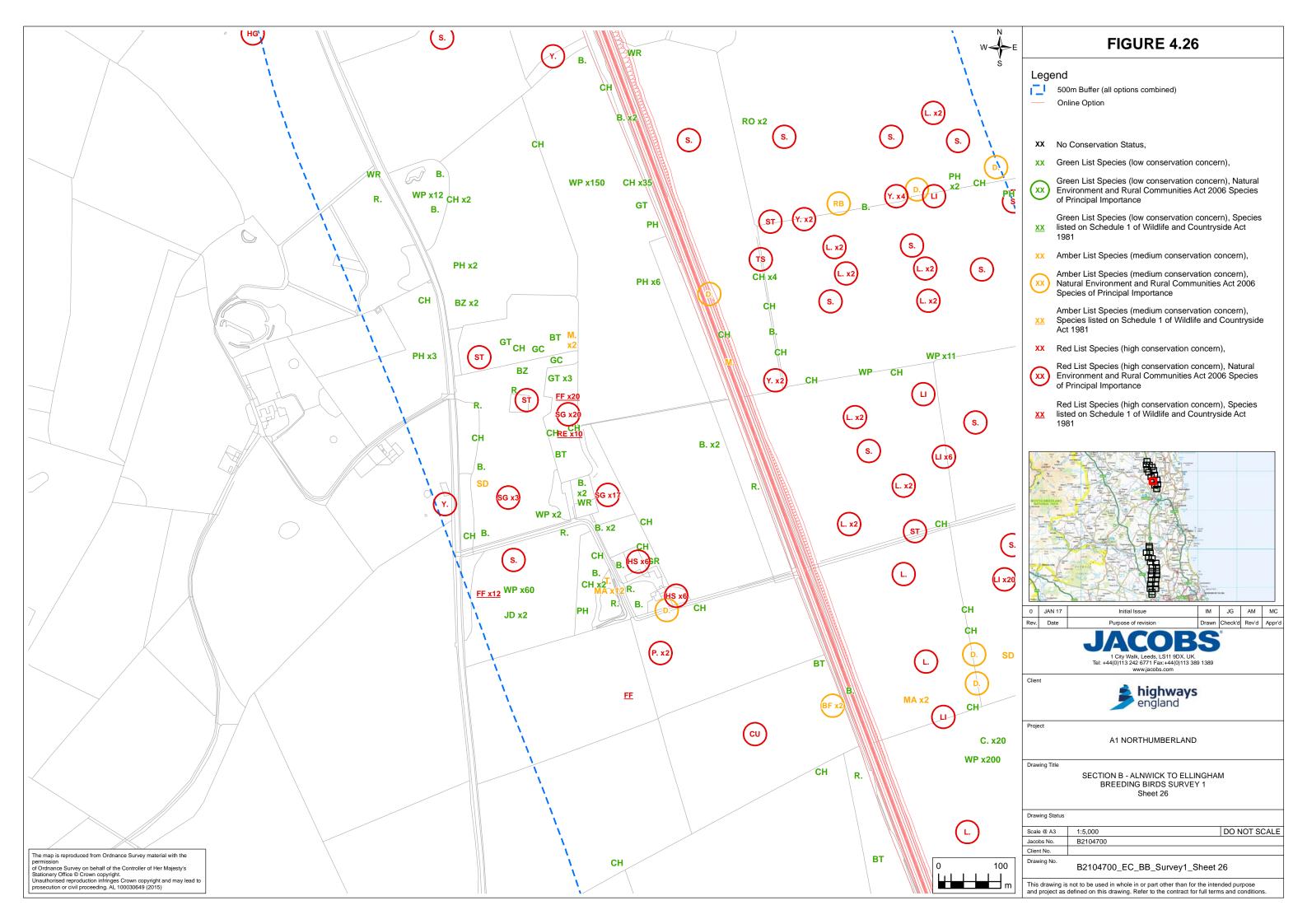
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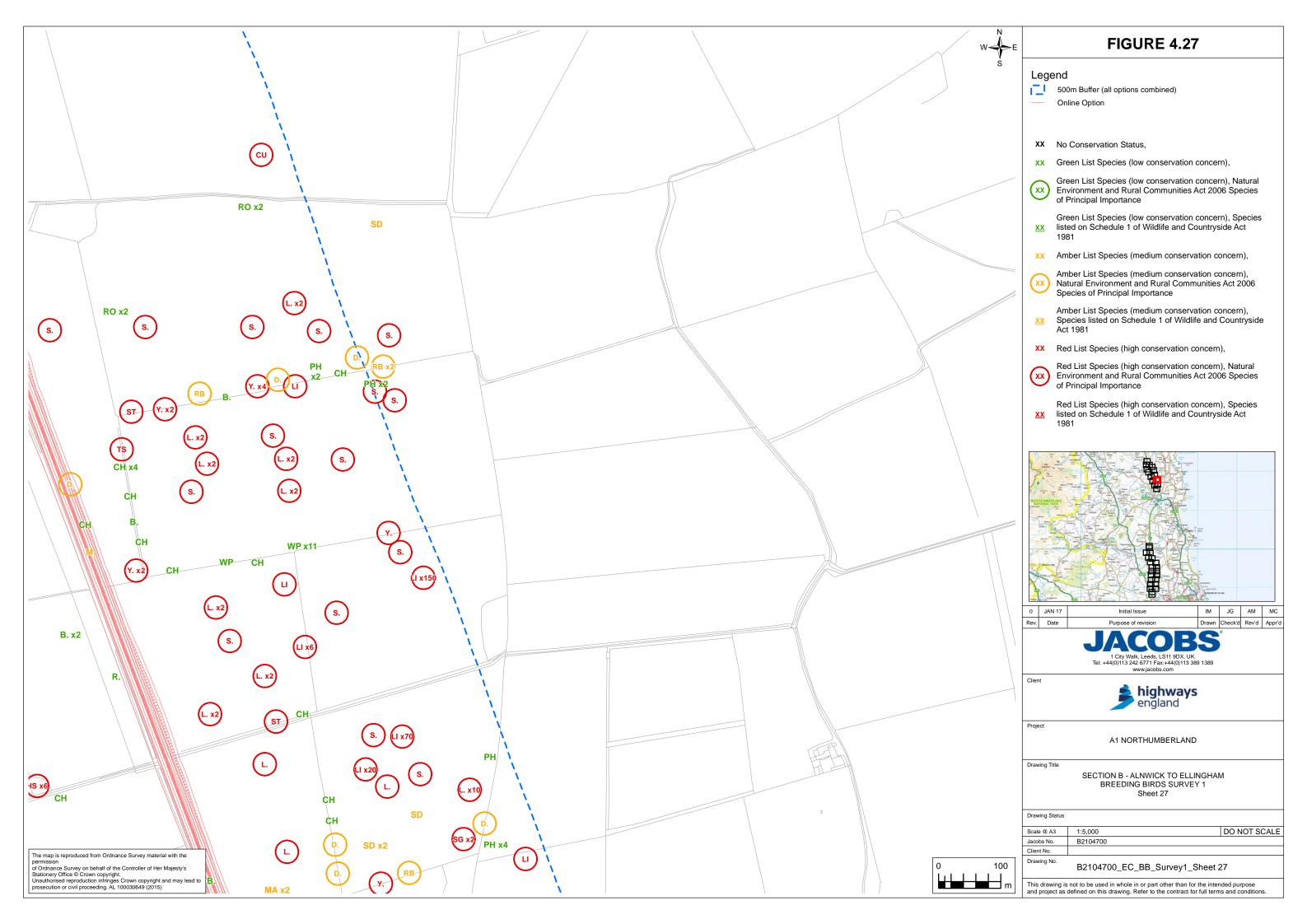
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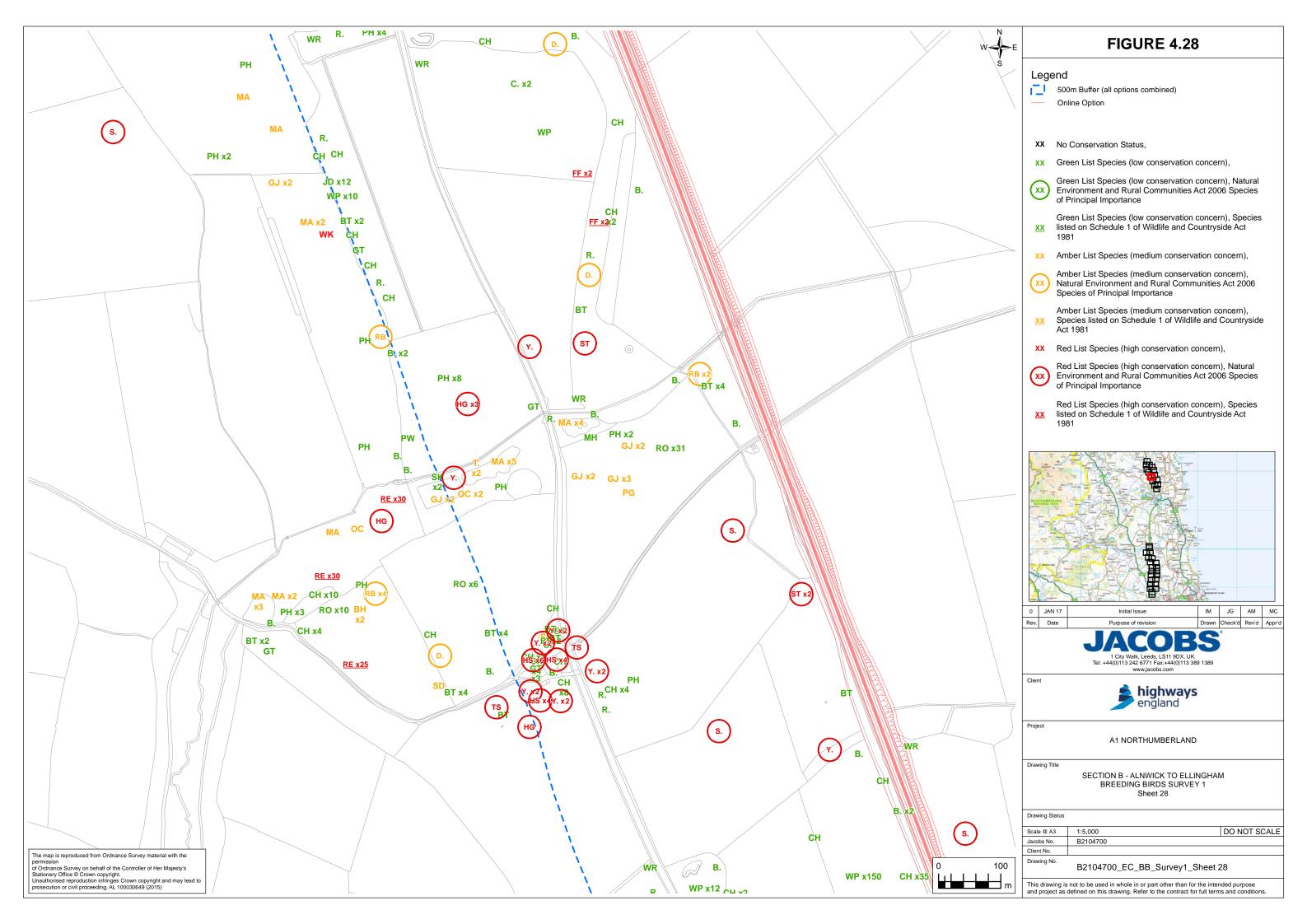


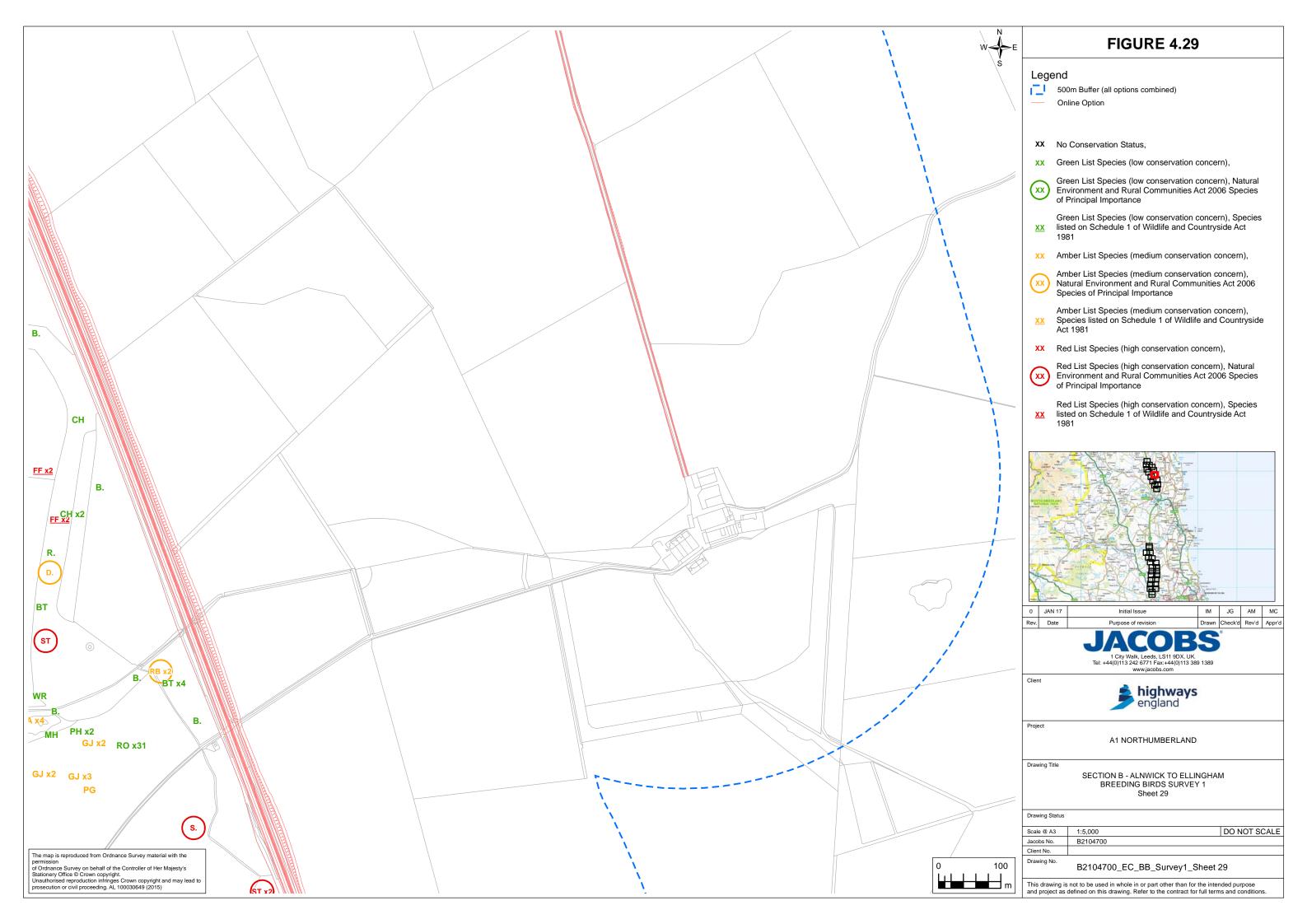


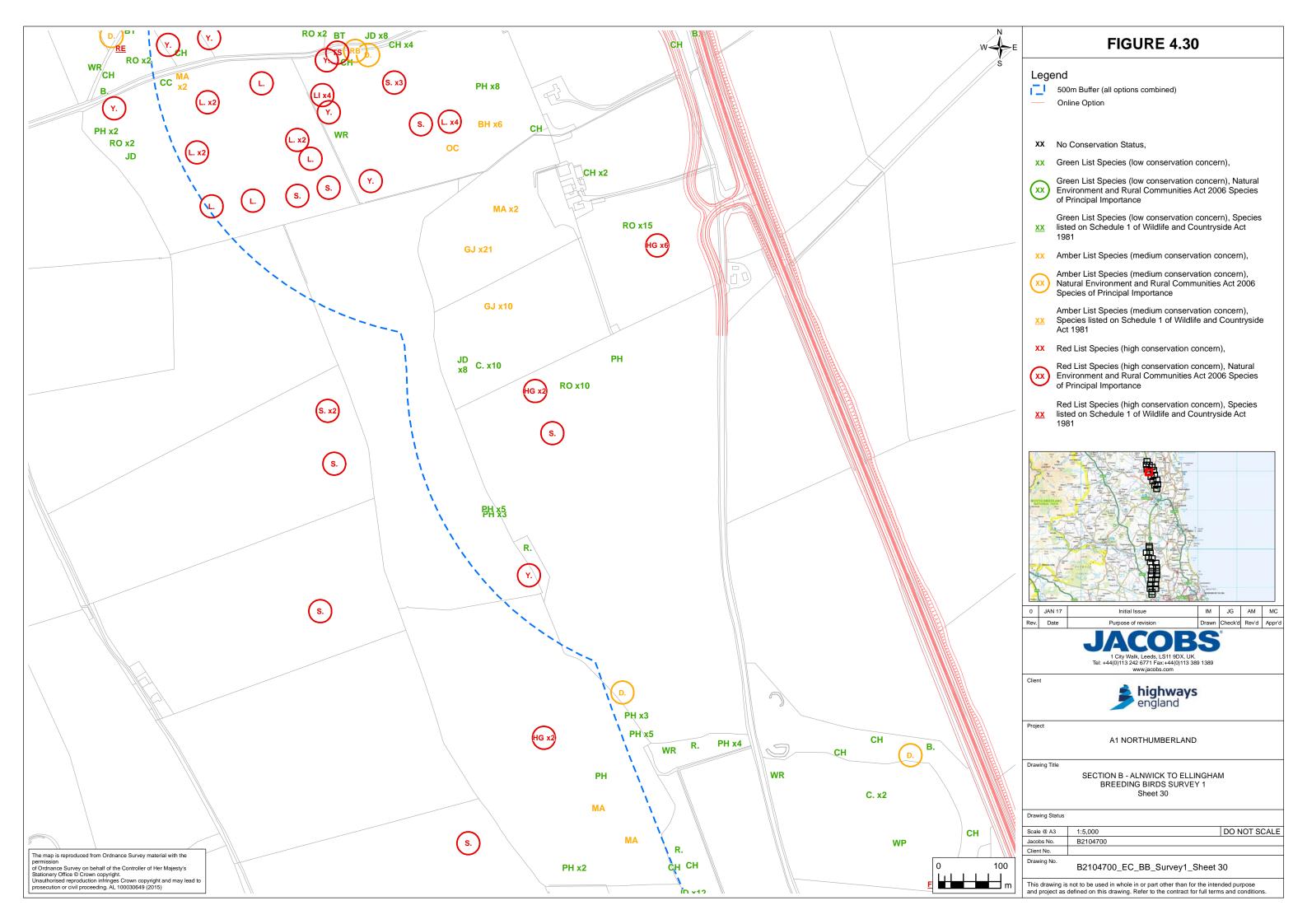


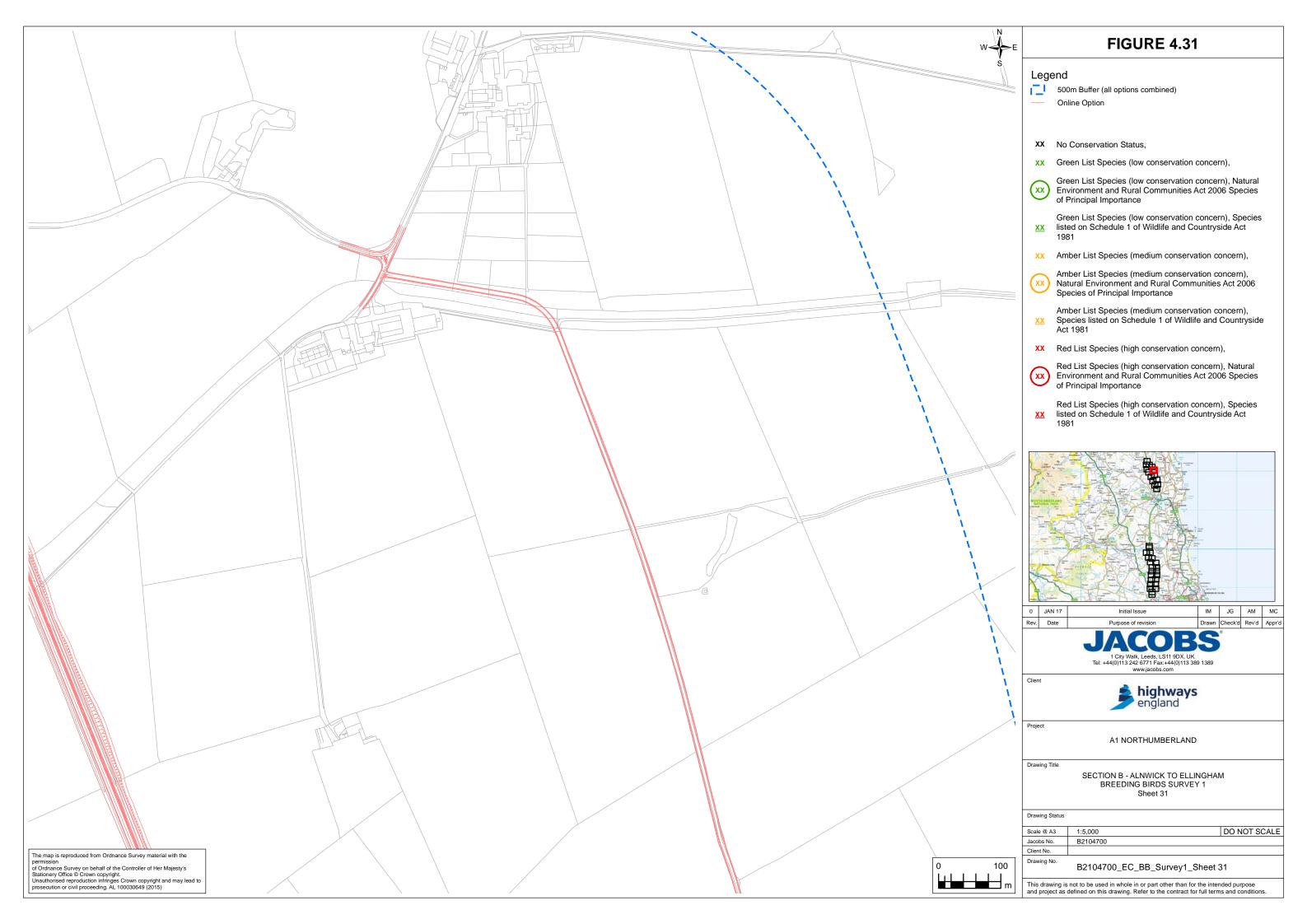


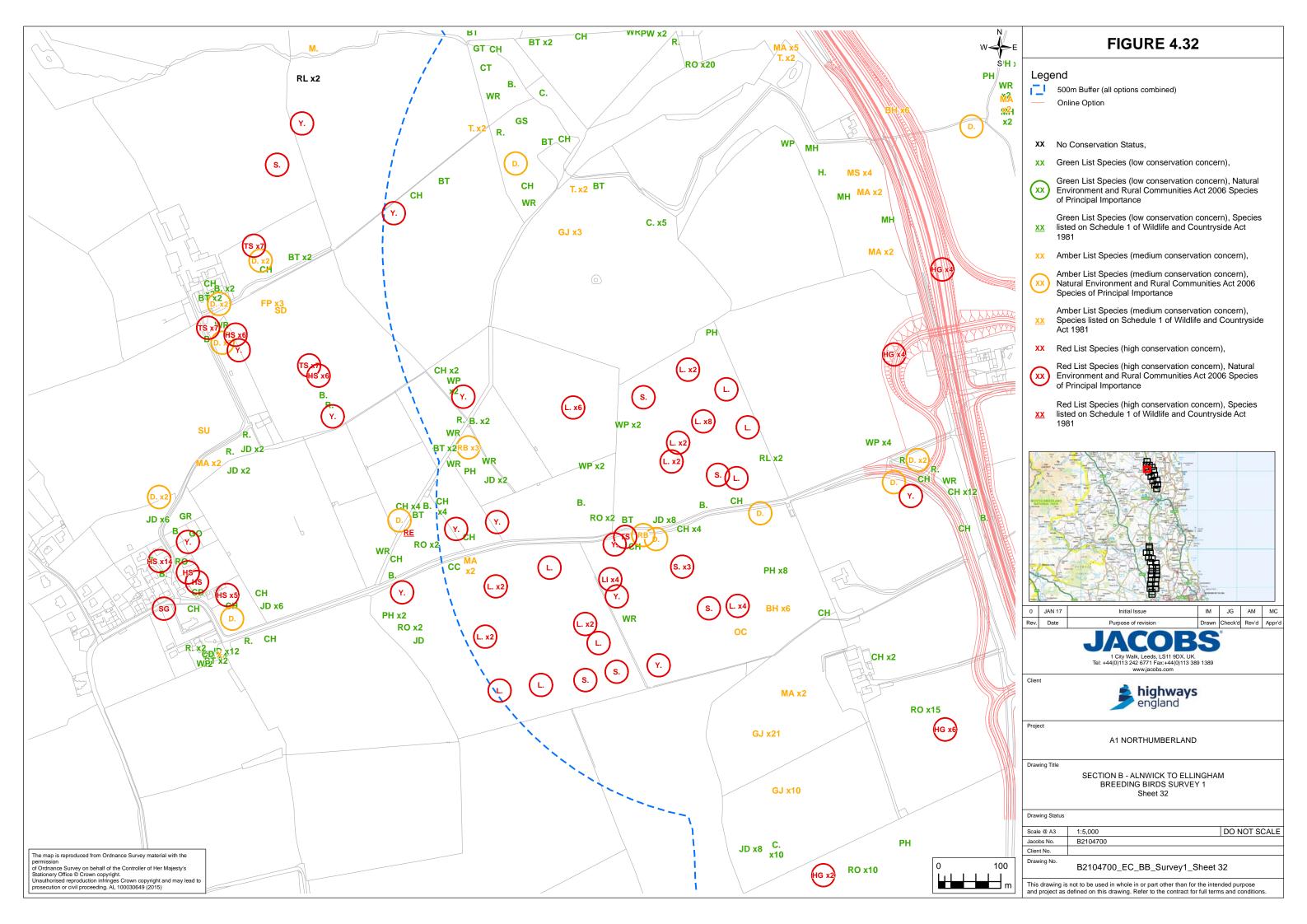


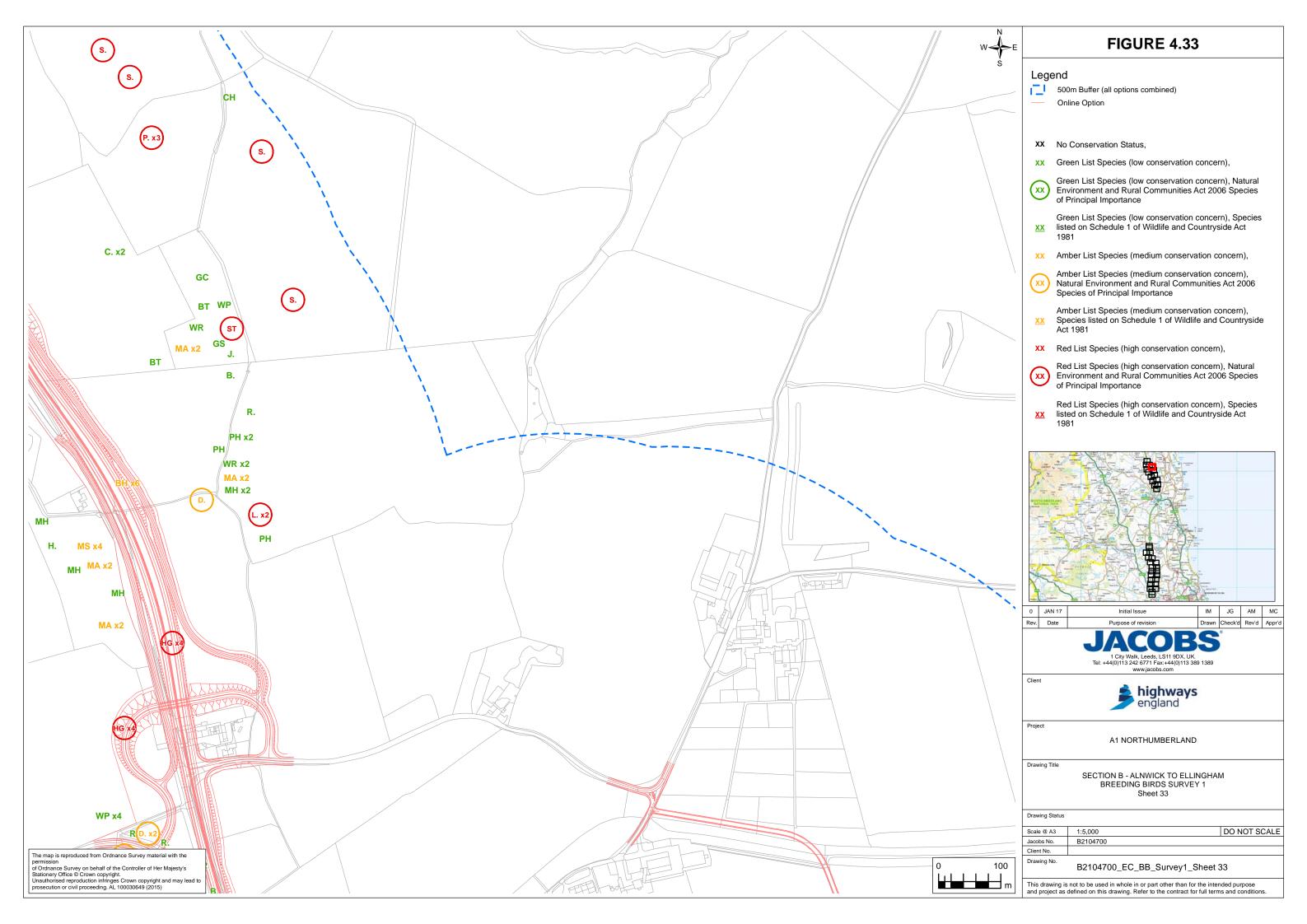


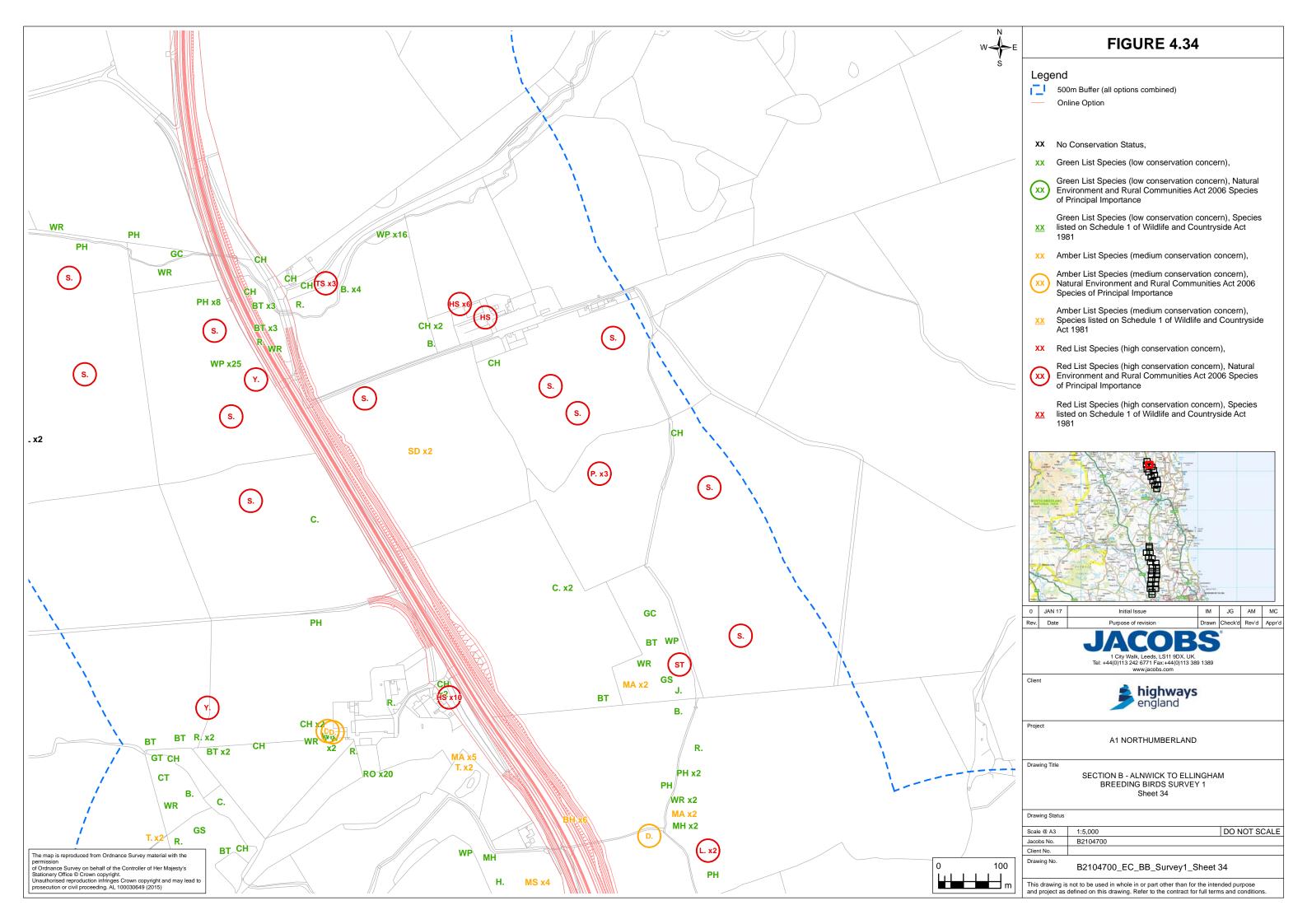


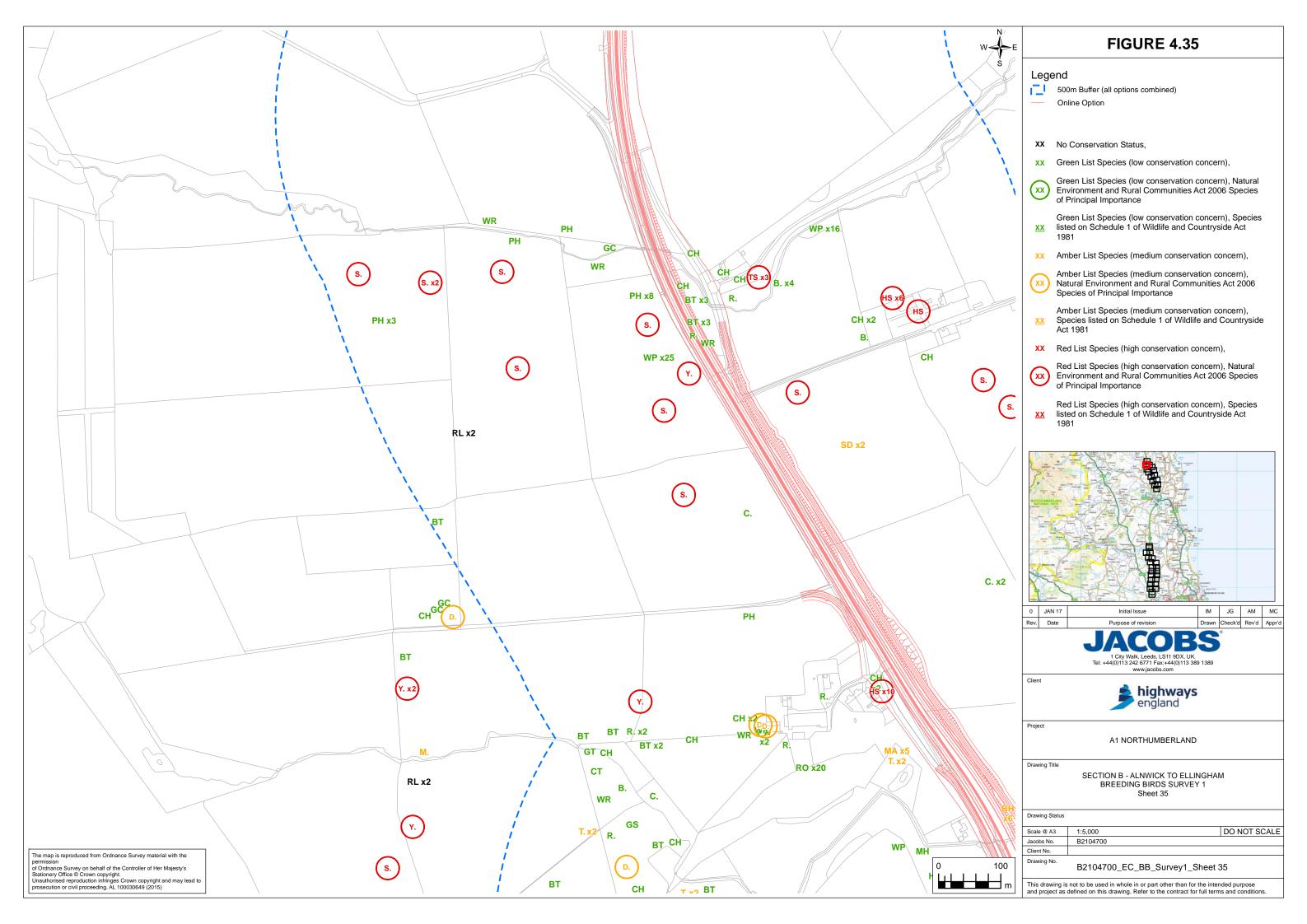


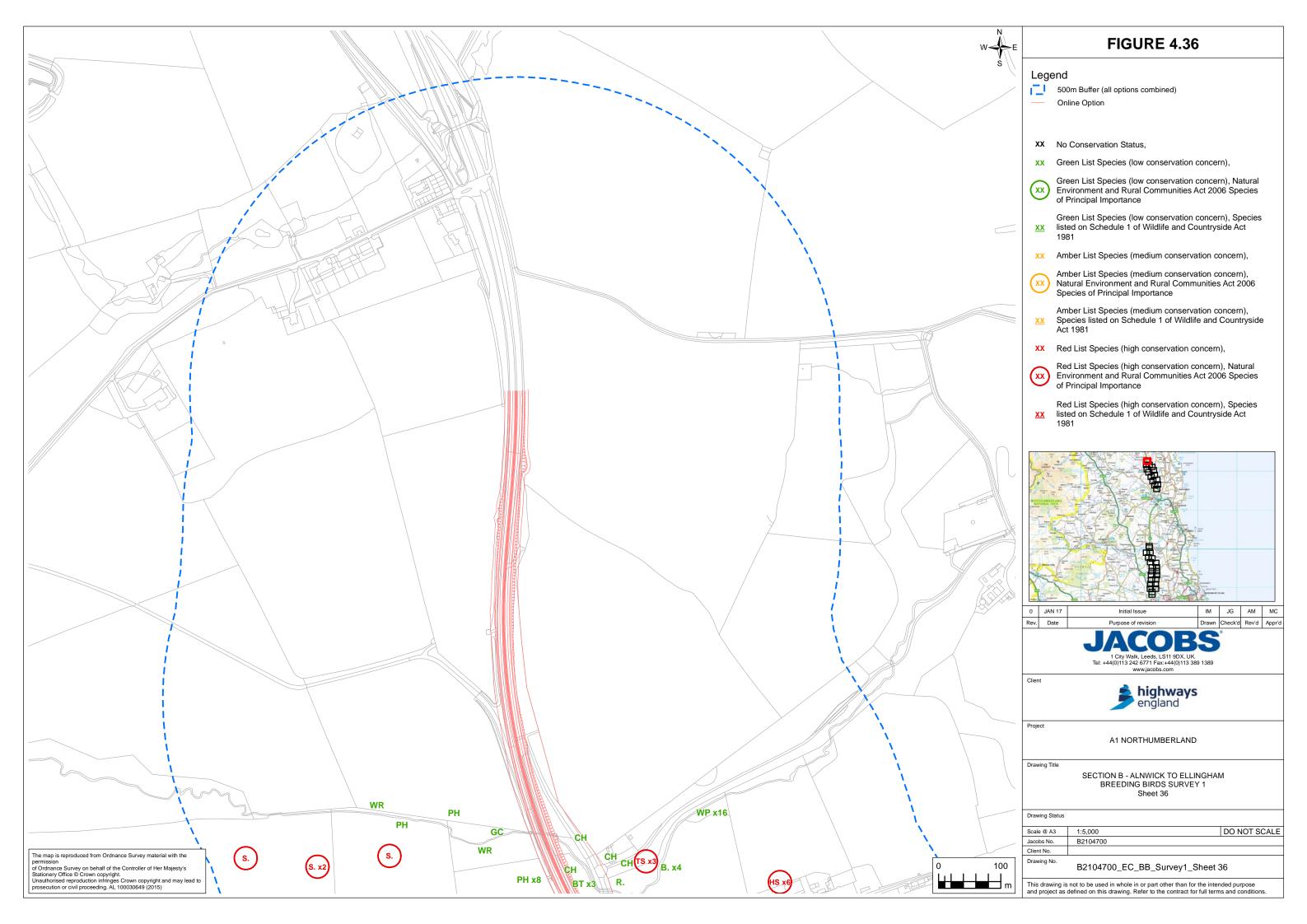


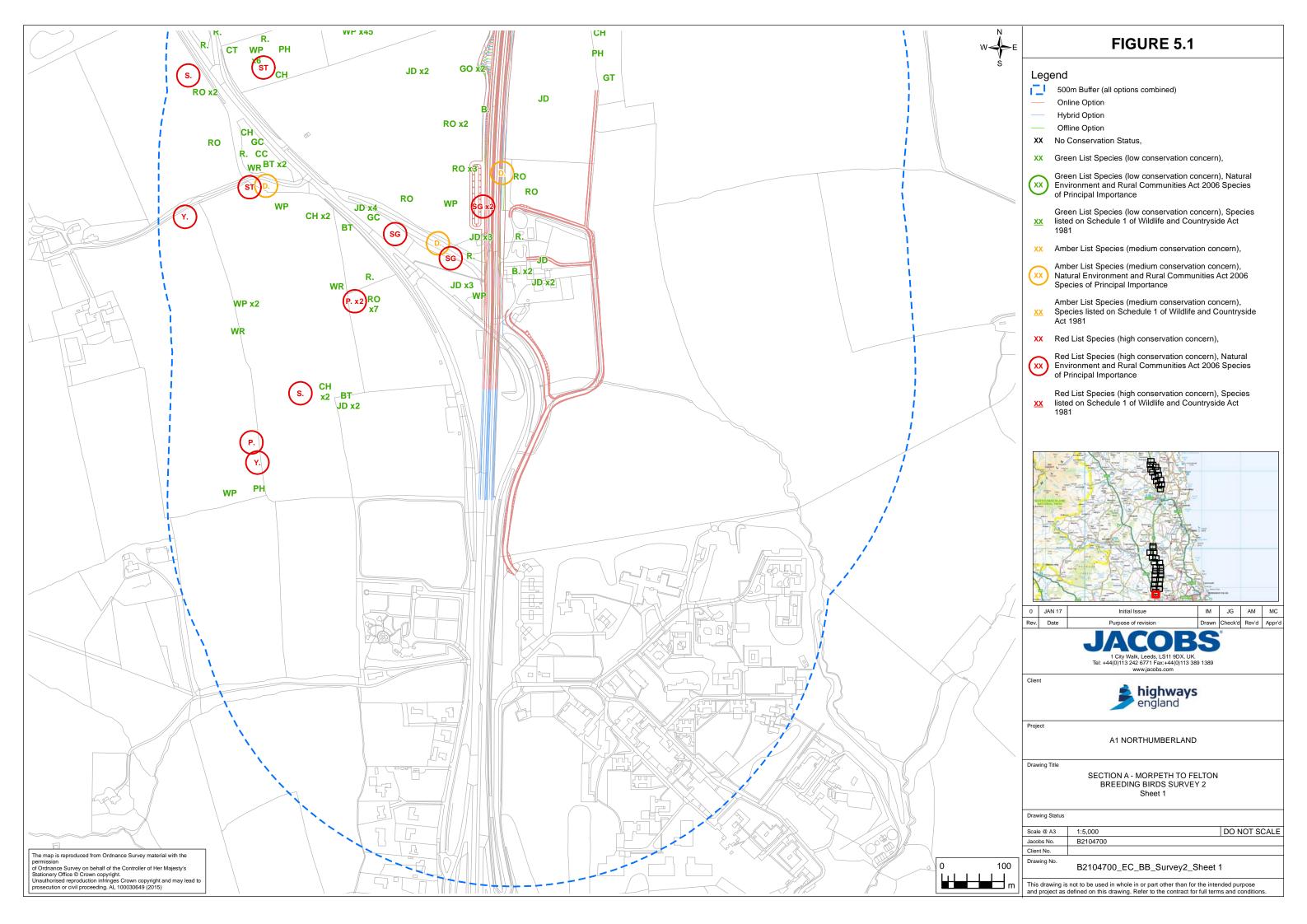


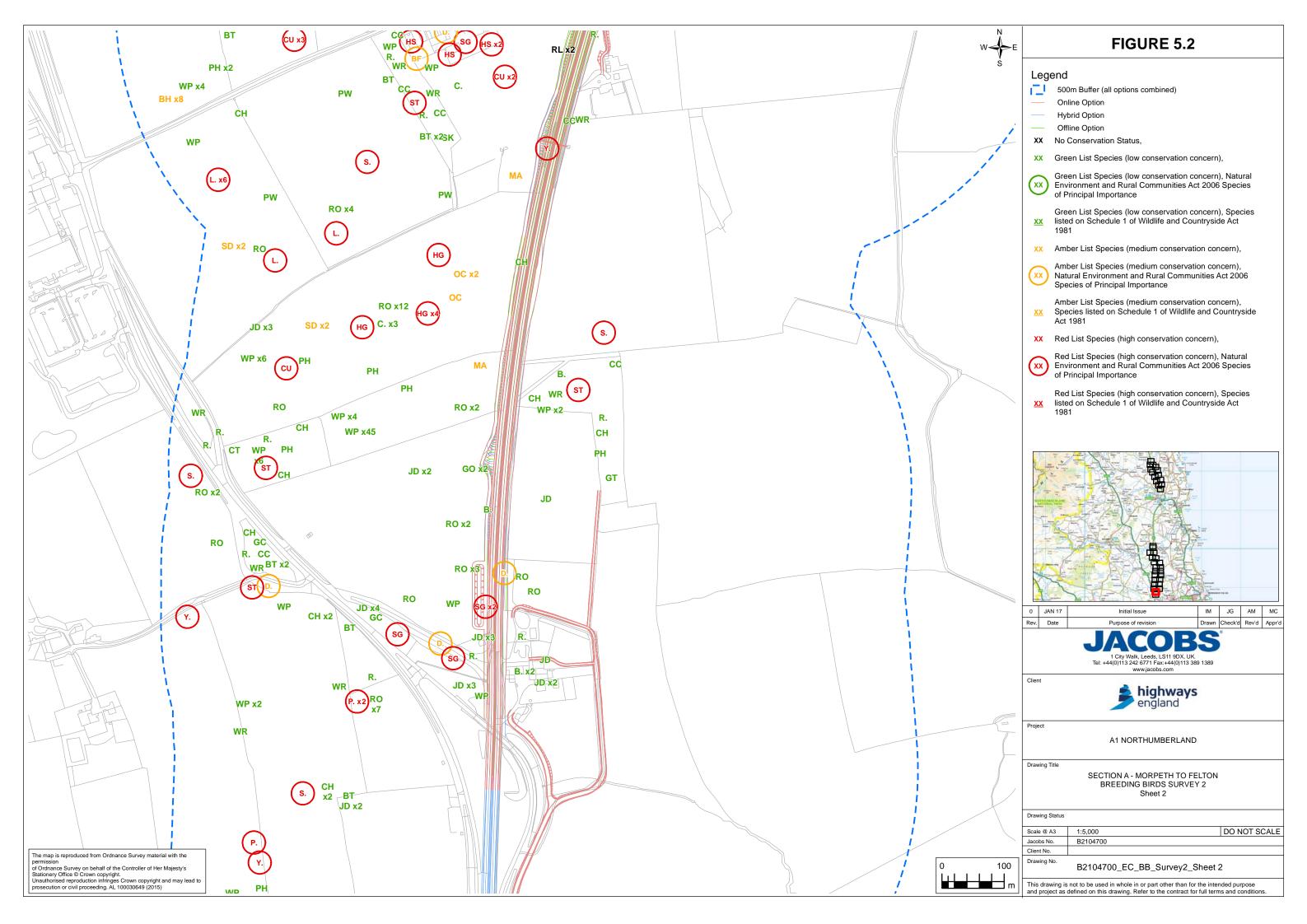


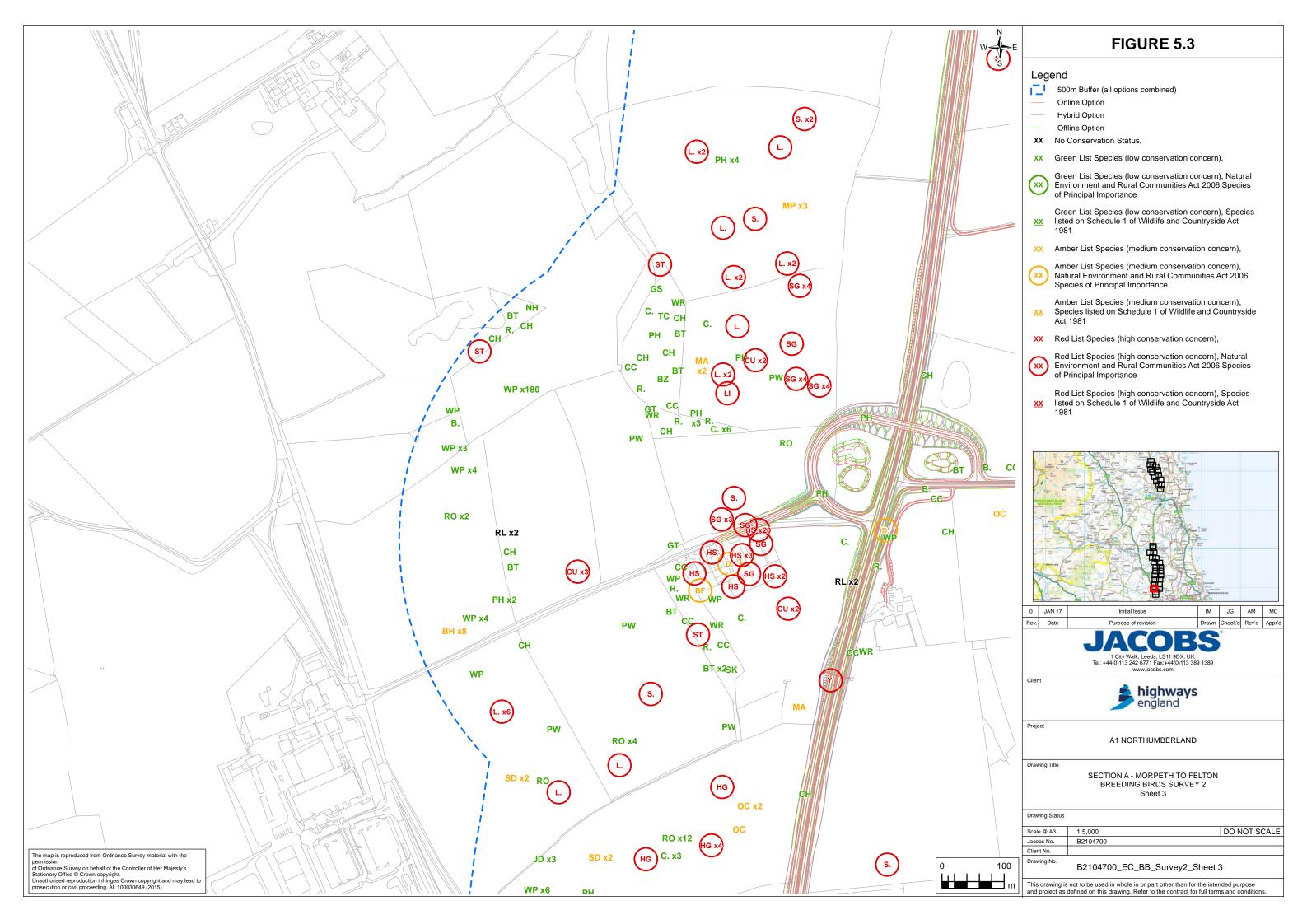


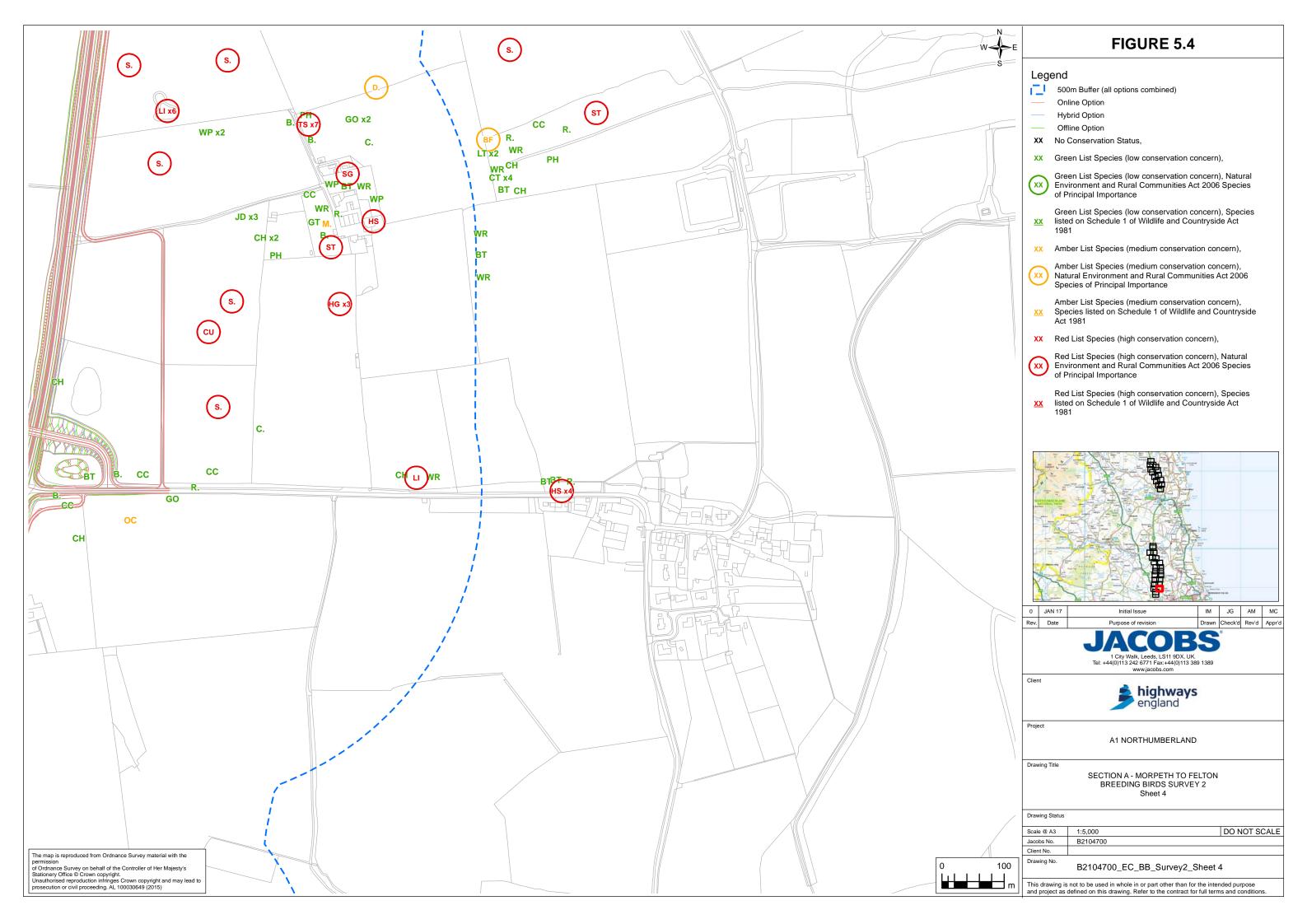


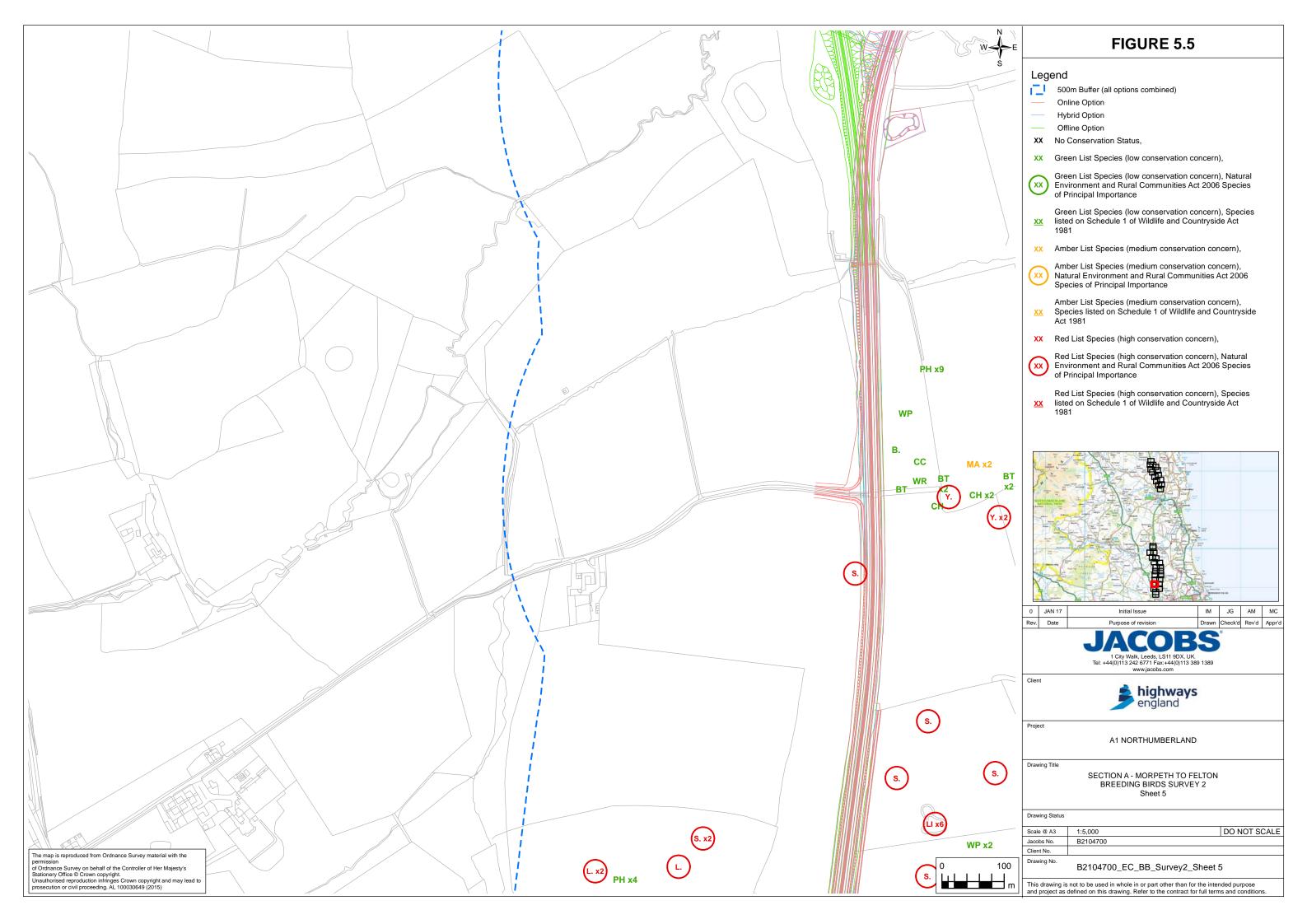


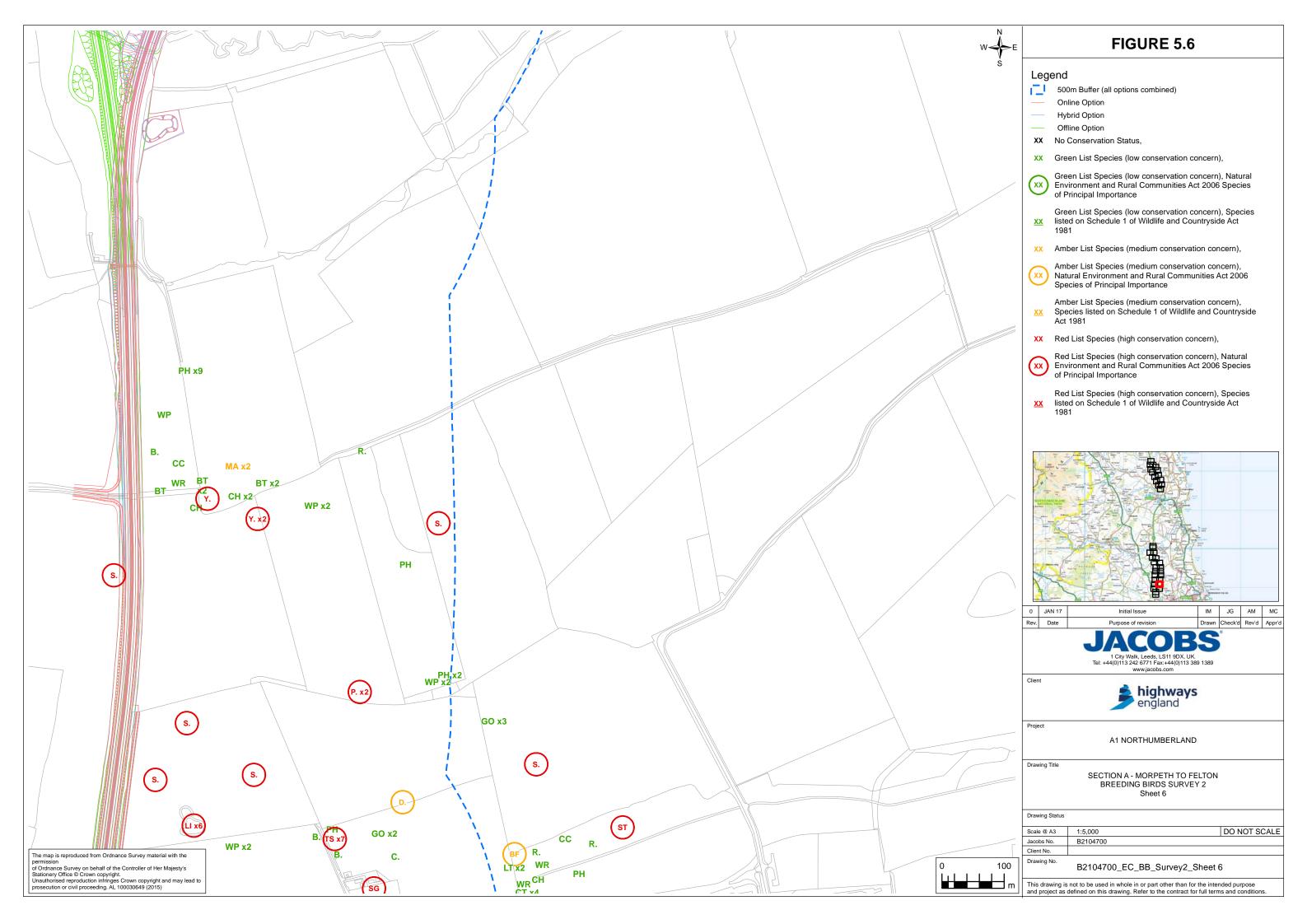


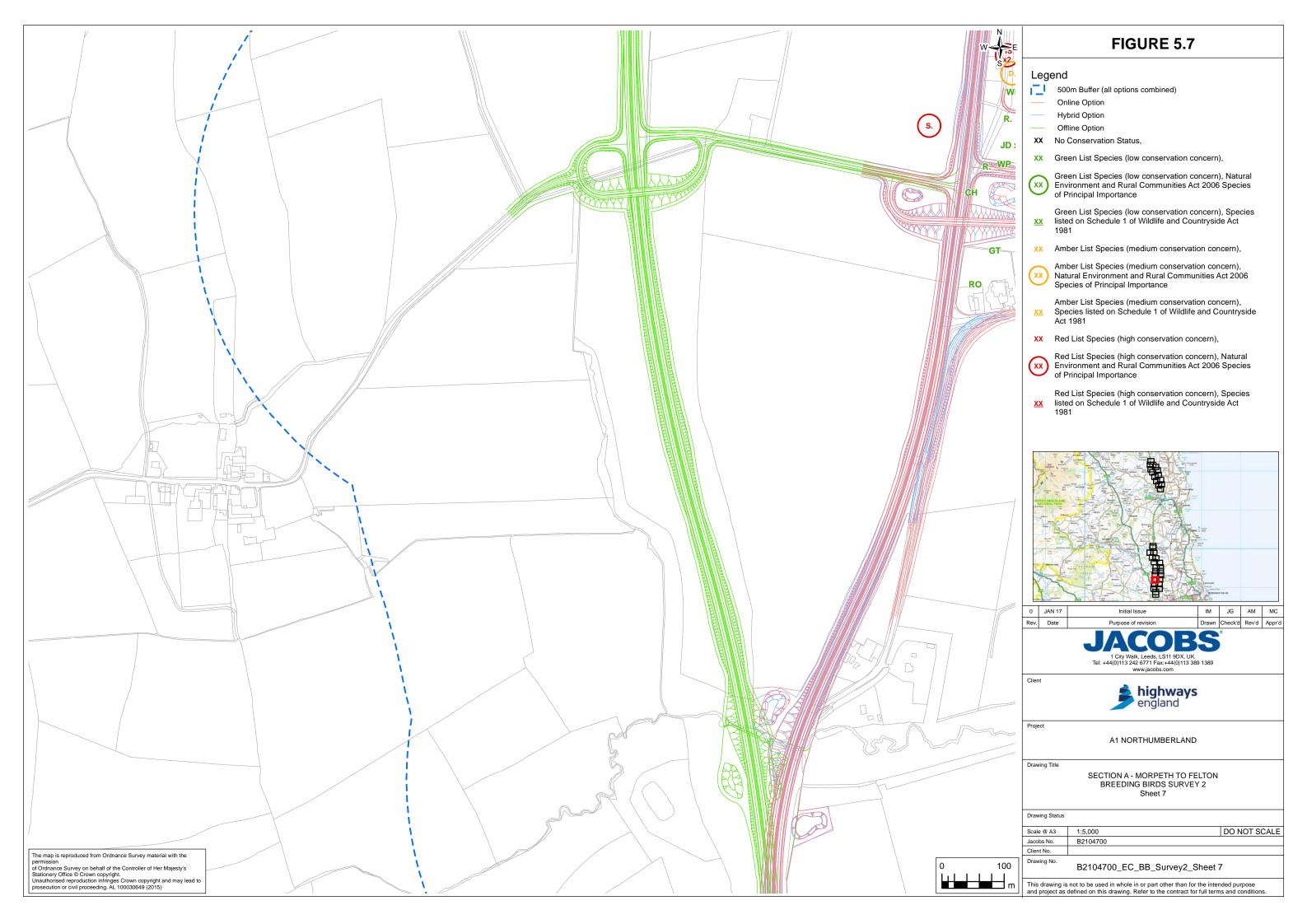


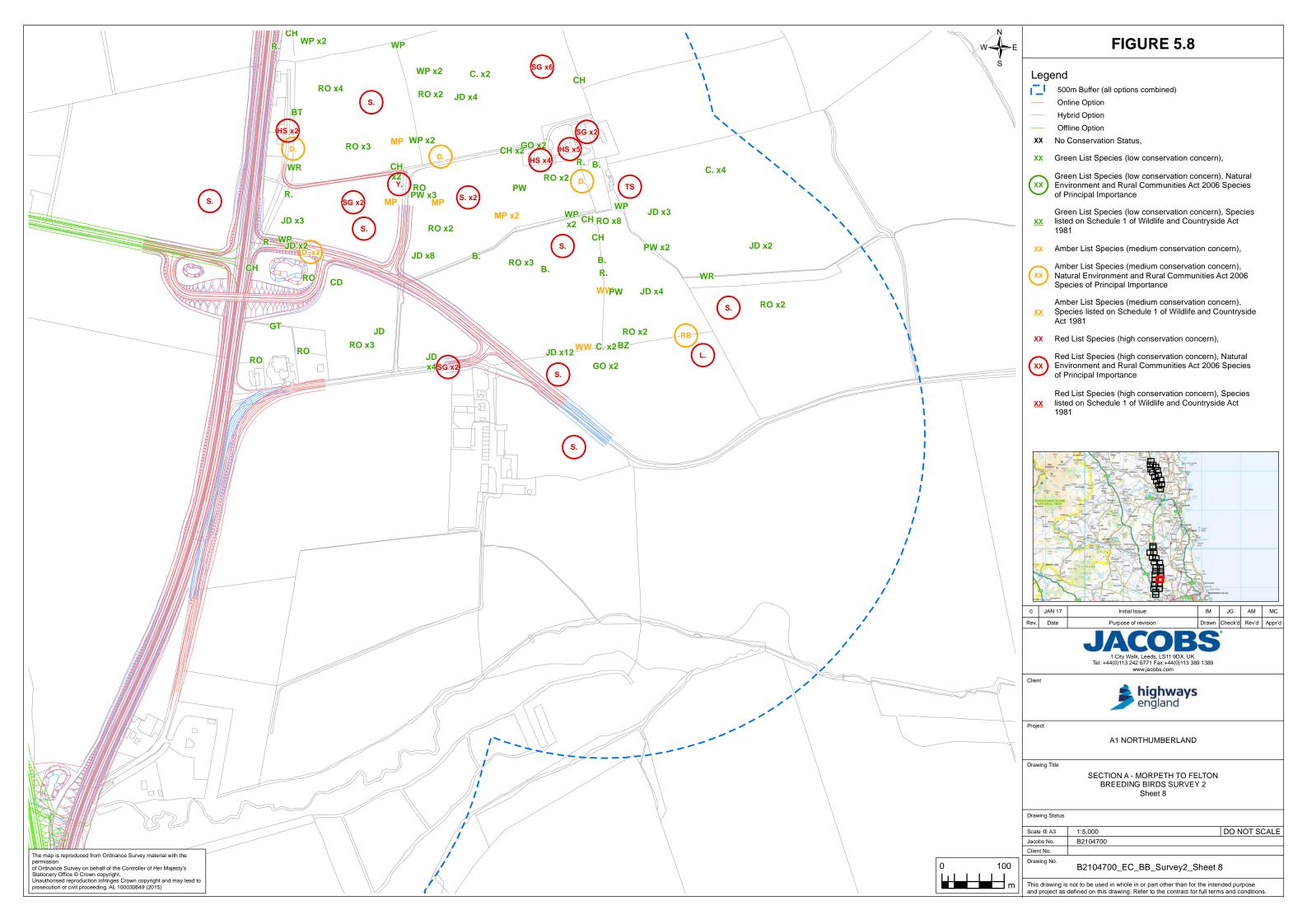


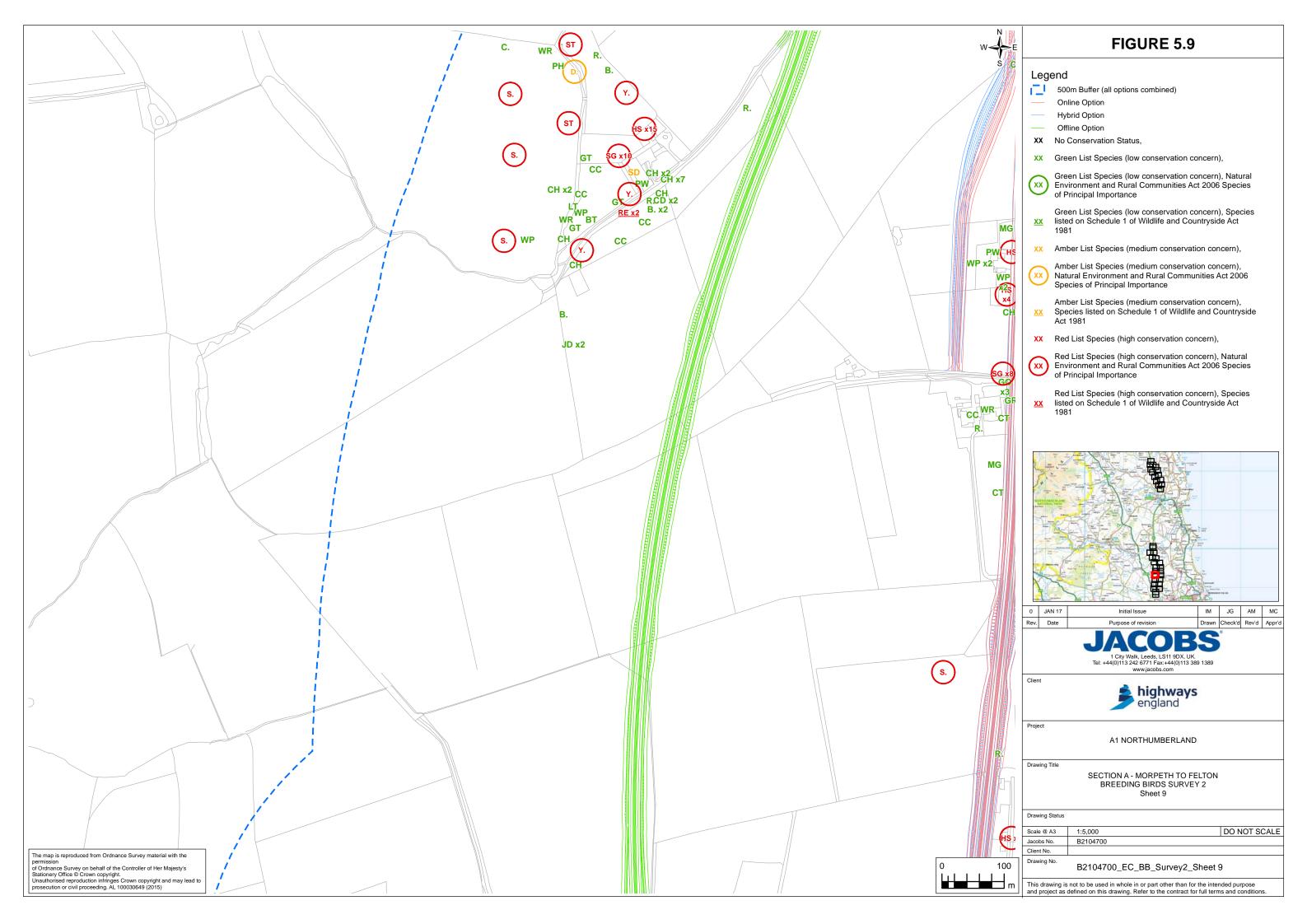


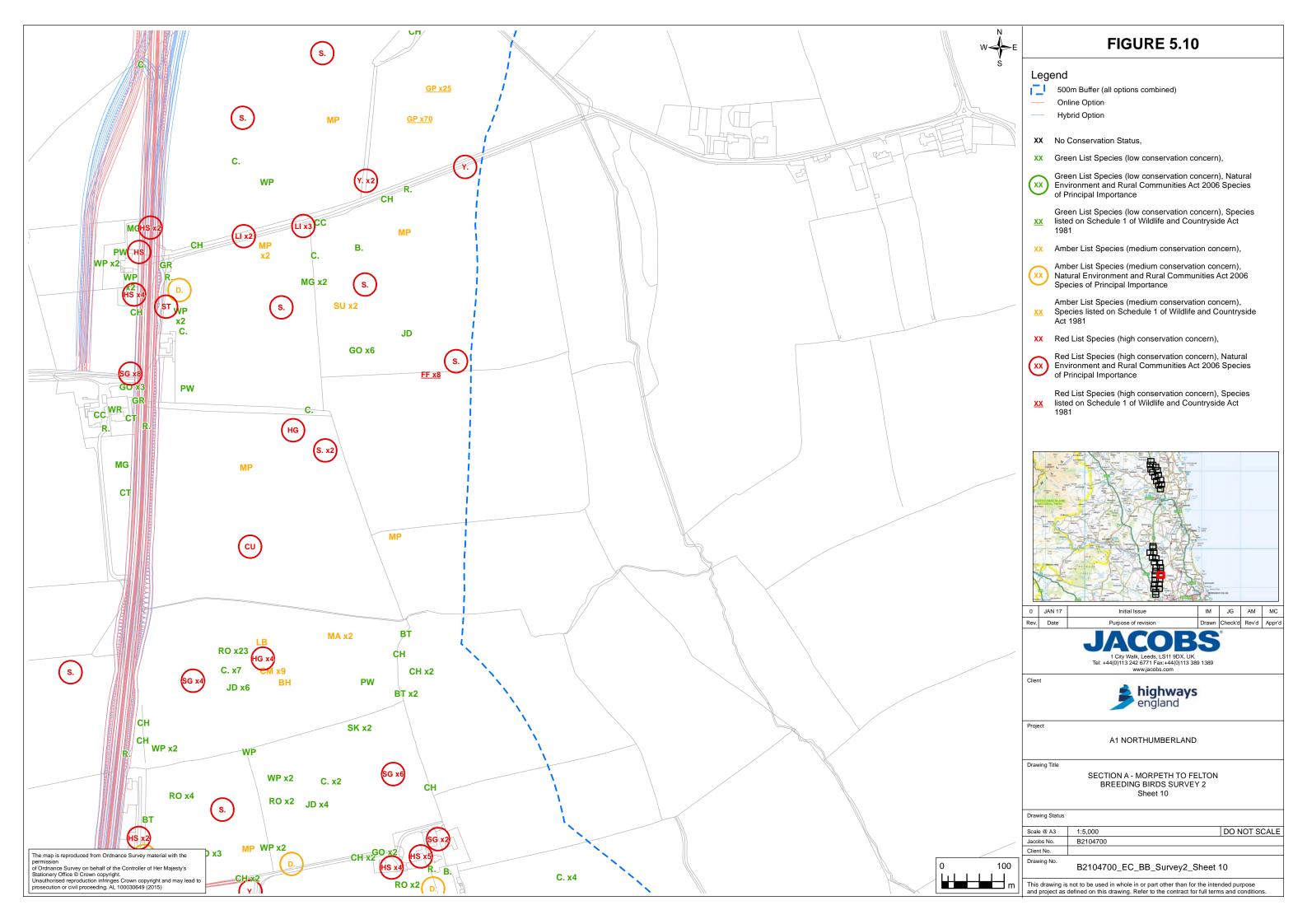


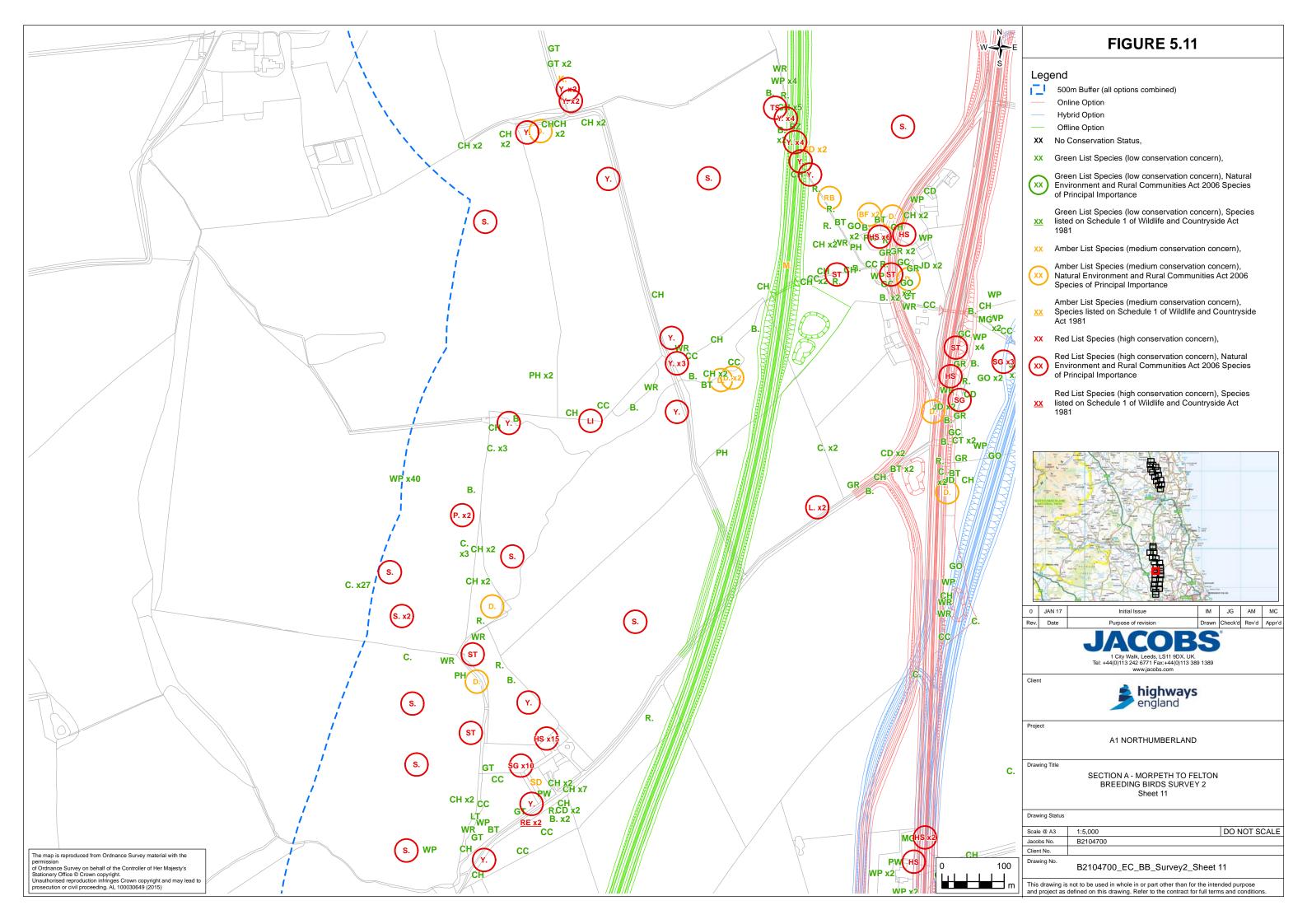


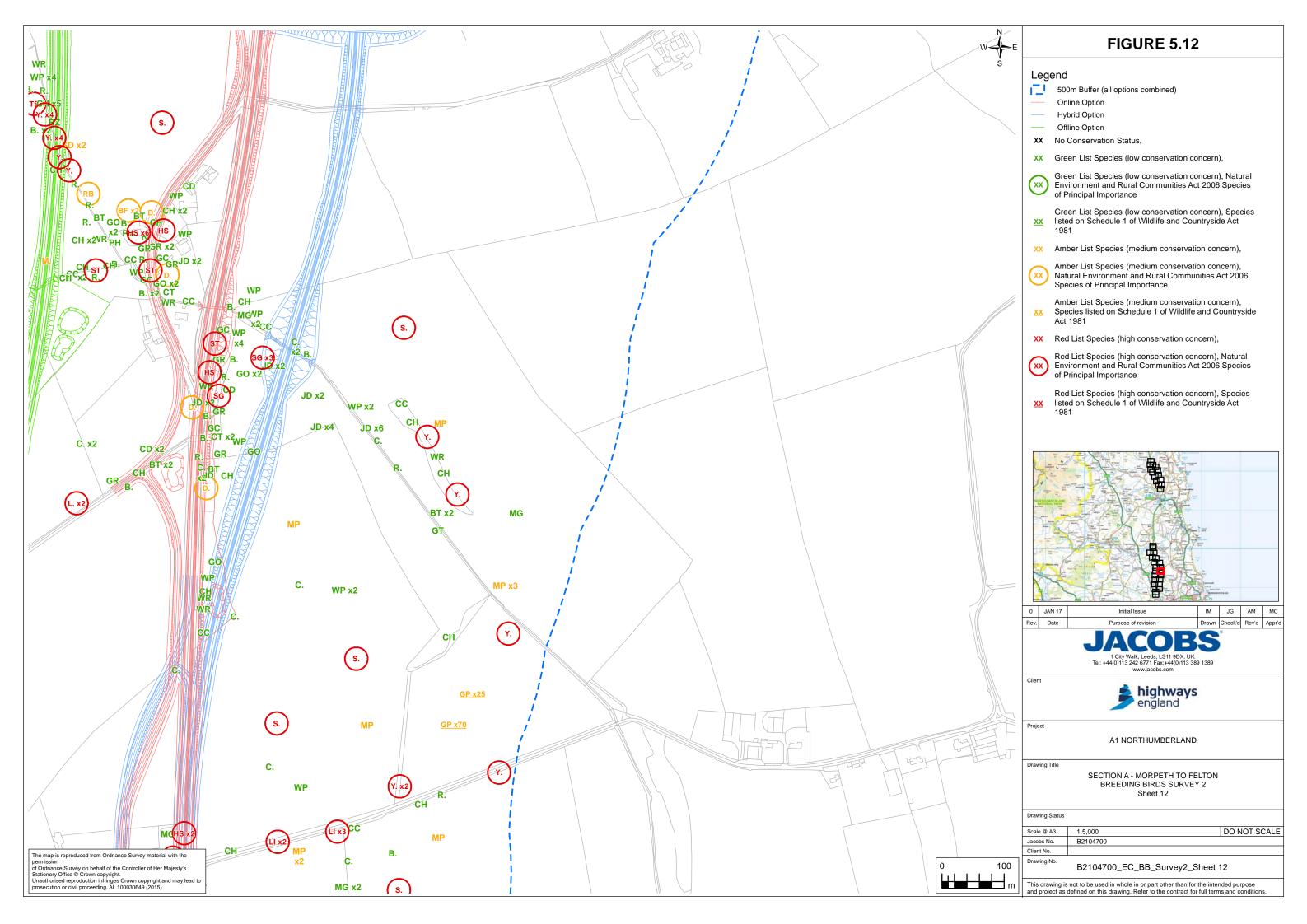


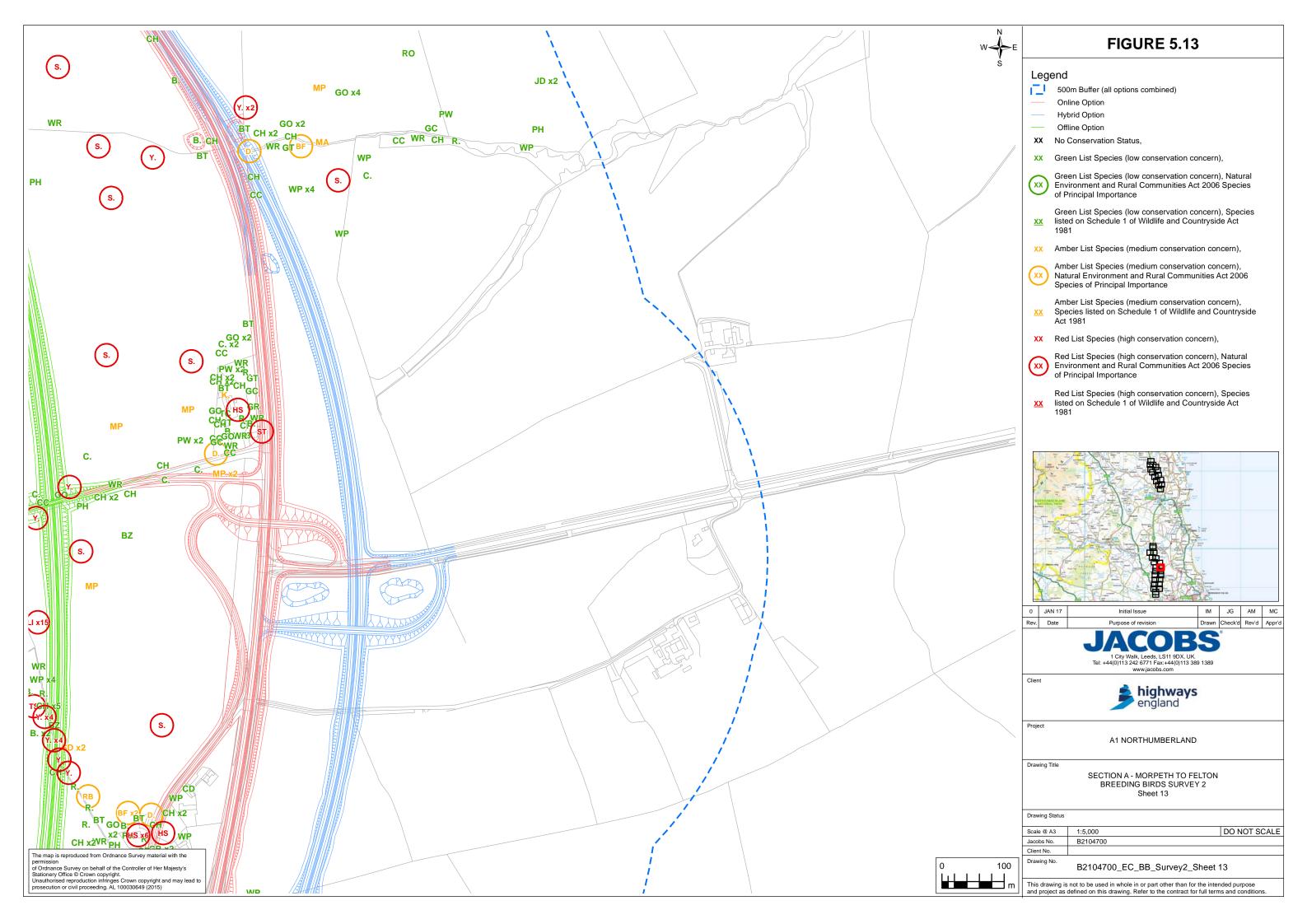


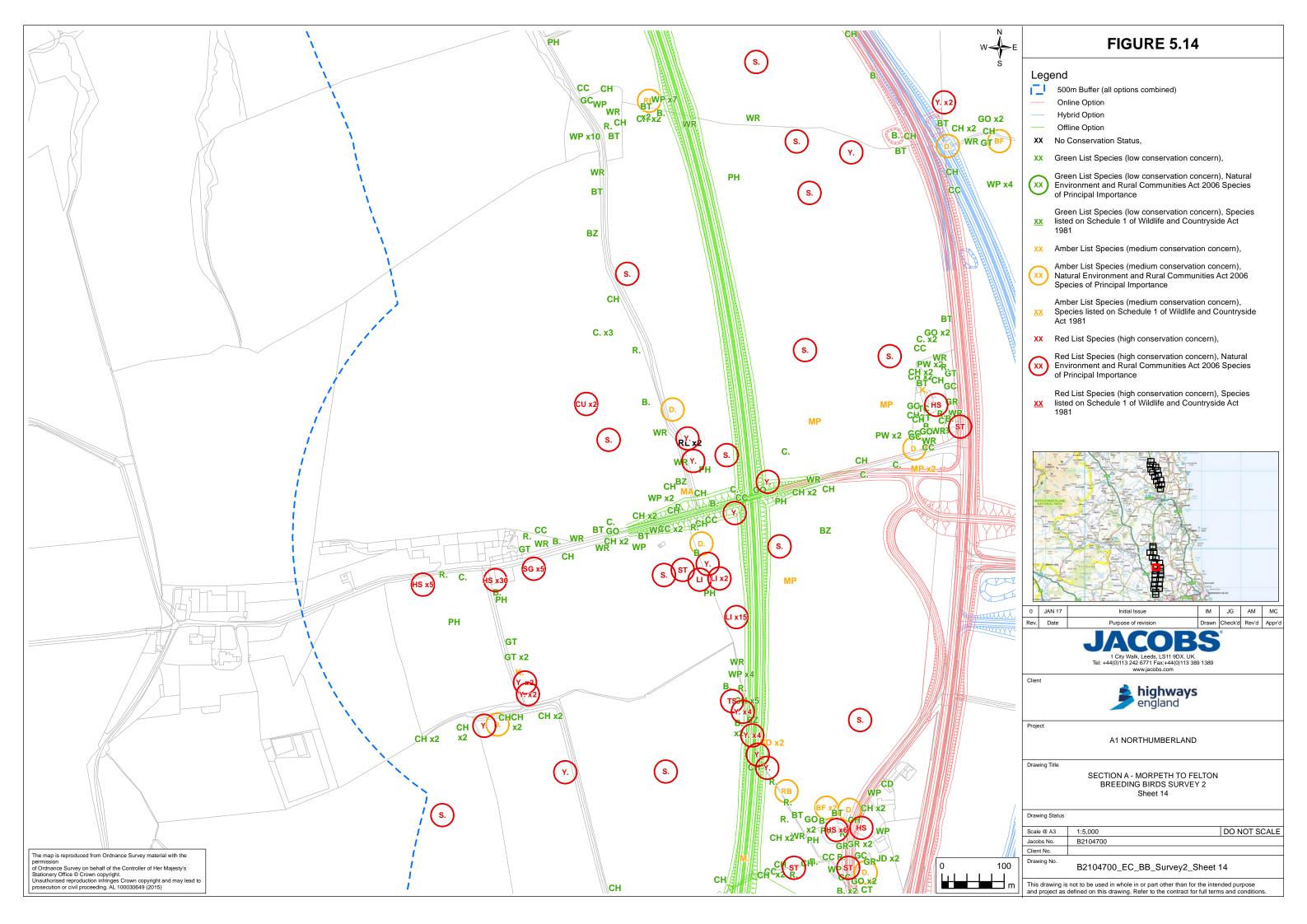


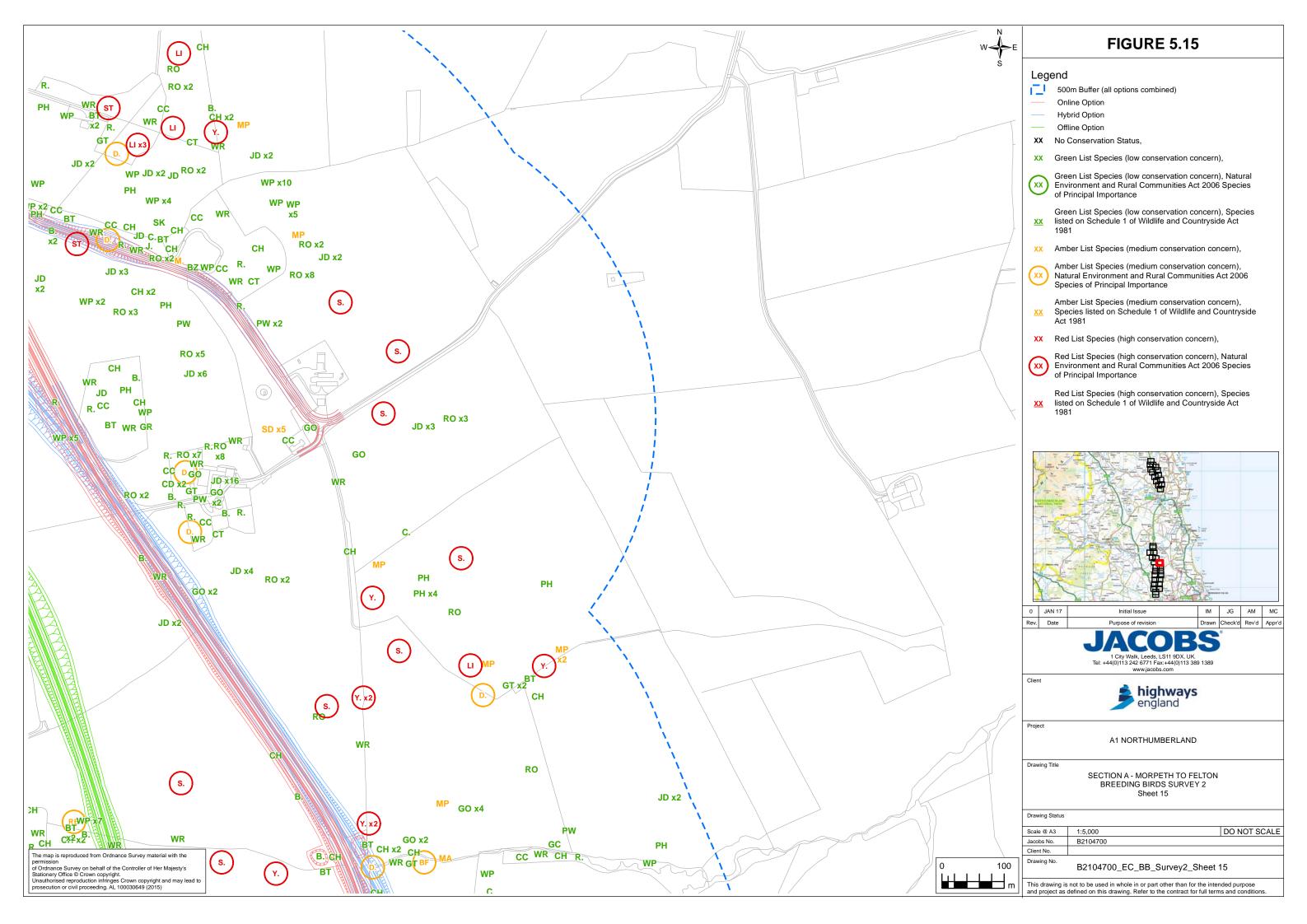


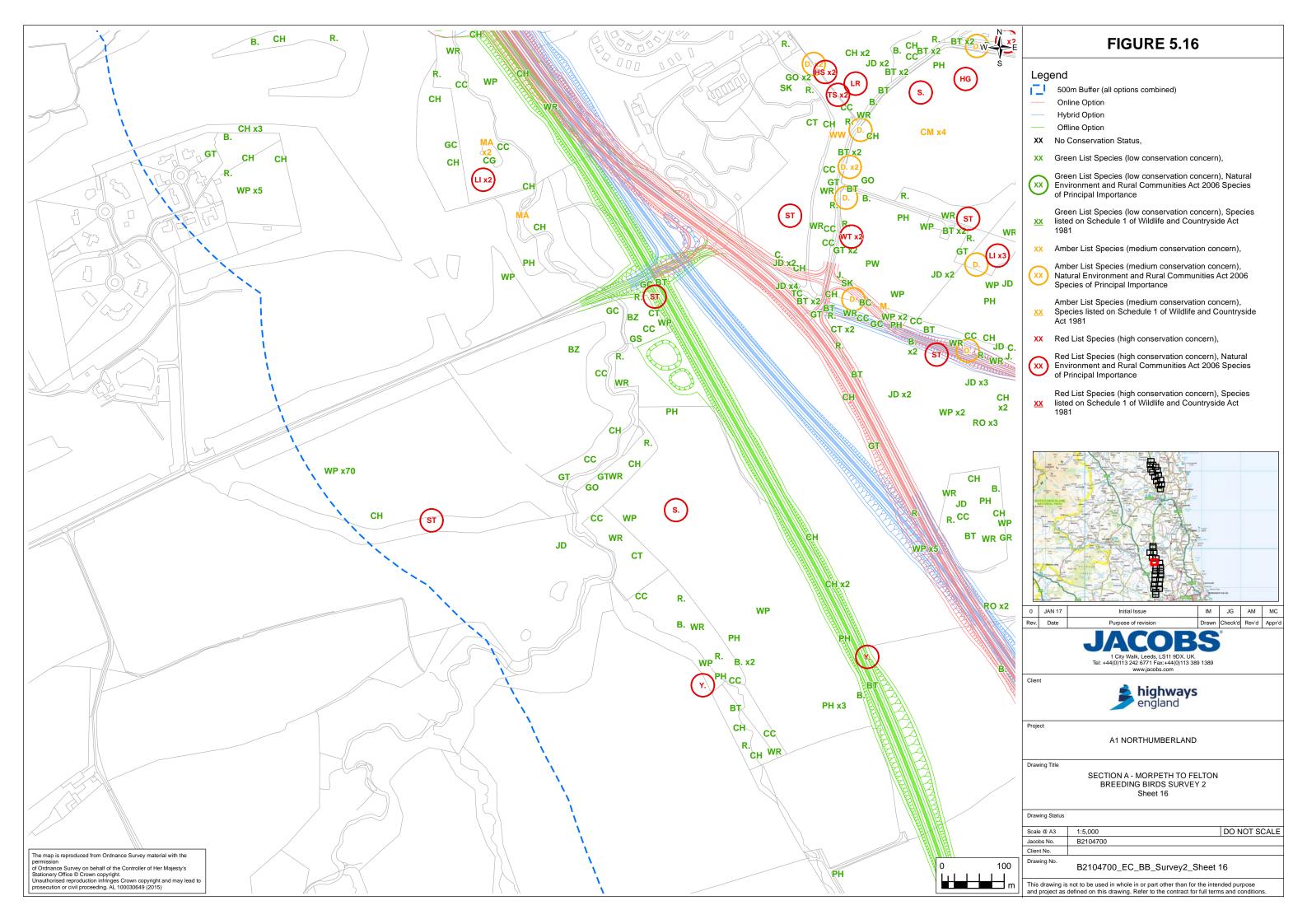


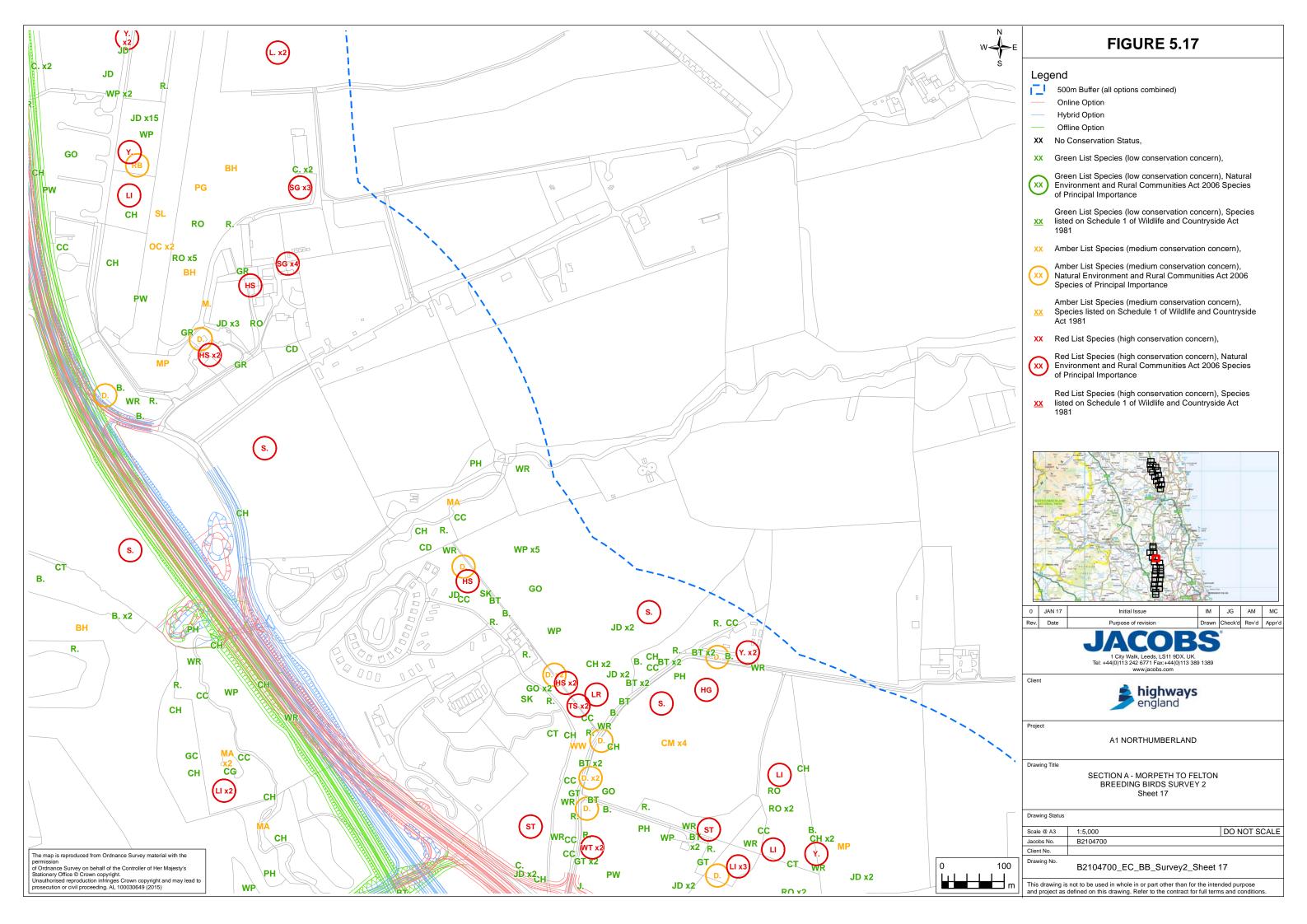


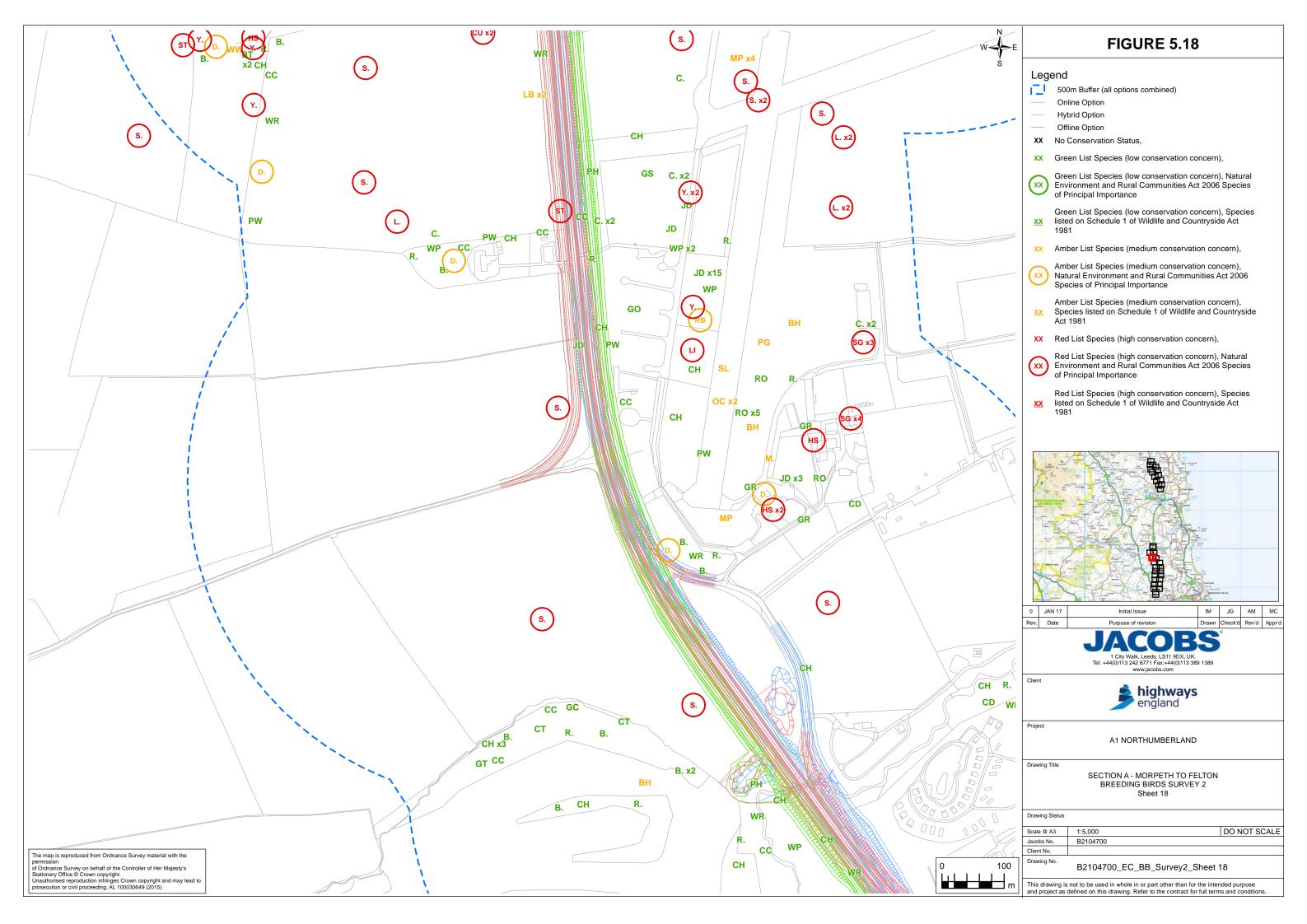


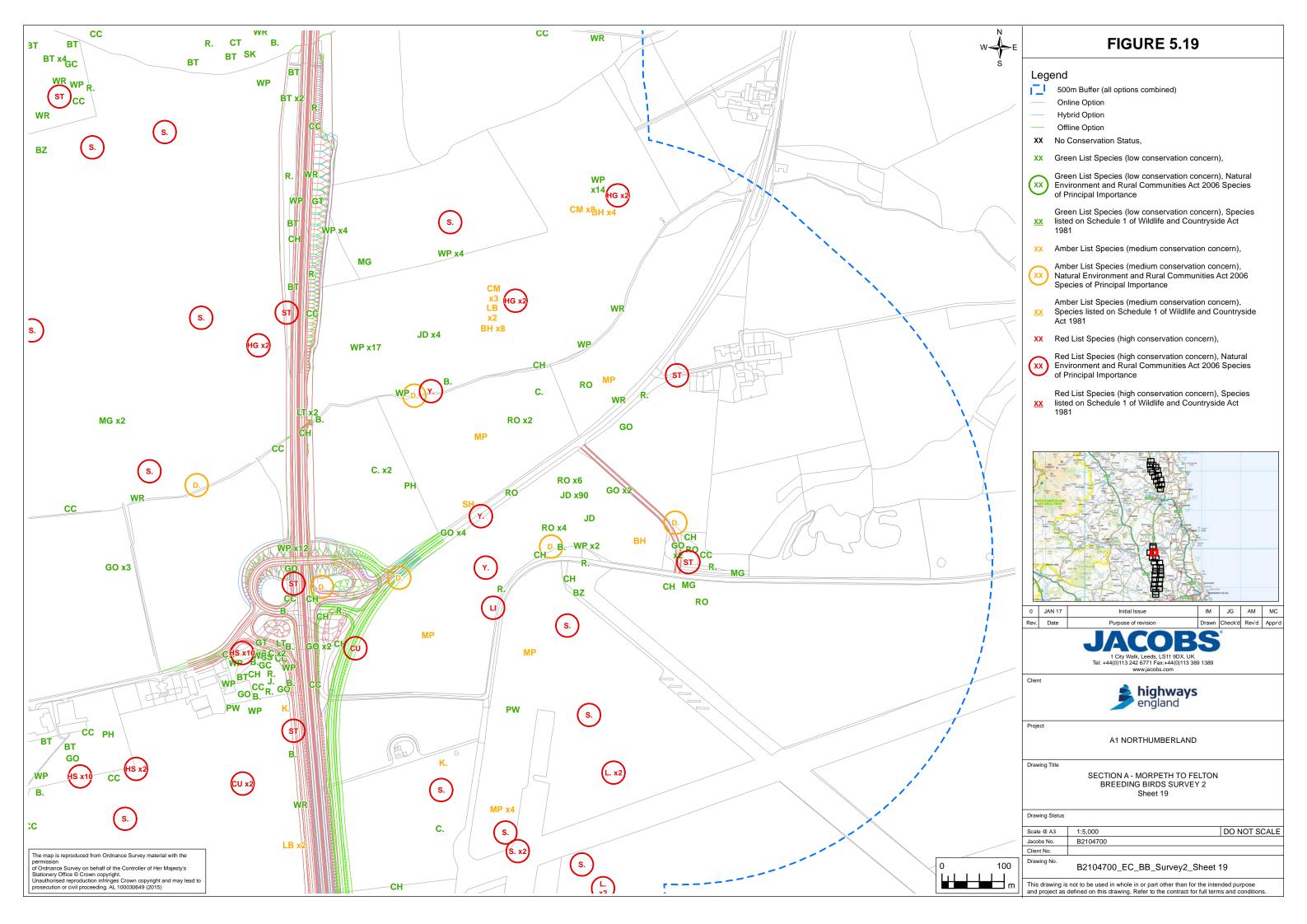


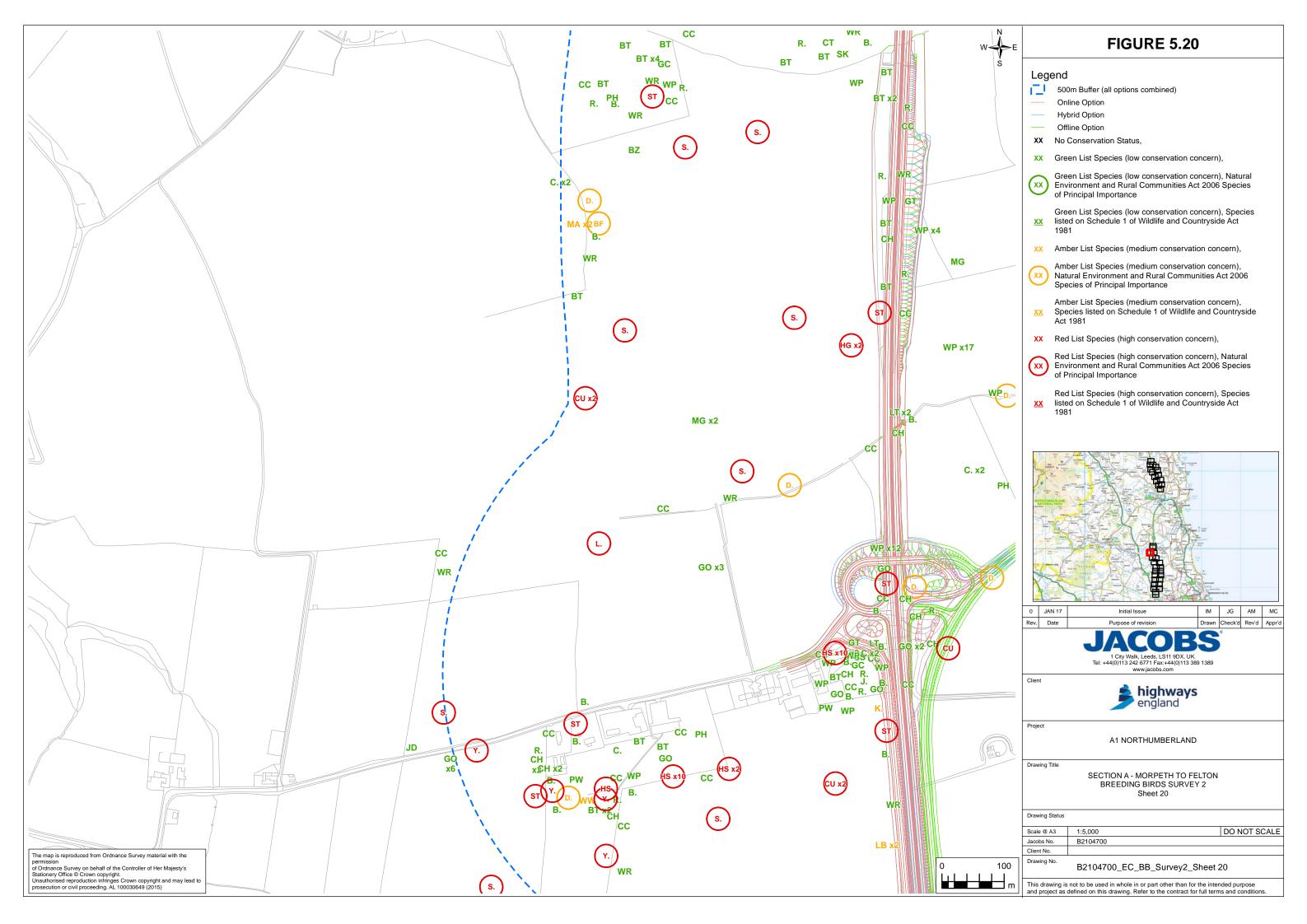


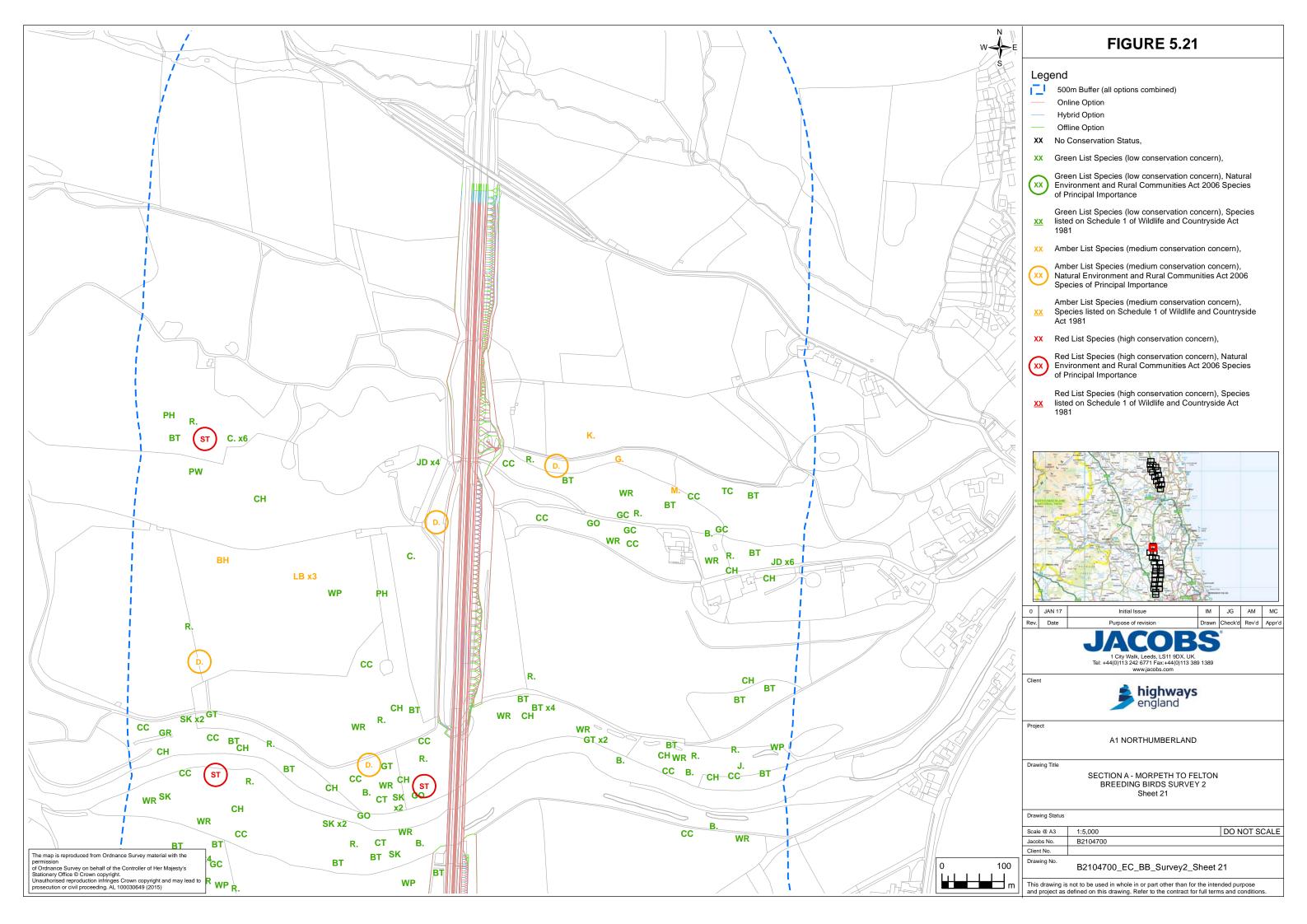


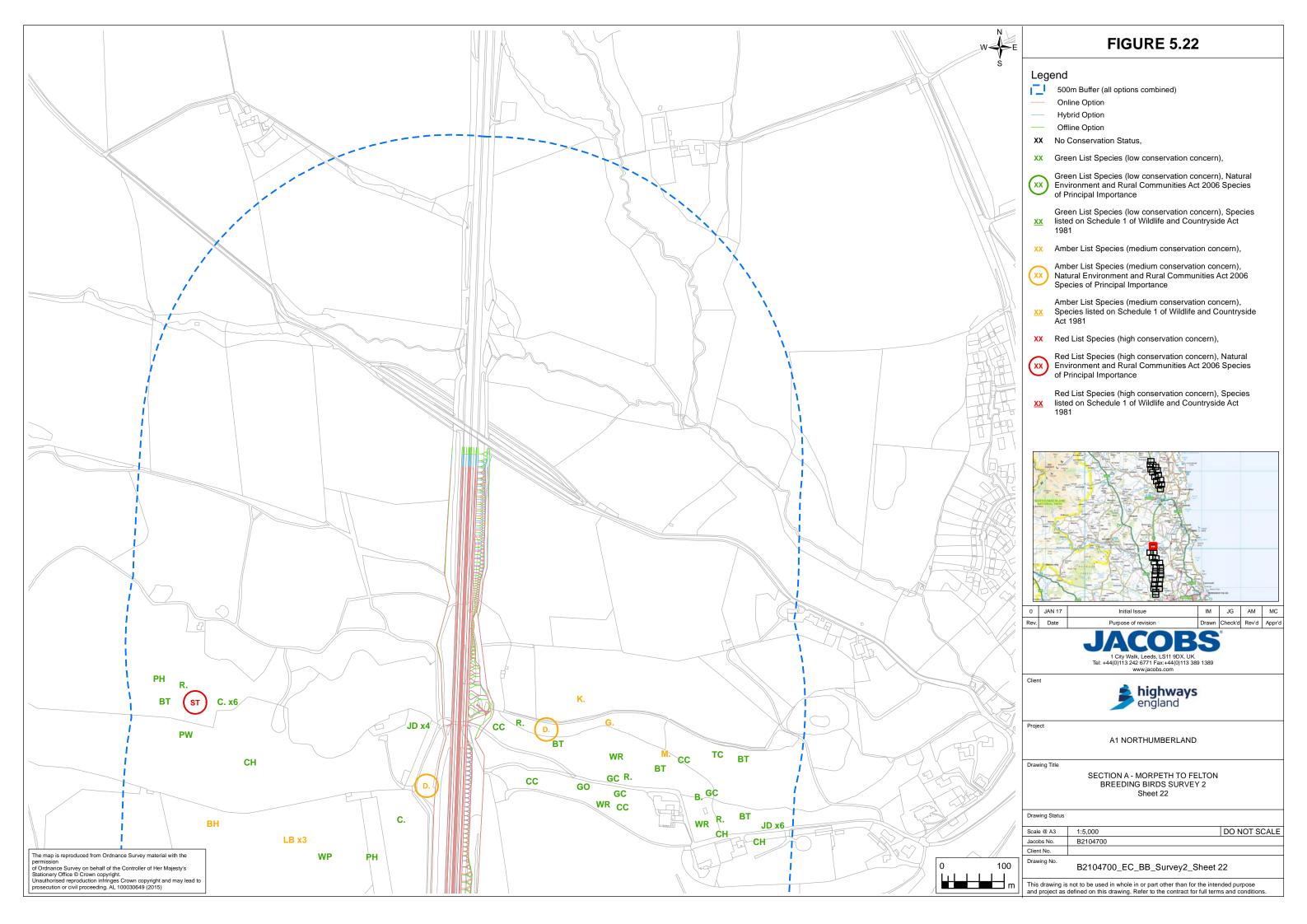


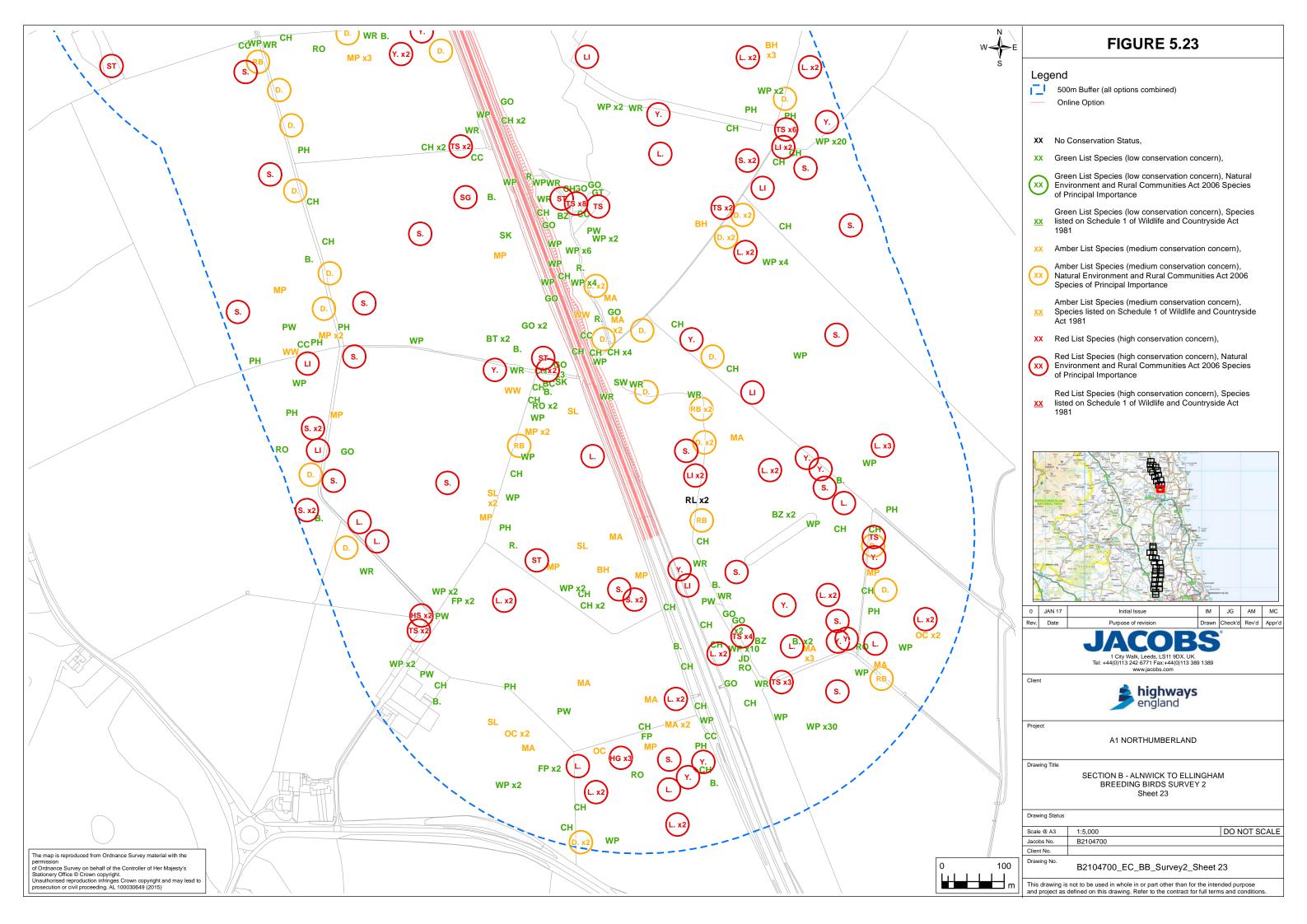


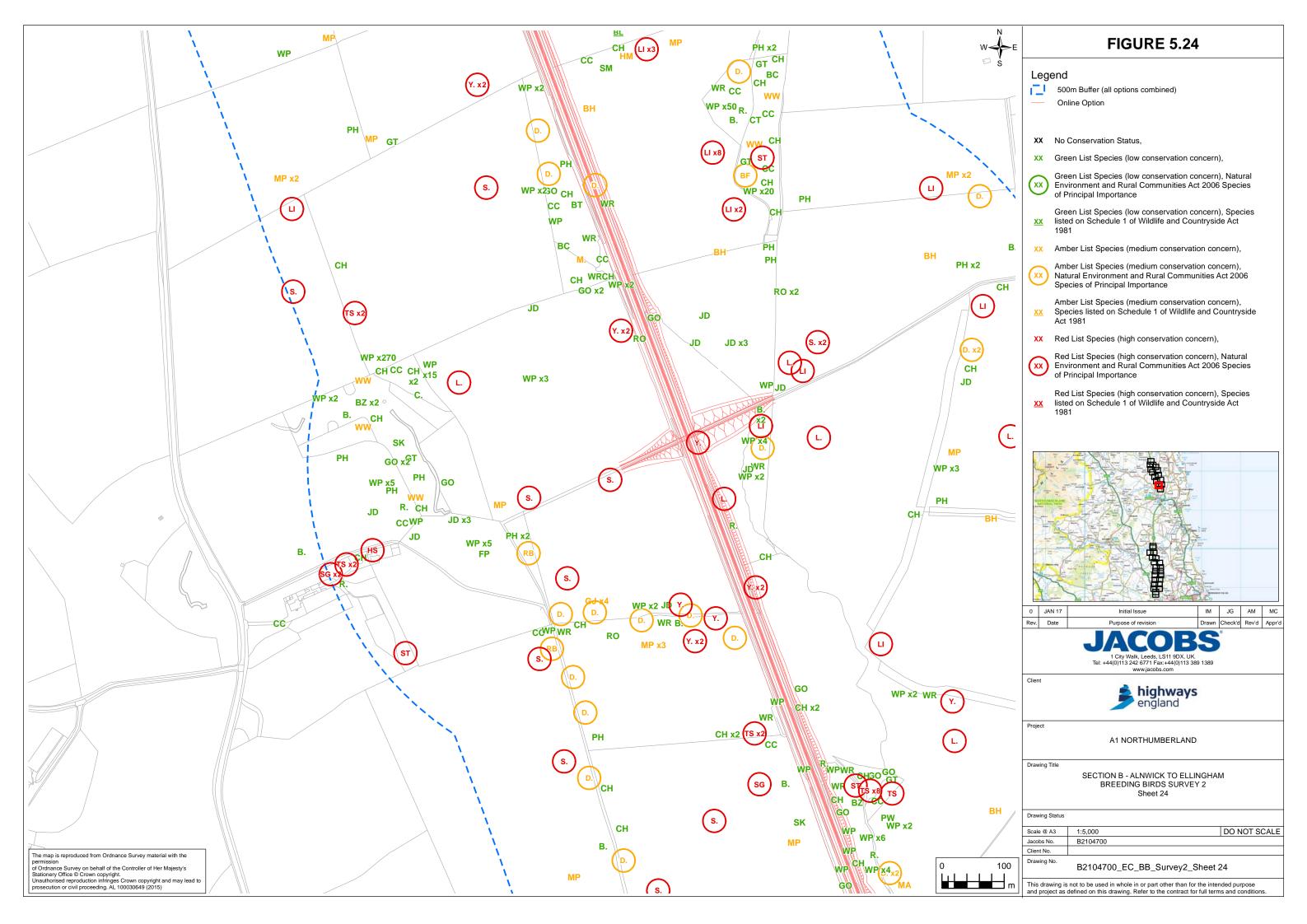


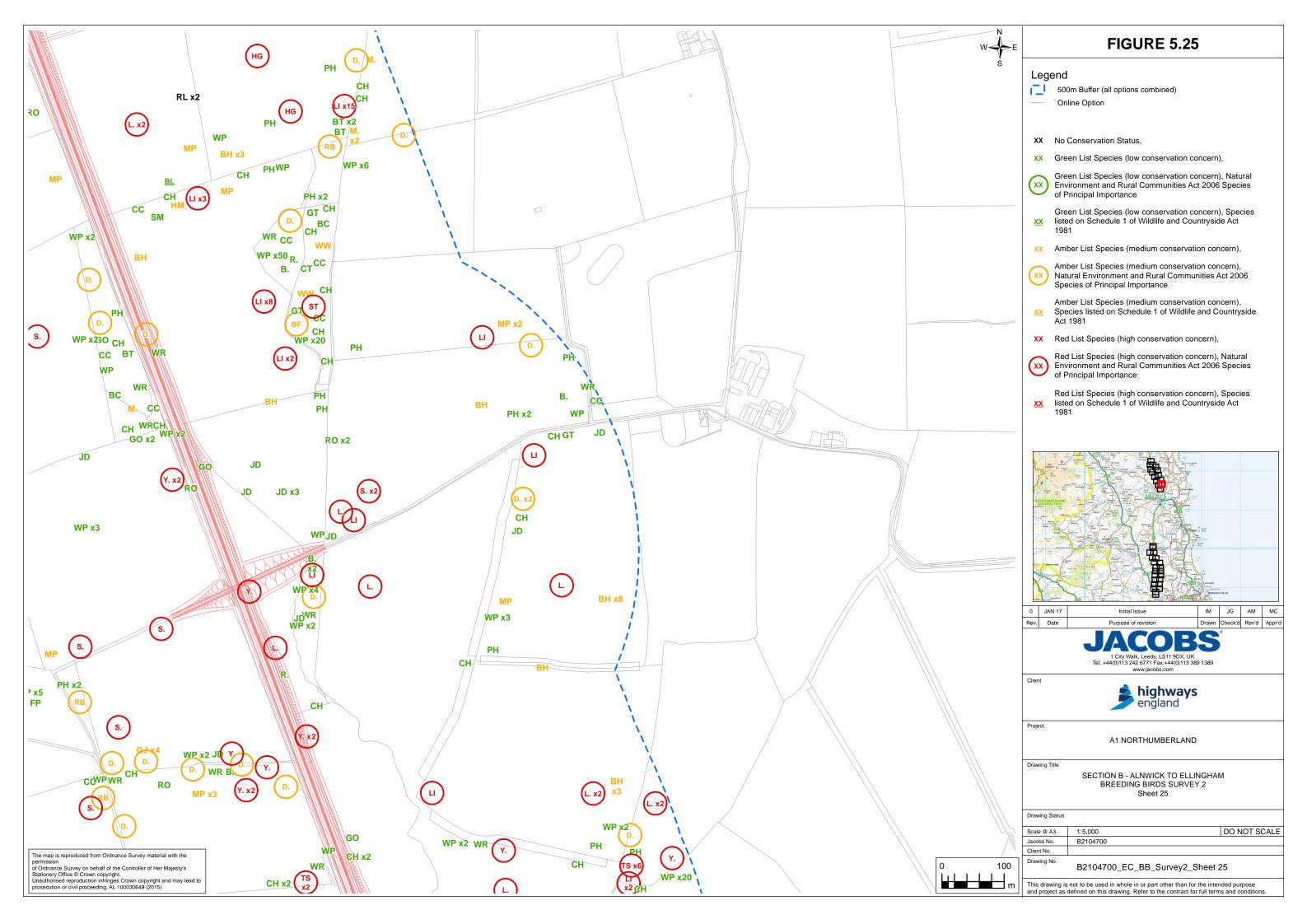


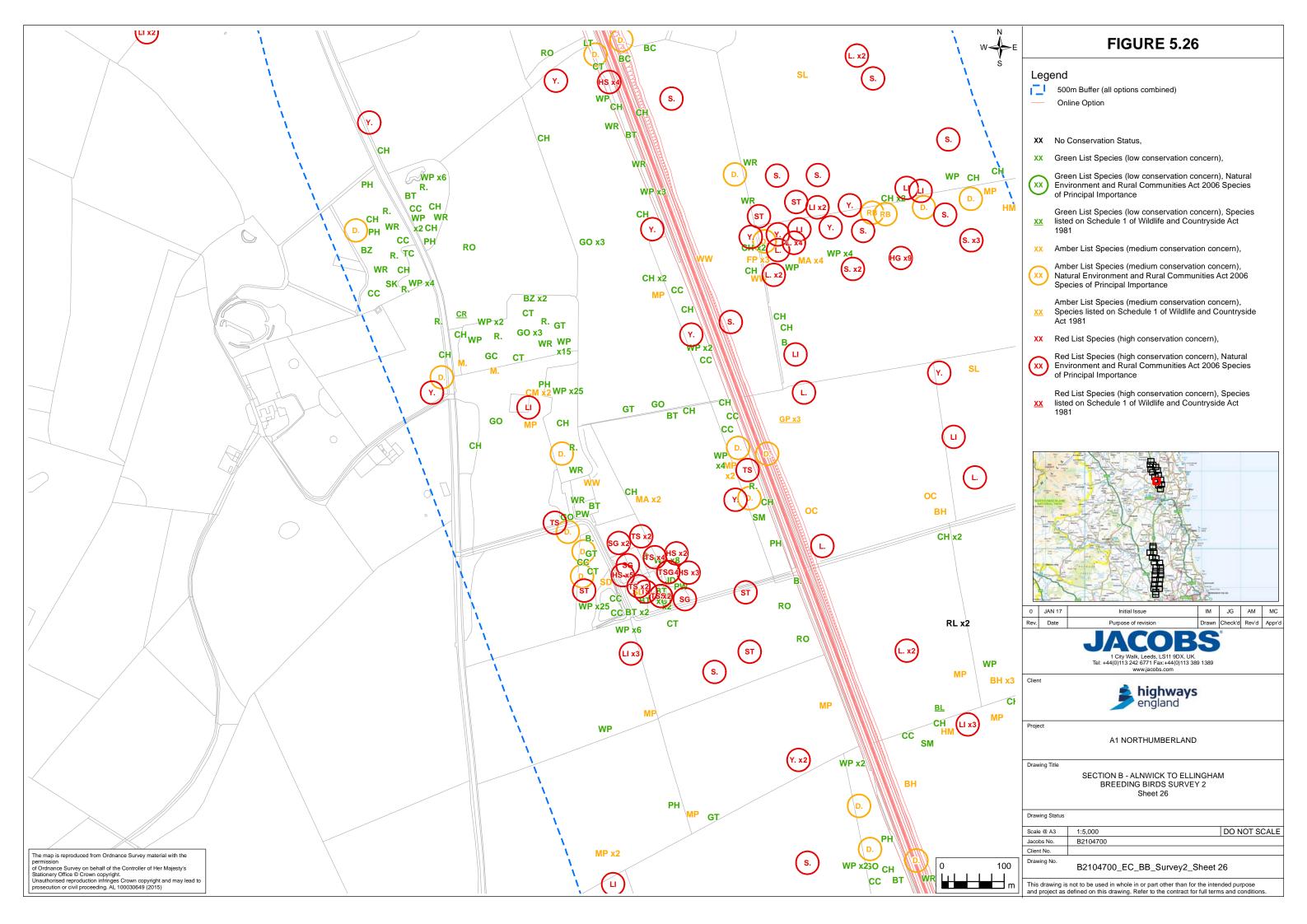


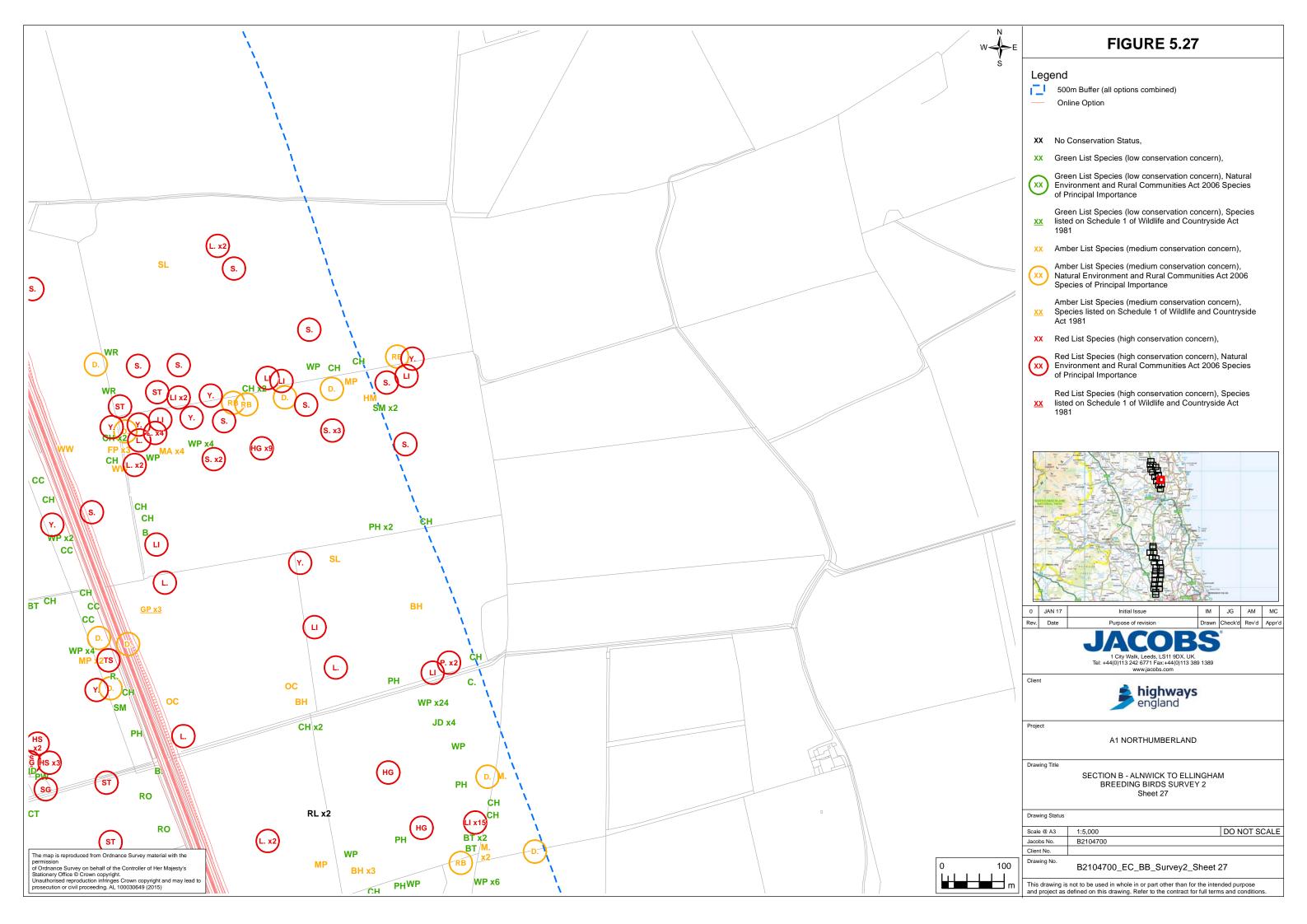


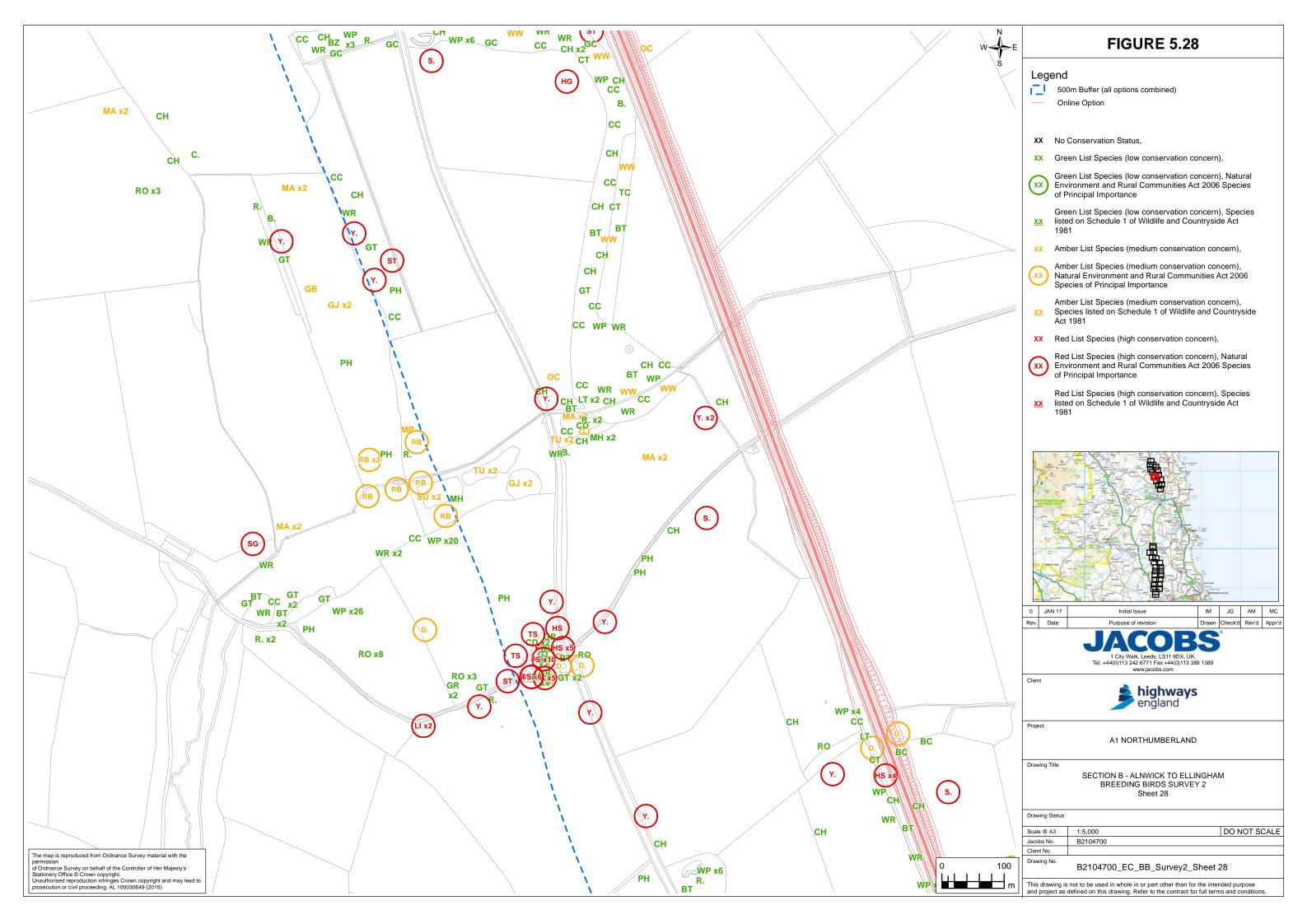


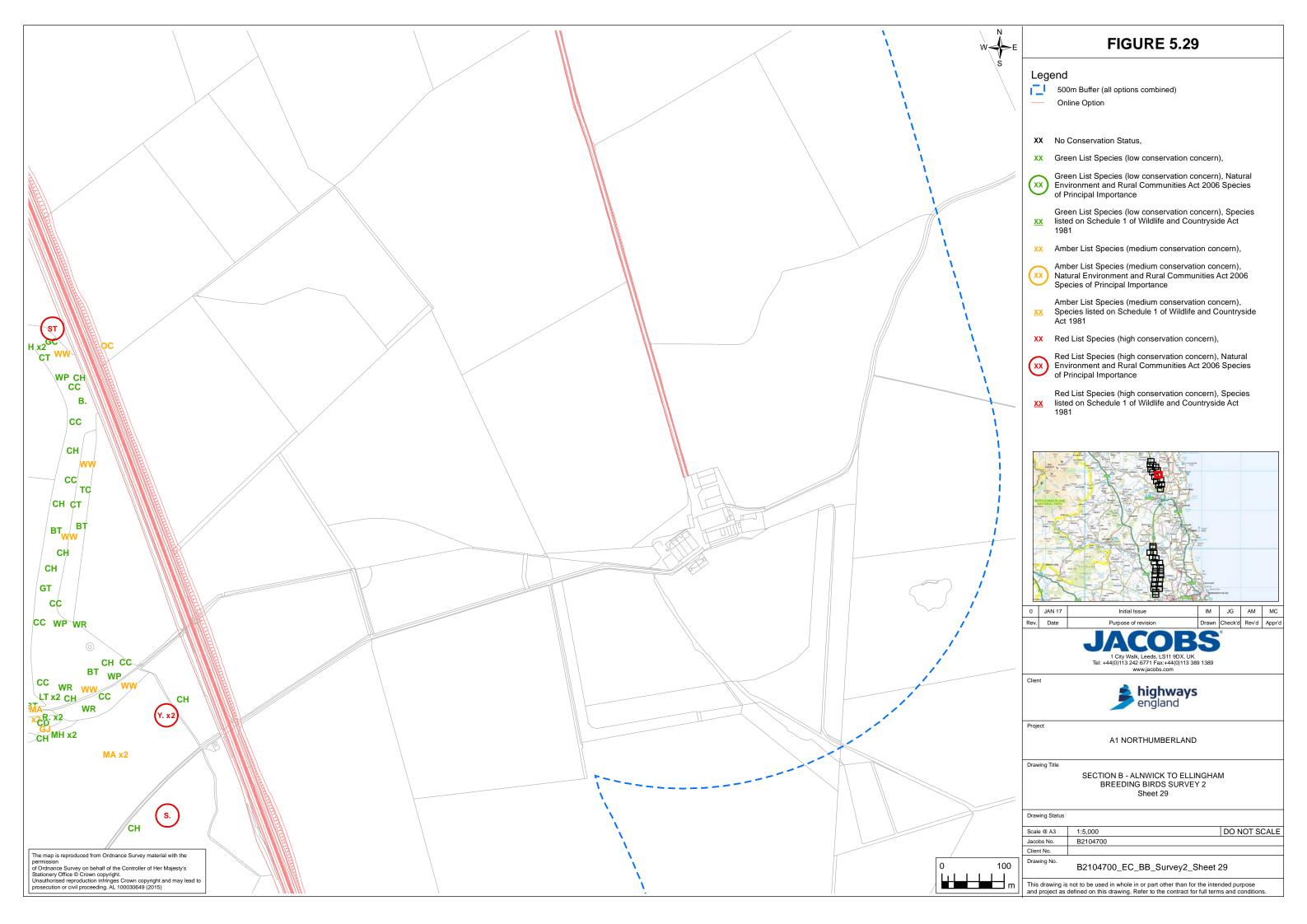


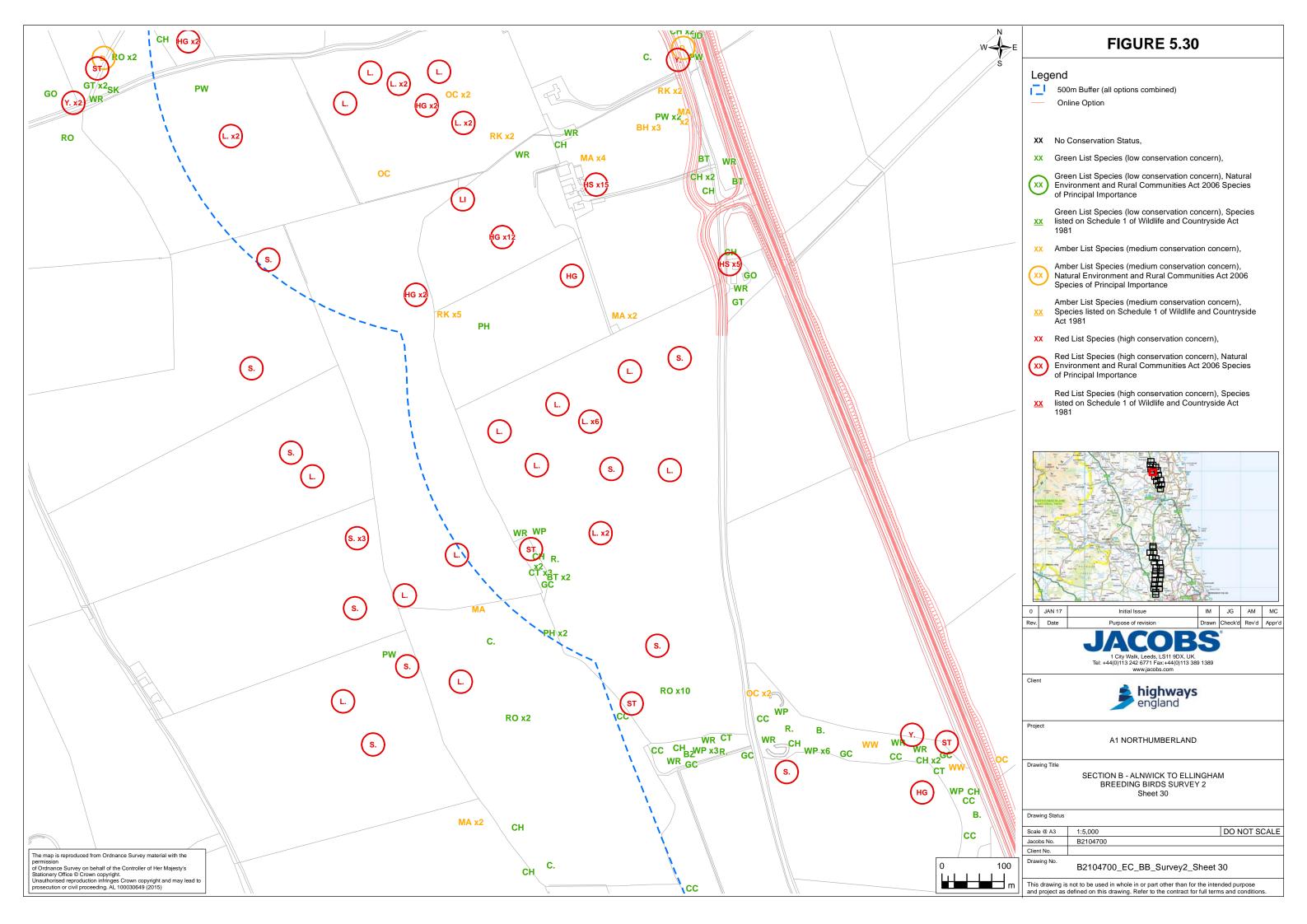


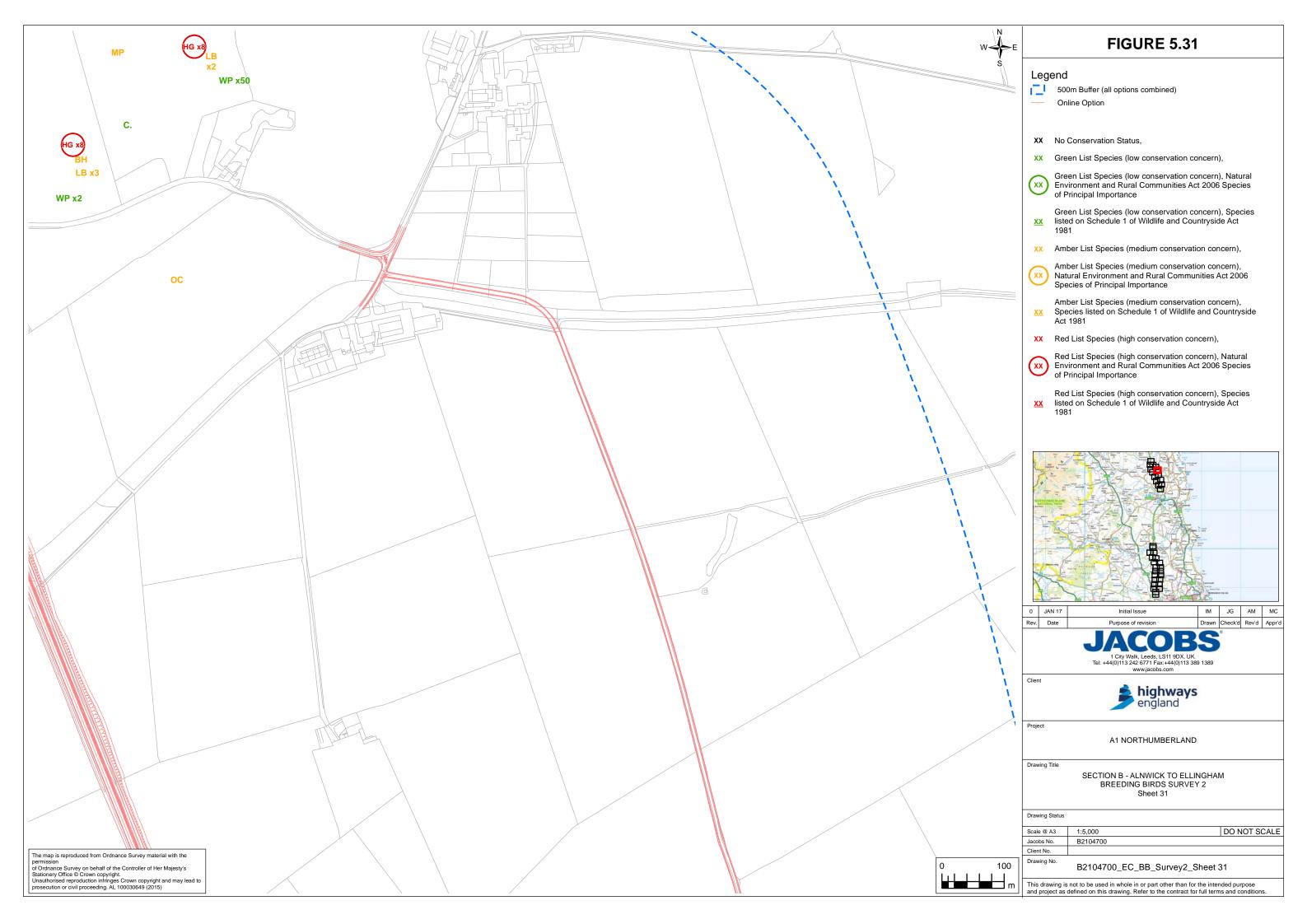


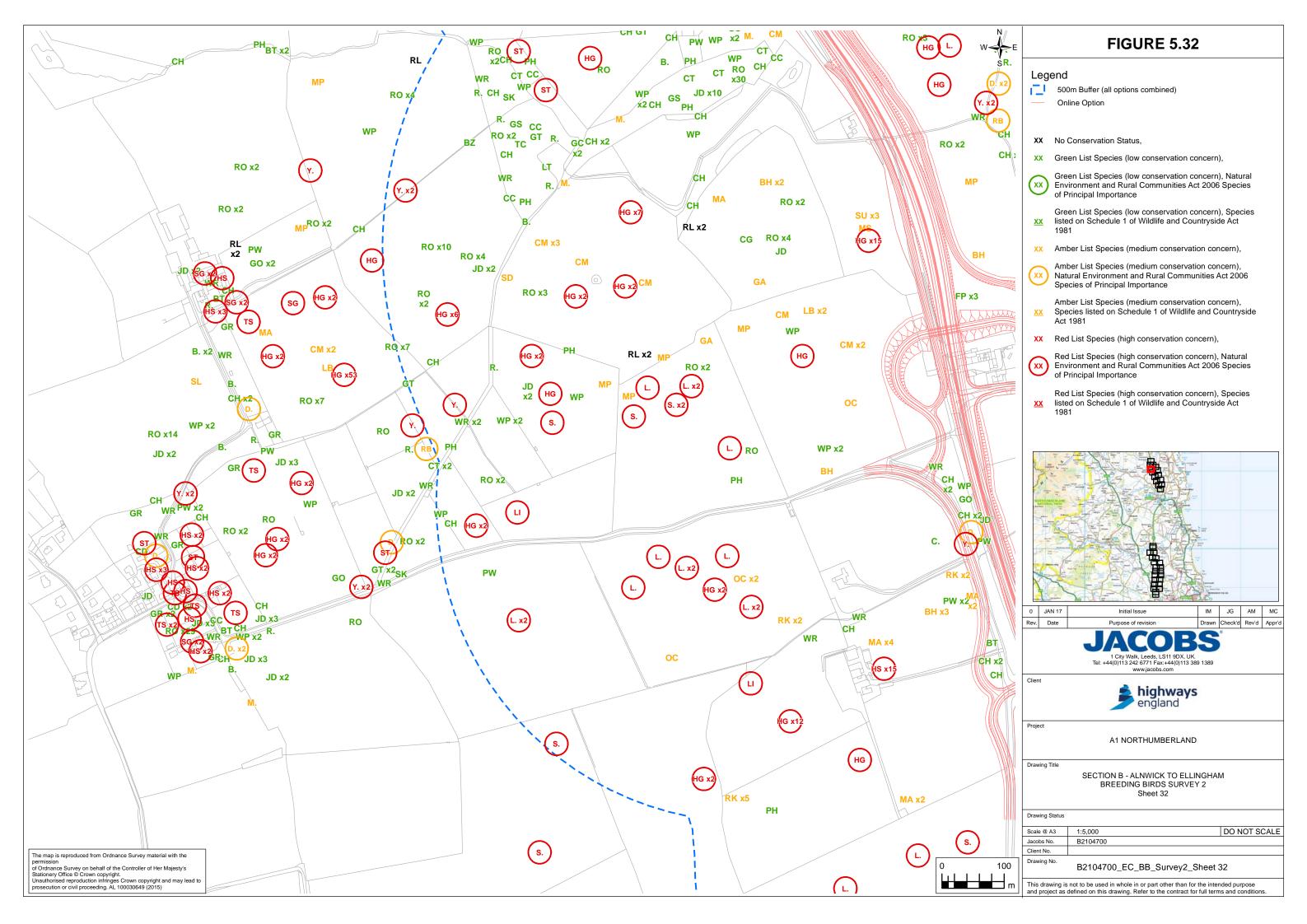


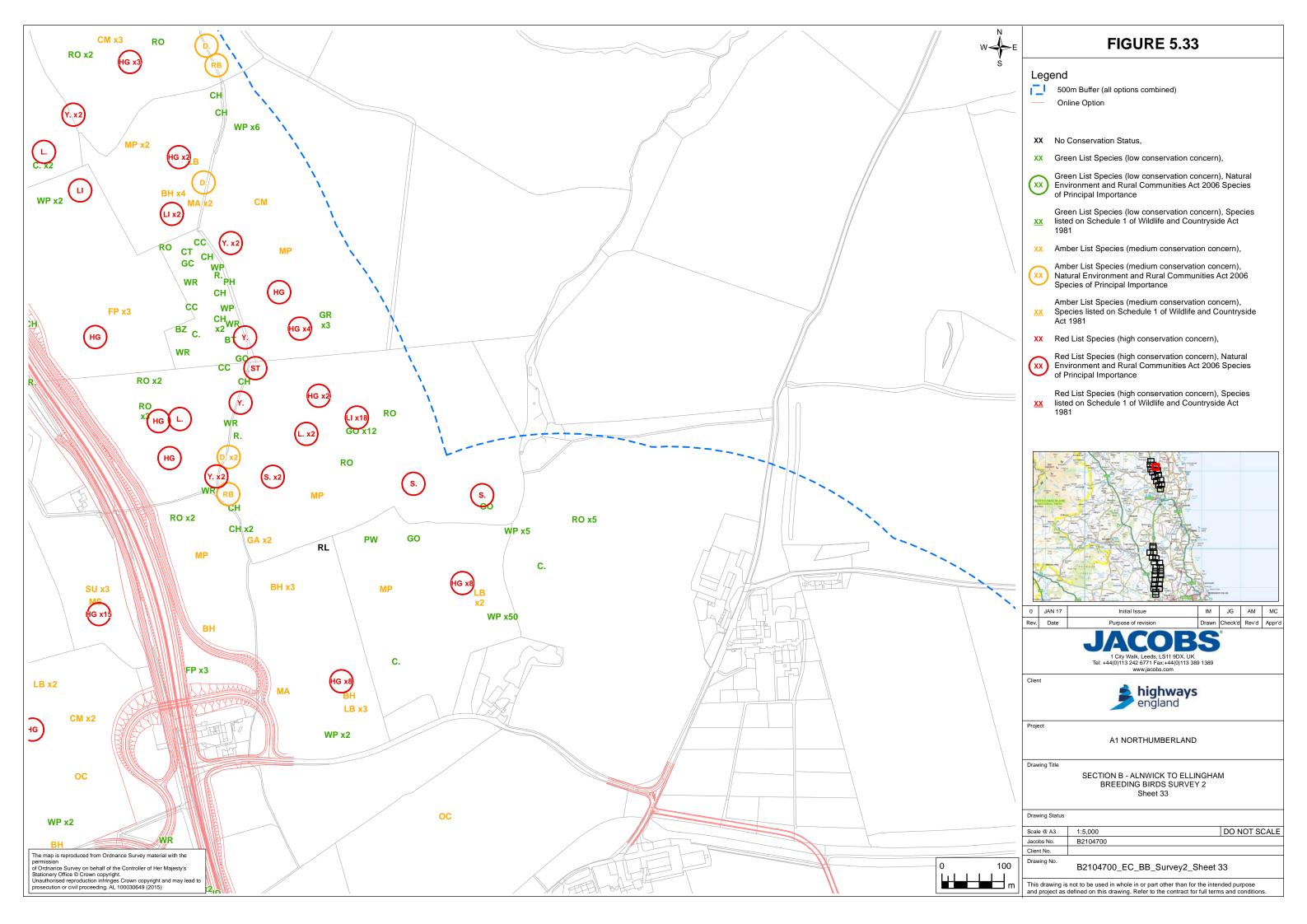


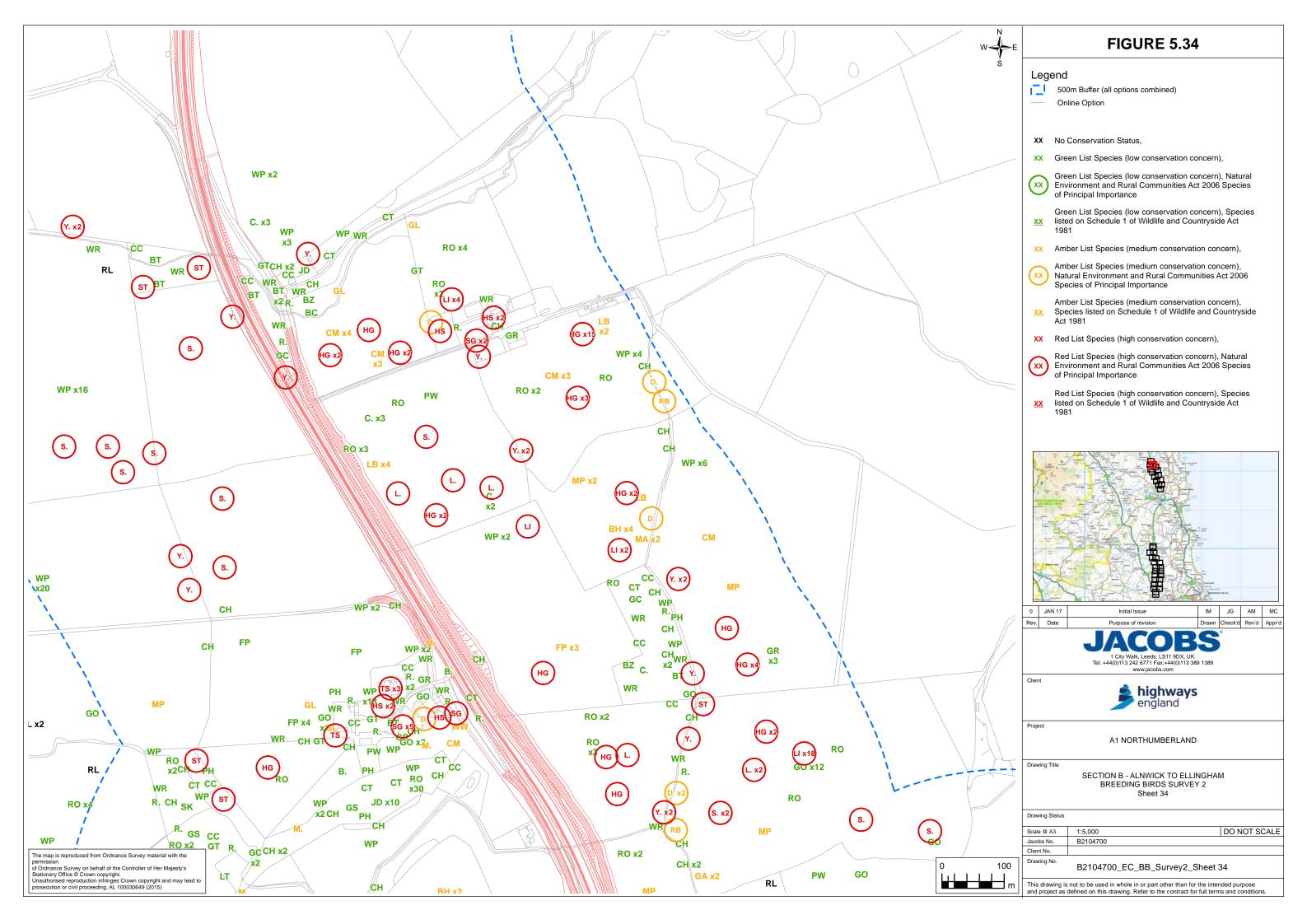


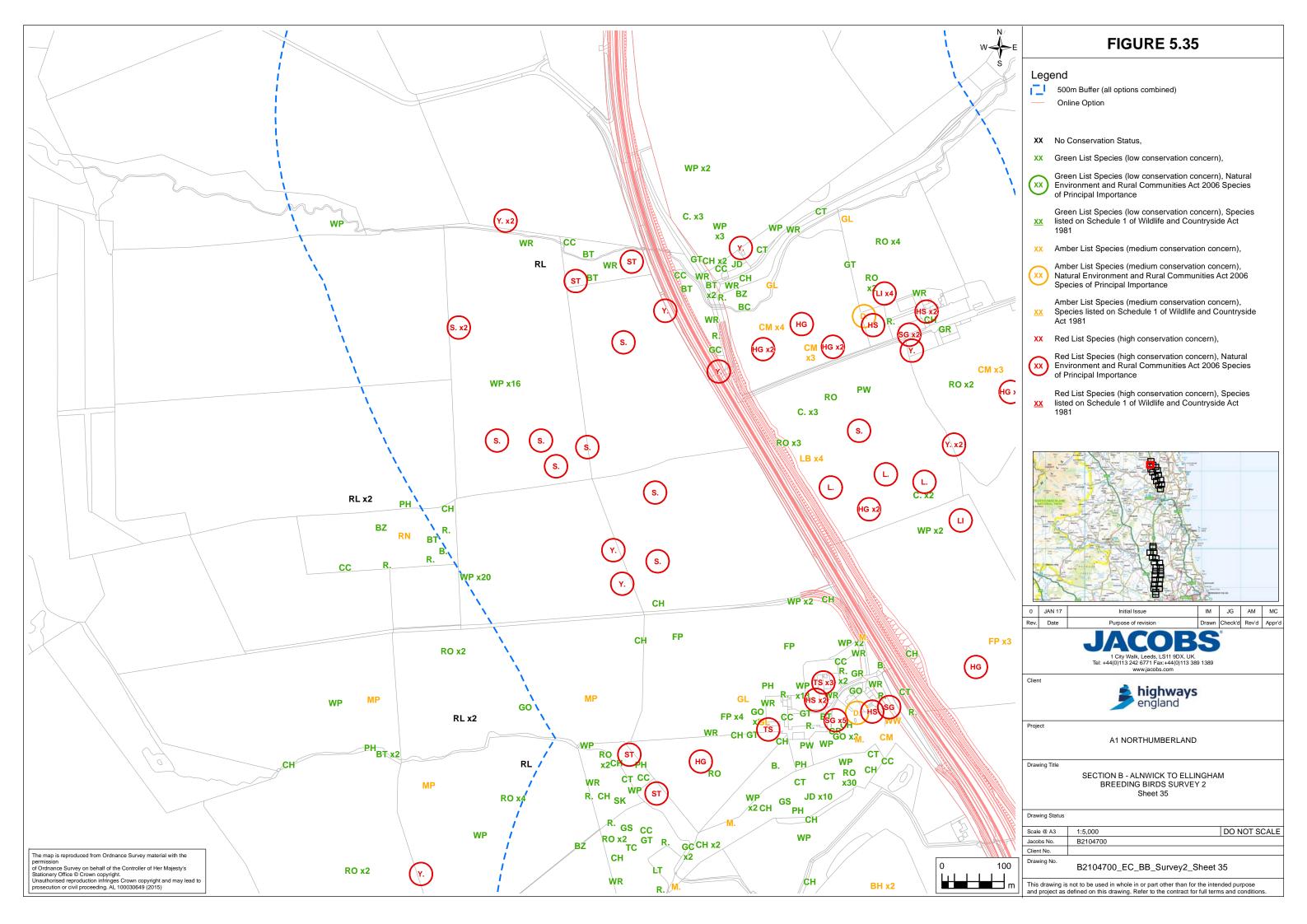


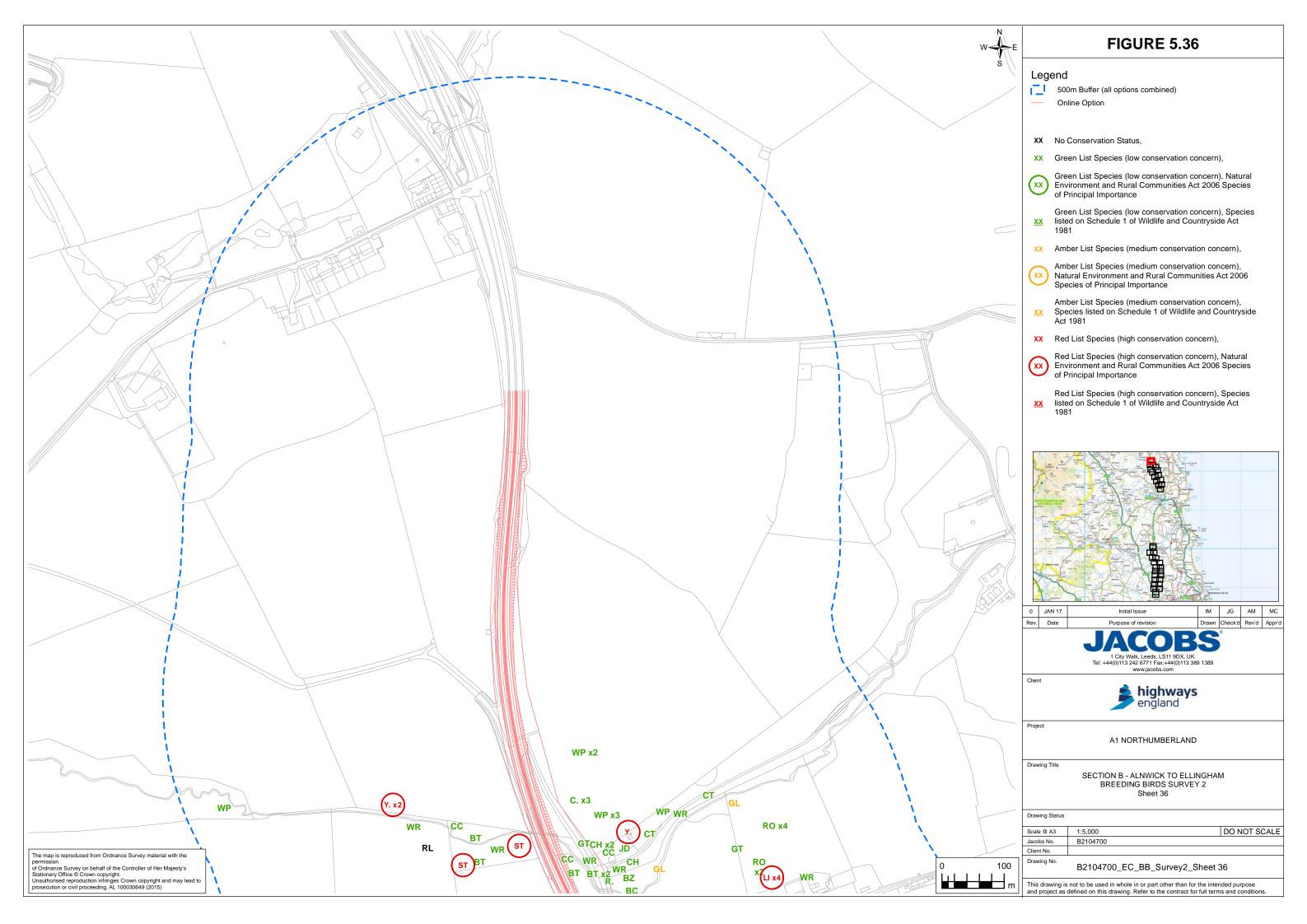


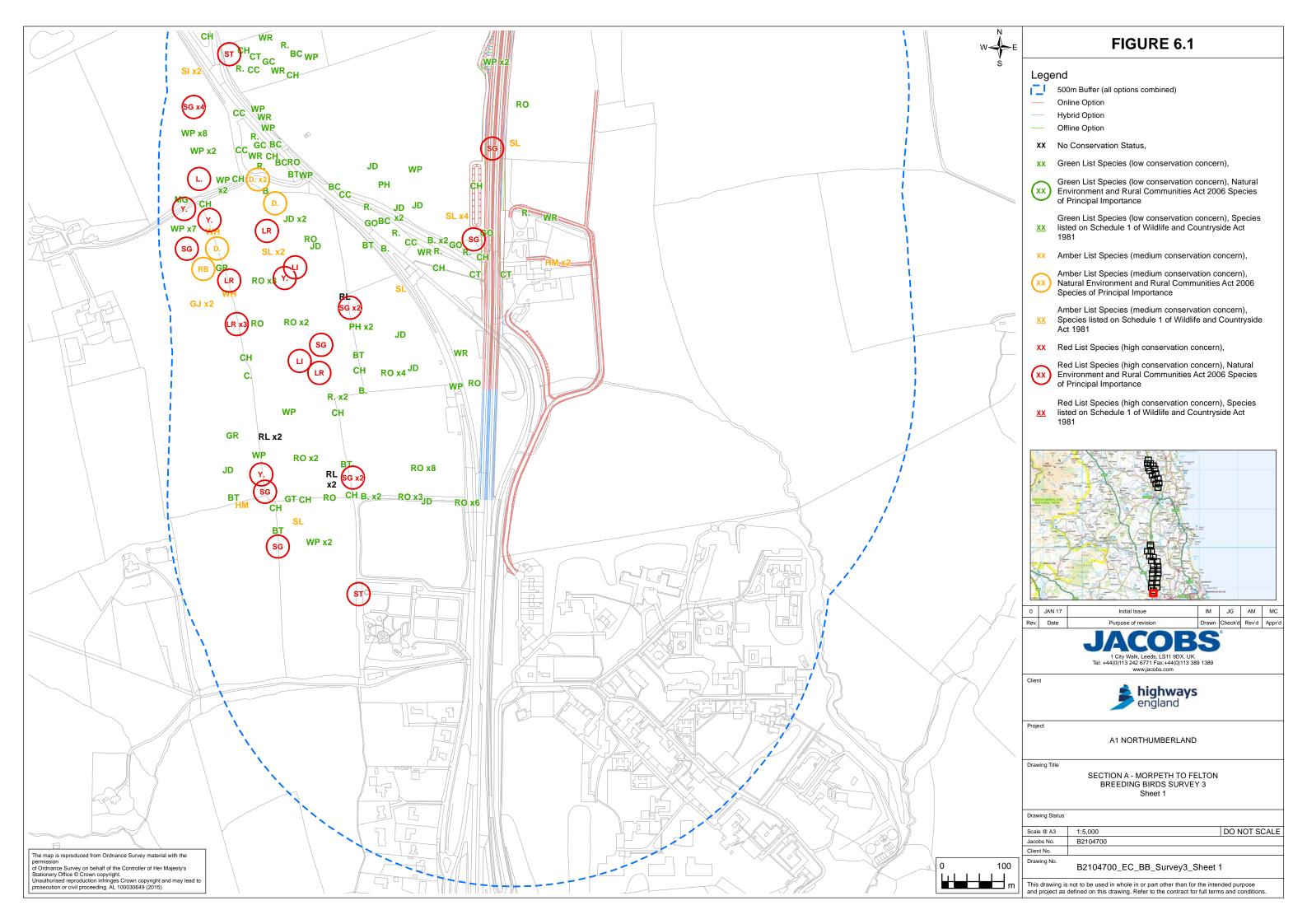


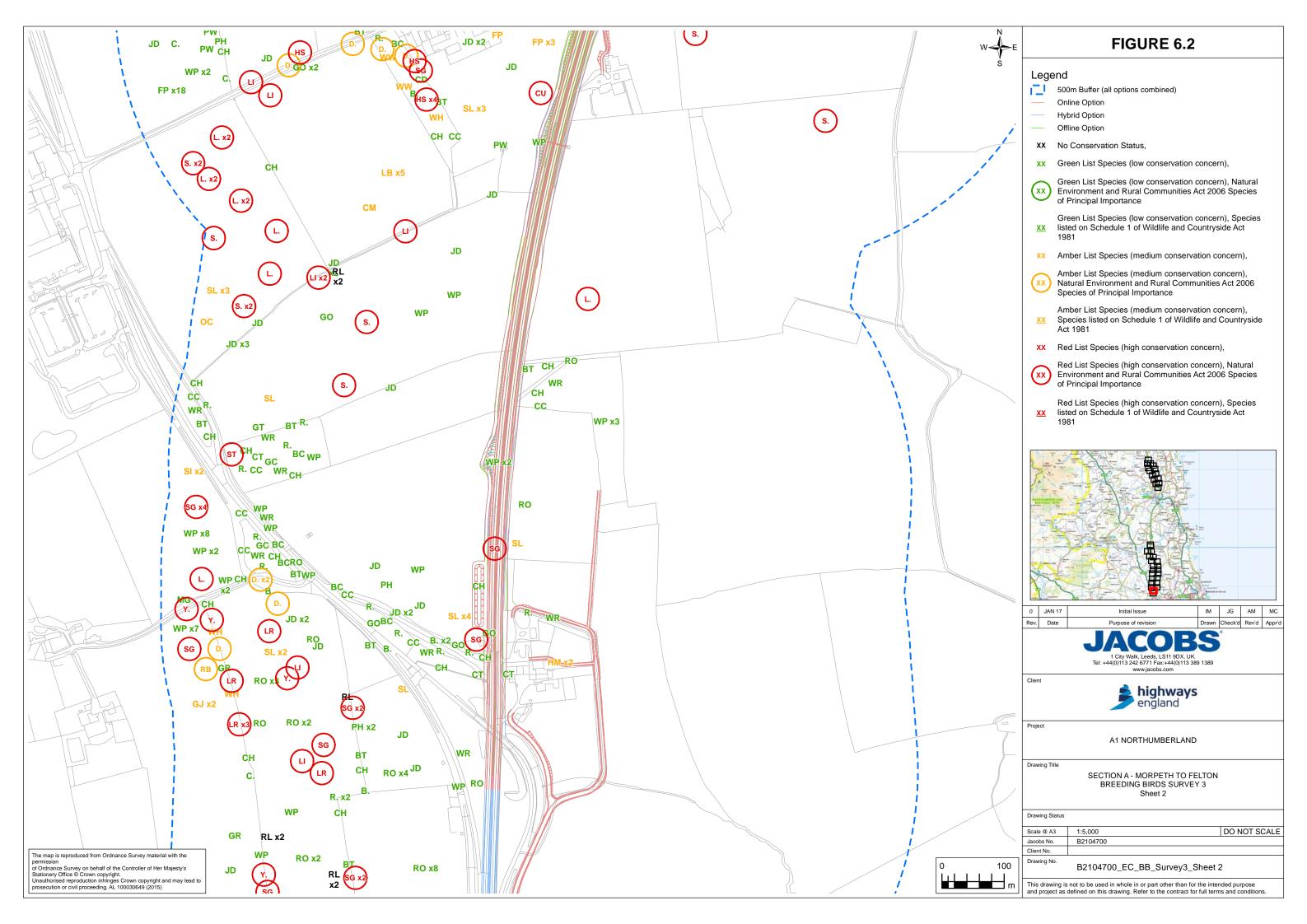


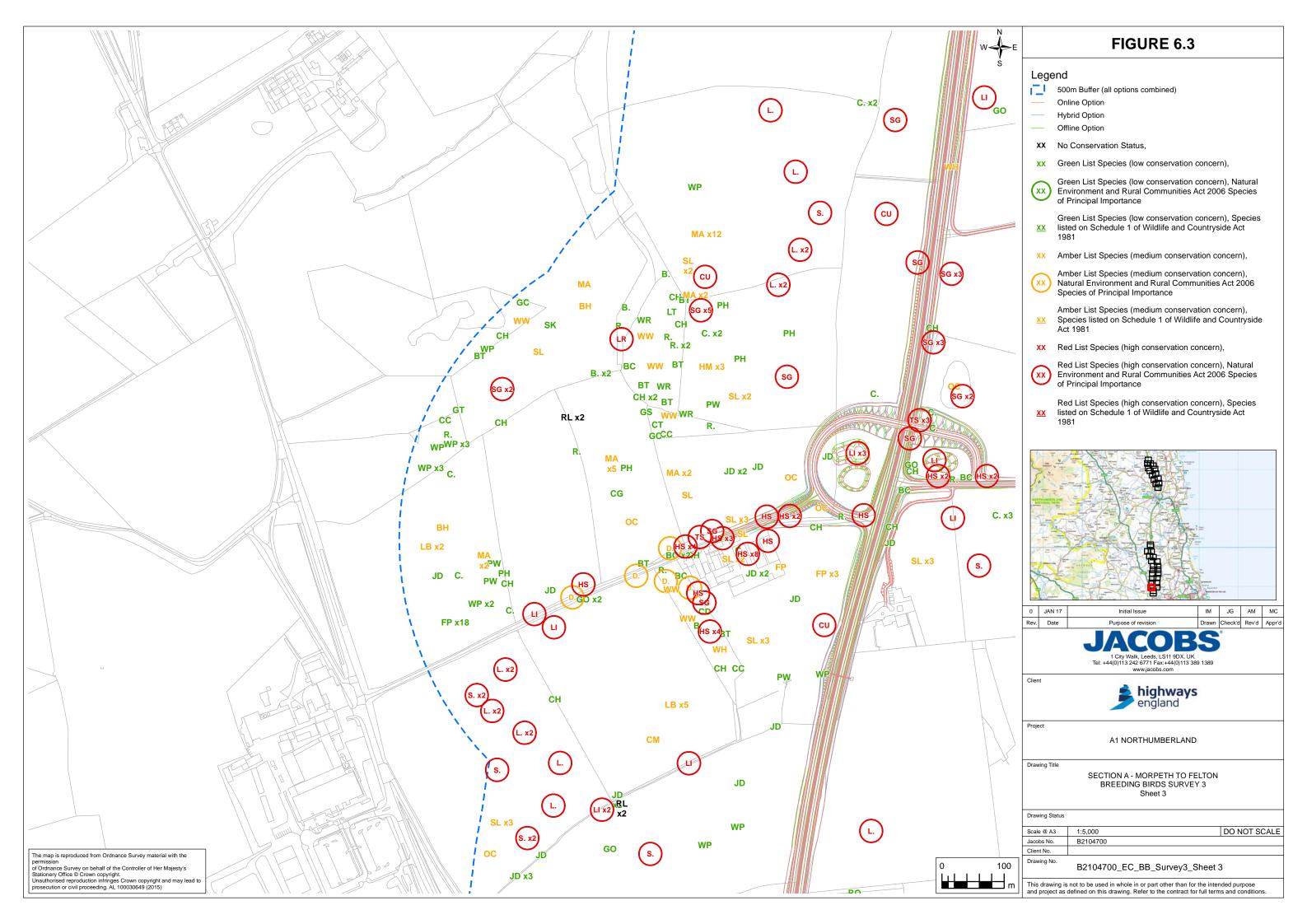


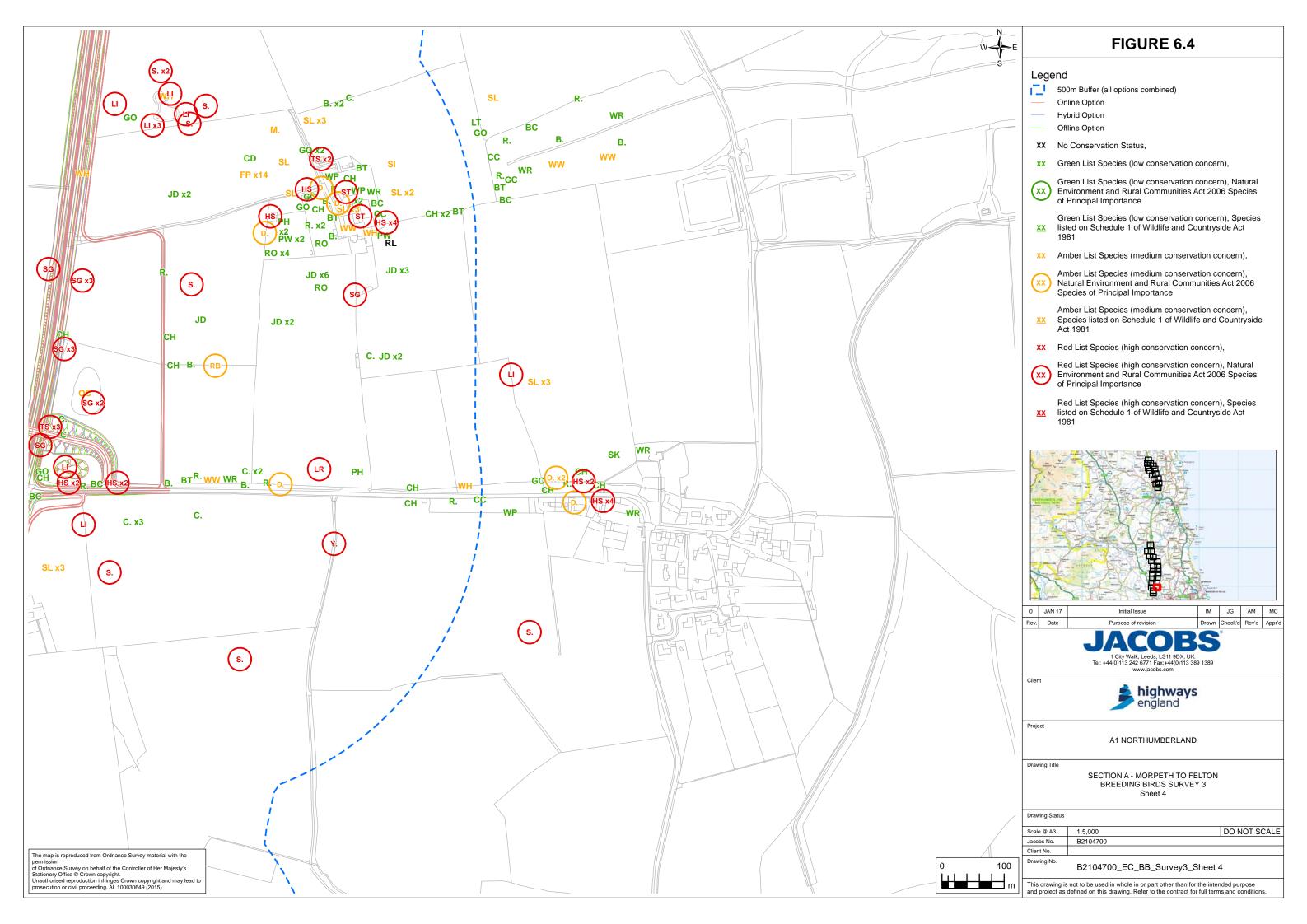


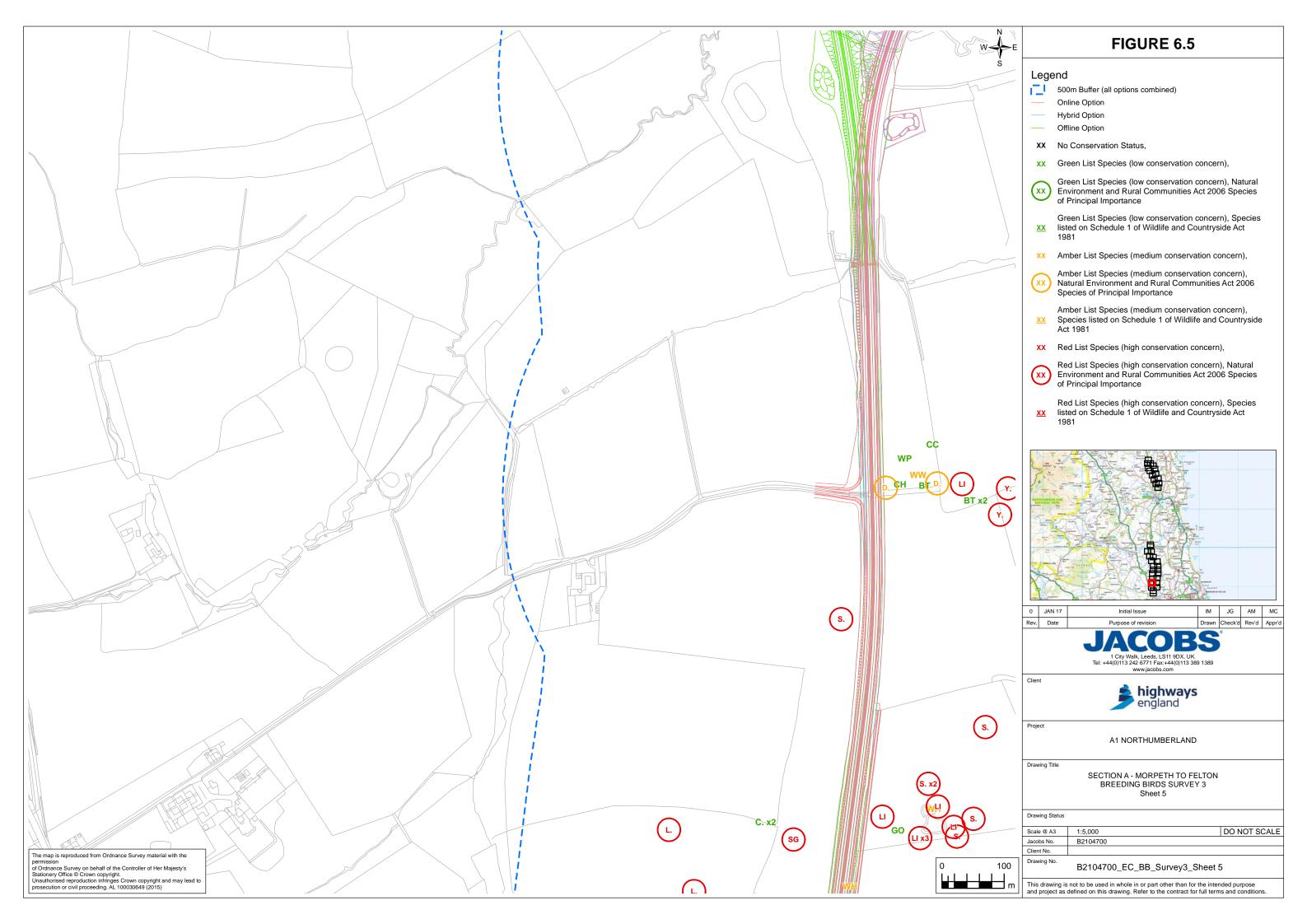


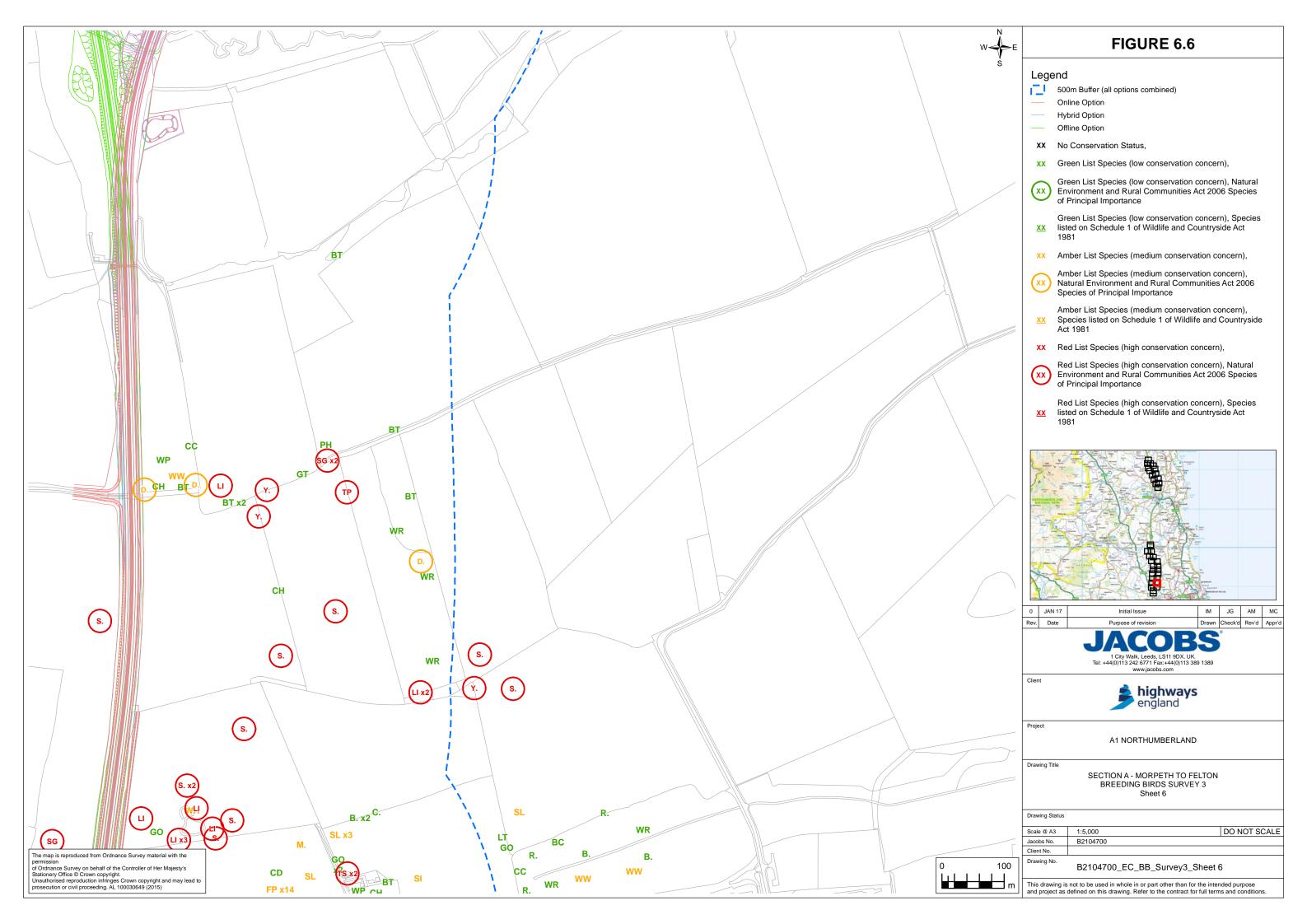


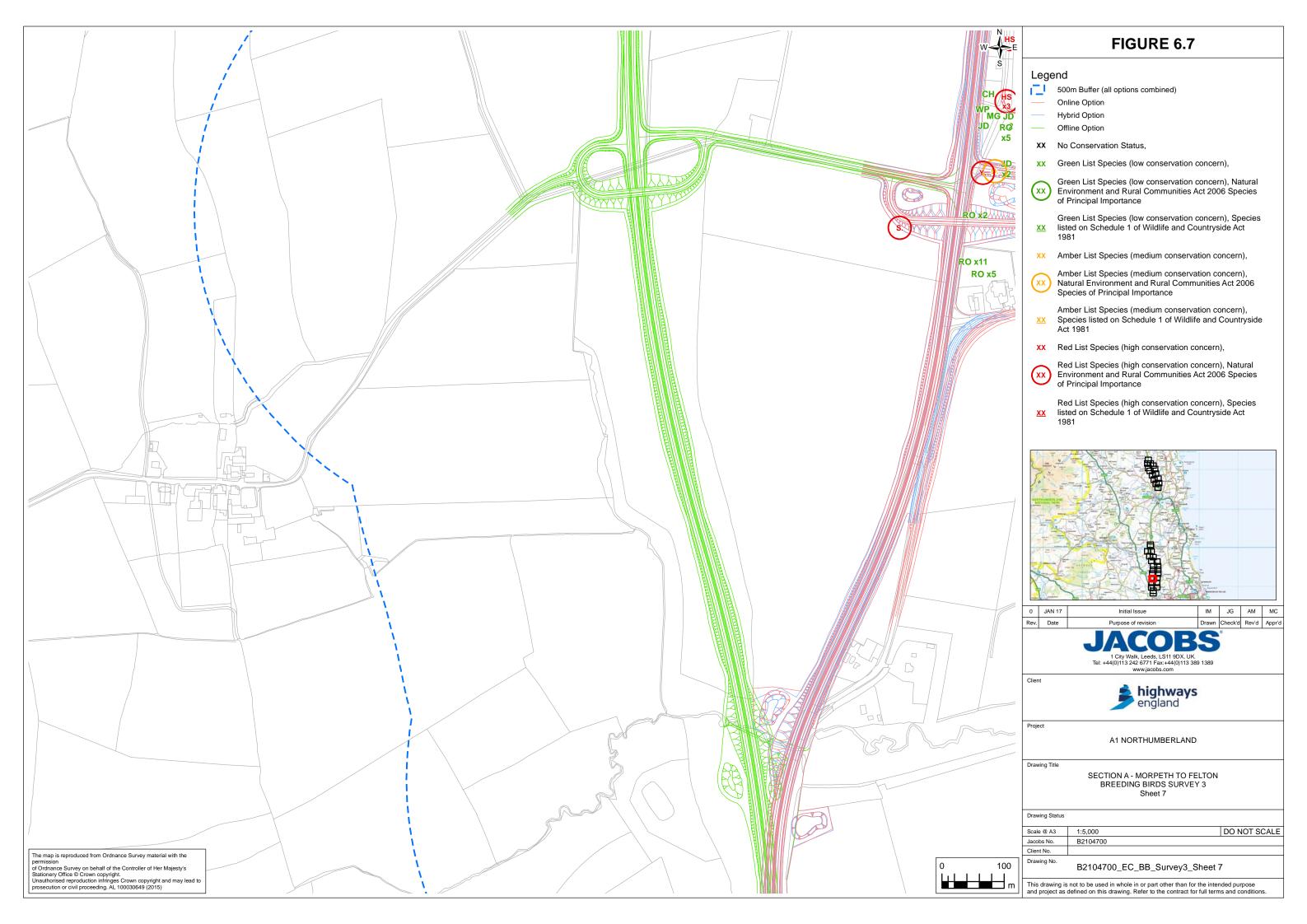


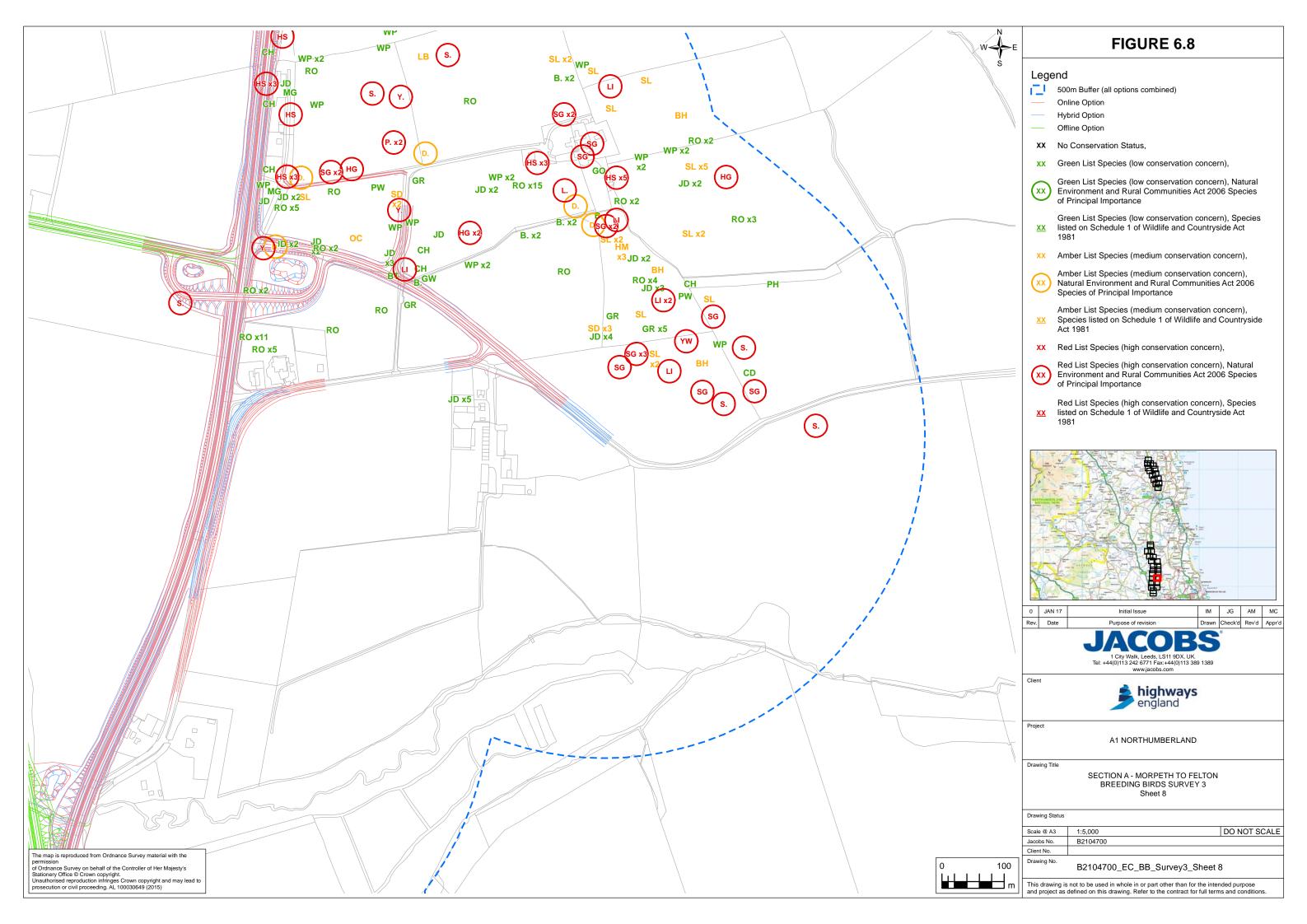


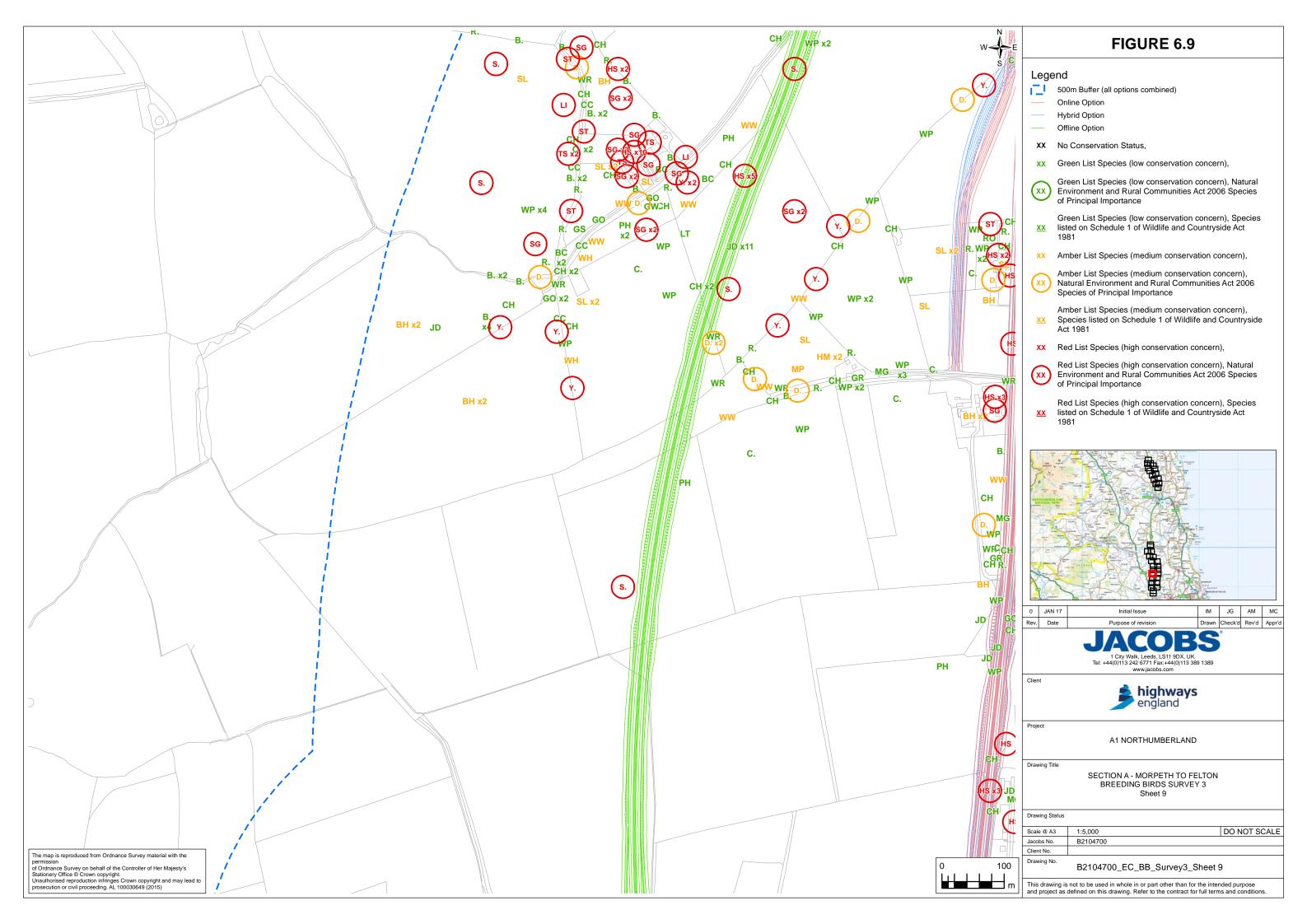


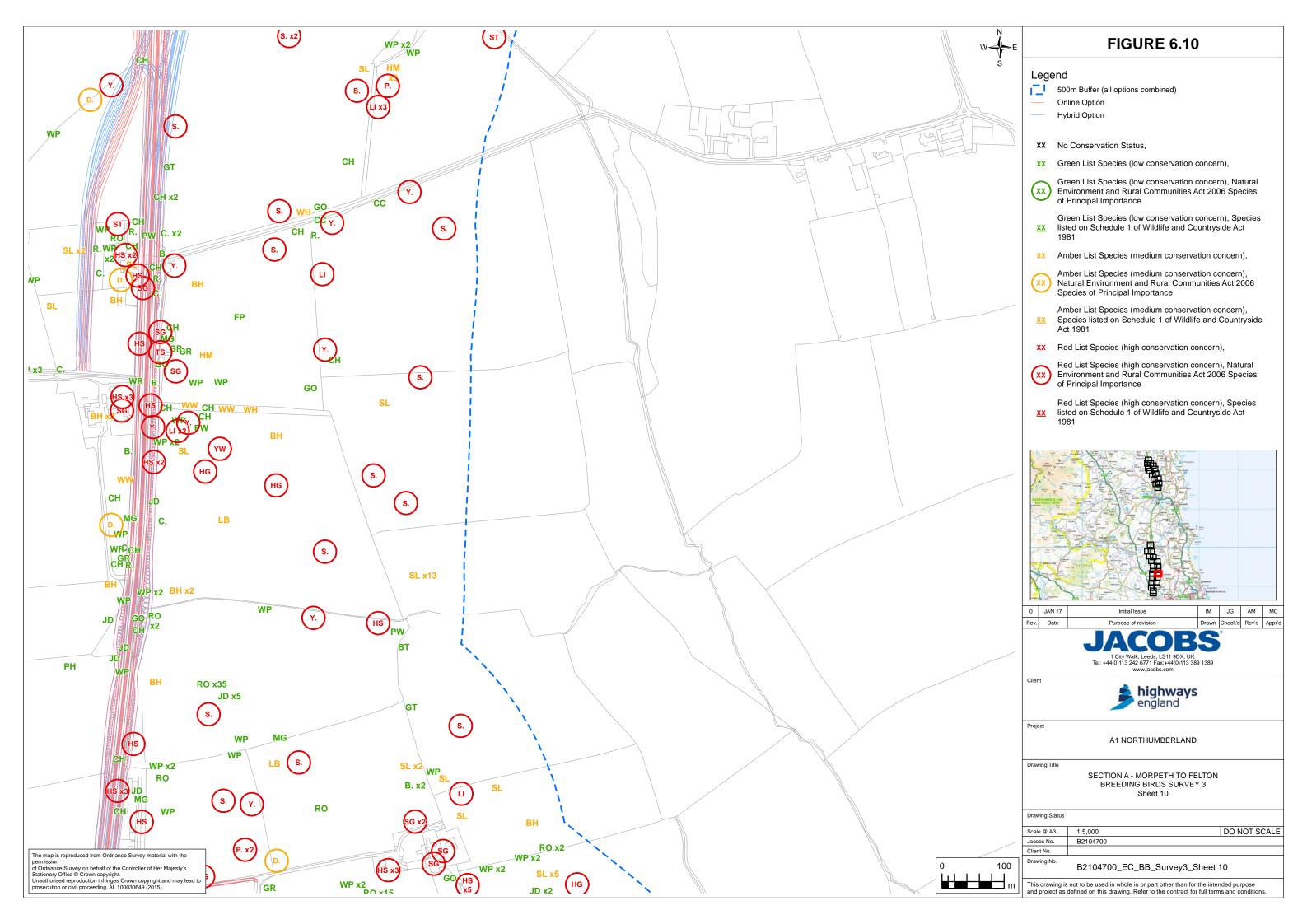


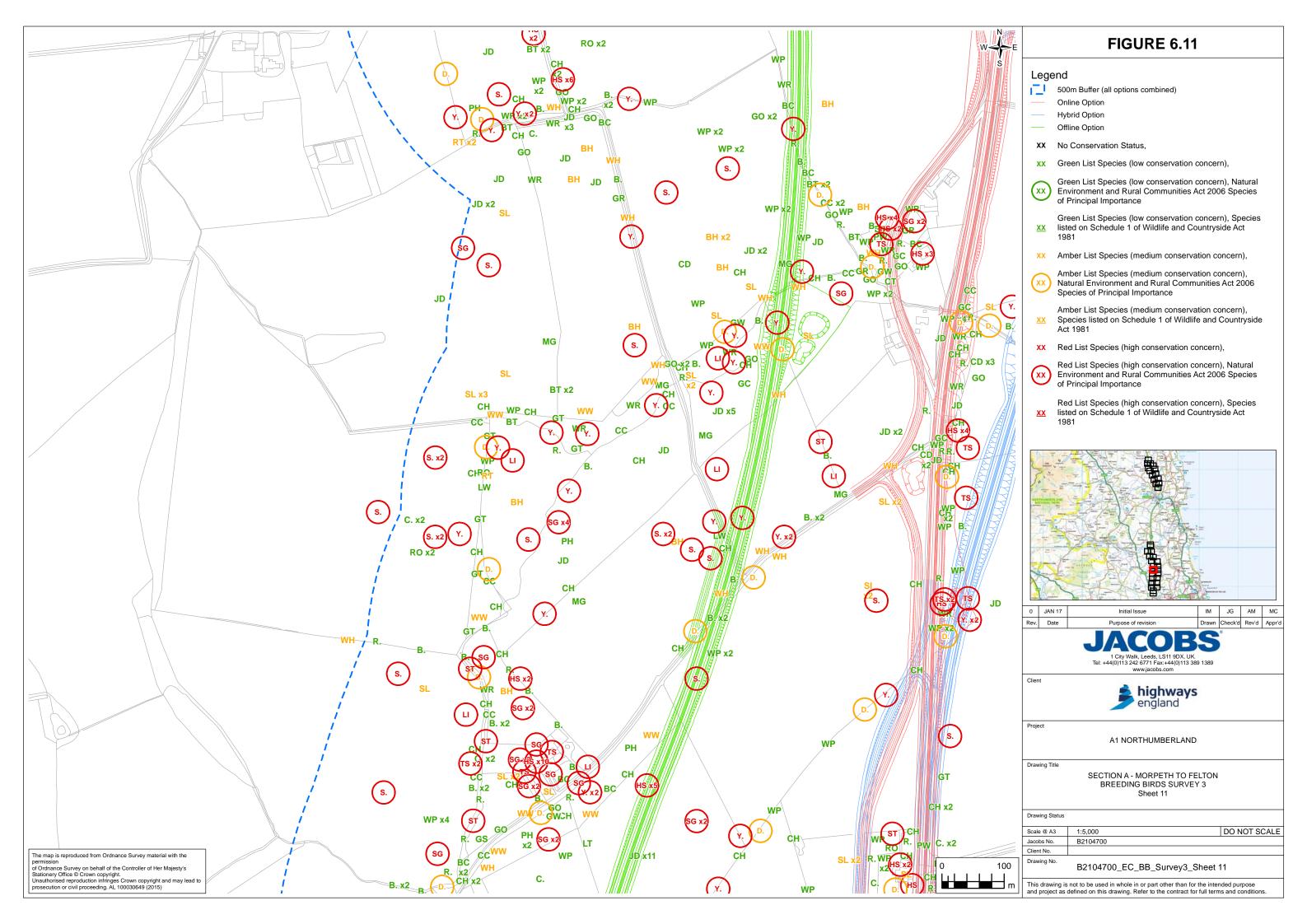


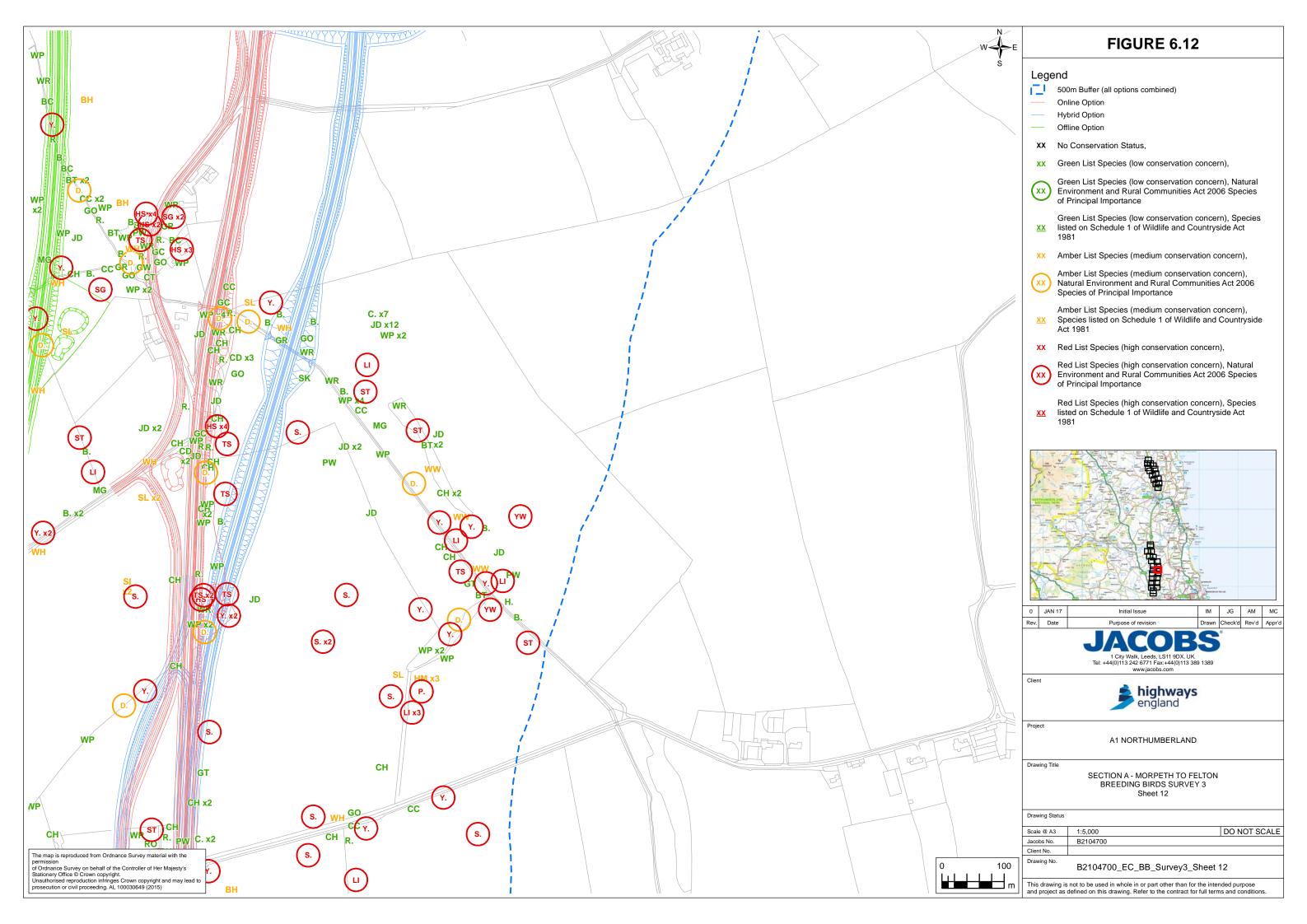


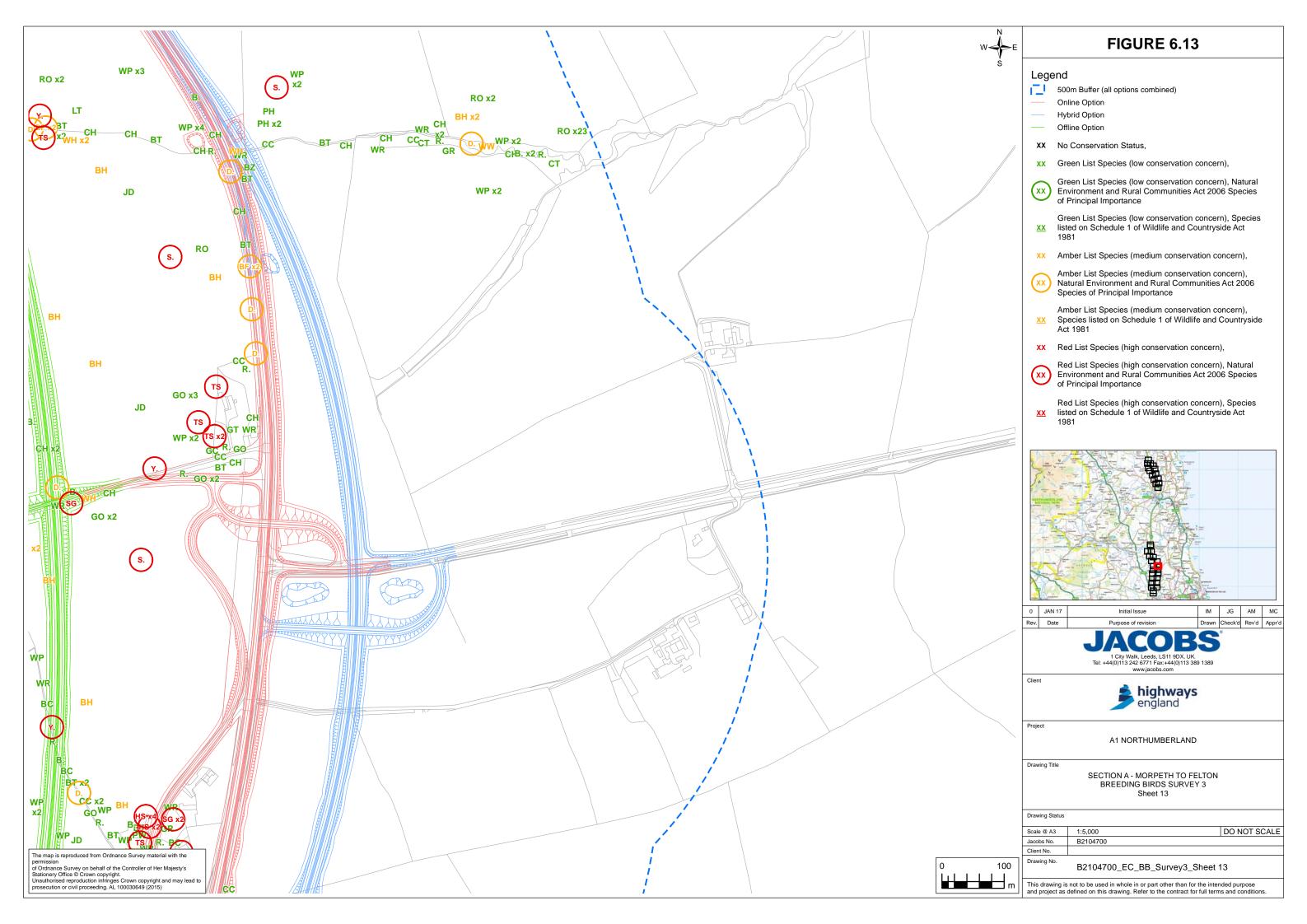


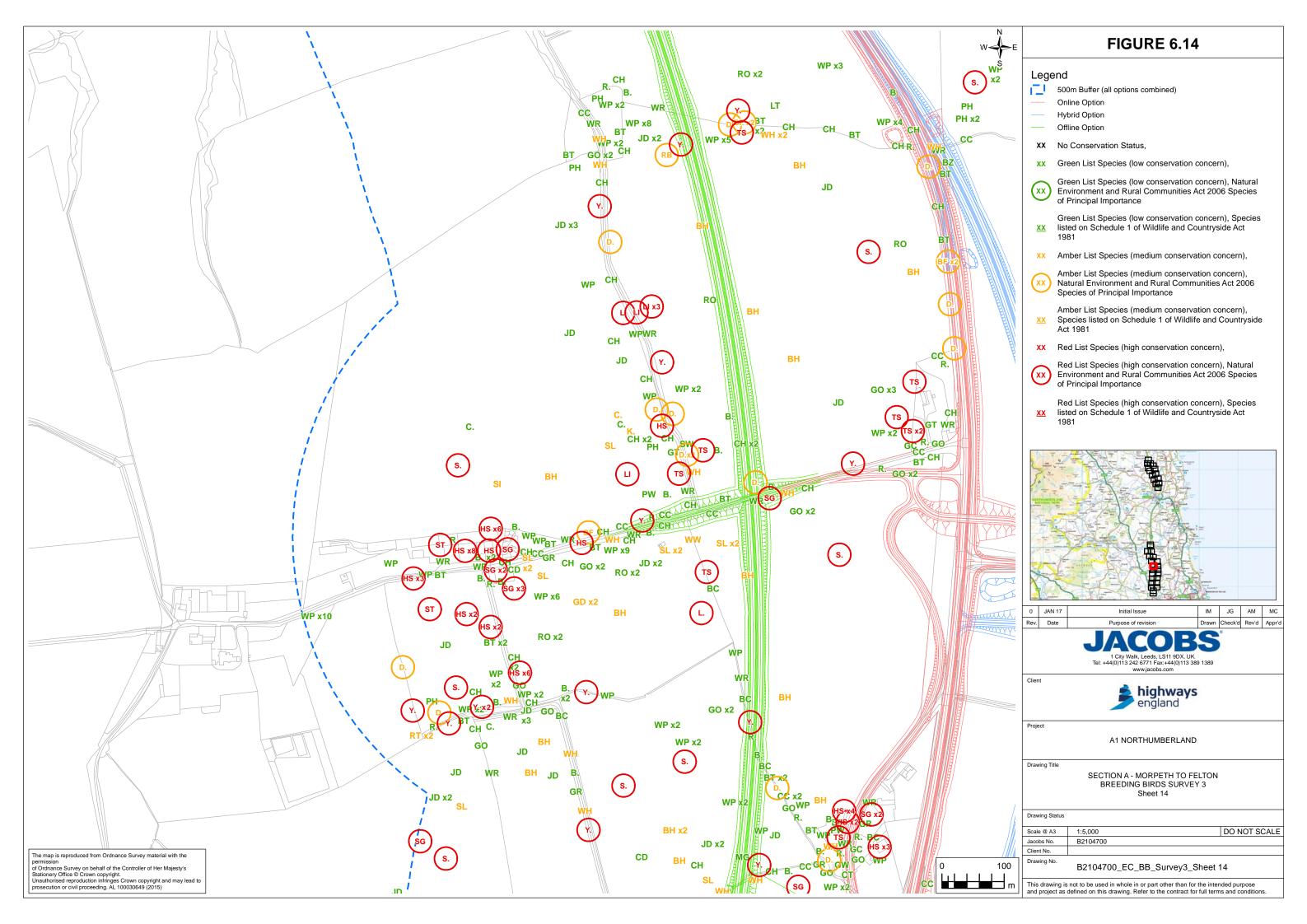


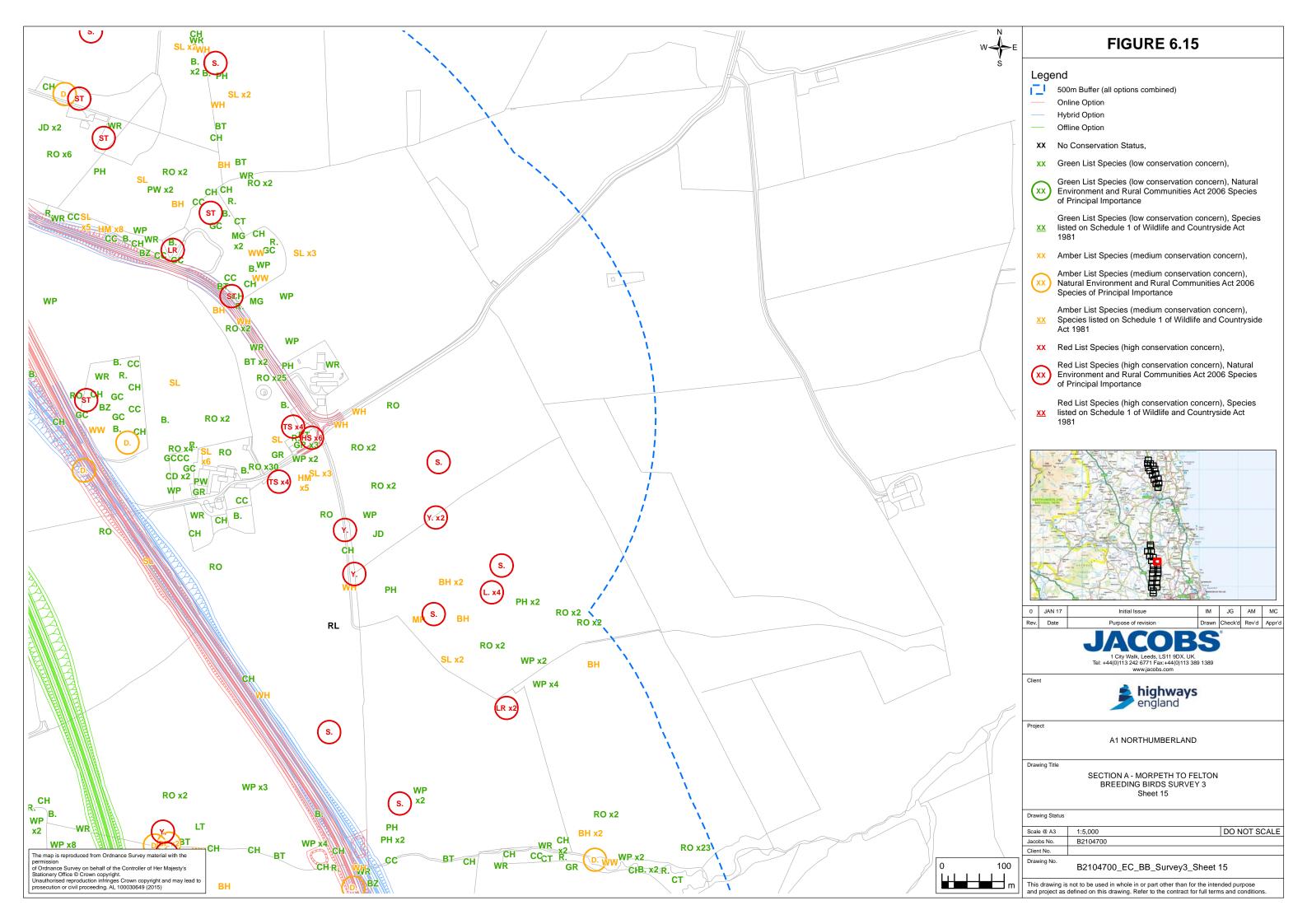


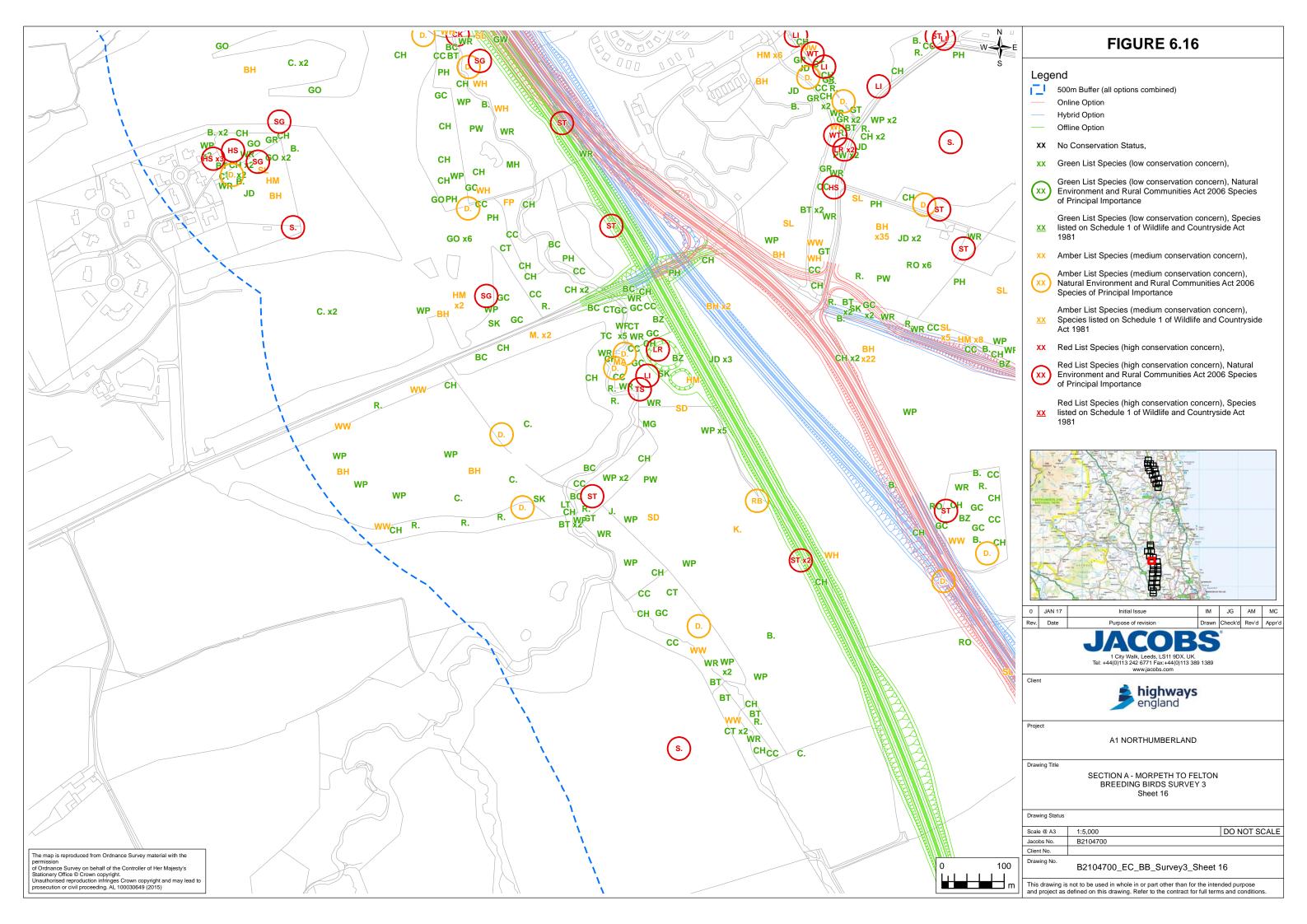


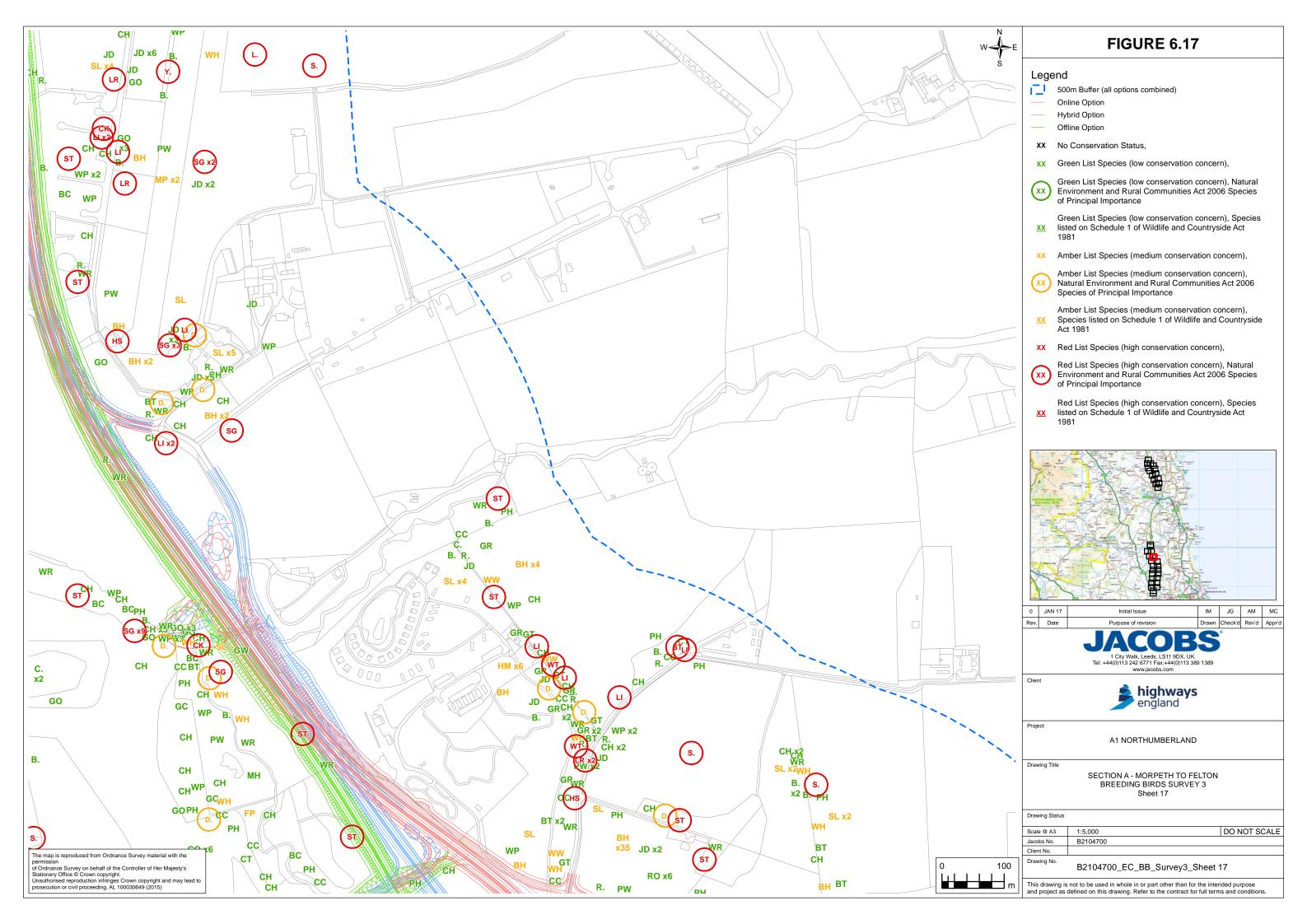


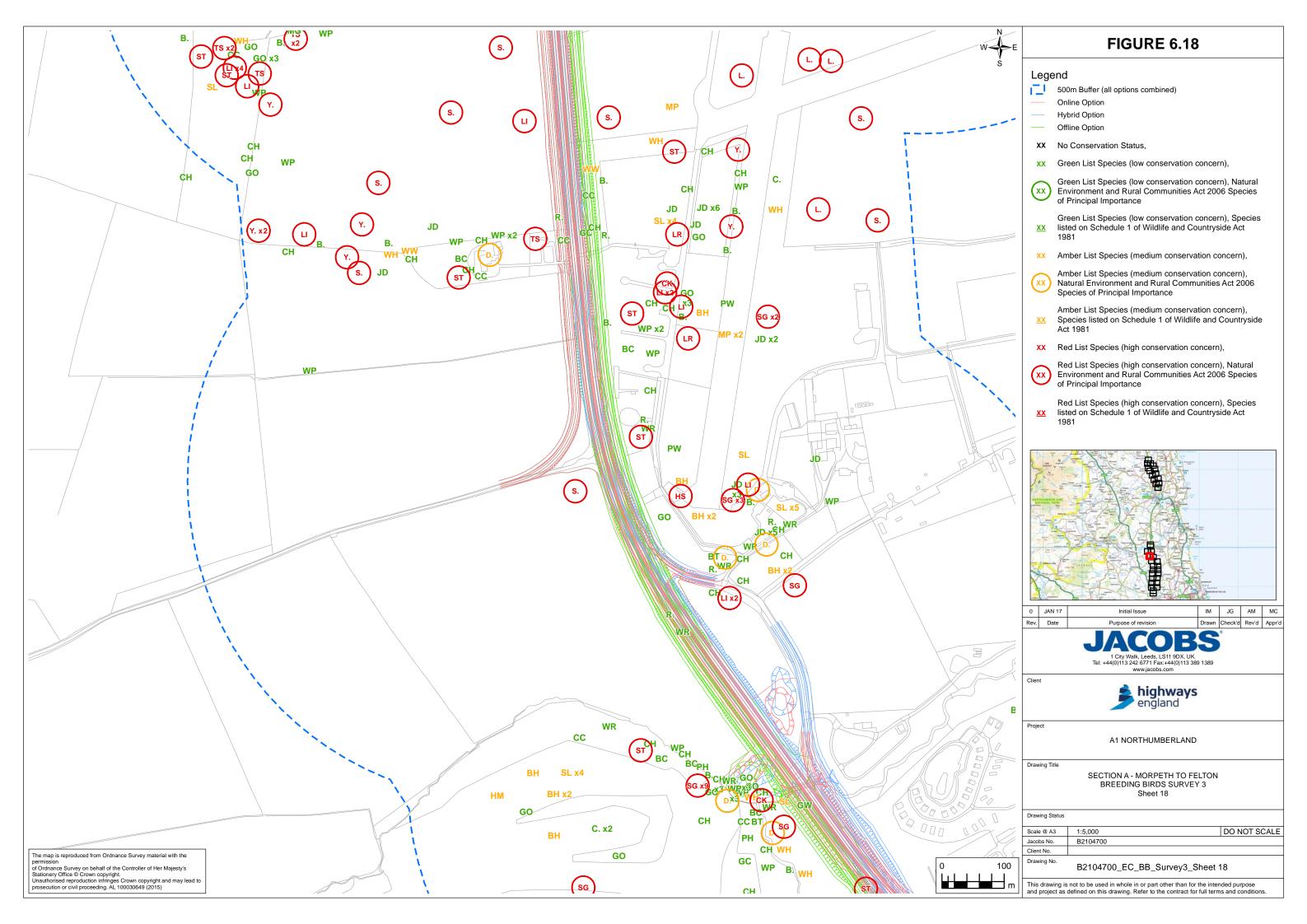


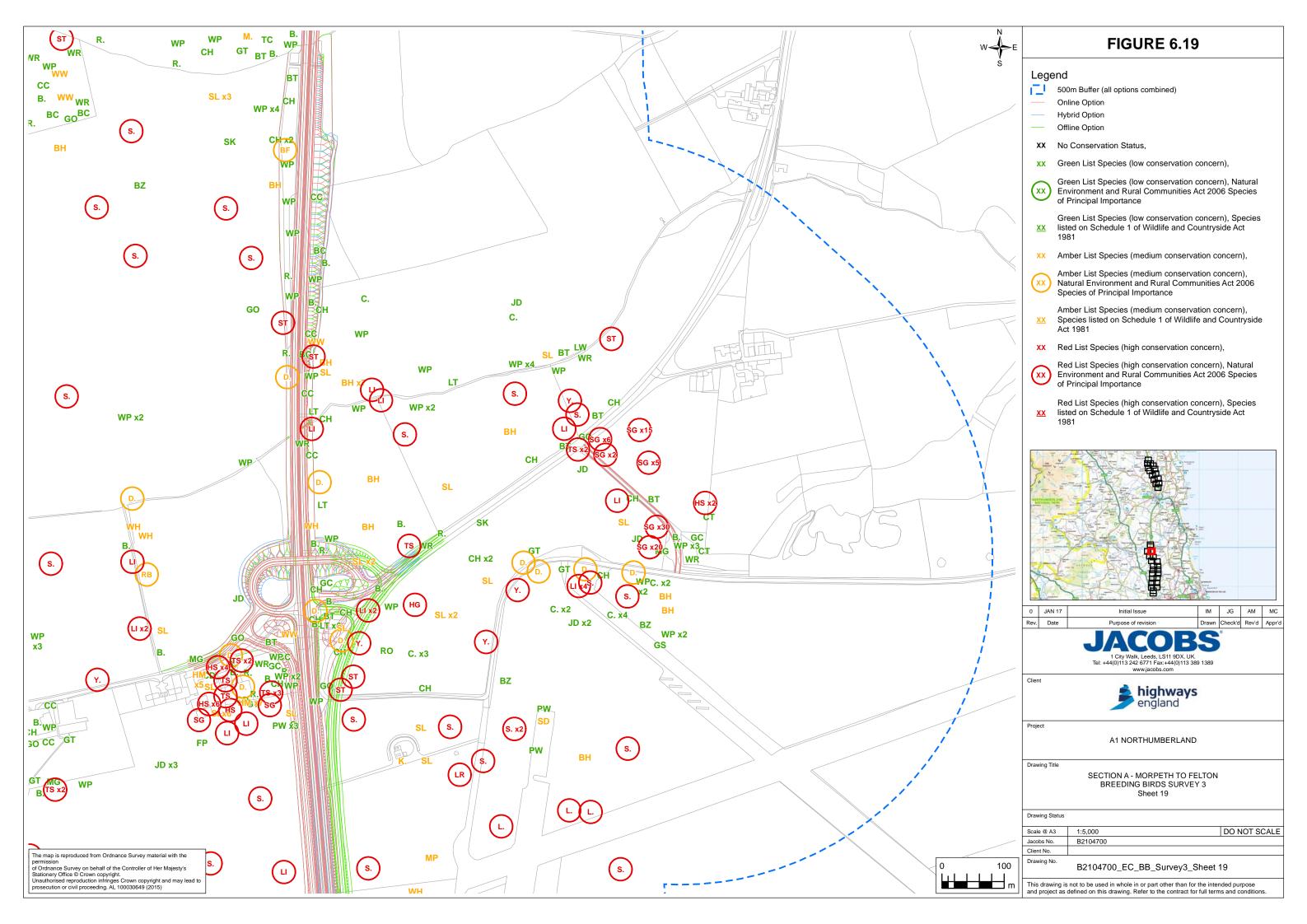


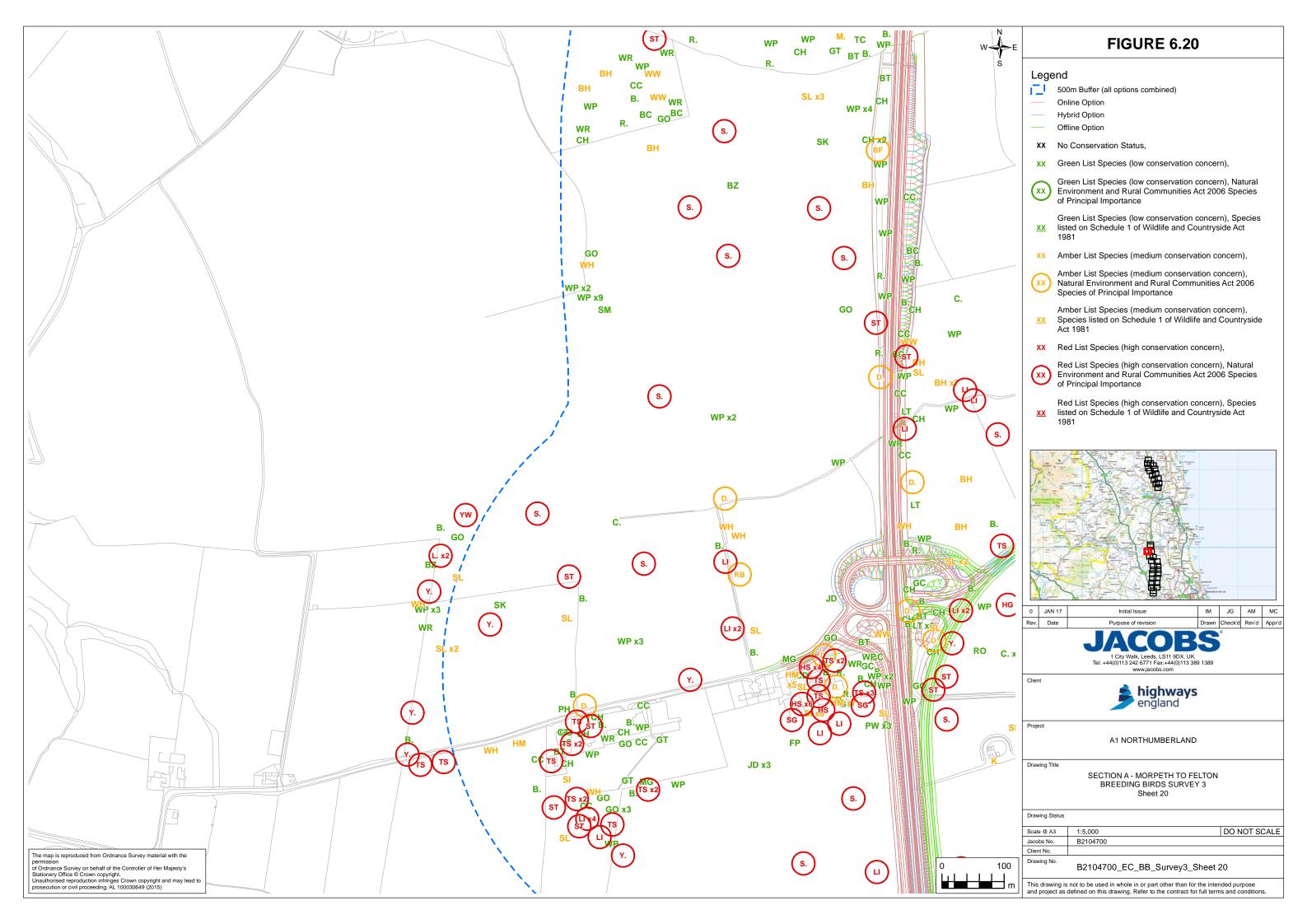


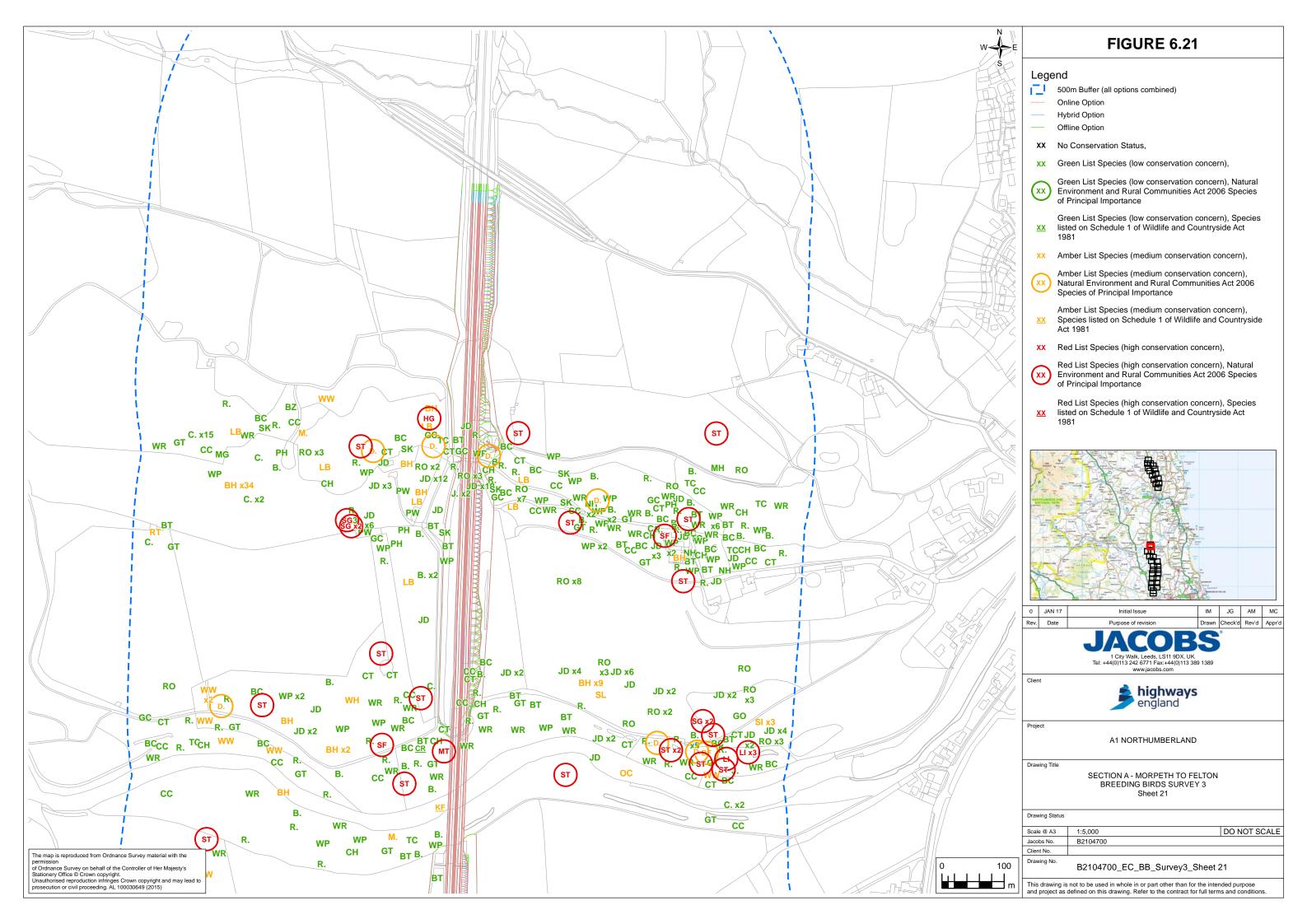


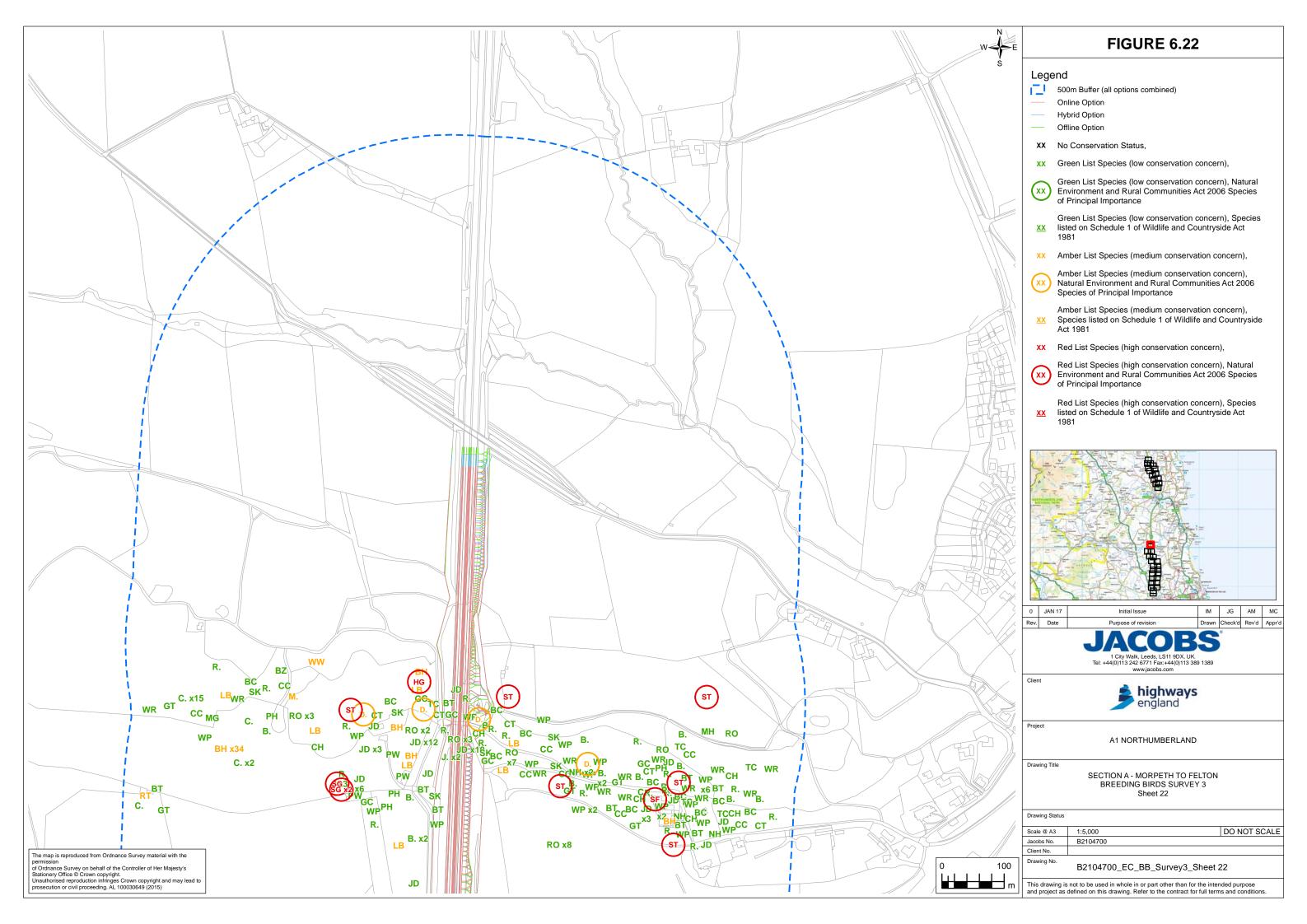


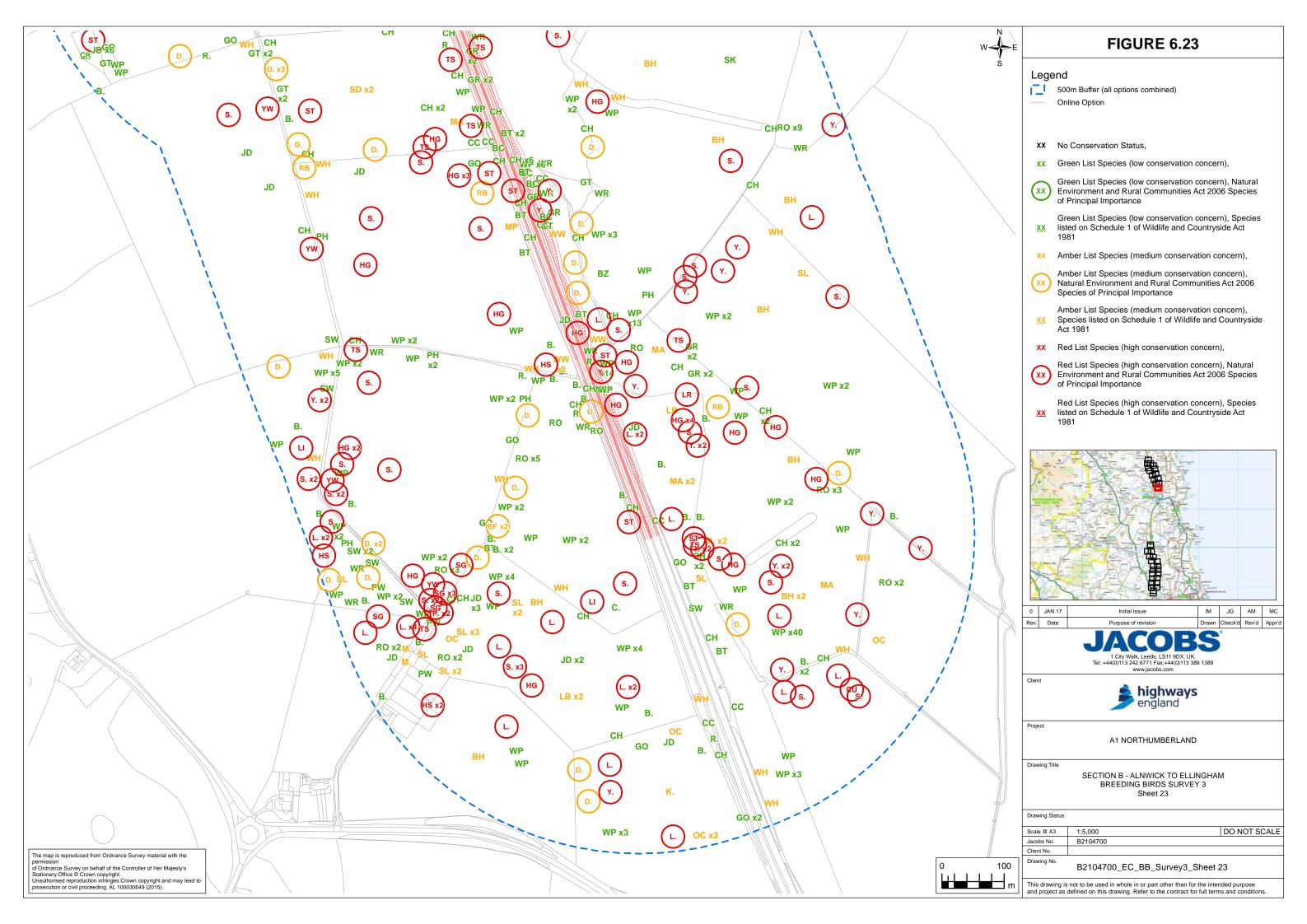


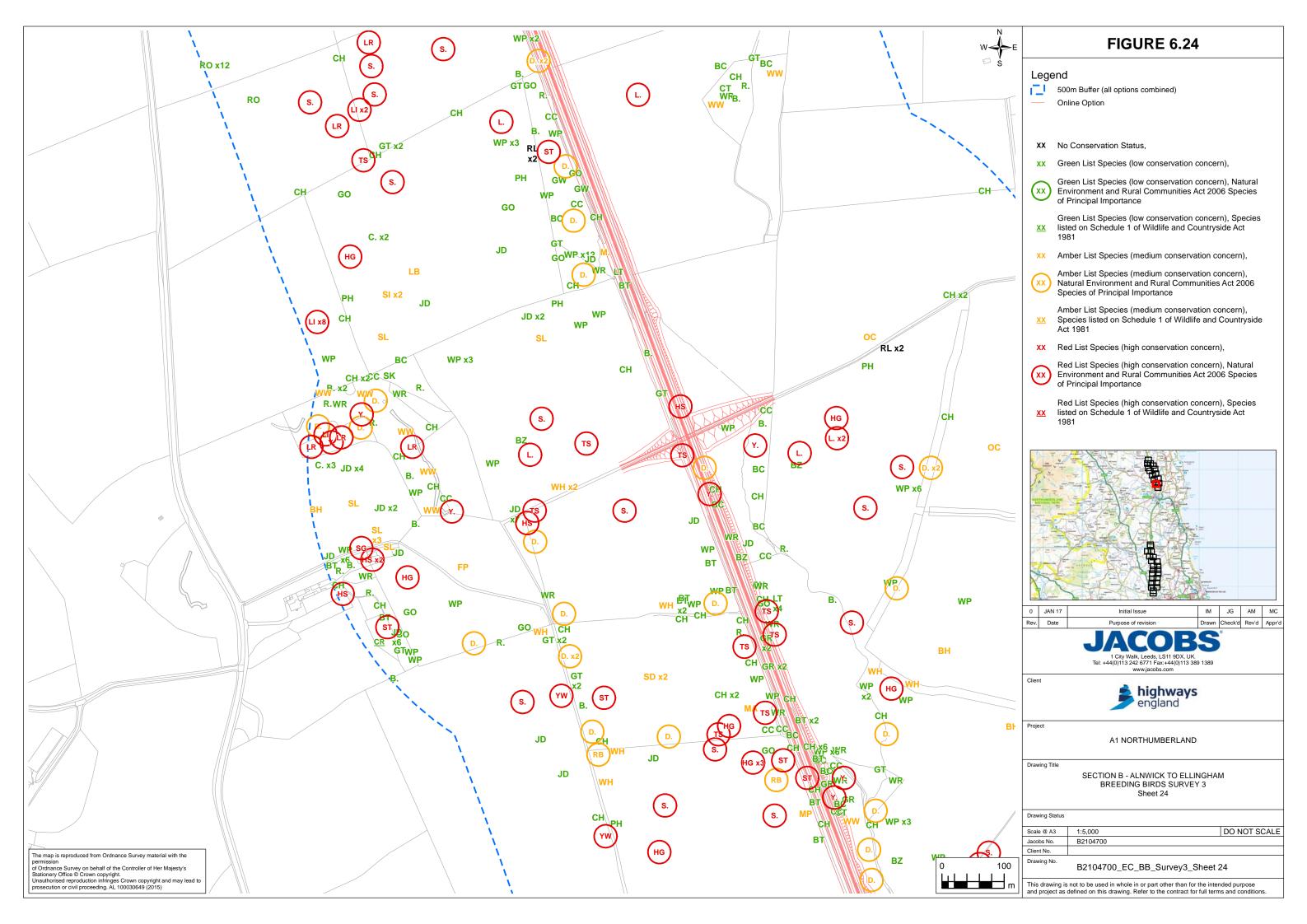


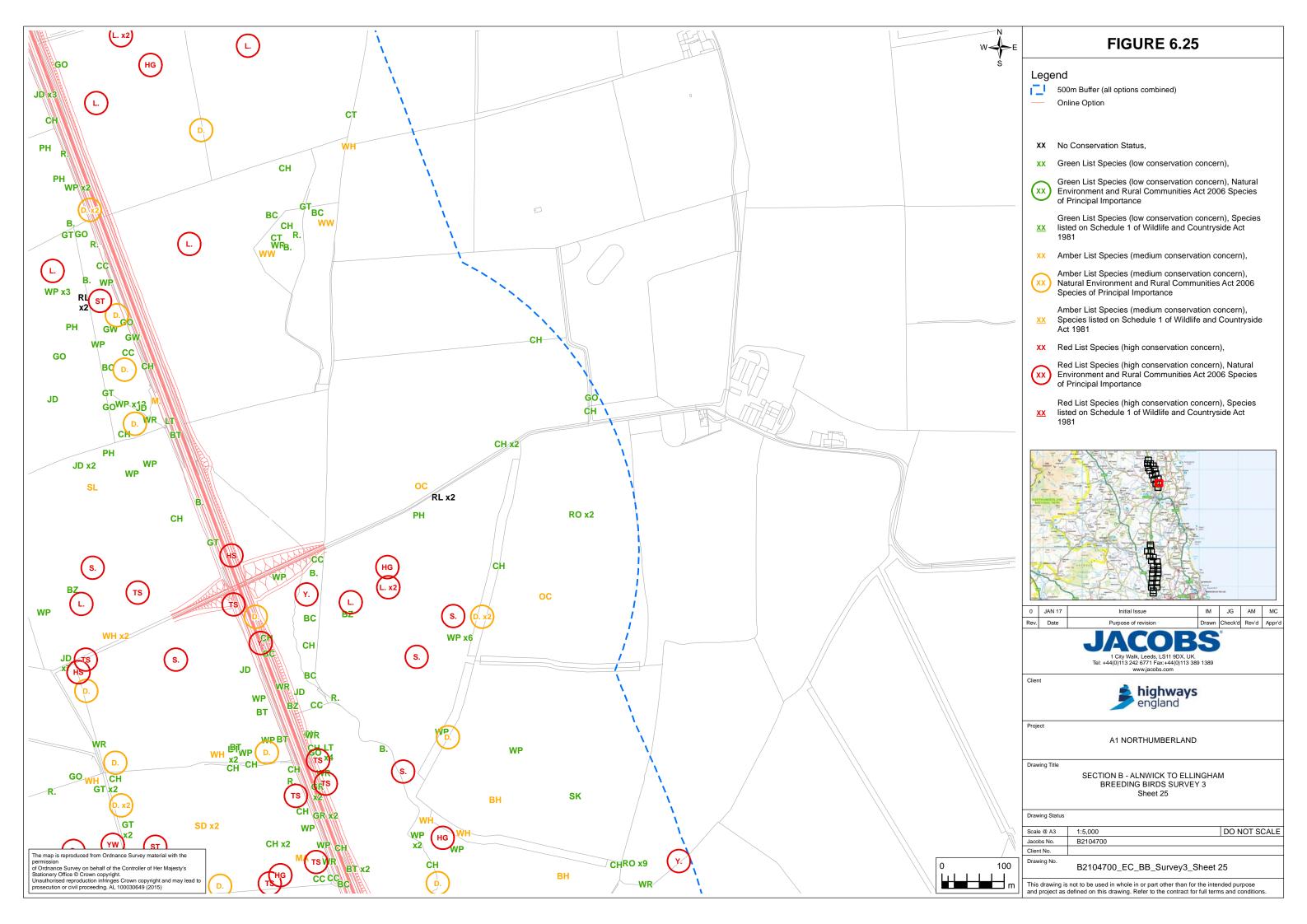


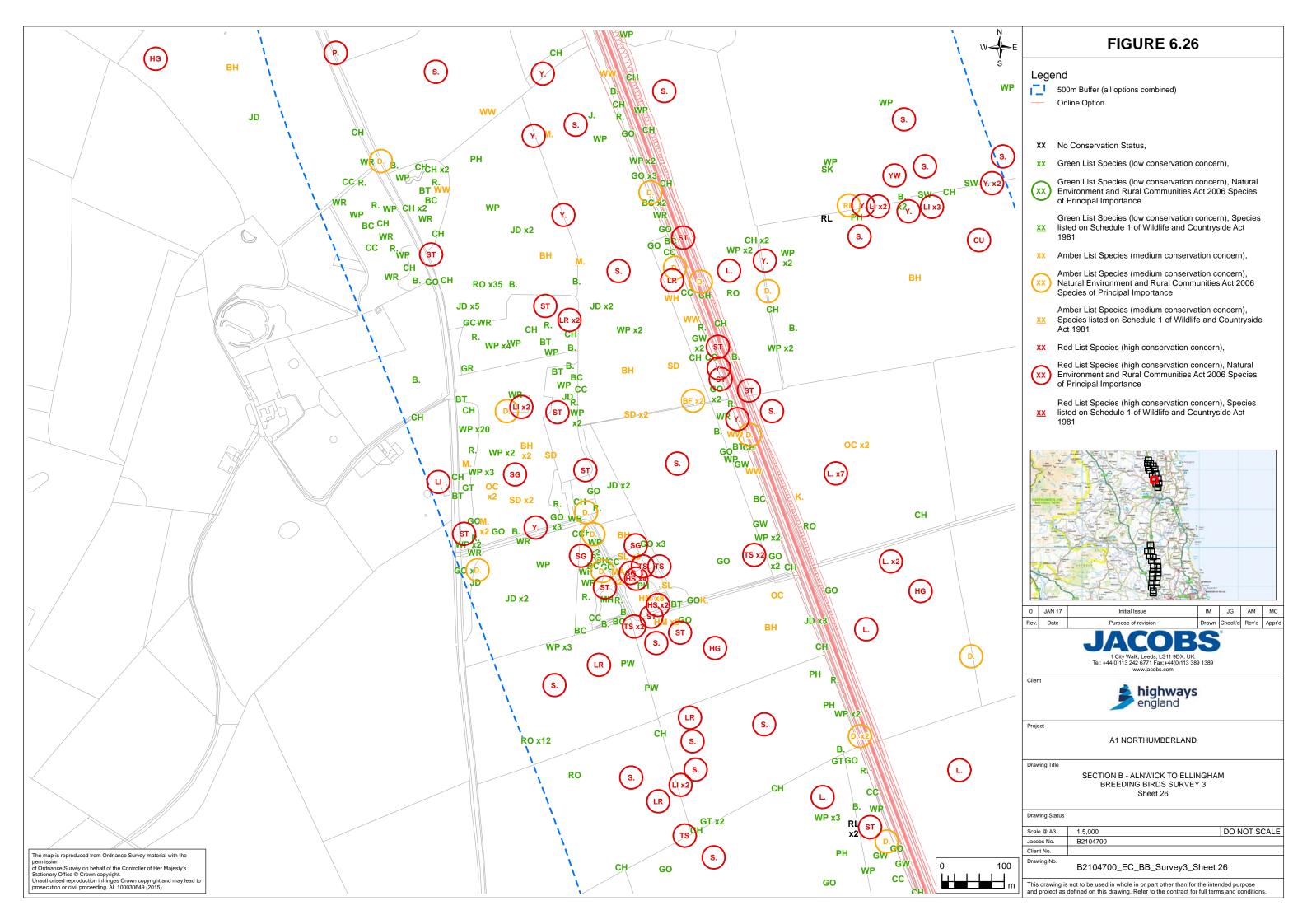


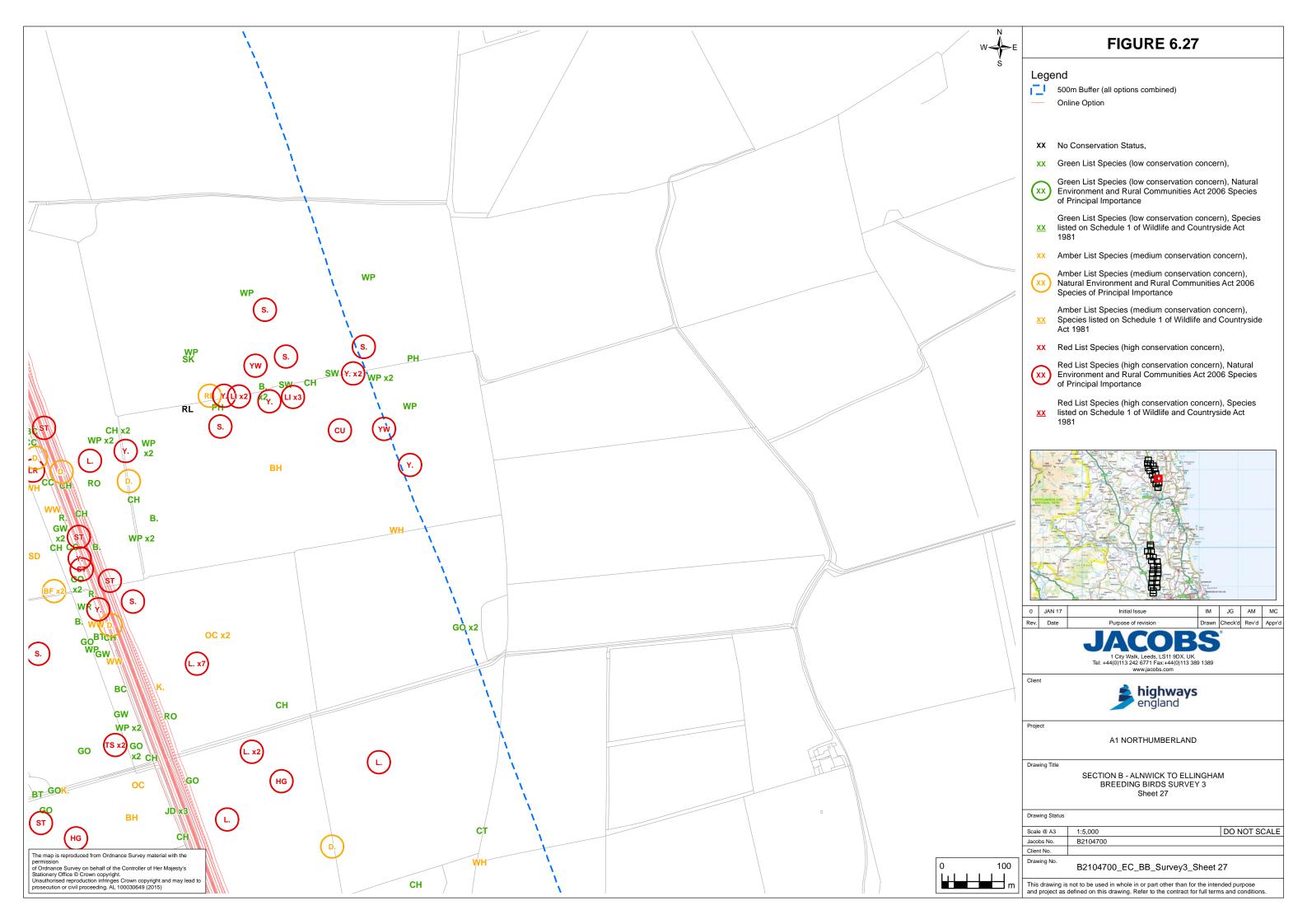


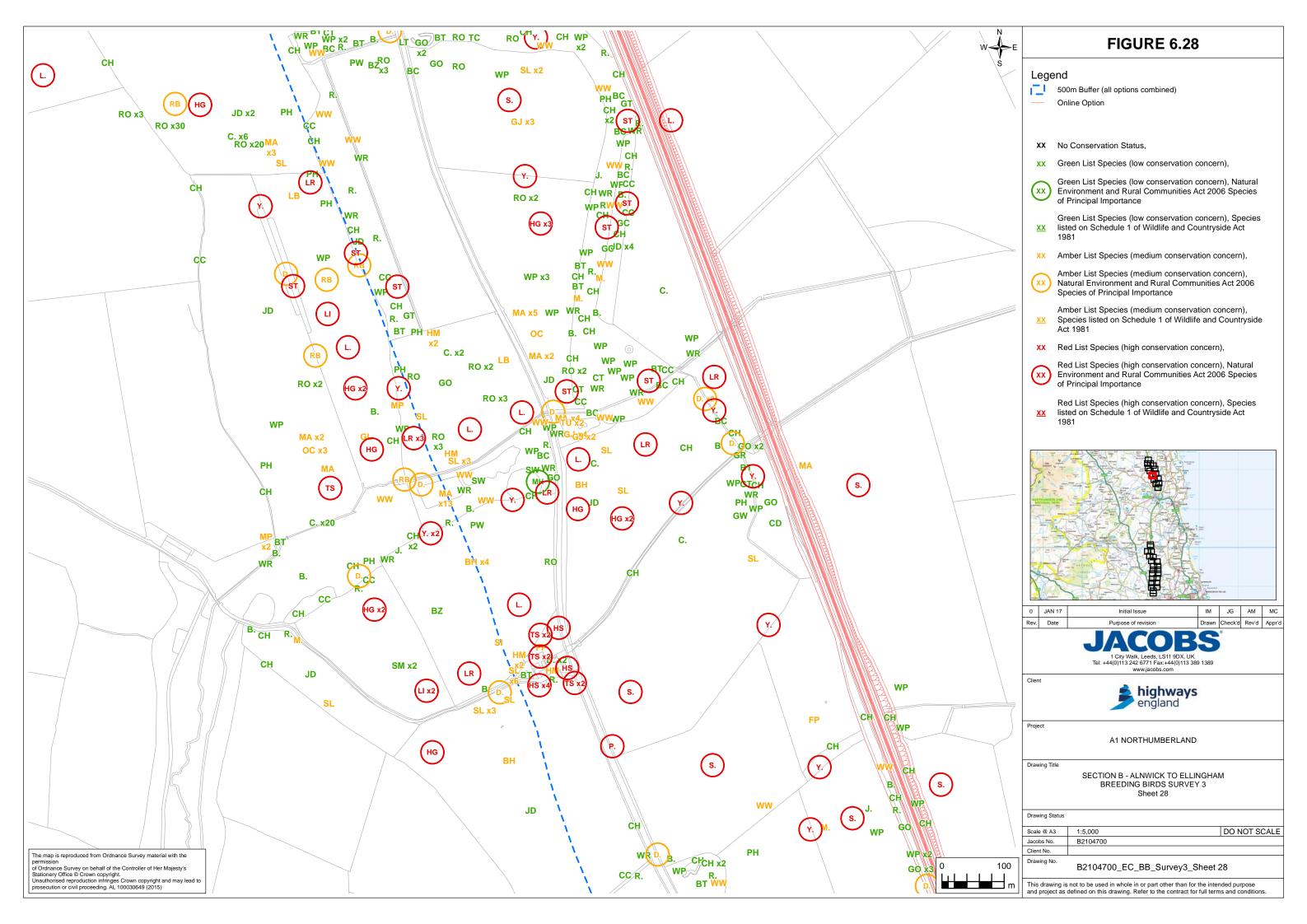


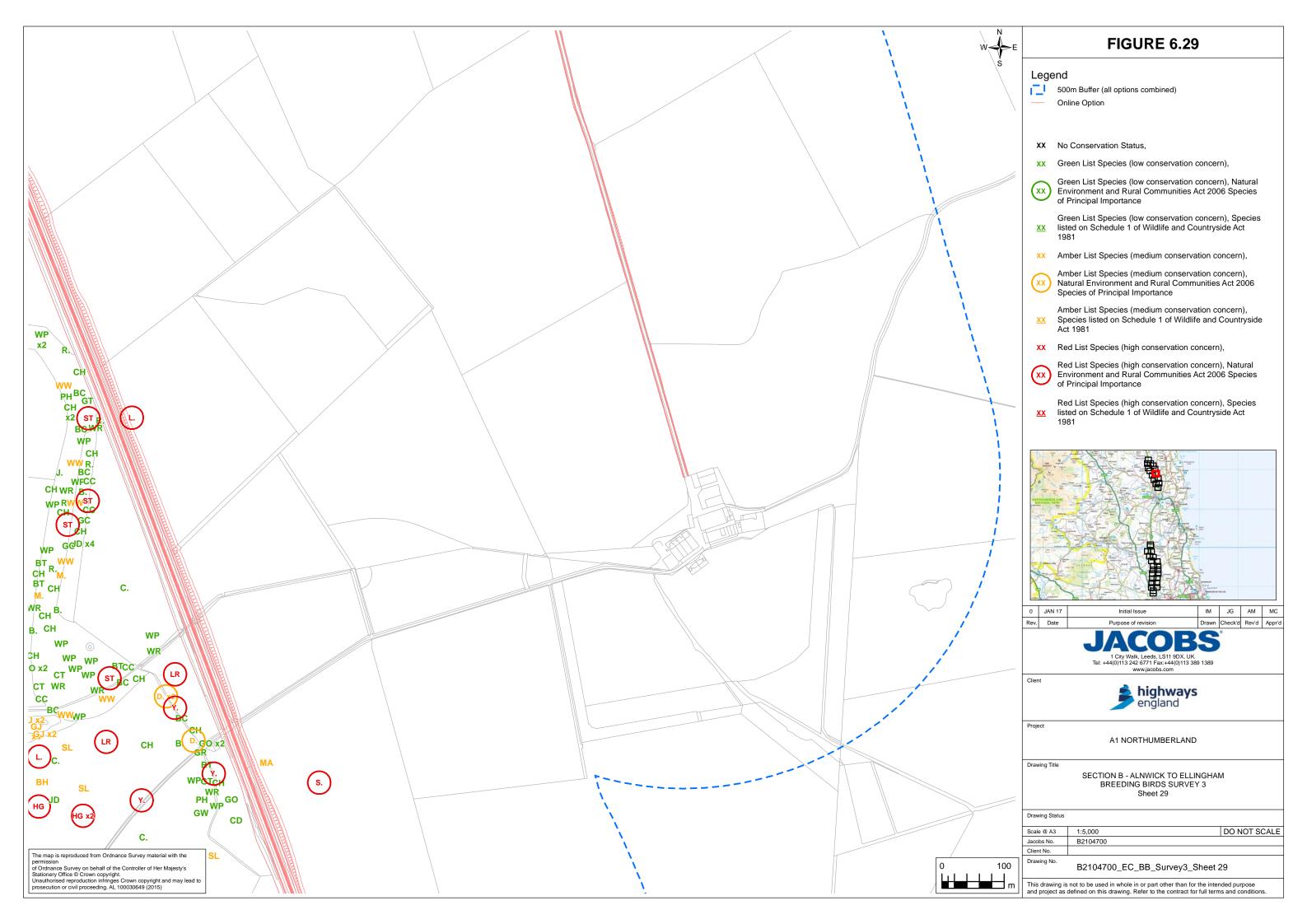


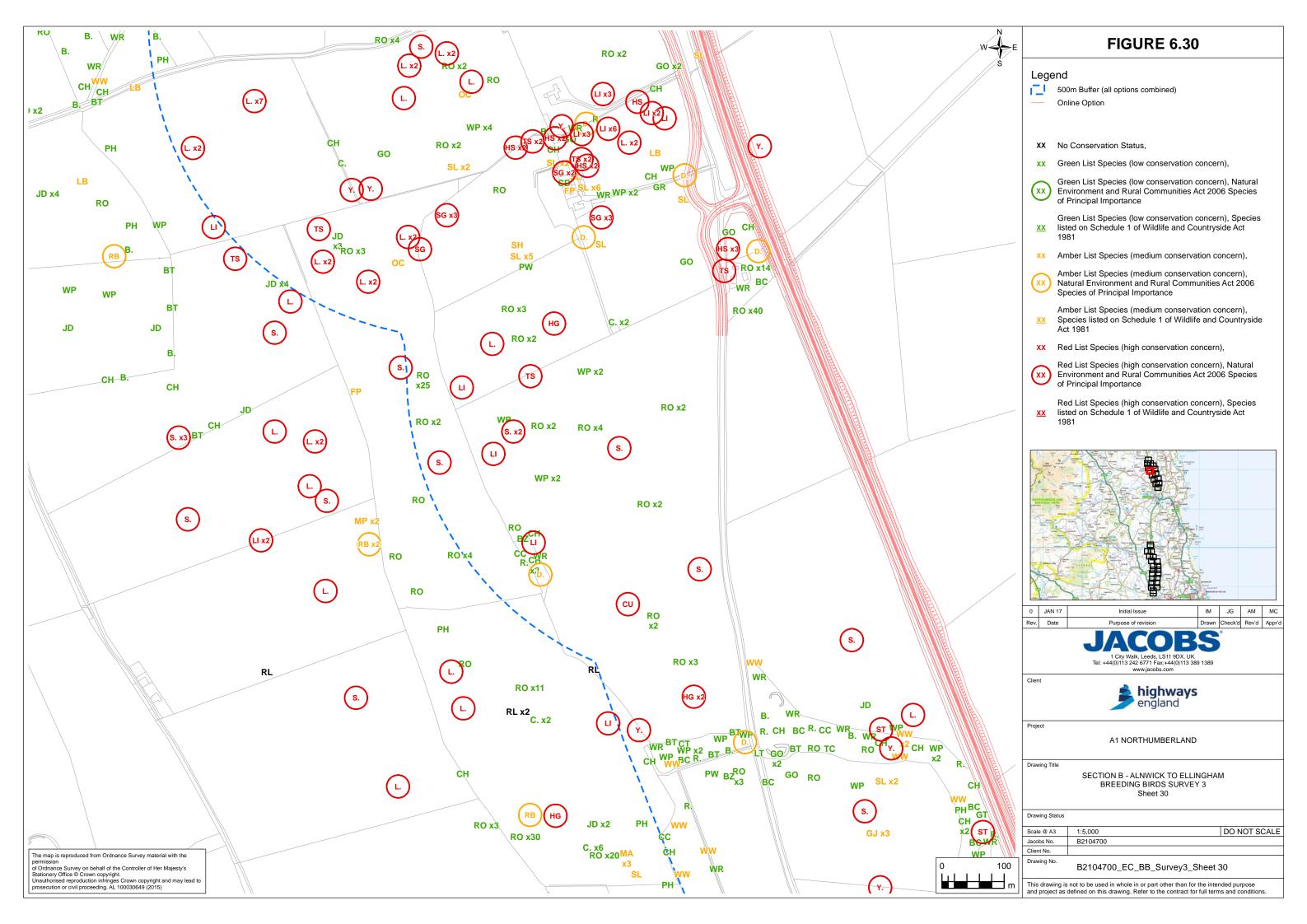


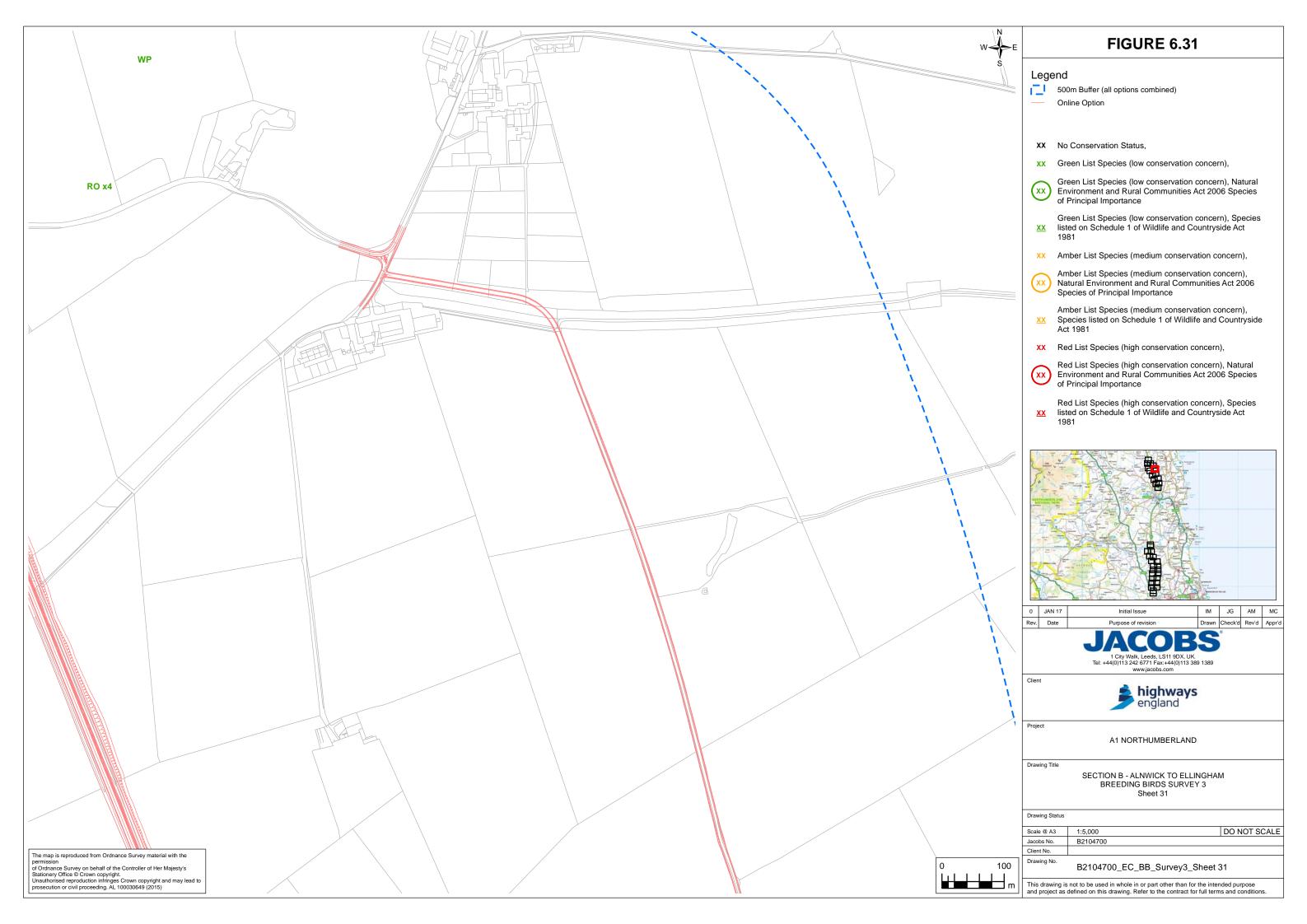


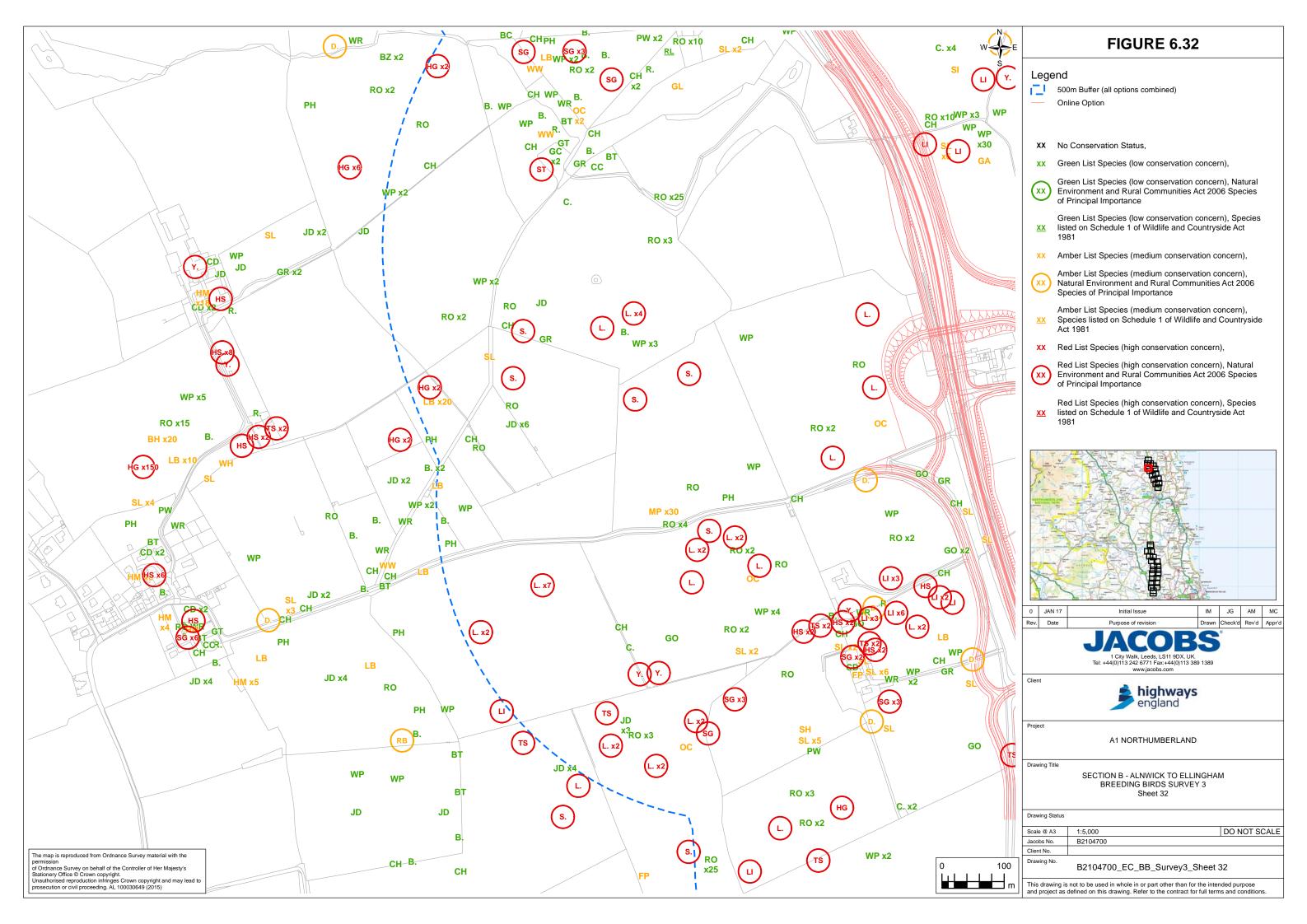


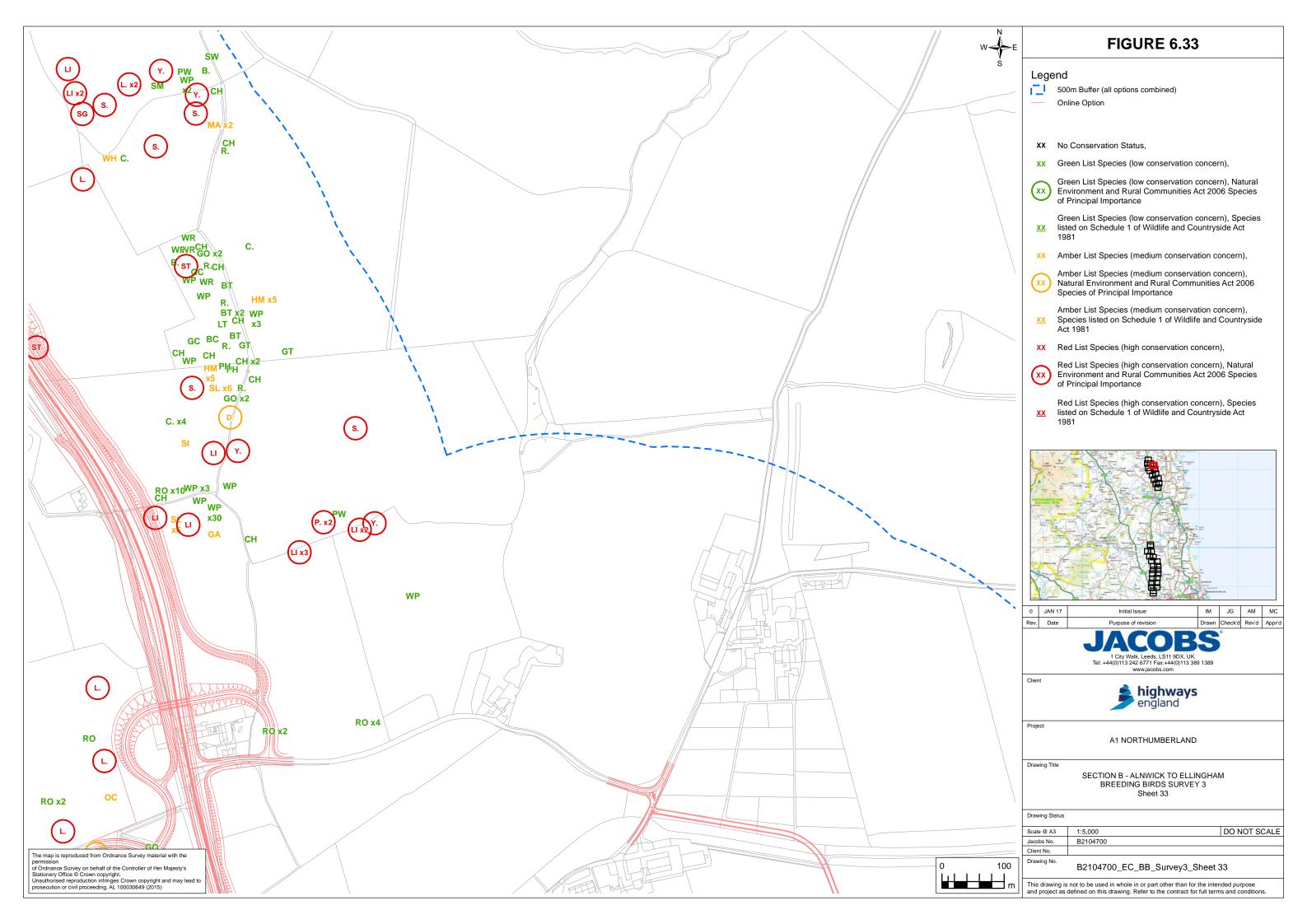


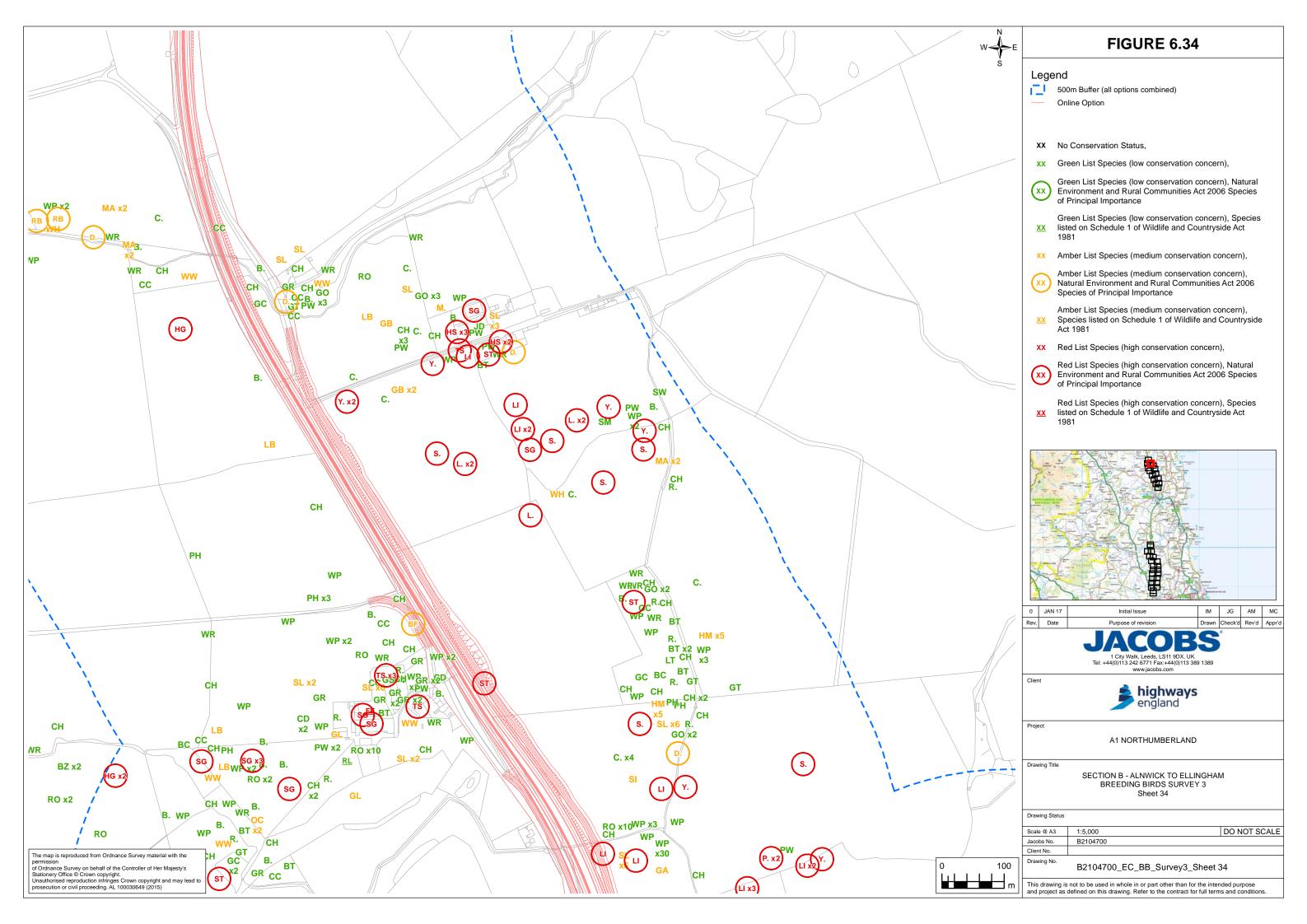


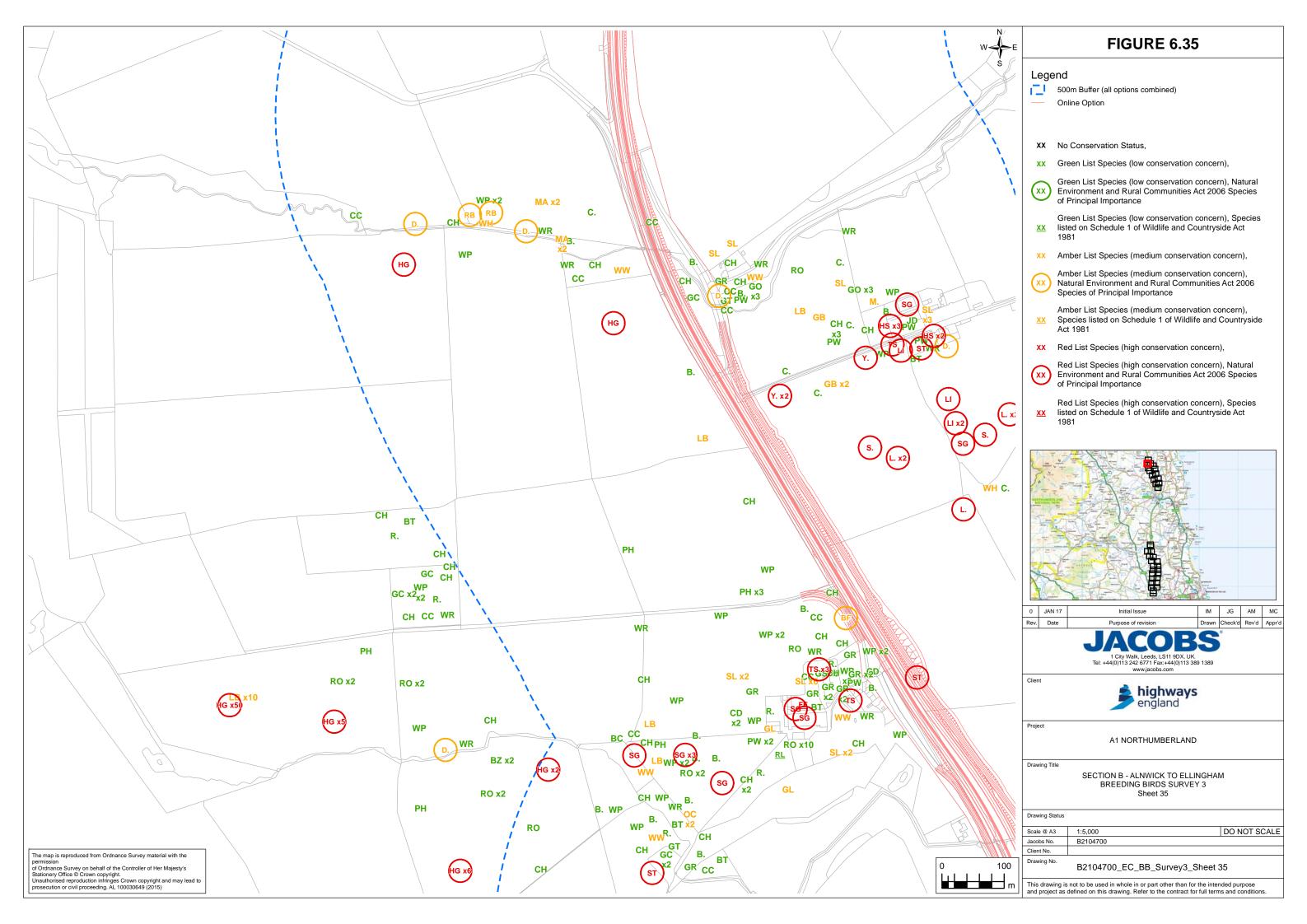


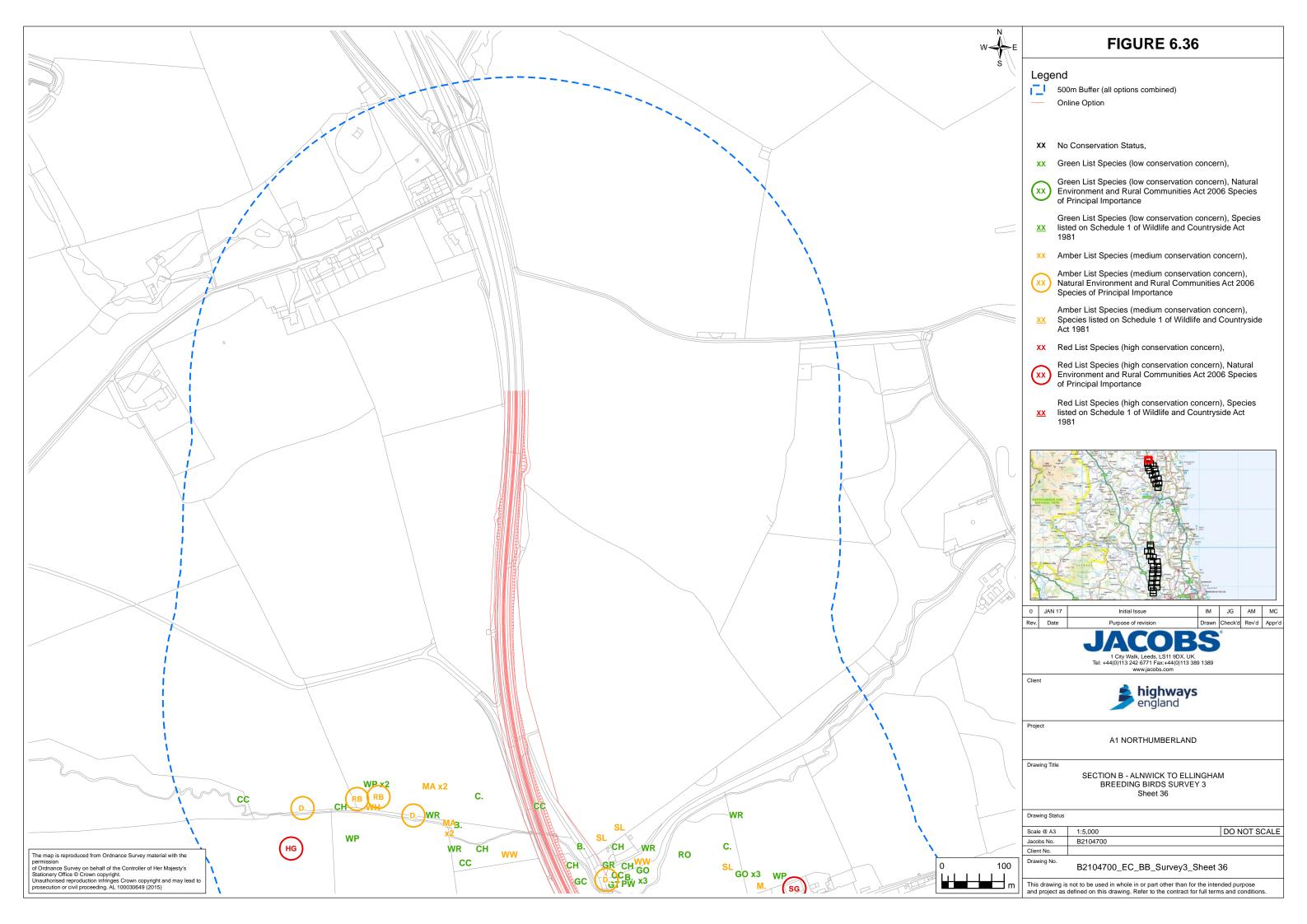


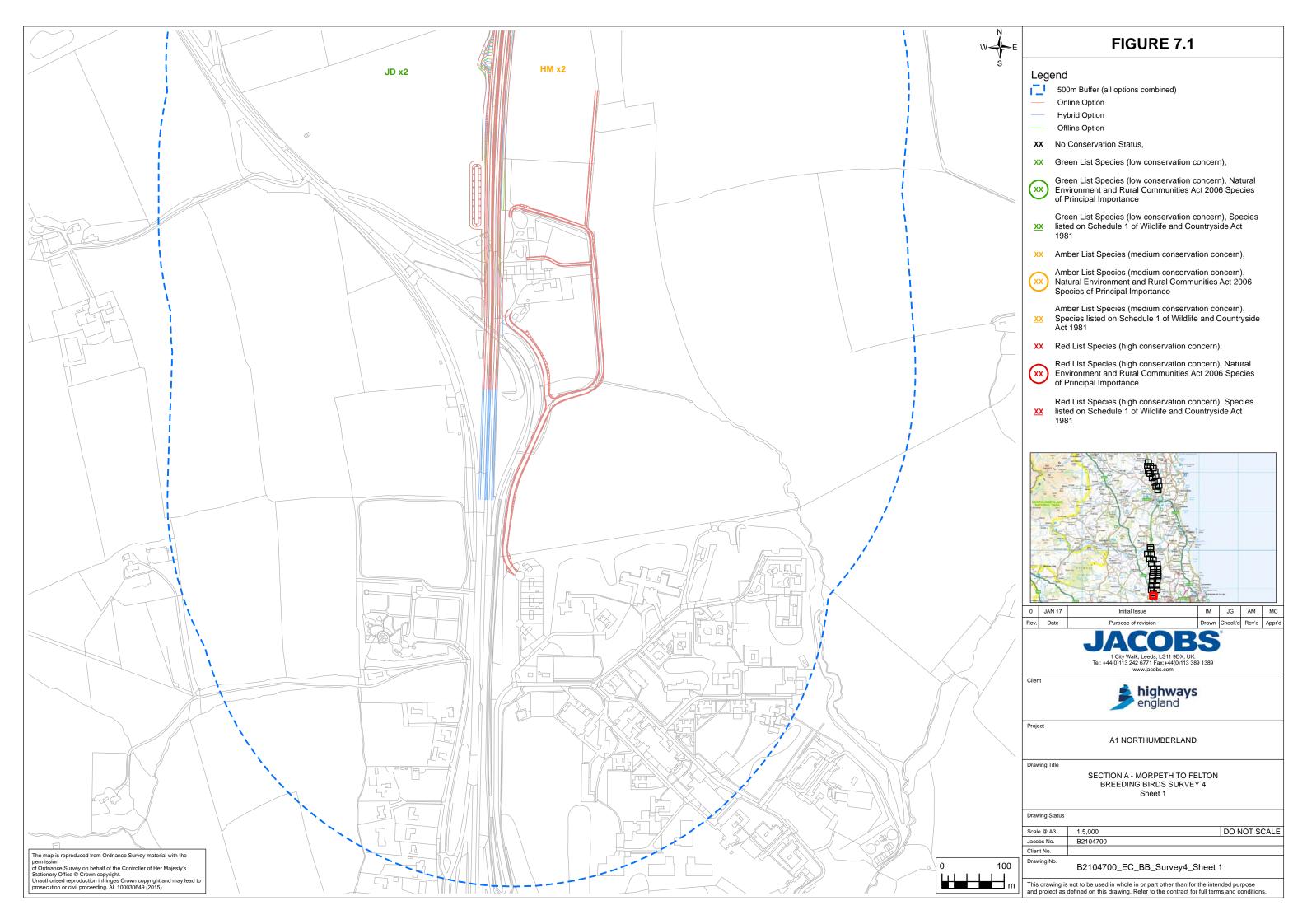


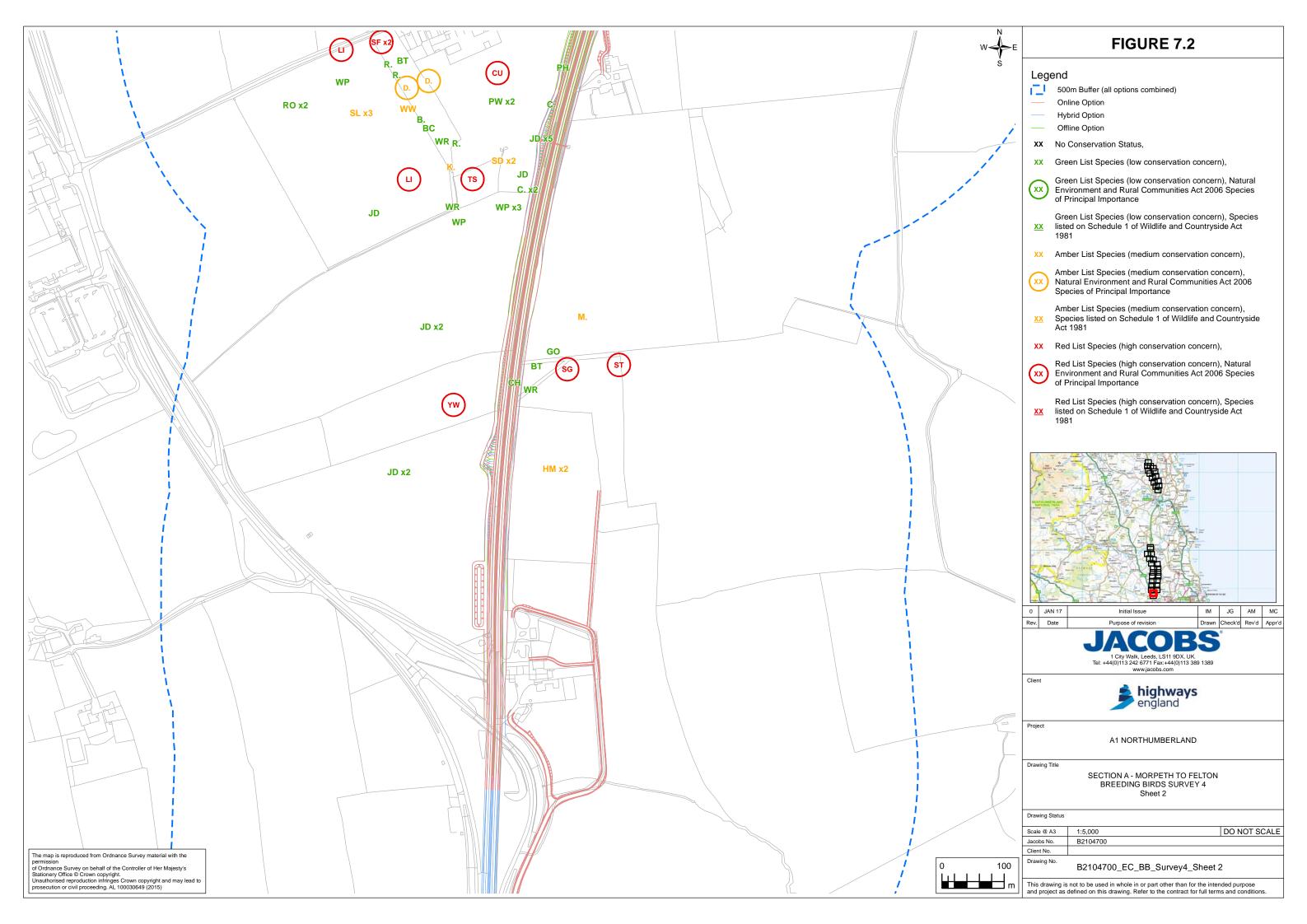


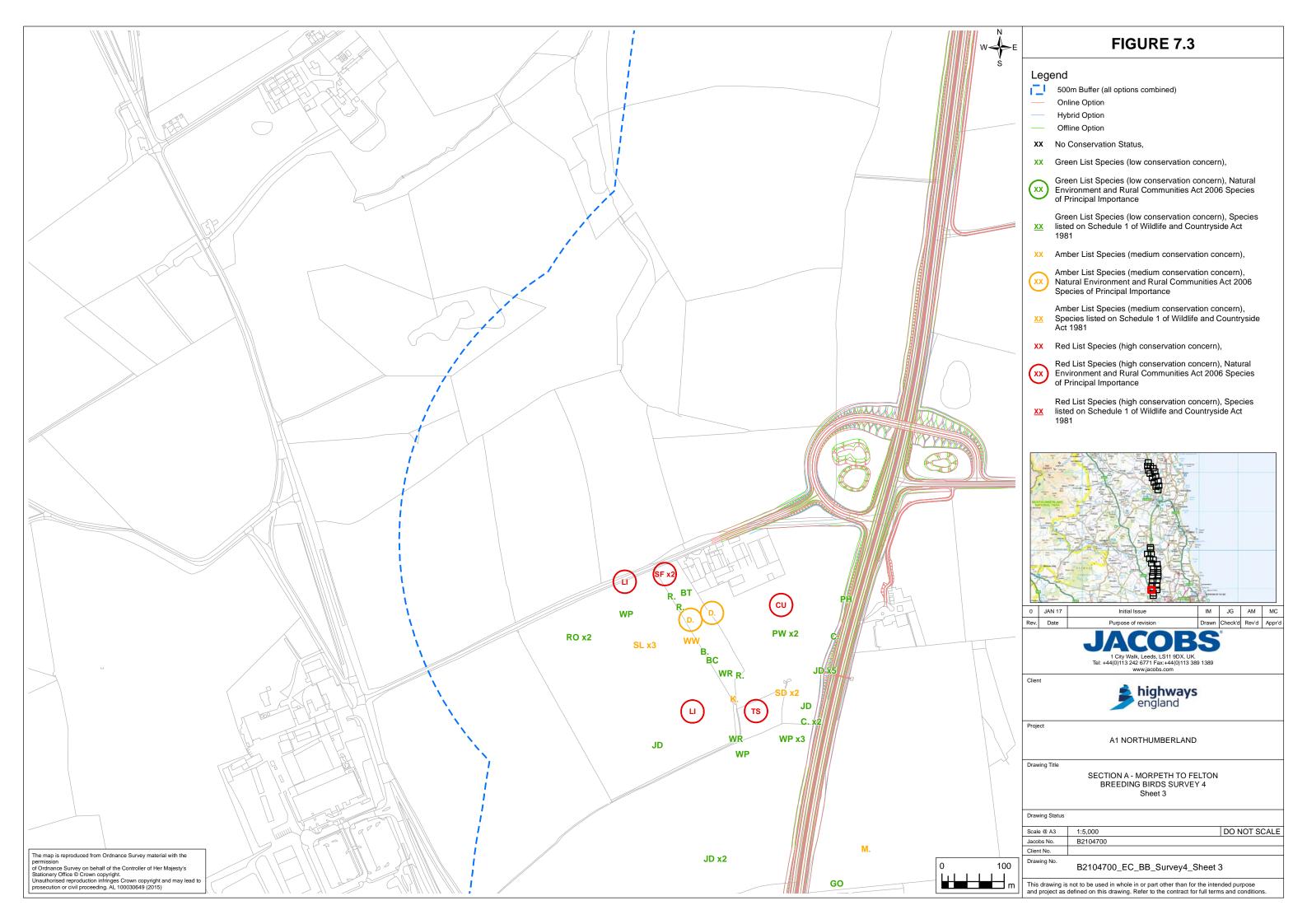


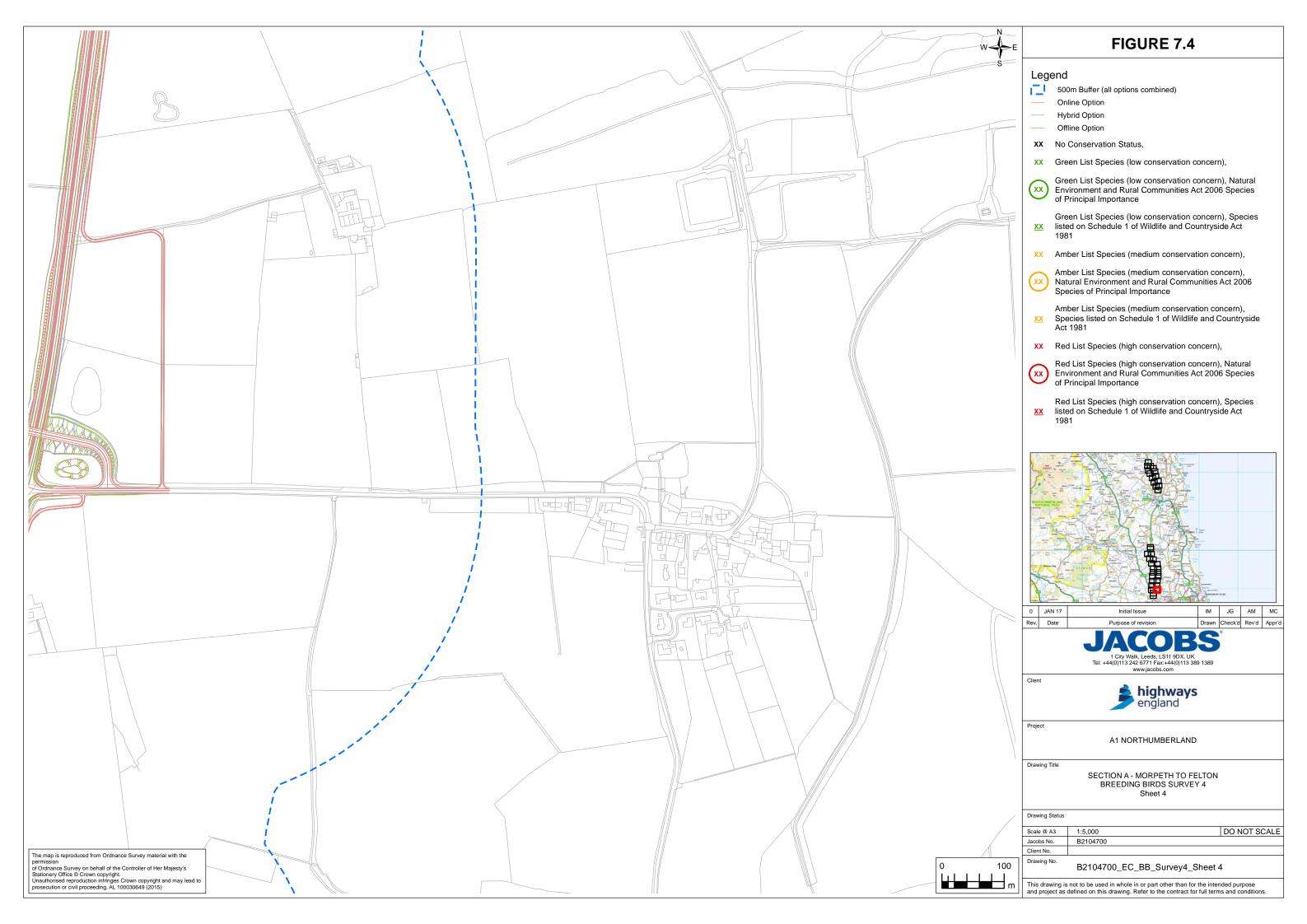














500m Buffer (all options combined)

XX No Conservation Status,

XX Green List Species (low conservation concern),

Green List Species (low conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance

Green List Species (low conservation concern), Species 

XX listed on Schedule 1 of Wildlife and Countryside Act

XX Amber List Species (medium conservation concern),

Amber List Species (medium conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance

Amber List Species (medium conservation concern), Species listed on Schedule 1 of Wildlife and Countryside

xx Red List Species (high conservation concern),

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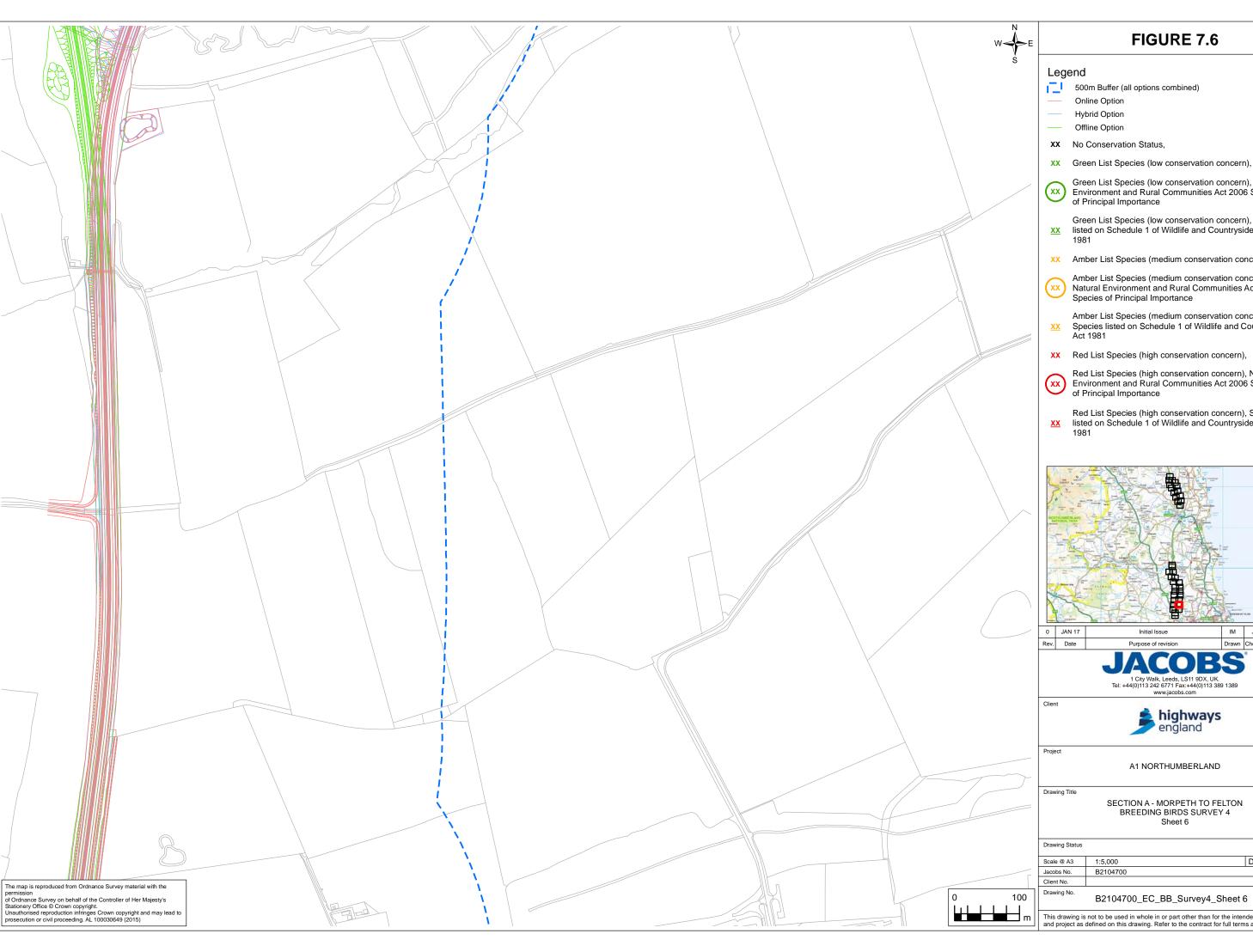


A1 NORTHUMBERLAND

SECTION A - MORPETH TO FELTON BREEDING BIRDS SURVEY 4 Sheet 5

1:5,000 DO NOT SCALE B2104700

B2104700\_EC\_BB\_Survey4\_Sheet 5



500m Buffer (all options combined)

Online Option

Hybrid Option

Offline Option

XX No Conservation Status,

Green List Species (low conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance

Green List Species (low conservation concern), Species listed on Schedule 1 of Wildlife and Countryside Act

XX Amber List Species (medium conservation concern),

Amber List Species (medium conservation concern),
Natural Environment and Rural Communities Act 2006
Species of Principal Importance

Amber List Species (medium conservation concern), Species listed on Schedule 1 of Wildlife and Countryside

xx Red List Species (high conservation concern),

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Red List Species (high conservation concern), Species listed on Schedule 1 of Wildlife and Countryside Act



IM JG AM MC

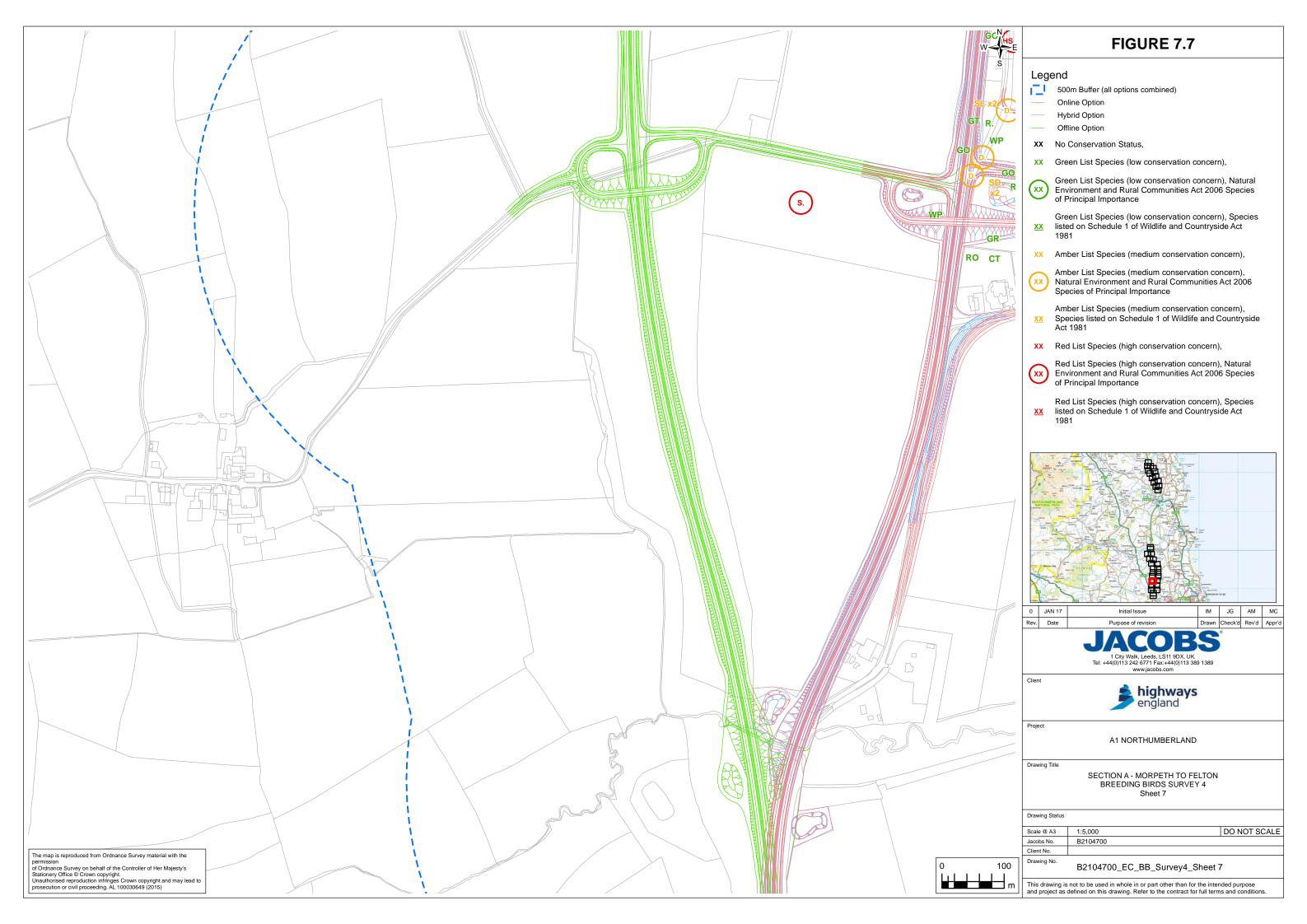


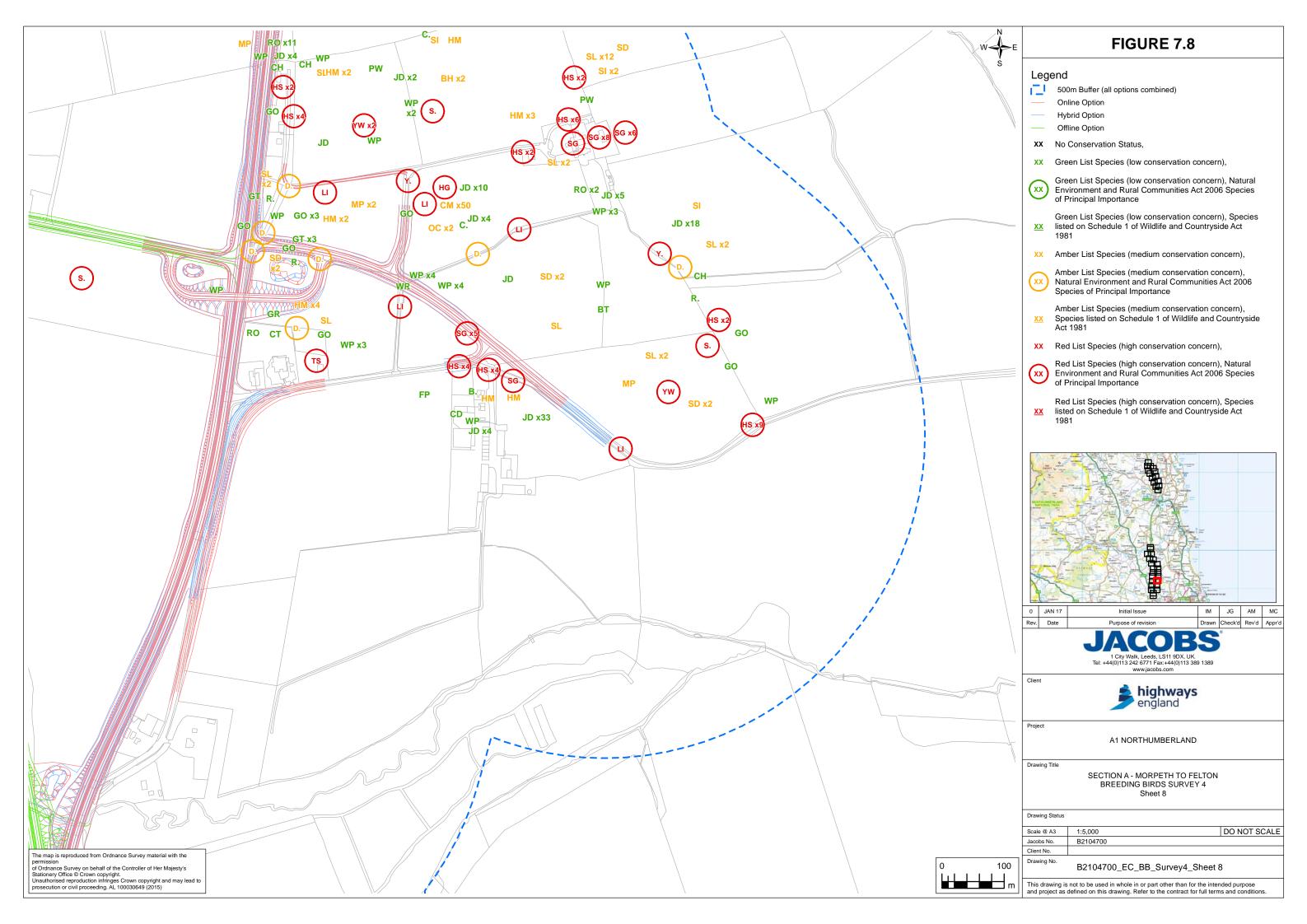
A1 NORTHUMBERLAND

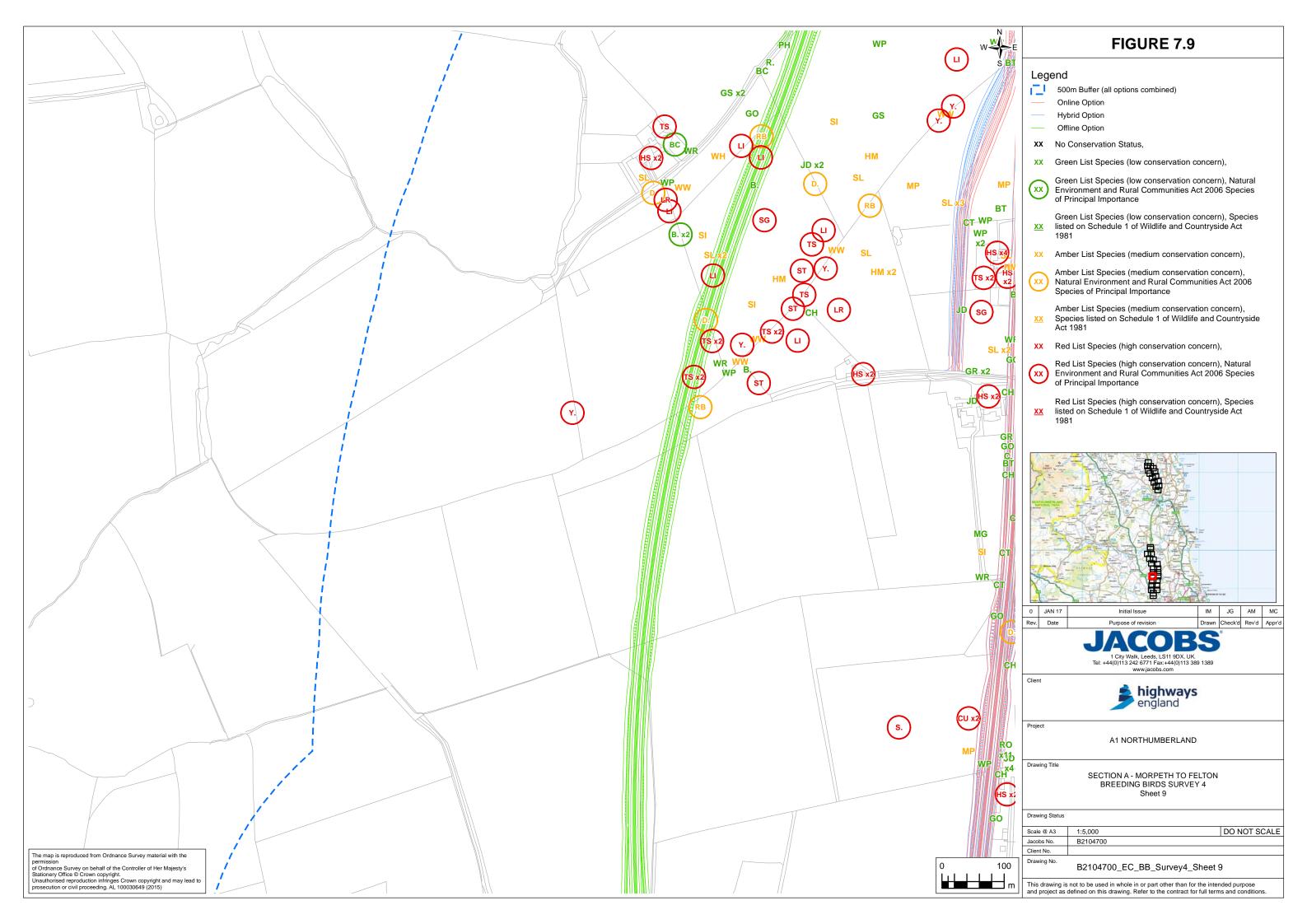
SECTION A - MORPETH TO FELTON BREEDING BIRDS SURVEY 4

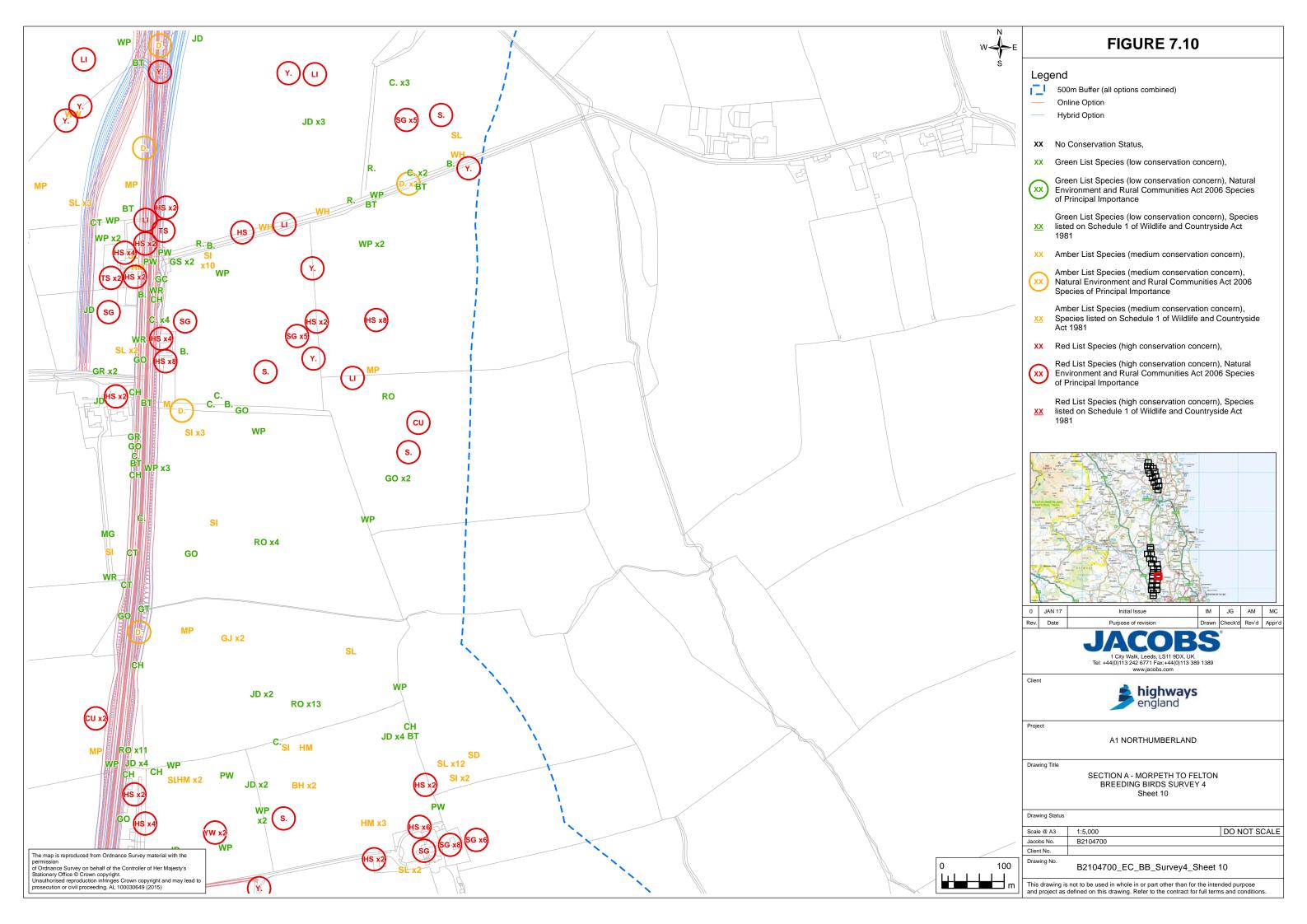
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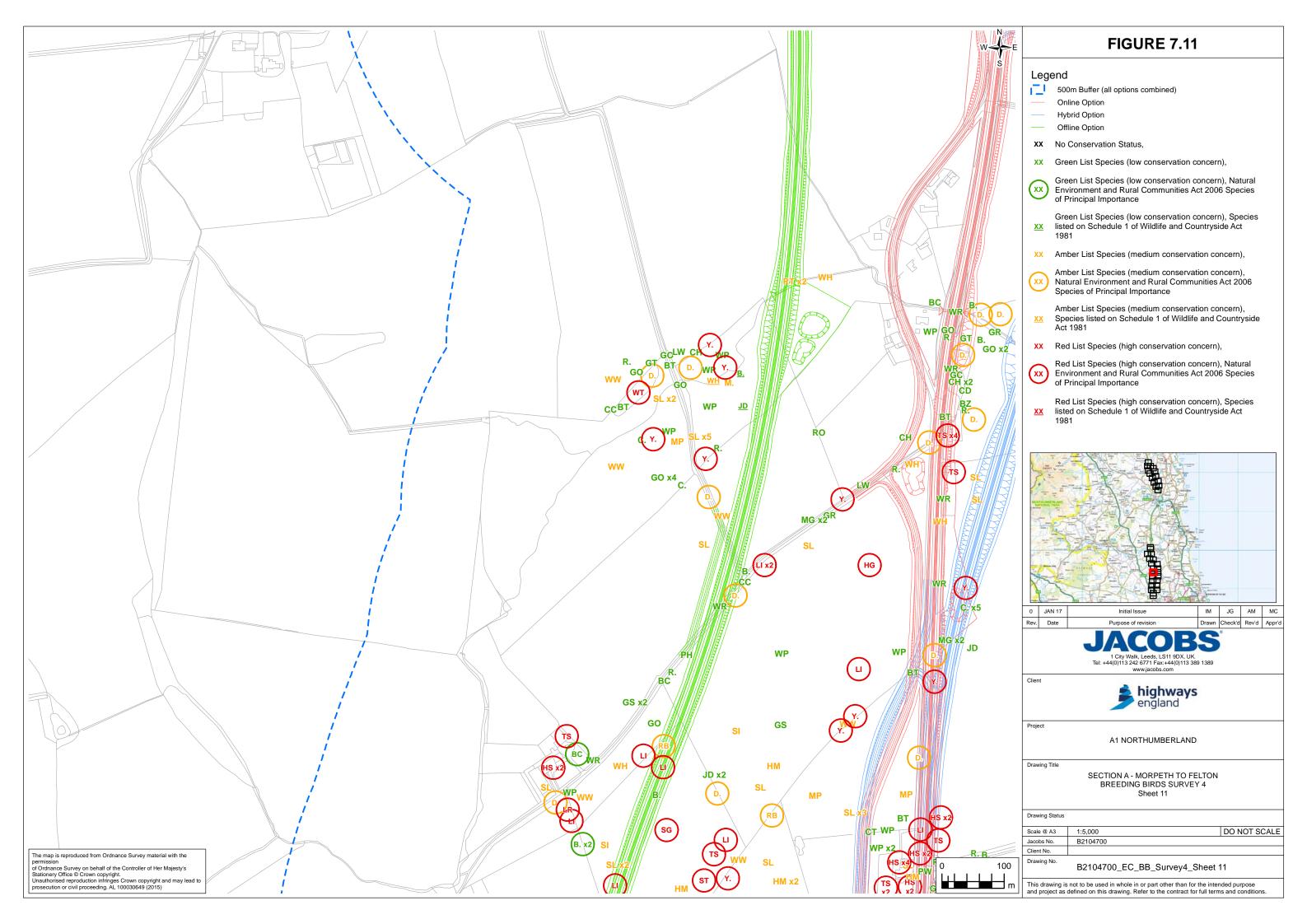
B2104700\_EC\_BB\_Survey4\_Sheet 6

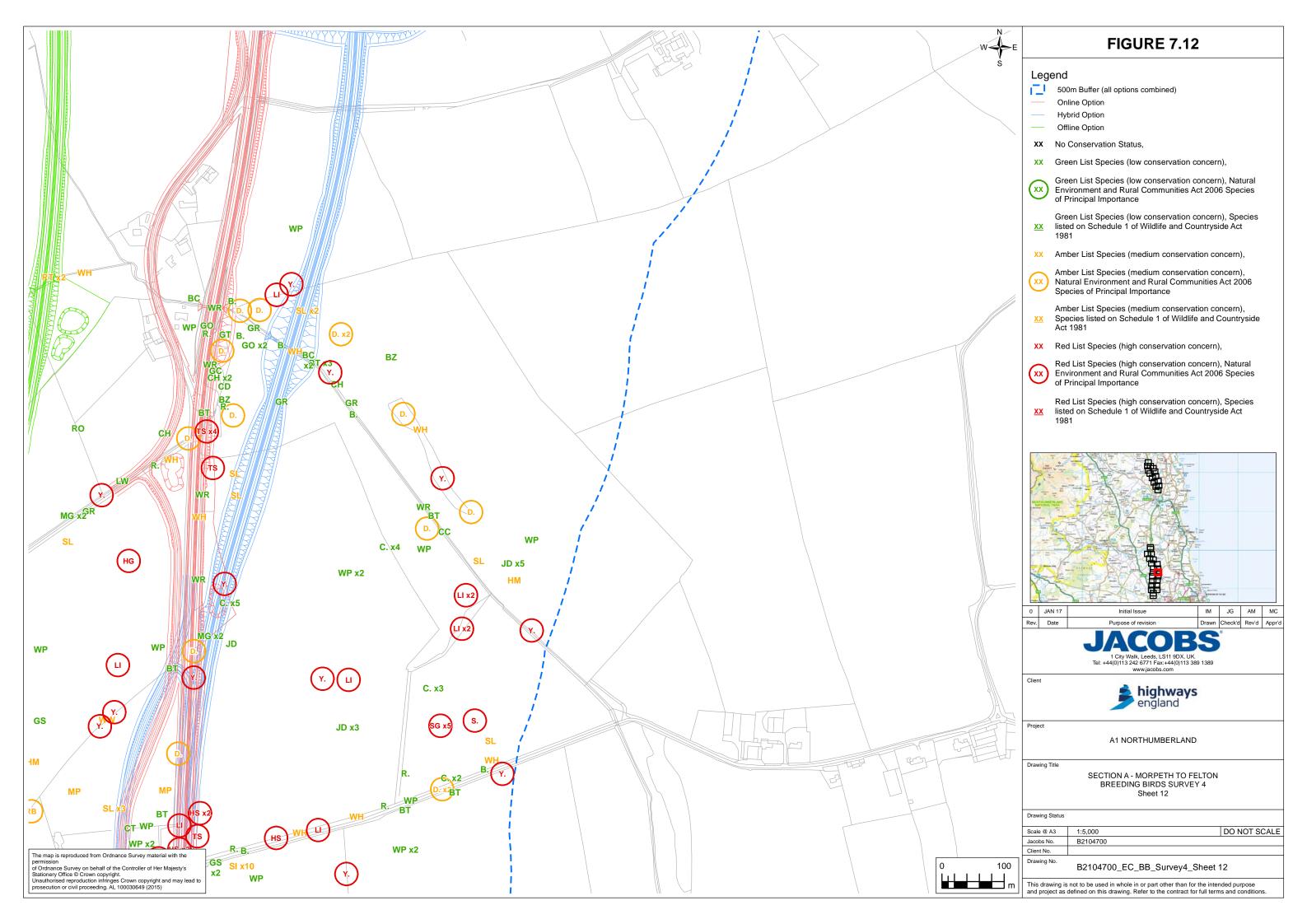


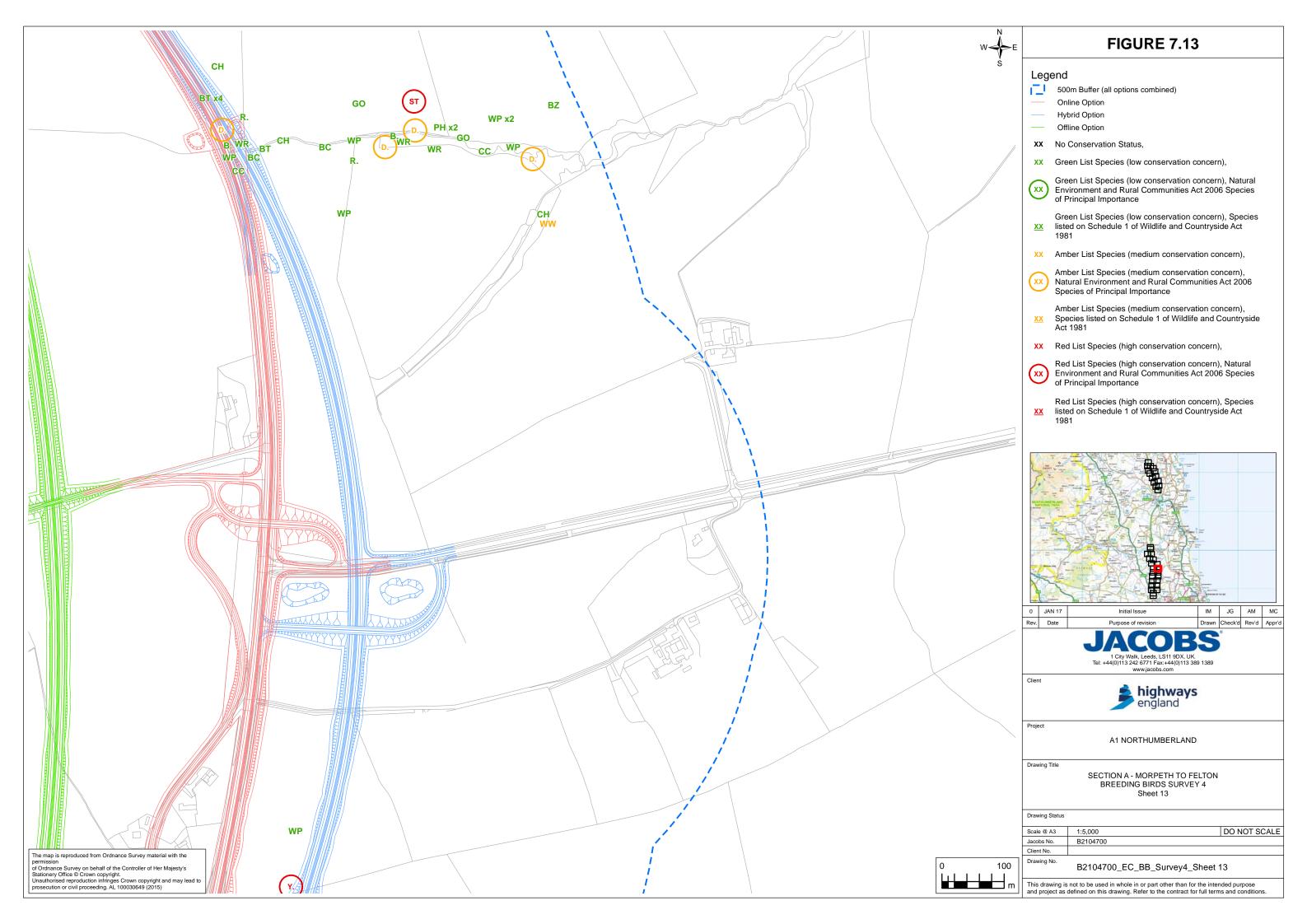


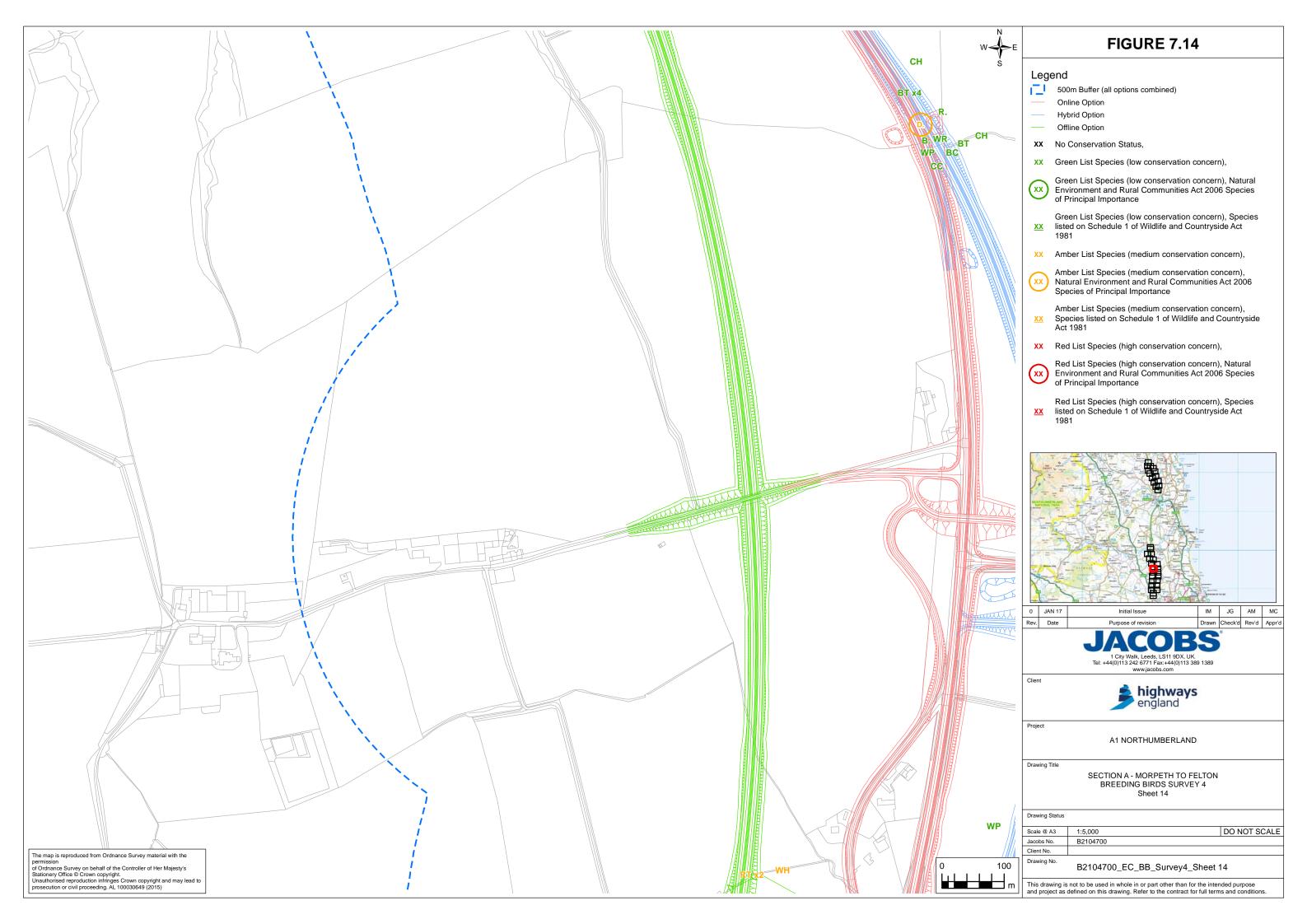


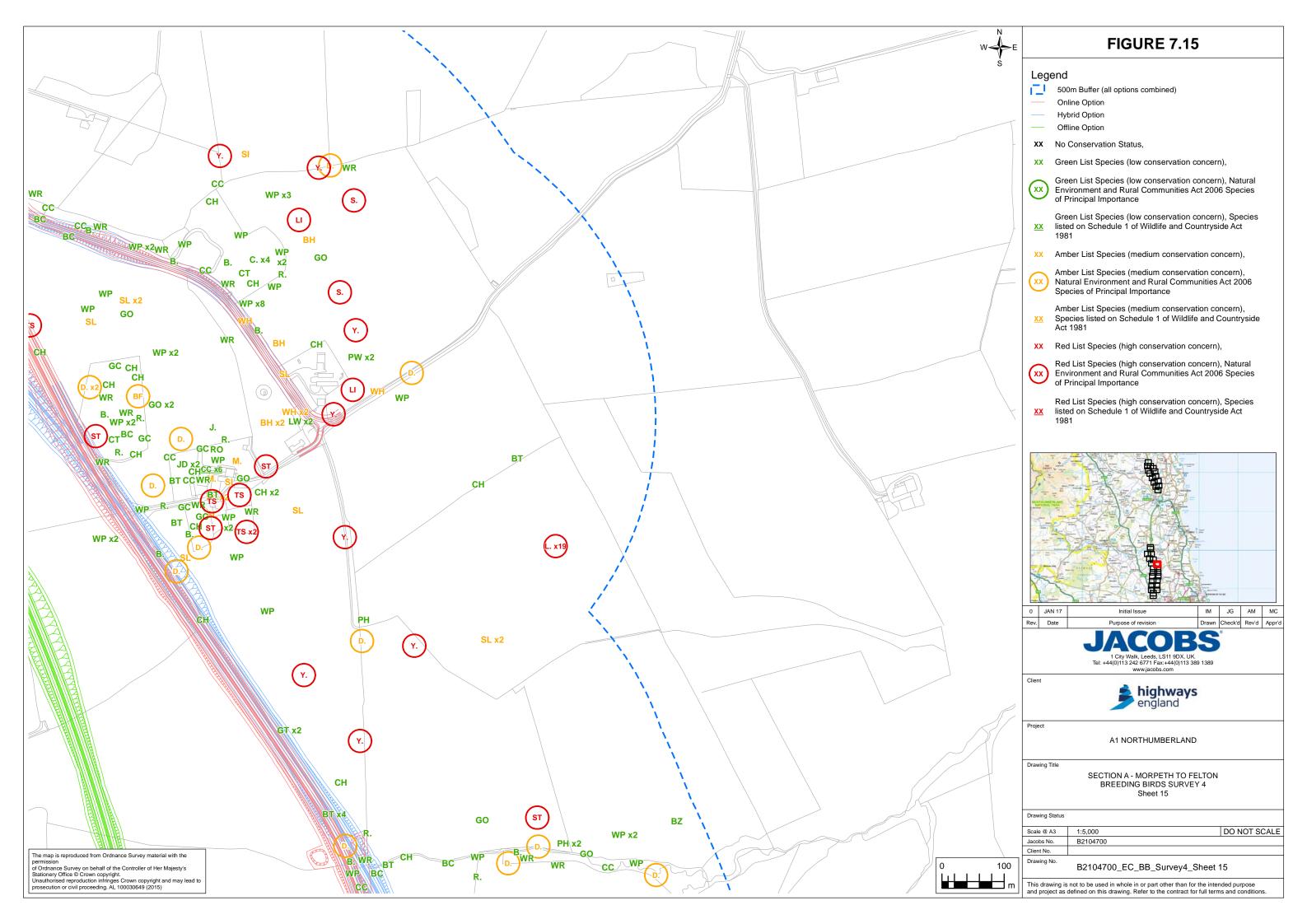


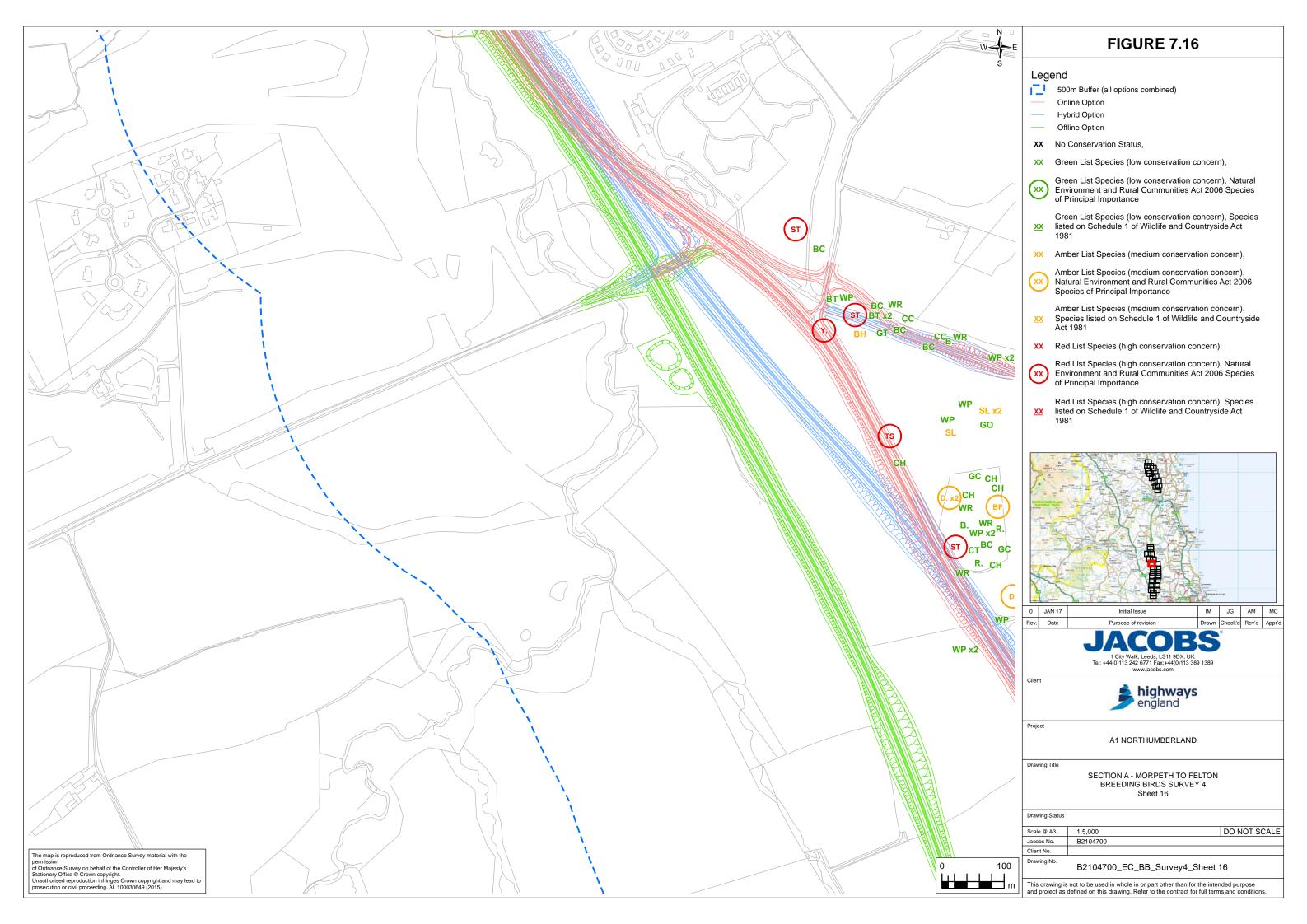


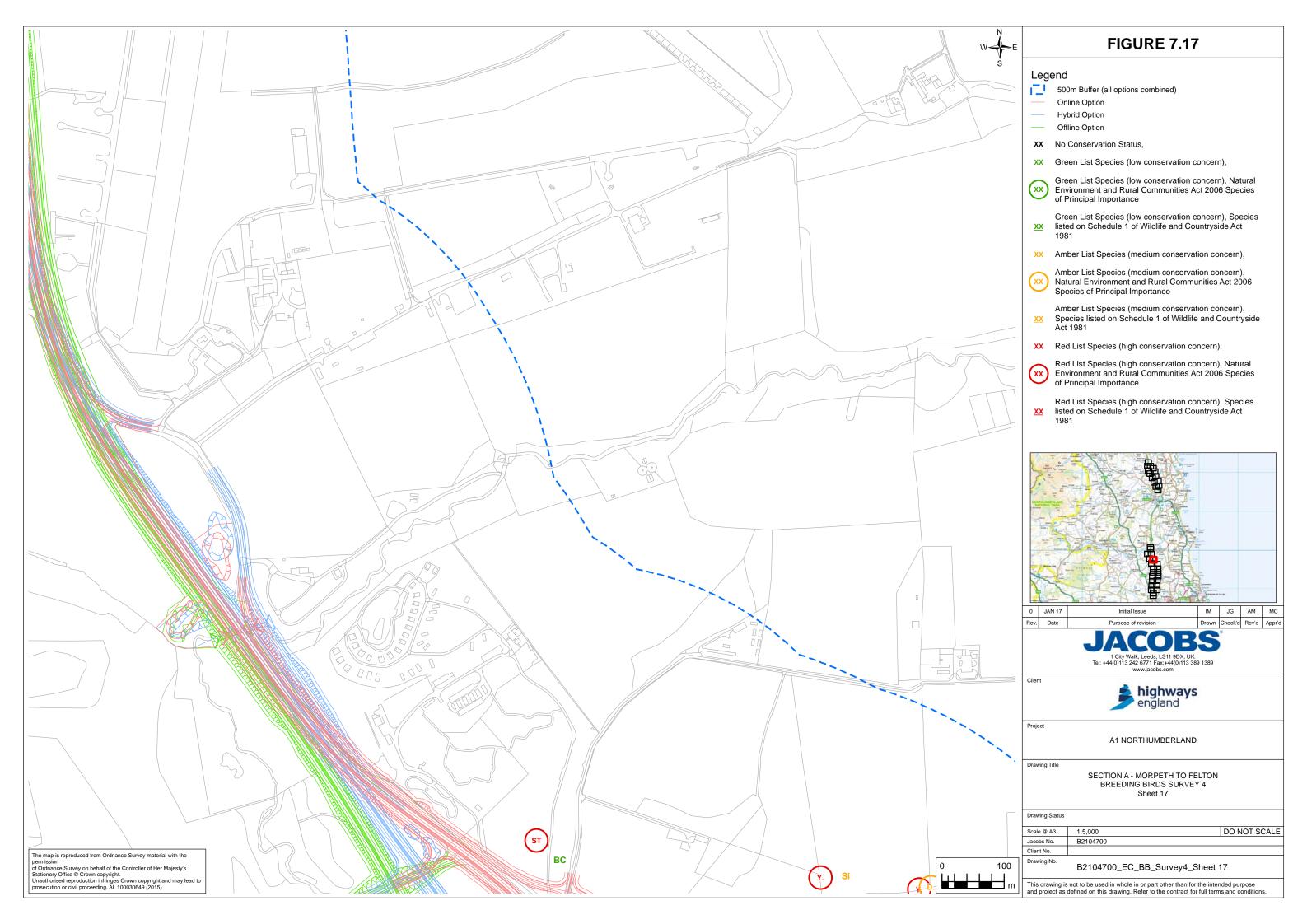


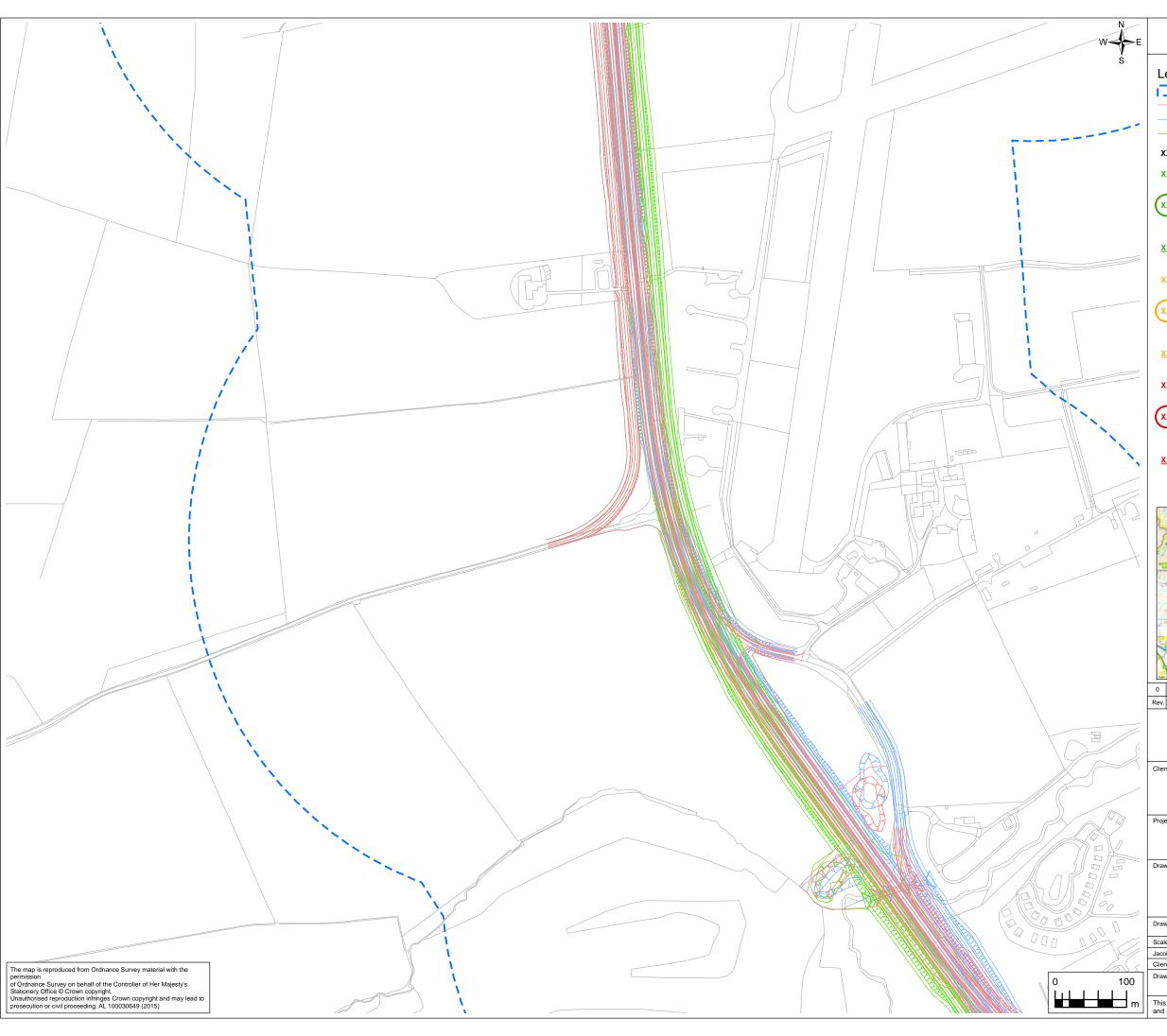












#### Legend

500m Buffer (all options combined)

Online Option

Hybrid Option

Offline Option

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Green List Species (low conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance

Green List Species (low conservation concern), Species 

XX listed on Schedule 1 of Wildlife and Countryside Act

XX Amber List Species (medium conservation concern),

Amber List Species (medium conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance

Amber List Species (medium conservation concern), Species listed on Schedule 1 of Wildlife and Countryside

xx Red List Species (high conservation concern),

Red List Species (high conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance

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A1 NORTHUMBERLAND

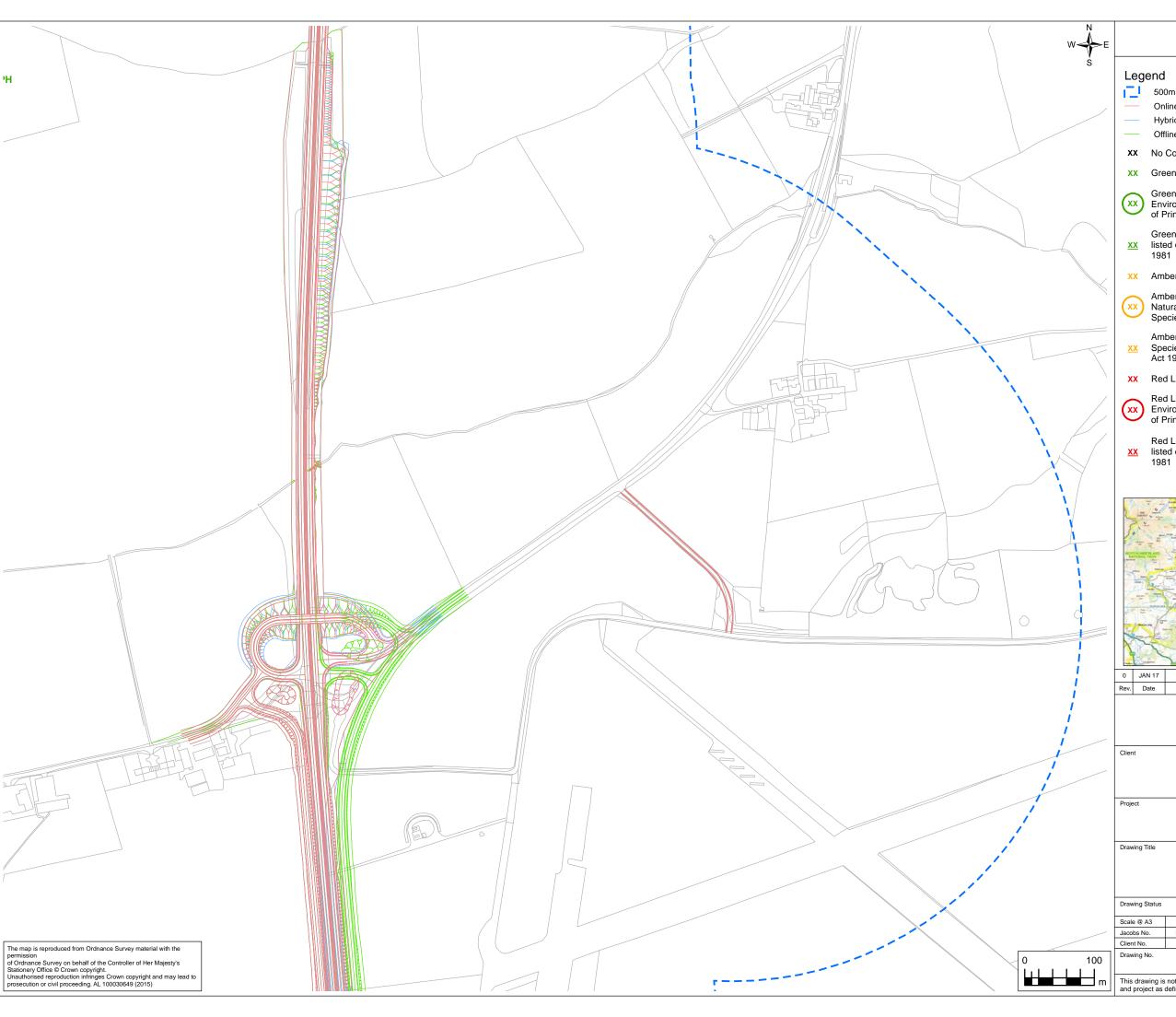
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SECTION A - MORPETH TO FELTON BREEDING BIRDS SURVEY 4 Sheet 18

Drawing Status

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B2104700\_EC\_BB\_Survey4\_Sheet 18



500m Buffer (all options combined)

Online Option

Hybrid Option

Offline Option

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XX Green List Species (low conservation concern),

Green List Species (low conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance of Principal Importance

Green List Species (low conservation concern), Species listed on Schedule 1 of Wildlife and Countryside Act 1981

XX Amber List Species (medium conservation concern),

Amber List Species (medium conservation concern),
Natural Environment and Rural Communities Act 2006
Species of Principal Importance

Amber List Species (medium conservation concern), Species listed on Schedule 1 of Wildlife and Countryside

xx Red List Species (high conservation concern),

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IM JG AM MC

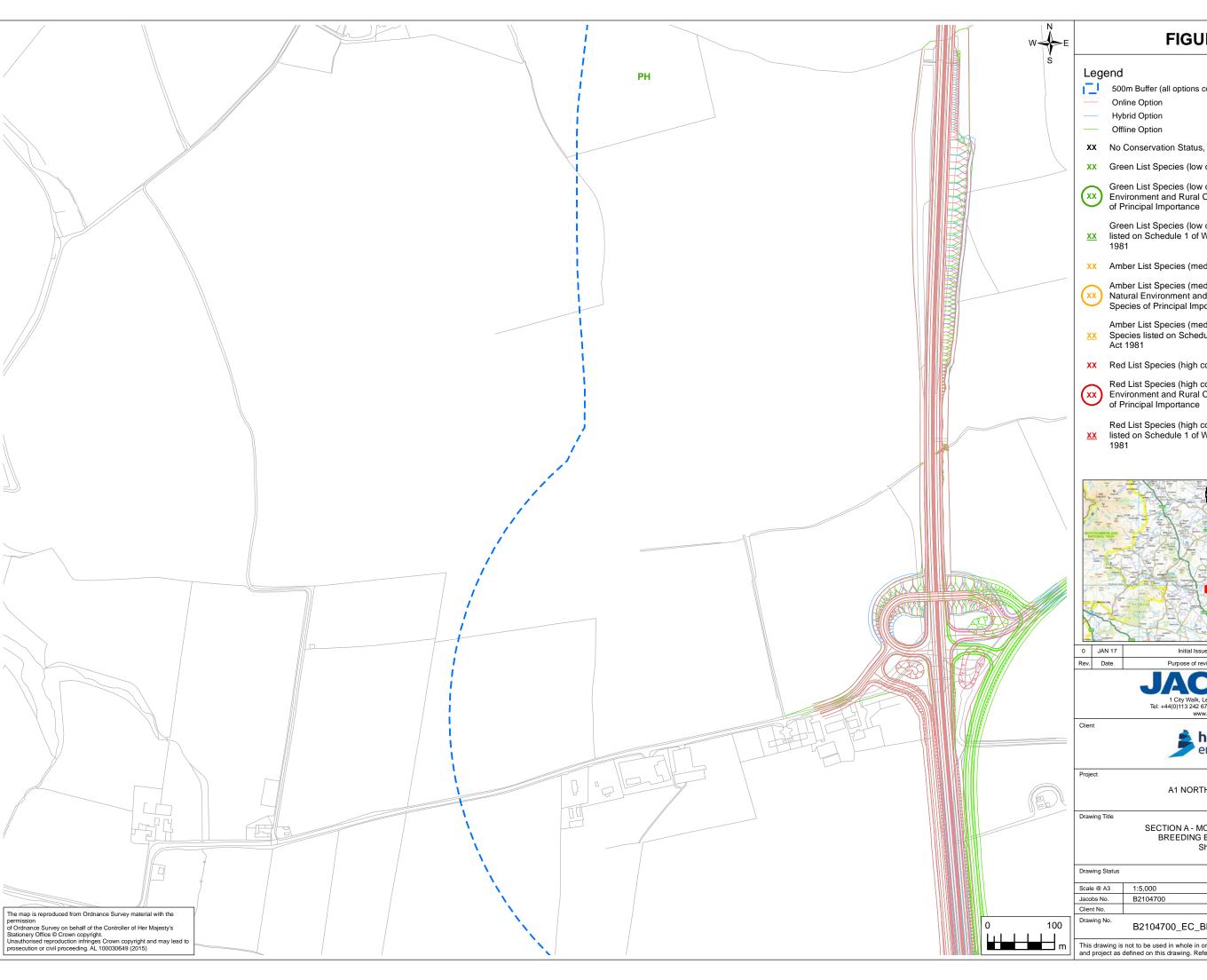


A1 NORTHUMBERLAND

SECTION A - MORPETH TO FELTON BREEDING BIRDS SURVEY 4 Sheet 19

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	Jacobs No.	B2104700	
	Client No.		
	Drawing No.		•

B2104700\_EC\_BB\_Survey4\_Sheet 19



500m Buffer (all options combined)

xx Green List Species (low conservation concern),

Green List Species (low conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance

Green List Species (low conservation concern), Species

XX
listed on Schedule 1 of Wildlife and Countryside Act
1981

XX Amber List Species (medium conservation concern),

Amber List Species (medium conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance

Amber List Species (medium conservation concern), Species listed on Schedule 1 of Wildlife and Countryside

XX Red List Species (high conservation concern),

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Red List Species (high conservation concern), Species listed on Schedule 1 of Wildlife and Countryside Act



IM JG AM MC

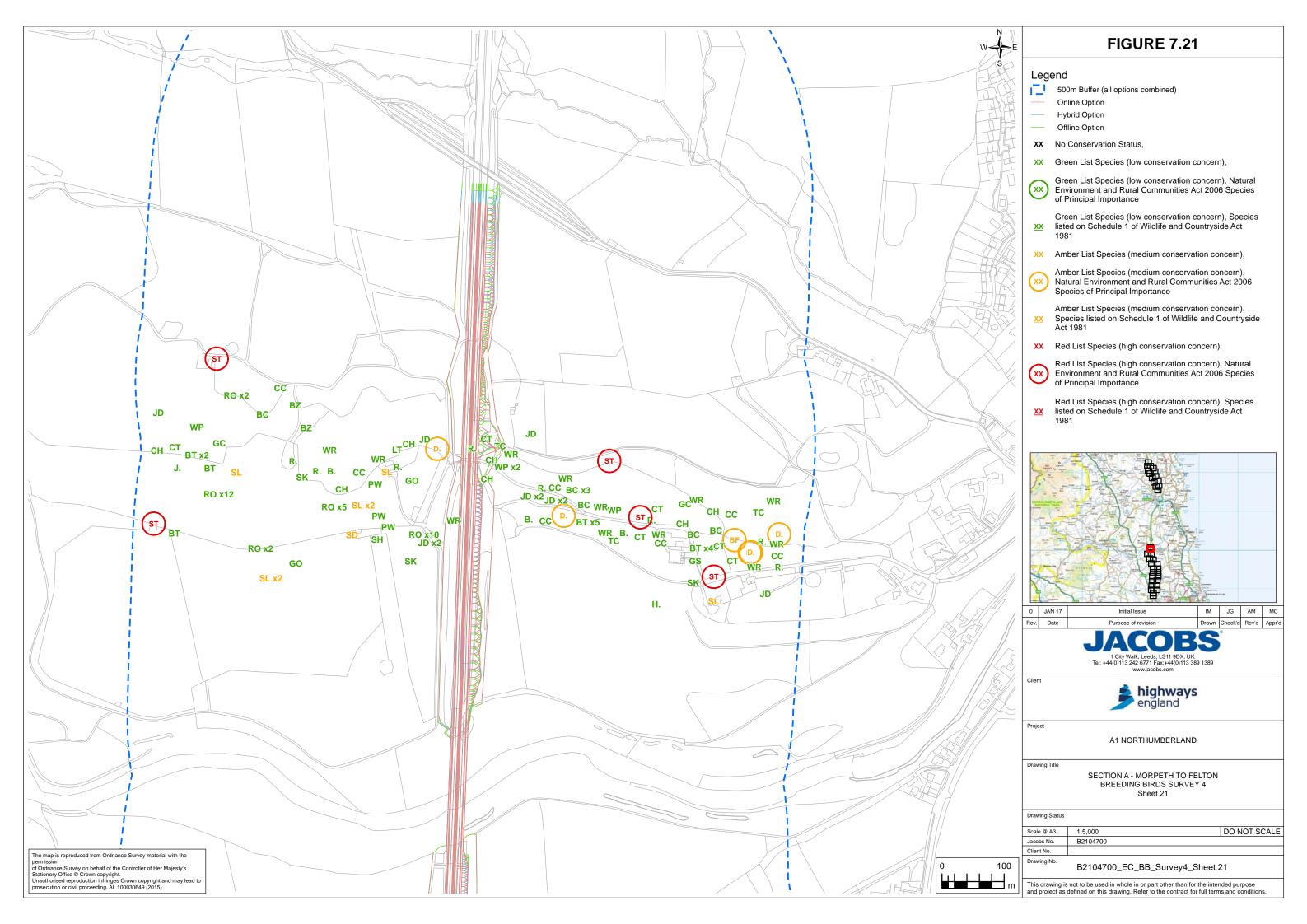


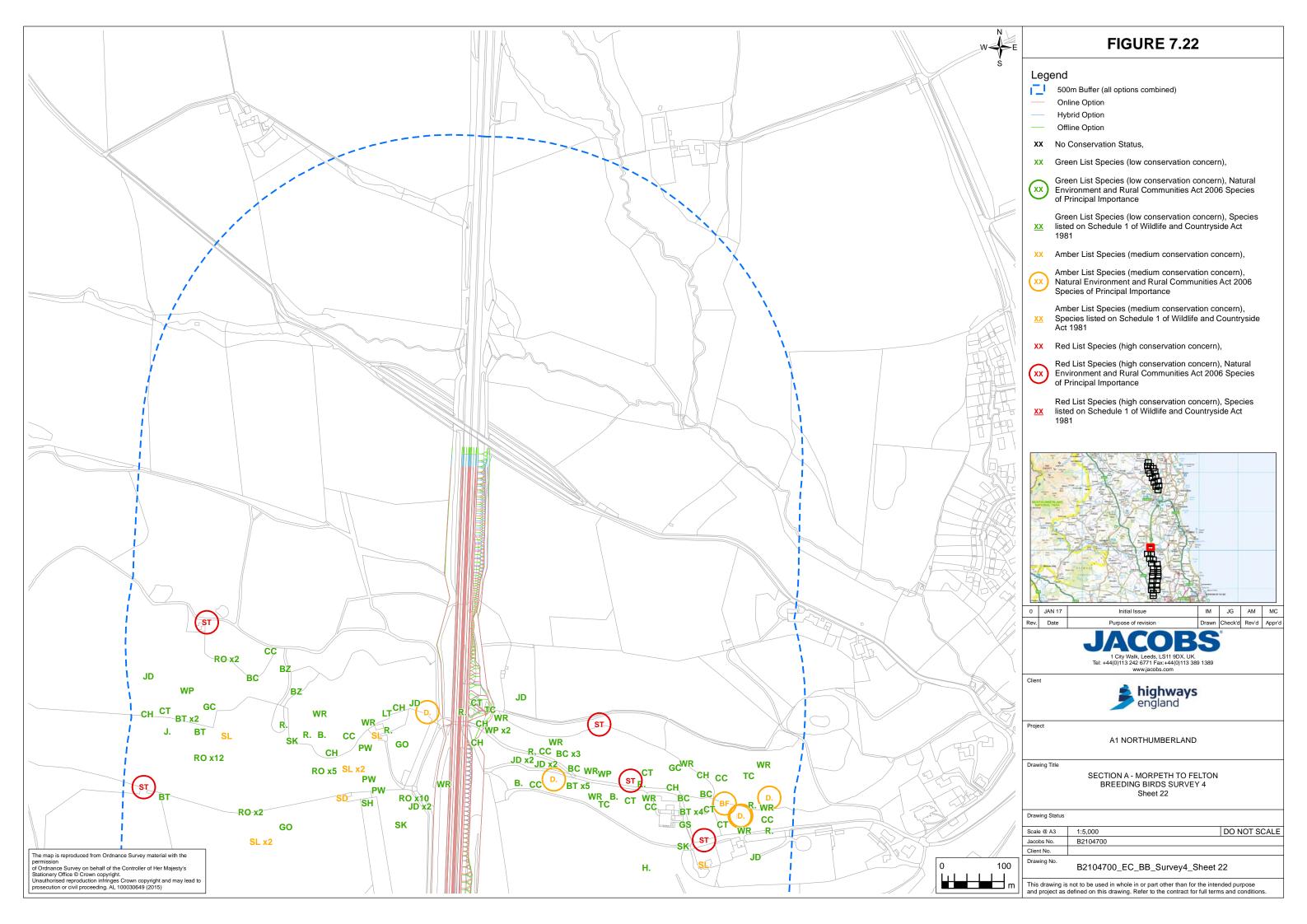
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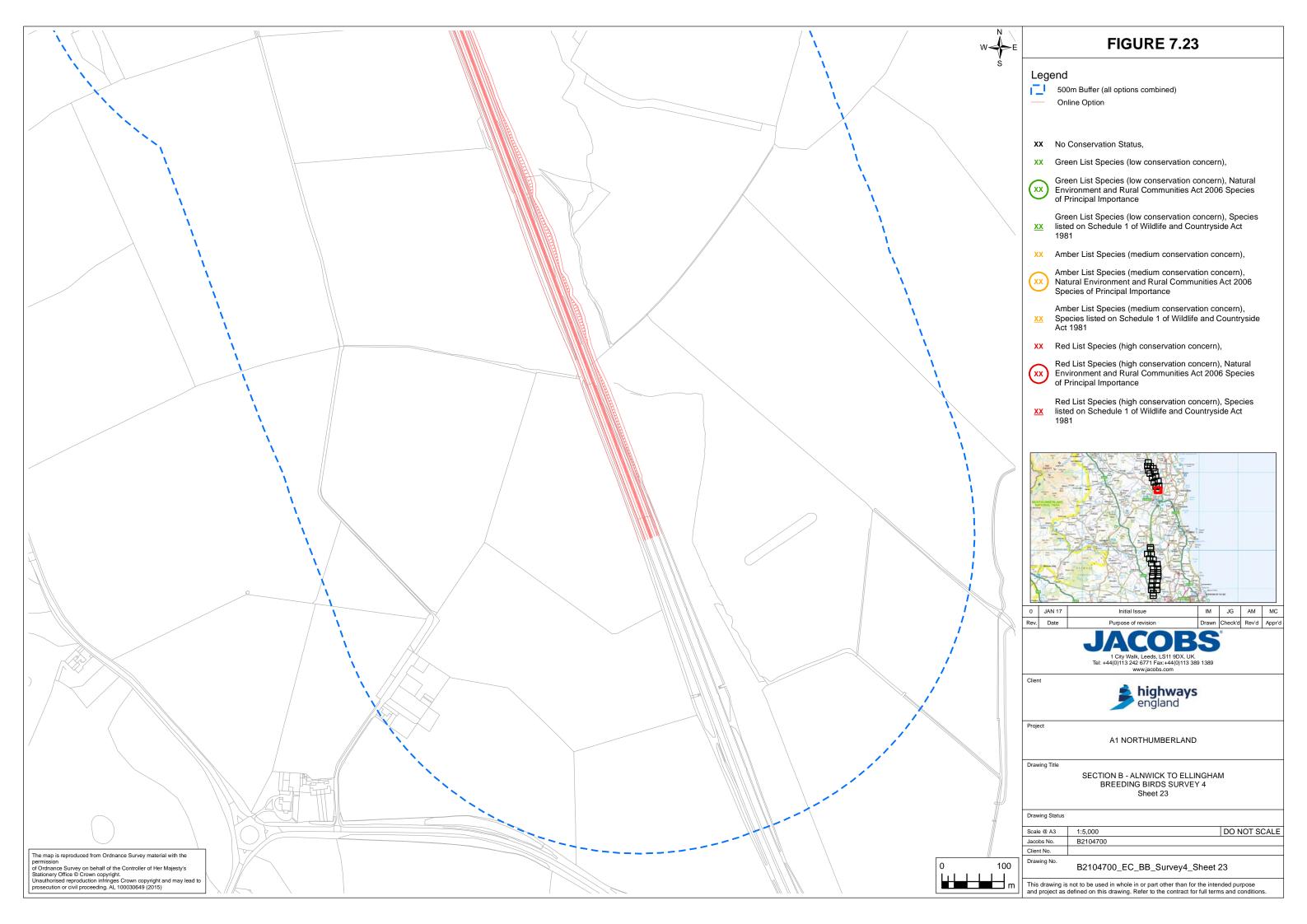
SECTION A - MORPETH TO FELTON BREEDING BIRDS SURVEY 4 Sheet 20

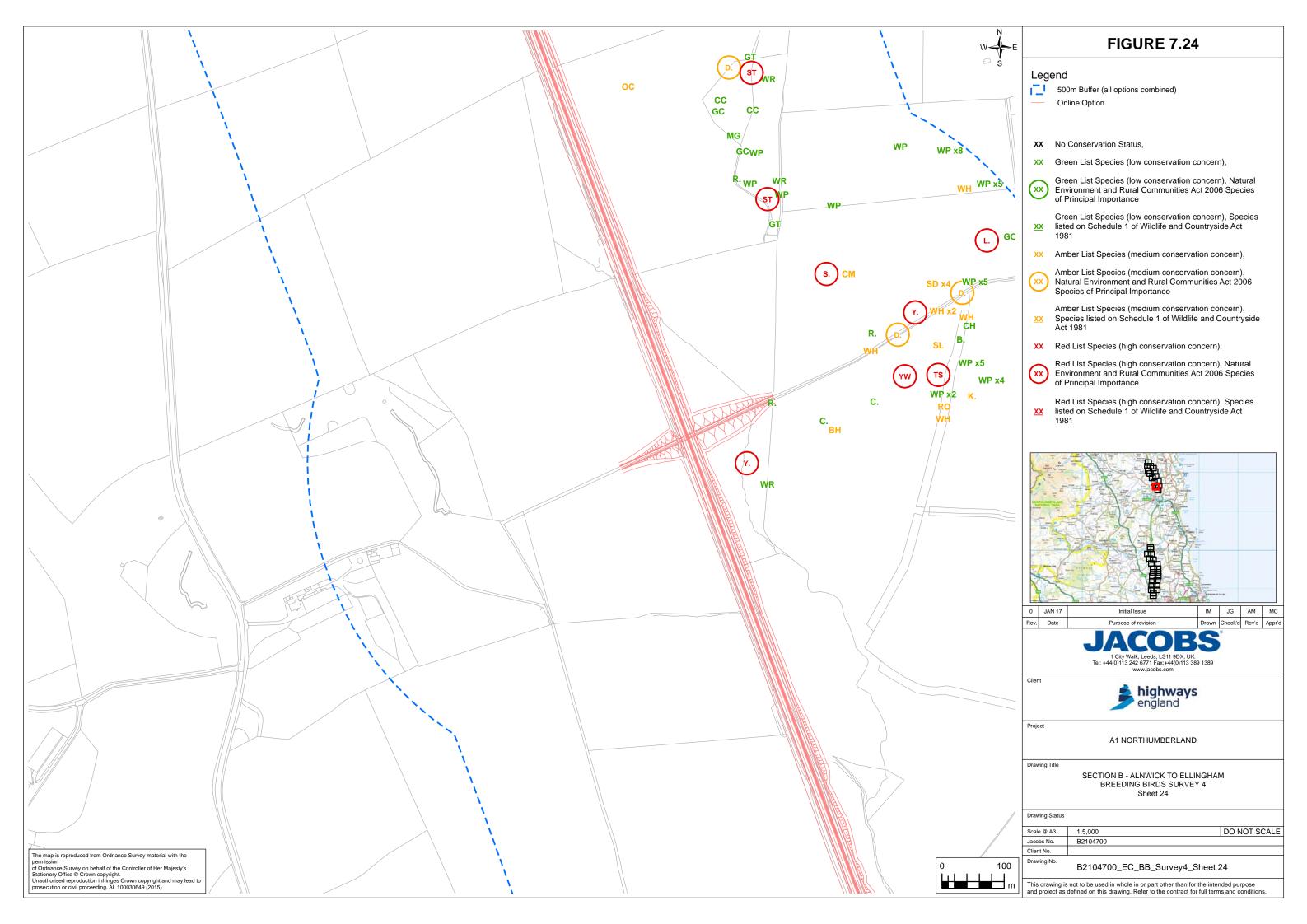
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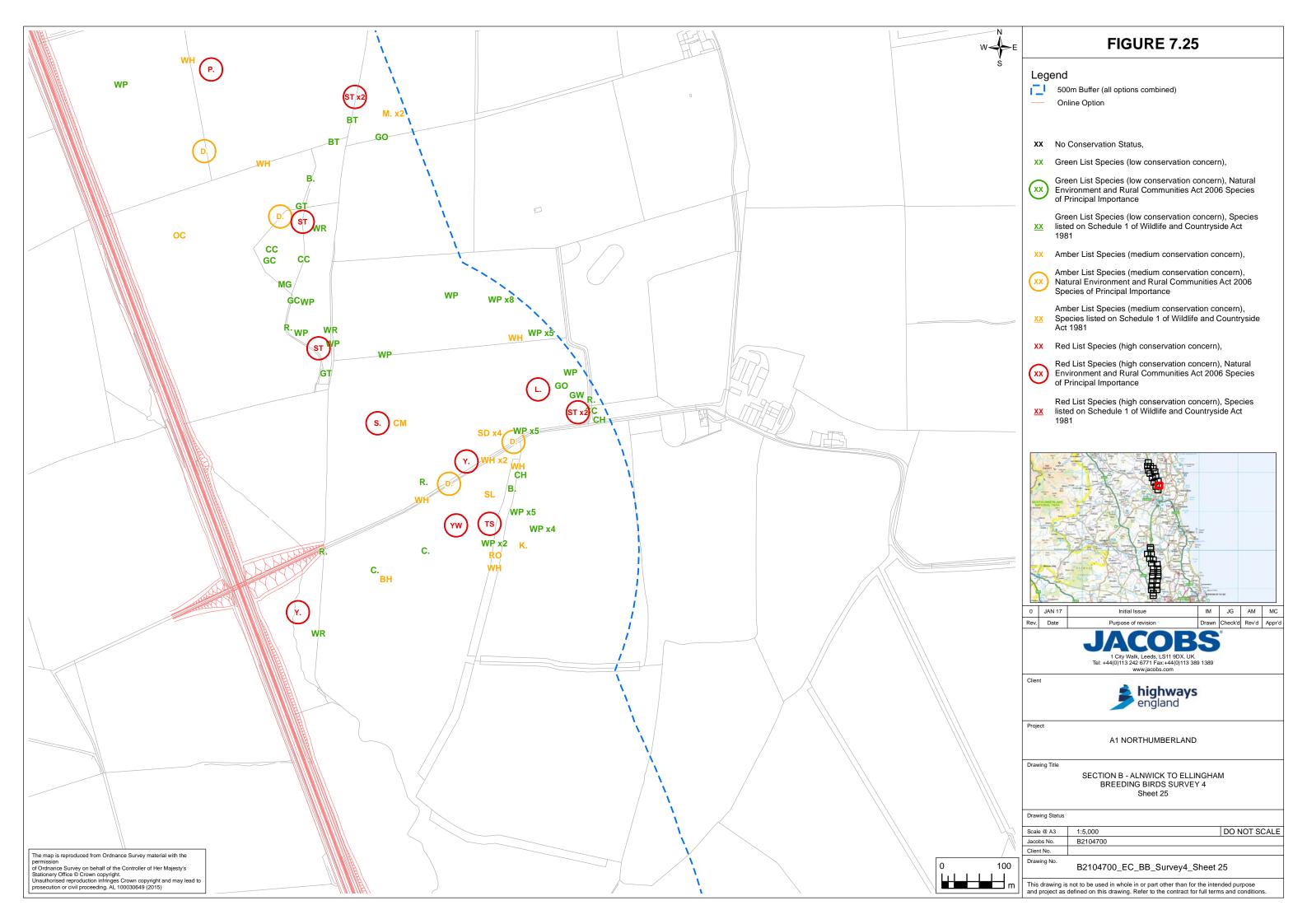
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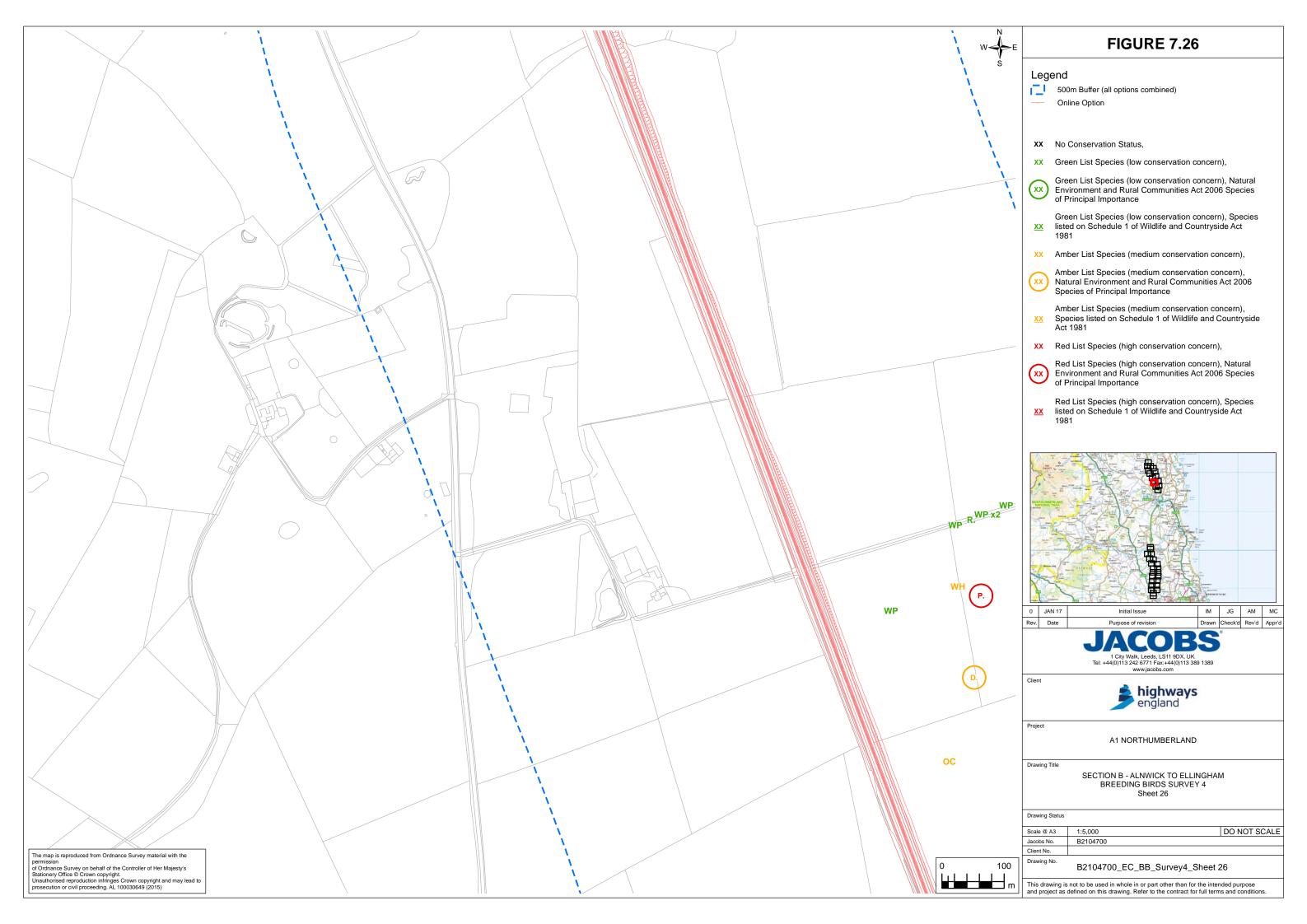


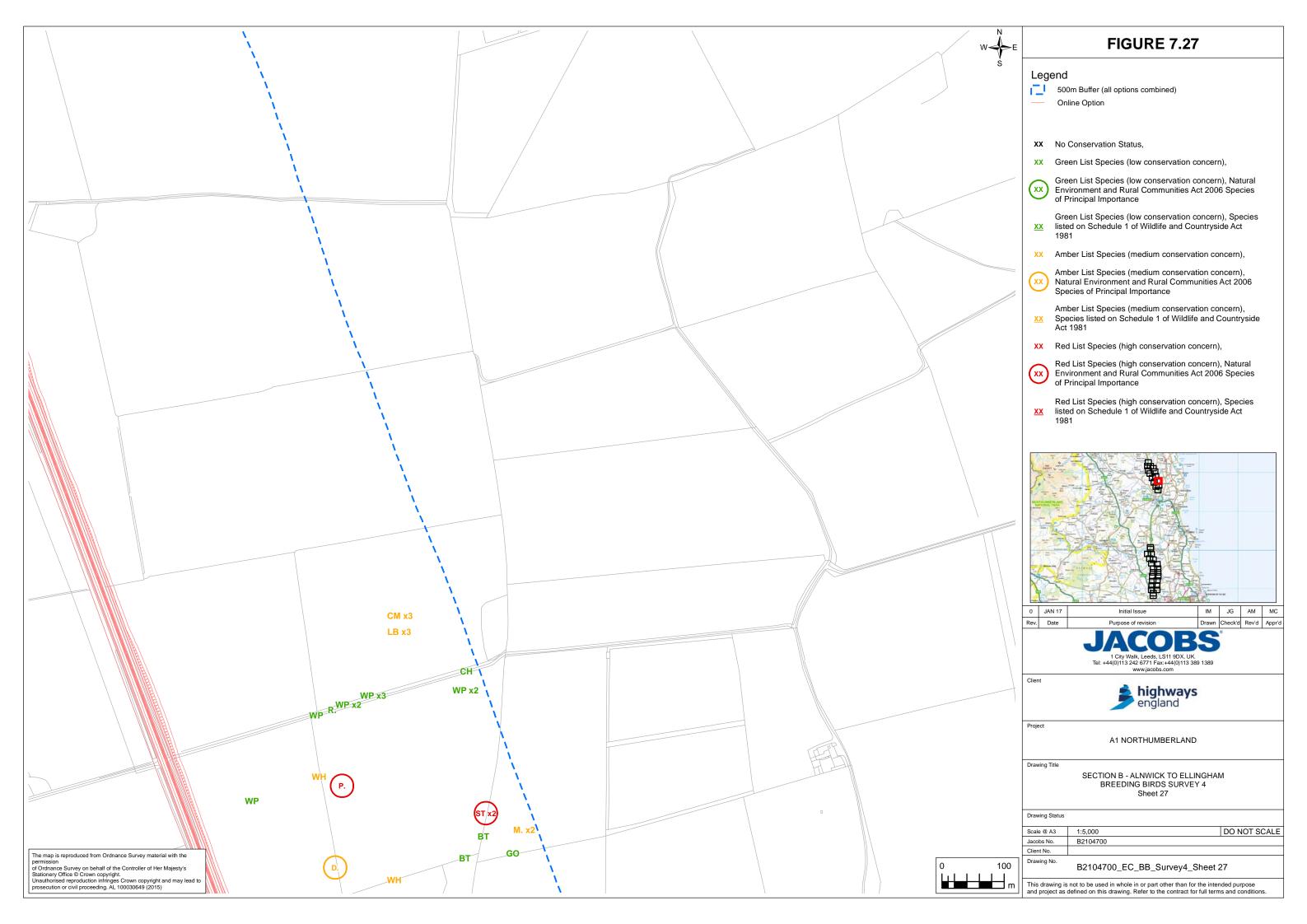


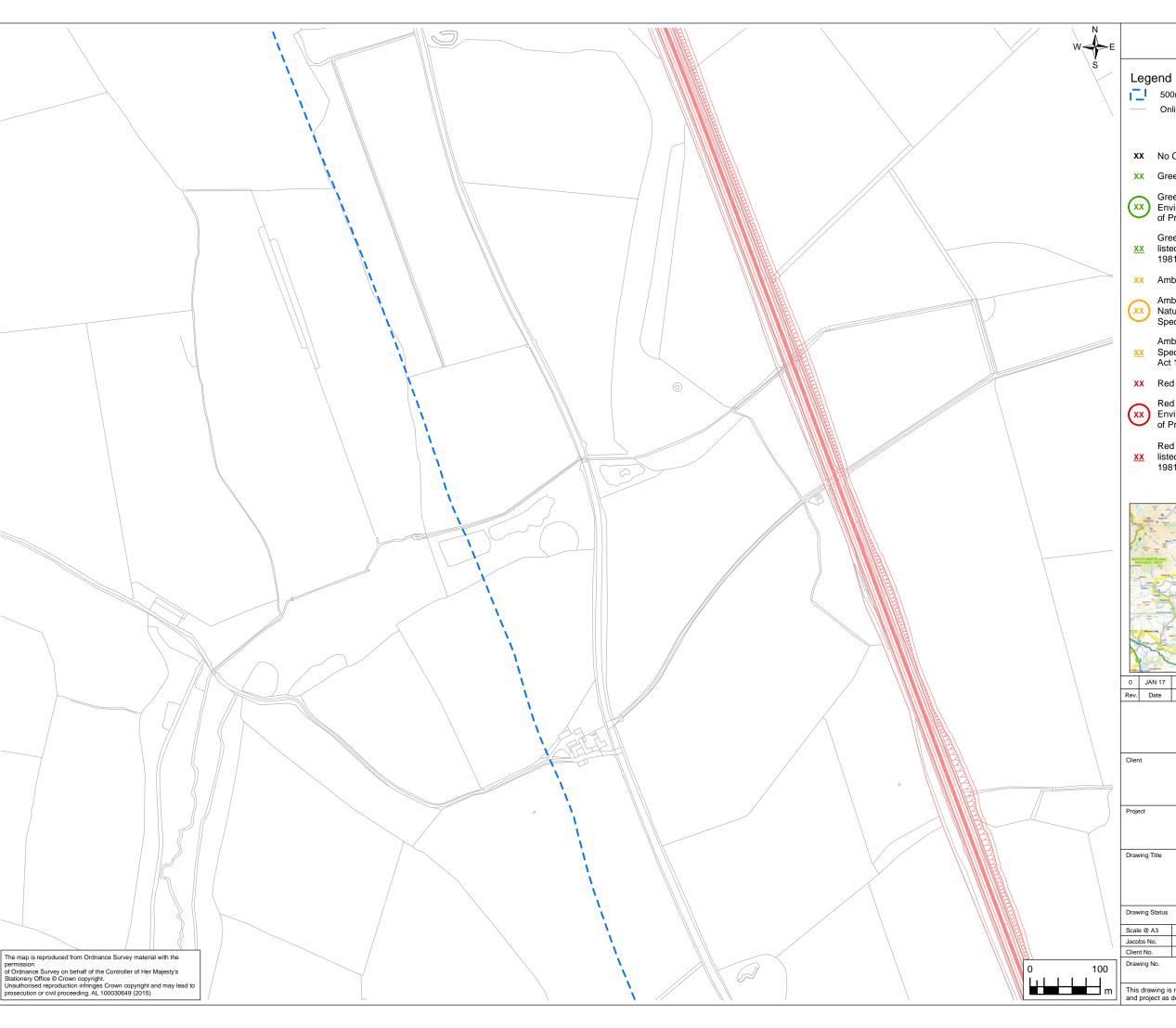












500m Buffer (all options combined)

Online Option

- XX No Conservation Status,
- xx Green List Species (low conservation concern),
- Green List Species (low conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance
- Green List Species (low conservation concern), Species 

  XX listed on Schedule 1 of Wildlife and Countryside Act
- XX Amber List Species (medium conservation concern),
- Amber List Species (medium conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance
- Amber List Species (medium conservation concern), Species listed on Schedule 1 of Wildlife and Countryside
- xx Red List Species (high conservation concern),
- Red List Species (high conservation concern), Natural Environment and Rural Communities Act 2006 Species of Principal Importance of Principal Importance
- Red List Species (high conservation concern), Species listed on Schedule 1 of Wildlife and Countryside Act



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A1 NORTHUMBERLAND

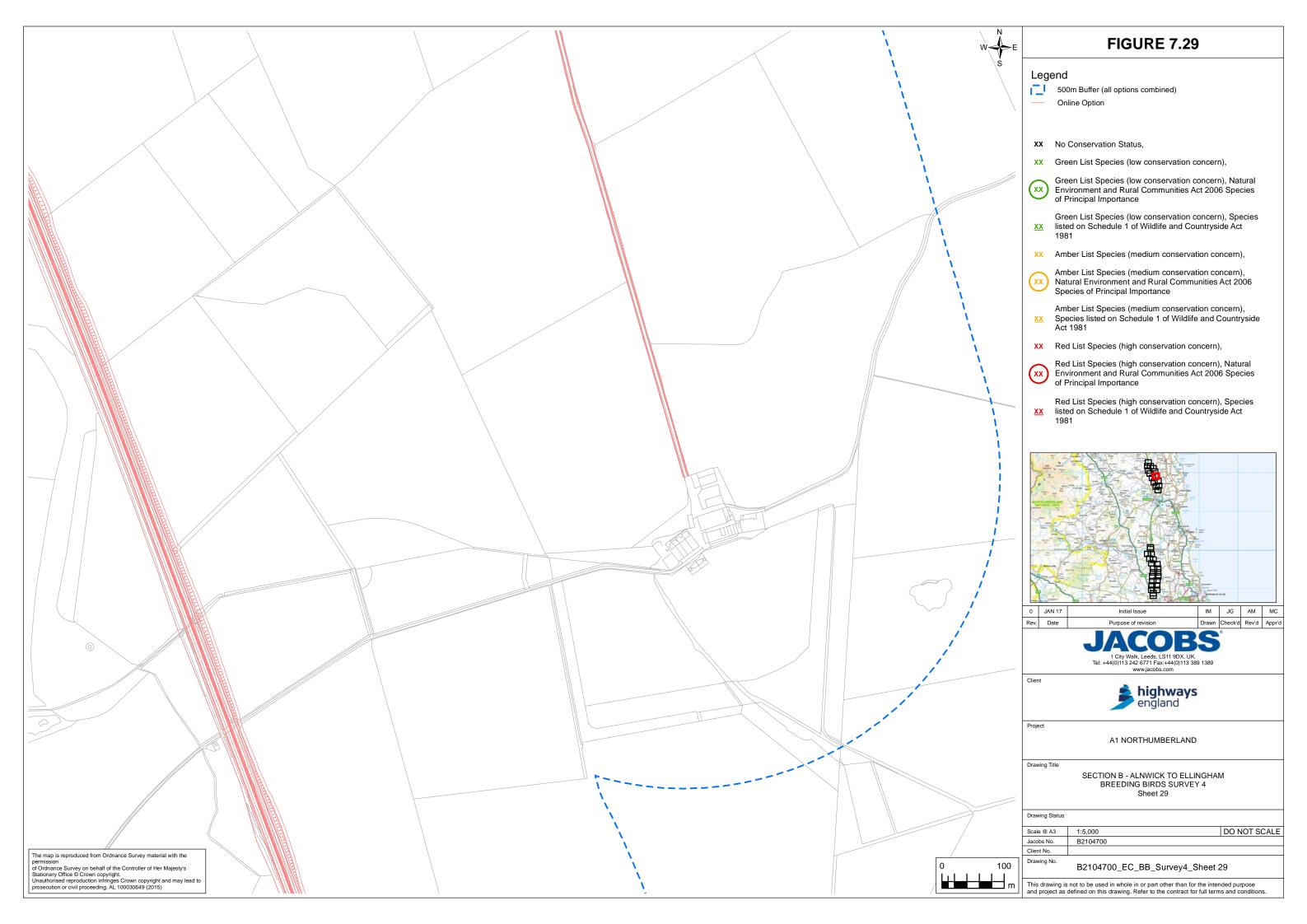
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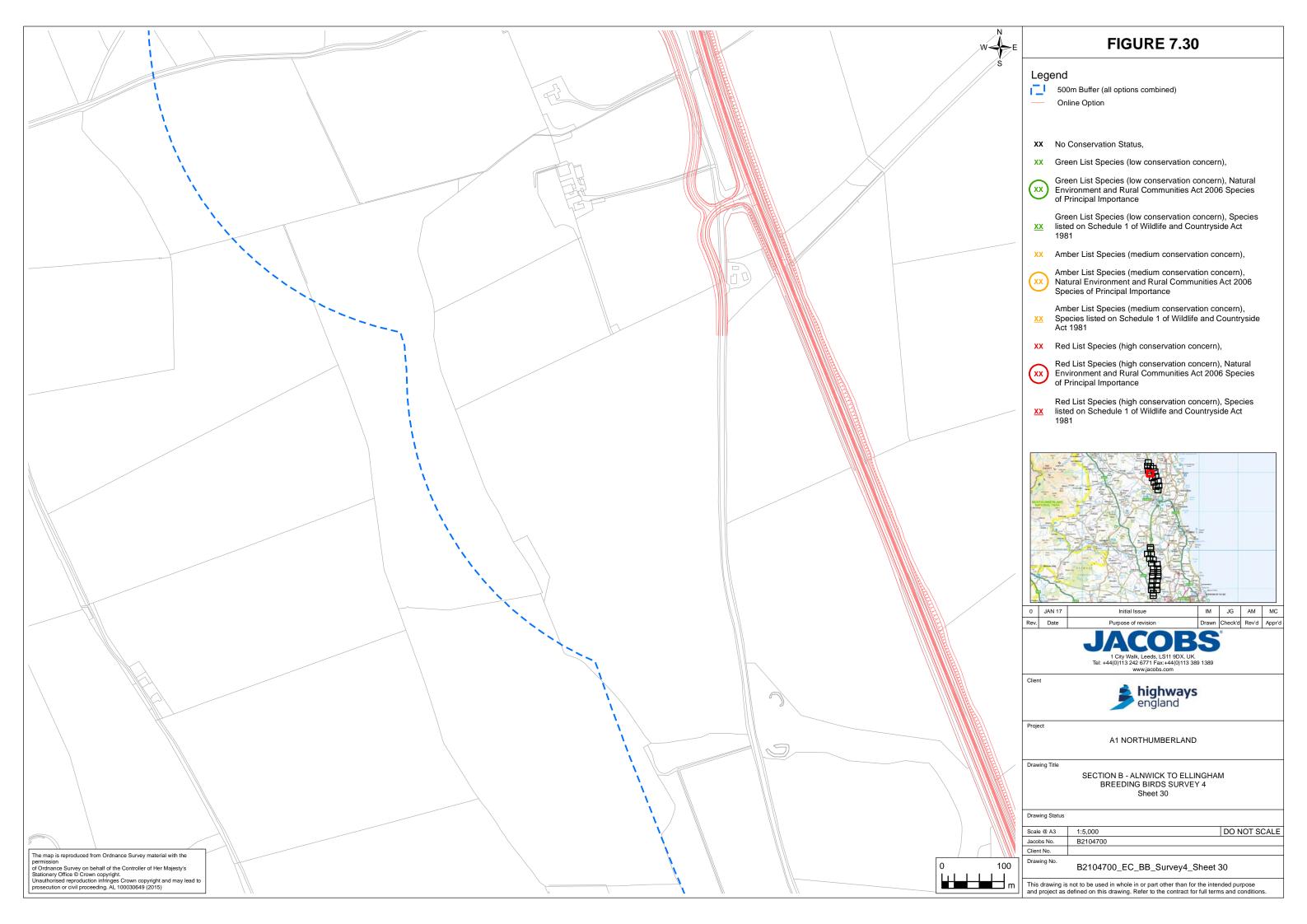
SECTION B - ALNWICK TO ELLINGHAM BREEDING BIRDS SURVEY 4 Sheet 28

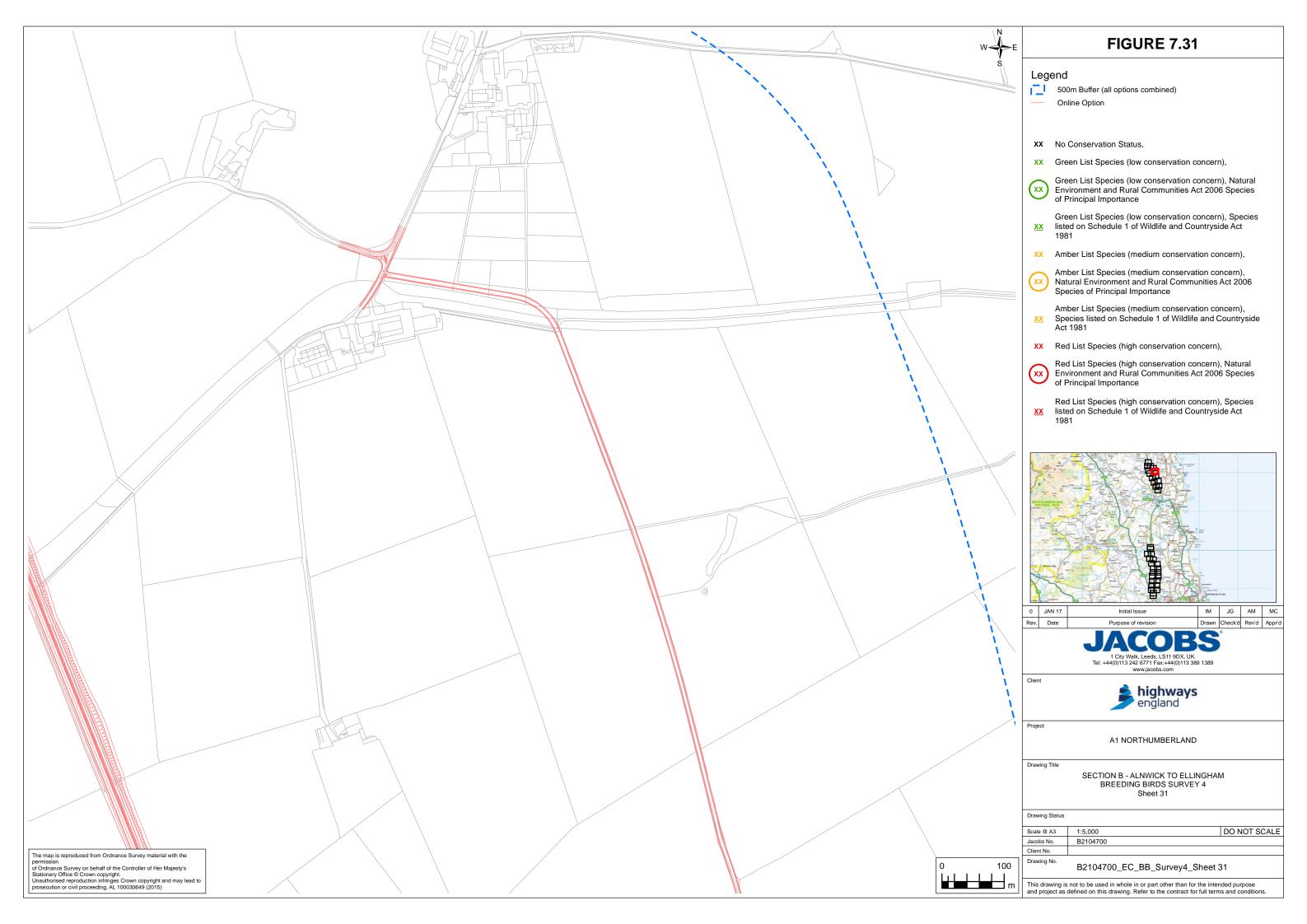
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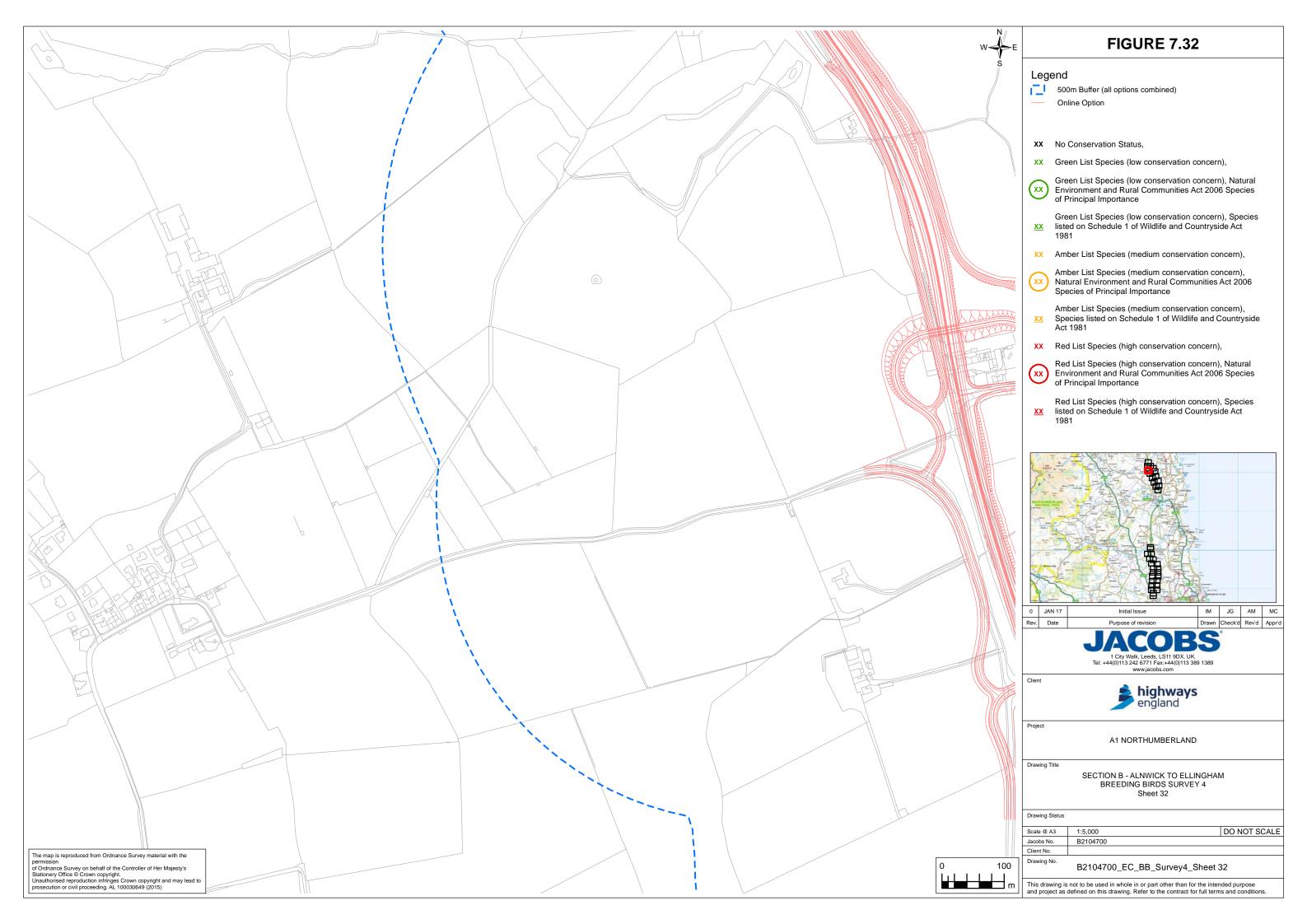
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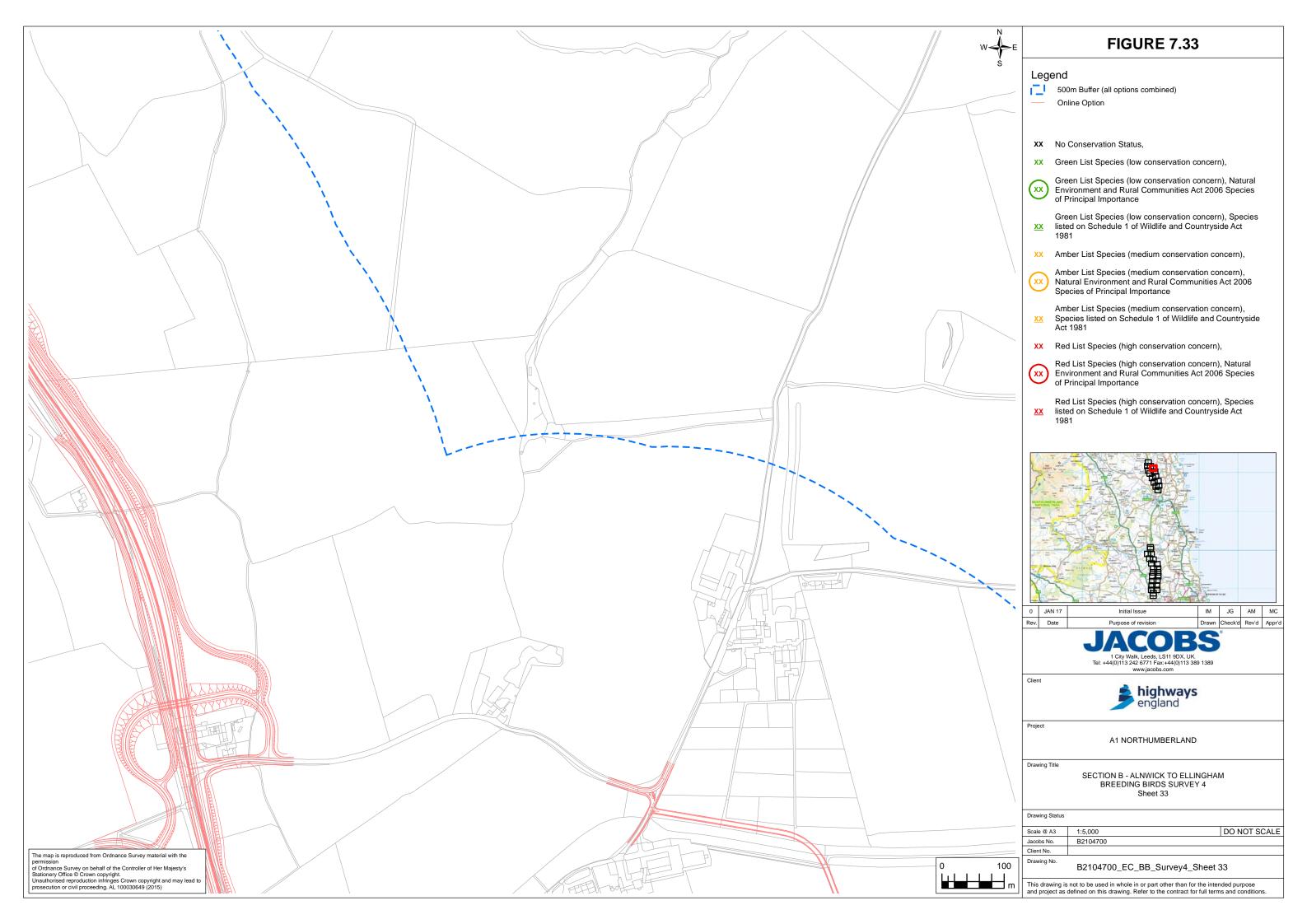
B2104700\_EC\_BB\_Survey4\_Sheet 28

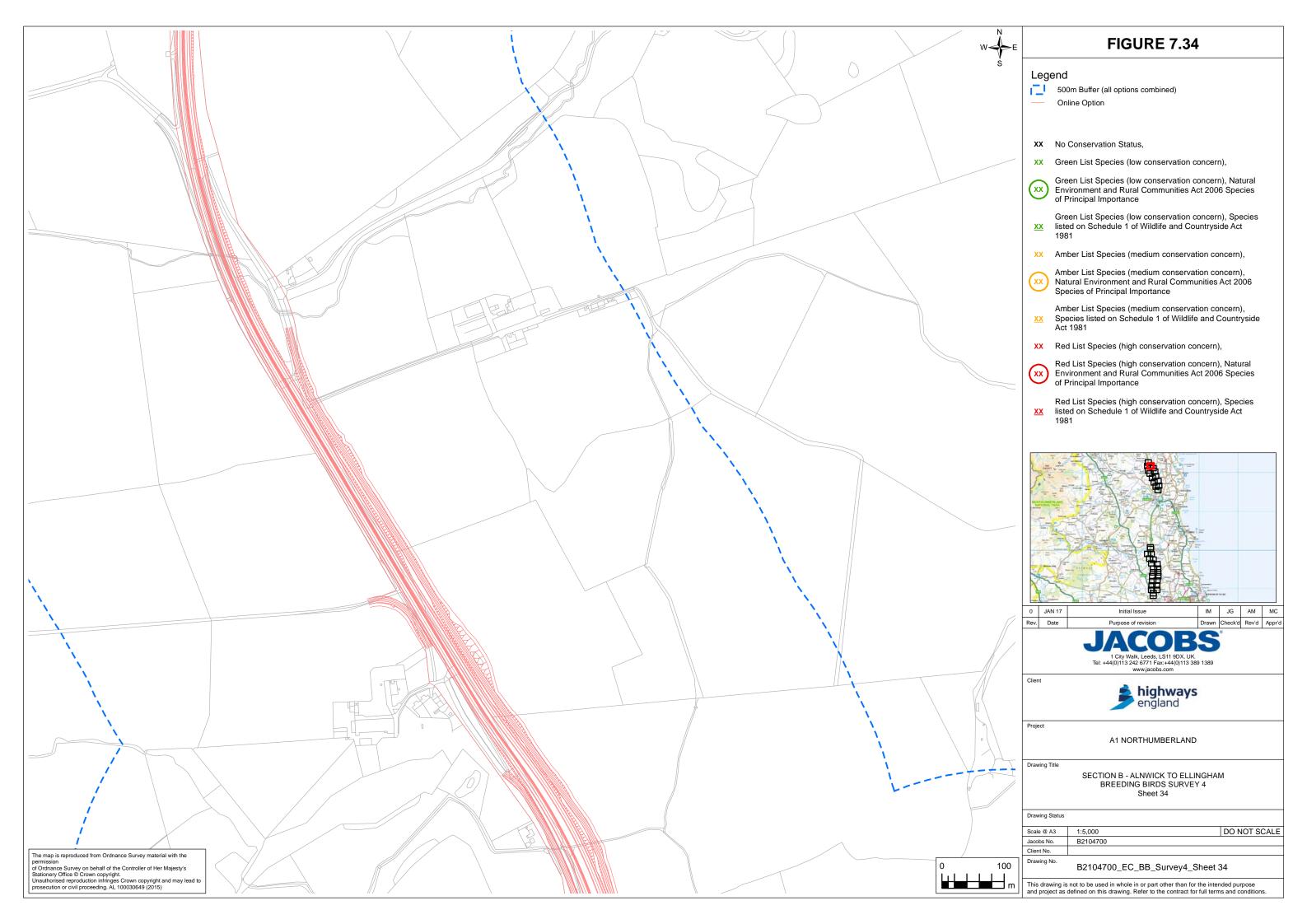


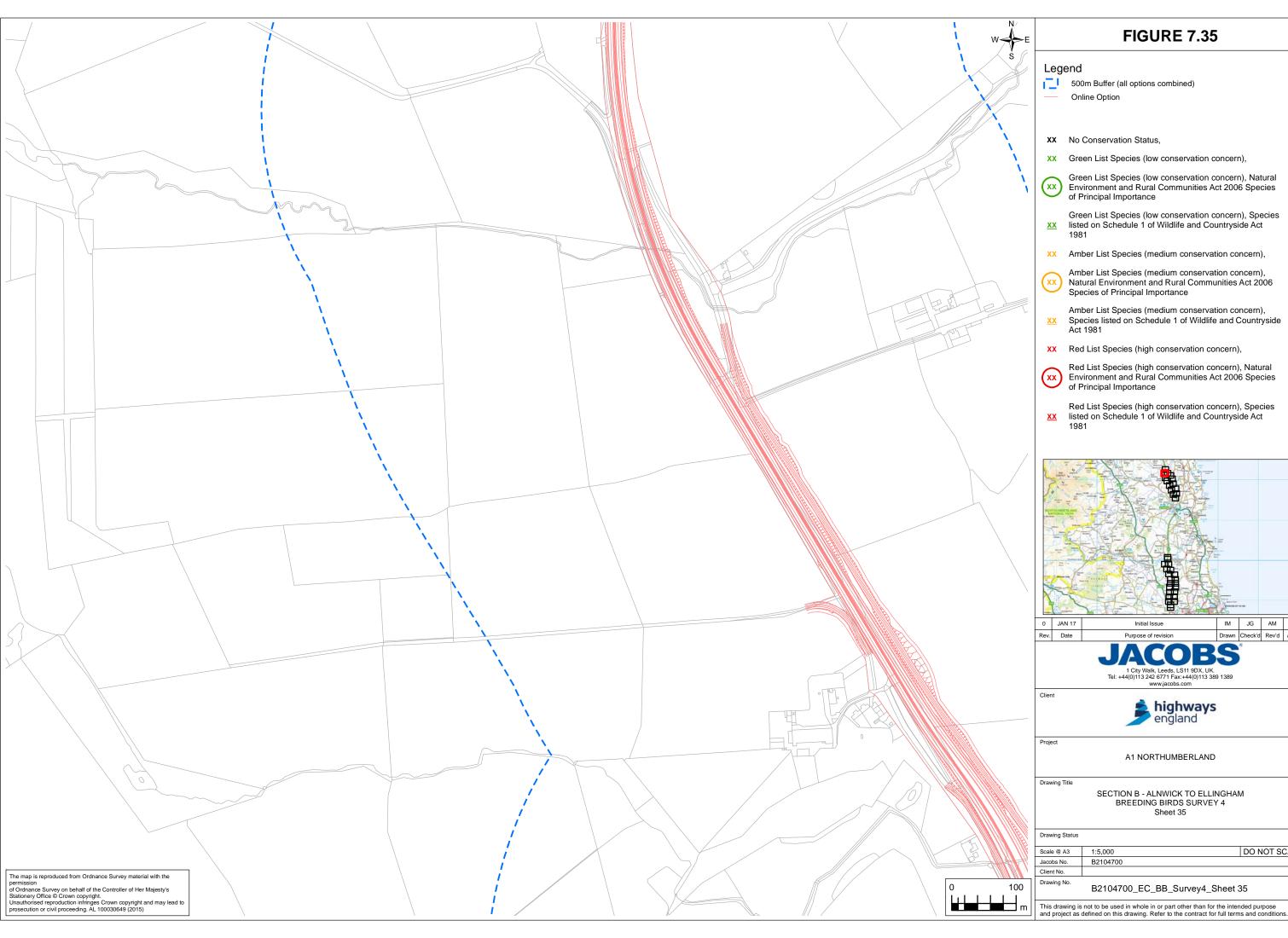










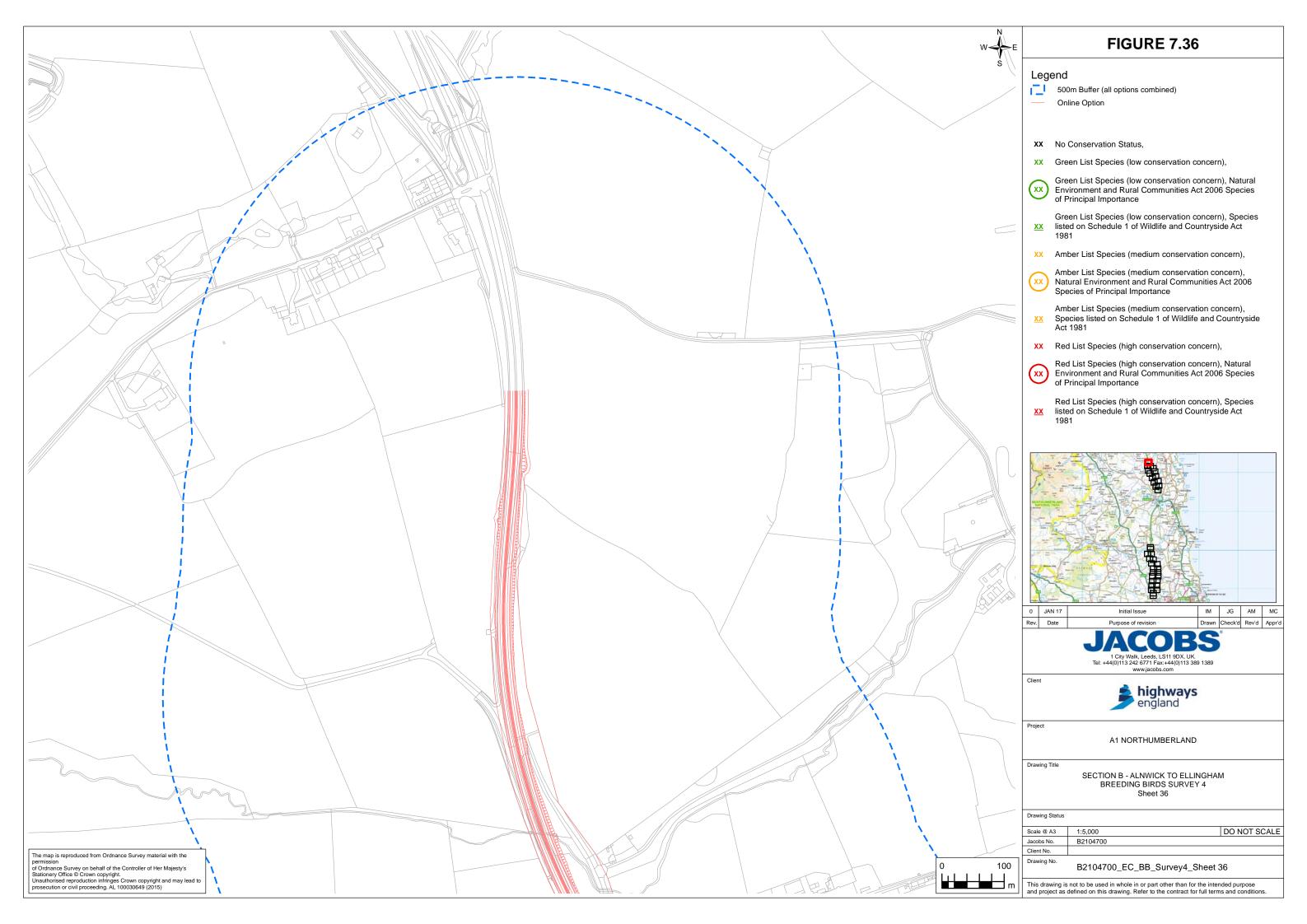


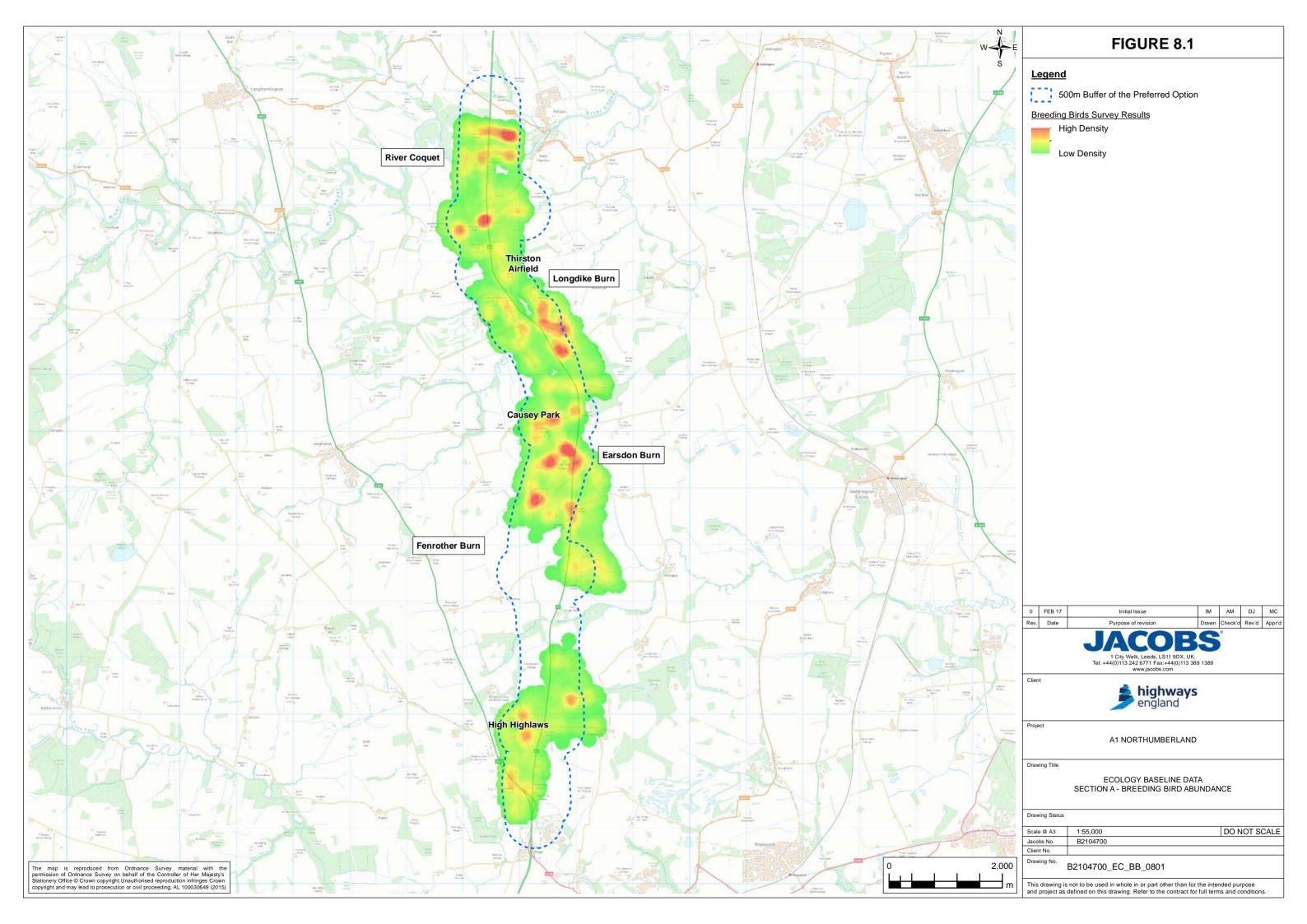
- Species listed on Schedule 1 of Wildlife and Countryside

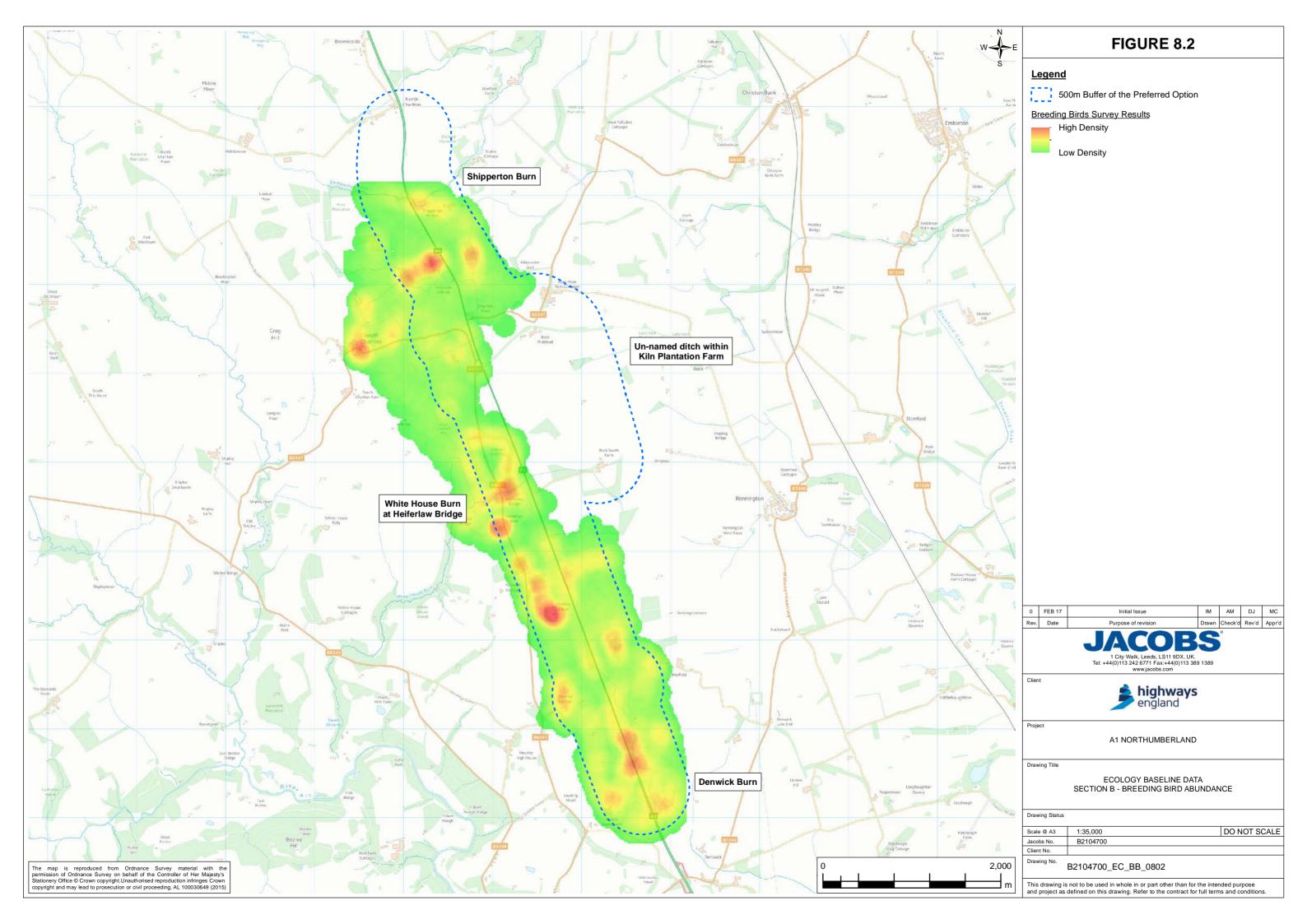


IM JG AM MC

DO NOT SCALE







### APPENDIX A: LEGISLATION, PLANNING POLICY AND BIODIVERSITY BACKGROUND

#### Legislation

#### **International Legislation**

Many bird populations within the UK, including those that are resident, over wintering and migratory are protected under European legislation.

The Birds Directive 2009/147/EC (as amended) requires the designation of Special Protection Areas (SPAs) for rare or vulnerable species, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance. Annex I of the Directive lists bird species to be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution.

The Council Directive 92/43/EEC on the Conservation of Natural habitats and of wild fauna and flora, known as the Habitats Directive, was adopted in 1992. The Directive is the means by which the European Union meets its obligations under the Bern Convention and highlights a legal obligation to protect over 500 wild plants and over 1000 wild animal species. The directive is implemented in UK law through the Wildlife and Countryside Act 1981 (as amended).

The Bonn Convention on Conservation of Migratory Species of Wild Animals, 1979, aims to achieve effective management of migratory species across national or jurisdictional boundaries. It is implemented in the UK by the Environmental Protection Act 1990.

#### **National Legislation**

#### The Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) (WCA) is the principal mechanism for the legislative protection of wildlife in Great Britain.

All bird species are protected under elements of Section 9 of the WCA and the Countryside and Rights of Way (CROW) Act 2000. This legislation taken together prohibits the following on any wild bird species:

- Deliberately, intentionally or recklessly, injuring, killing and capturing any wild bird (although for some pest species licensed exemptions apply);
- Deliberately, intentionally or recklessly taking or destroying eggs or nests of any wild bird;
- Keeping, transporting, selling or exchanging, offering for sale or advertising any wild bird.

A special penalty is levied against any of the above offences being committed in conjunction with a bird listed on Schedule 1 of the WCA, such that it is an offence to intentionally or recklessly disturb any bird listed on Schedule 1 while it is building a nest or is on or near a nest containing young, or to intentionally or recklessly disturb dependent young of any bird listed on Schedule 1. Species included on Schedule 1 are those of high nature conservation priority or otherwise in greater need of legal protection.

\_\_\_\_\_\_ Version: 2 38 Issued: April 2018

#### **National Planning Policy Framework 2012 (NPPF)**

The National Planning Policy Framework (NPPF) 2012 and Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 place a duty on all public bodies, including local planning authorities, to consider habitats and species of 'Principal Importance' when considering a planning application.

It is recognised by the NPPF that the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes, recognising the benefits of ecosystem services, minimising impacts on biodiversity and providing net gain where possible by establishing coherent and resilient wildlife networks.

### Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 – Habitats and Species of Principal Importance in England

The England Biodiversity List has been developed to meet the requirements of Section 41 of the Natural Environment and Rural Communities Act (2006). This legislation requires the Secretary of State to publish a list of species of flora, fauna and habitats considered to be of principal importance for the purpose of conserving biodiversity. A total of 59 bird species/subspecies are listed on Section 41 of the NERC Act 2006, of which 53 are relevant to England<sup>12</sup>.

The Section 41 list will be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006 "to have regard" to the conservation of biodiversity in England, when carrying out their normal functions. In particular:

- National Planning Bodies and Local Planning Authorities will use it to identify the species and habitats that should be afforded priority when applying the requirements of the NPPF to maintain, restore and enhance species and habitats.
- Local Planning Authorities will use it to identify the species and habitats that require specific consideration in dealing with planning and development control, recognising that under NPPF the aim of planning decisions should be to avoid harm to all biodiversity.
- All Public Bodies will use it to identify species or habitats that should be given priority when implementing the NERC Act 2006 Section 40 duty.

#### **Conservation Status**

#### Northumberland Local Biodiversity Action Plan (LBAP)

The UK Biodiversity Action Plan (UKBAP) was published in January 1994 in response to the Convention on Biological Diversity, which was signed by the UK at the 1992 Rio Earth Summit. The 'species of principal importance' listed on Section 41 of the NERC Act 2006 were initially identified as requiring conservation action under the UK Biodiversity Action Plan, which was published in response to the Convention on Biological Diversity. The UKBAP was implemented at the county level through Local Biodiversity Action Plans (LBAPs), which targeted certain species.

Although the UKBAP has been superseded by the UK Post-2010 Biodiversity Framework, LBAPs are still widely used as the species of principal importance remain the same. The LBAP for Northumberland was revised in February 2016 to reflect changes in the conservation statuses of bird species<sup>13</sup>. This revision resulted in the inclusion of a number of species which are not listed as 'species of principal importance' under Section 41 of the NERC Act 2006, due to declines in the

\_\_\_\_\_\_ Version: 2 39 Issued: April 2018

<sup>12</sup> http://incc.defra.gov.uk/page-5163

<sup>13</sup> http://www.durhambiodiversity.org.uk/new-priority-birds-species-lists-published/

populations of these species since the Act was brought into force. The revised Northumberland list of priority bird species includes a total of 70 species, of which 27 are listed as 'species of principal importance' (Table A1).

Table A1: Revised Northumberland Priority Bird Species List

Species	'Species of Principal Importance'	Species	'Species of Principal Importance'
Arctic tern		Merlin	
Avocet		Mistle thrush	
Barn owl		Nightjar	Y
Bar-tailed godwit		Peregrine	
Bittern	Υ	Pied flycatcher	
Black grouse	Υ	Pink-footed goose	
Black-necked grebe		Pochard	
Brent goose (pale-bellied)		Puffin	
Common tern		Purple sandpiper	
Cormorant		Razorbill	
Corn bunting	Υ	Red kite	
Cuckoo	Υ	Redshank	
Curlew	Υ	Reed bunting	Y
Dunlin		Ringed plover	
Eider		Roseate tern	Y
Fulmar		Sanderling	
Golden plover		Sandwich tern	
Goldeneye		Shag	
Grasshopper warbler	Υ	Shelduck	
Grey partridge	Υ	Skylark	Y
Grey wagtail		Snipe	
Guillemot		Song thrush	Y
Hen harrier	Υ	Spotted flycatcher	Y
House martin		Starling	Y
House sparrow	Υ	Swallow	
Kestrel		Swift	
Kittiwake		Tree pipit	Y
Lapwing	Υ	Tree sparrow	Y
Lesser redpoll	Υ	Turnstone	
Linnet	Υ	Twite	Y
Little ringed plover		Willow tit	Y
Little tern		Willow warbler	
Marsh harrier		Woodcock	
Marsh tit	Υ	Yellow wagtail	Y
Marsh warbler	Υ	Yellowhammer	Y

\_\_\_\_\_ Version: 2 40 Issued: April 2018

#### Birds of Conservation Concern (Eaton et al. 2015)

The UK's leading bird conservation organisations have worked together on the fourth quantitative review of the status of the birds that occur regularly in the UK, updating the last review in 2009. The status' of birds within the UK have been regularly monitored through a series of surveys, including the national Breeding Bird Survey, Common Bird Census, sea bird monitoring programs and wetland monitoring programs. The result of this review and continued monitoring is Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man (Eaton *et al.* 2015).

Birds are assessed against criteria to place each species on one of three alert lists: Red, Amber or Green. Red list species are considered to be of high conservation concern, being either globally threatened, having historical UK population declines, having a rapid population decline or breeding range contraction of 50% or more in the last 25 years.

Amber list species are considered to be of medium conservation concern as they meet one or more of the following criteria (but none of the Red list criteria): Red listed for historical decline in a previous review but with substantial recent recovery (more than doubled in the last 25 years), a UK breeding range contraction of between 25% and 49%, a reduction of breeding or non-breeding population of 25-49% in the last 25 years, a 5-year mean of 1-300 breeding pairs in the UK, an unfavourable European conservation status, at least 50% of the UK breeding population found in 10 or fewer sites, or where the breeding population in the UK represents 20% or more of the European breeding populations.

Green list species are considered to be of low conservation concern. They include all regularly occurring species that do not qualify under any of the Red list or Amber list criteria. The Green list also includes those species listed as recovering from historical decline in the last review that have continued to recover and do not qualify under any of the other criteria.

\_\_\_\_\_\_ Version: 2 41 Issued: April 2018

### APPENDIX B: FIELD SURVEY VISIT DATES, TIMES, WEATHER CONDITIONS AND OBSERVERS

Observers (lead surveyors shown in bold):

JG – James Grundy, IH – Ian Heard, NG – Nicola Goodship, AP – Alice Palmer, EF – Emma Fambely, TH – Trevor Hall

#### **Section A**

Transect Number	Visit Number	Date	Time	Observers	Cloud	Visibility	Wind Direction	Wind Speed (Beaufort Scale)	Temp (°C)	Precipitation
	1	16/03/16	07:05 – 10:25	<b>JG/</b> AP	8/8	Clear	NE	0 - 2	6	Occ. drizzle
1	2	12/04/16	07:05 – 10:00	JG/AP IH/EF	8/8	Clear	NE	0 - 1	7	Occ. drizzle
	3	20/05/16	05:45 - 09:50	JG/AP	5/8	Clear	-	0	8 - 11	Occ. light showers
	4	08/07/16	07:55 – 08:35	JG/TH	5/8	Clear	S	0 - 1	13	None
	1	17/03/16	07:05 – 13:00	JG/AP	8/8	Clear	-	0	4 - 7	None
	2	12/04/16	10:30 – 11:45	IH/EF JG/AP	8/8	50m - Clear	NE	0 - 1	8	Occ. drizzle/light rain
2		13/04/16	06:50 - 09:45	IH/EF	8/8	Clear	-	0	8	None
	3	19/05/16	05:45 – 12:45	JG/TH	8/8	1.5km - Clear	S	0 - 1	8 - 13	None
	4	07/07/16	09:50 - 11:40	JG/TH	7/8	Clear	WNW	1 - 3	16	None
	1	17/03/16	07:10 – 10:20	IH/EF	8/8	Clear	-	0	4 - 6	None
3	2	13/04/16	10:10 – 12:30	IH/EF	8/8	Clear	N	1	9	None
	3	25/05/16	09:00 – 10:55	JG/IH	6/8 - 8/8	Clear	N	3	10 - 12	None
4	1	18/03/16	07:10 – 10:45	IH/EF	8/8	>1km	-	0	4	None
4	2	14/04/16	06:50 - 10:10	IH/EF	8/8	1km	-	0	6	None

Transect Number	Visit Number	Date	Time	Observers	Cloud	Visibility	Wind Direction	Wind Speed (Beaufort Scale)	Temp (°C)	Precipitation
	3	24/05/16	08:50 – 11:50	JG/IH	0/8 - 6/8	Clear	N	2 - 3	18 - 20	None
	1	18/03/16	10:30 – 11:15	JG/AP	6/8 - 7/8	Clear	N	0 - 1	6	None
5	2	14/04/16	11:20 – 11:50	J <b>G</b> /AP IH/EF	8/8	1km	N	1	9	None
	3	24/05/16	07:10 - 08:30	JG/IH	0/8 - 6/8	Clear	N	2 - 3	15 - 17	None
	1					Not	surveyed			
	2	14/04/16	10:30 – 11:15	IH/EF	8/8	Clear	N	1	9	None
6	3	24/05/16	05:40 - 07:00	JG/IH	0/8 - 6/8	Clear	NW	0 - 2	4 - 15	None
	4	05/07/16	09:00 - 10:30	JG/TH	6/8	Clear	W	0 - 1	12	None
	1	18/03/16	07:20 - 09:25	JG/AP	8/8	Clear	N	0 - 2	6	Occ. light drizzle
7	2	13/04/16	11:00 – 12:50	<b>JG</b> /AP	8/8	1km - Clear	NW	1	7 - 8	Occ. drizzle/light rain
	3	27/05/16	08:15 – 10:22	JG/IH	8/8	1km - Clear	-	0	10	Light drizzle
	1	17/03/16	10:25 – 12:10	IH/EF	8/8	Clear	-	0	4 - 6	None
	2	14/04/16	06:55 – 10:45	JG/AP	8/8	Clear	N	0 - 3	6 - 7	Occ. light drizzle
8	3	19/05/16	06:10 – 12:40	NG/AP	8/8	Good	NE	1	9	Light mist @ 06:10 – 07:00
	4	05/07/16	05:40 - 08:40	JG/TH	5/8	Clear	WNW	0 - 1	11	None
	1					Not	surveyed			
0	2	13/04/16	07:15 – 10:40	JG/AP	8/8	100m - Clear	NW	0 - 1	7 - 8	Occ. drizzle
9	3	25/05/16	05:10 - 08:35	JG/IH	8/8	Clear	N	3	4 – 9	None
	4	07/07/16	05:05 – 09:15	JG/TH	6/8	Clear	SSW	1 - 3	12	None
	1	16/03/16	10:40 – 12:45	<b>JG</b> /AP	6/8 - 8/8	Clear	NNE	0 - 2	8 - 10	None
10	2	12/04/16	07:00 - 09:30	IH/EF	8/8	1km - Clear	Е	1	7	Occ. light rain
	3	20/05/16	10:05 – 12:15	JG/AP	5/8	Clear	WSW	1 - 3	11 - 13	Occ. light showers

Version: 2 Issued: April 2018

#### **Section B**

Transect Number	Visit Number	Date	Time	Observers	Cloud	Visibility	Wind Direction	Wind Speed (Beaufort Scale)	Temp (°C)	Precipitation
	4	14/03/16	16:00 – 17:50	IH/EF	1/8	Clear	NE	1 - 2	8	None
11	1	15/03/16	07:06 - 07:40	IH/EF	8/8	50m – 1km	NE	2	4 - 5	Fog
11	2	19/04/16	06:30 - 09:00	JG/IH	0/8	Clear	W	1 - 2	6 - 8	None
	3	27/05/16	05:20 - 07:50	JG/IH	8/8	Clear	-	0	9	None
	1	15/03/16	07:40 - 10:00	IH/EF	8/8	500m – 1km	N	2 - 3	5 - 6	Mist/drizzle
12	2	19/04/16	09:25 - 12:00	JG/IH	0/8	Clear	W	1 - 2	9 - 13	None
	3	18/05/16	05:50 - 10:30	<b>JG</b> /TH	8/8	Clear	-	0	10	None
	1	15/03/16	10:05 – 13:20	IH/EF	8/8	500m – 1km	N	3	5 - 6	Mist/drizzle
13	2	15/04/16	07:00 - 10:50	IH/EF	8/8	Clear	W-NE	1	6	None
	3	17/05/16	05:50 – 12:10	<b>JG</b> /TH	0/8	Clear	W	0 - 1	8 - 14	None
	1	16/03/16	06:50 - 11:10	IH/EF	8/8	600m - Clear	N	0 - 2	5 - 6	None
14	2	15/04/16	09:05 – 11:50	JG/AP IH/EF	7/8 – 8/8	Clear	W-NE	0 - 1	6 - 9	None
	3	17/05/16	05:45 – 12:05	NG/AP	1/8	Very good	-	0	5	None
	1	16/03/16	11:15 – 12:30	IH/EF	8/8	Clear	NNE	2	7	None
15	2	15/04/16	07:10 - 08:35	<b>JG</b> /AP	8/8	Clear	W	0 - 1	6	None
	3	25/05/16	11:20 – 12:30	JG/IH	6/8	Clear	N	3 - 4	11	None
	4	14/03/16	16:25 – 17:30	<b>JG</b> /AP	1/8	Clear	-	0	10	None
	1	15/03/16	07:05 – 12:30	<b>JG</b> /AP	8/8	500m – 1km	NE	2 - 3	6	Mist/drizzle
16	2	20/04/16	06:35 – 11:10	JG/IH	0/8	Clear	E	1	2 - 12	None
10	3	18/05/16	05:50 – 13:00	NG/AP JG/TH	7/8	Very good	-	0	10	None
	4	08/07/16	05:30 - 07:10	JG/TH	8/8	Clear	SE	0 - 1	12	Rain @ 06:00 - 06:50

Version: 2 Issued: April 2018

# APPENDIX C: BRITISH TRUST FOR ORNITHOLOGY (BTO) BIRD SPECIES CODES

		вто	Bird Species Codes		
AC	Arctic Skua	G.	Green Woodpecker	NK	Red-necked Phalarope
ΑE	Arctic Tern	GR	Greenfinch	RH	Red-throated Diver
AV	Avocet	GK	Greenshank	LR	Redpoll
BY	Barnacle Goose	H.	Grey Heron	RK	Redshank
ВО	Barn Owl	GJ	Greylag Goose	RT	Redstart
ВА	Bar-tailed Godwit	P.	Grey Partridge	RE	Redwing
BR	Bearded Tit	GV	Grey Plover	RB	Reed Bunting
BS	Bewick's Swan	GL	Grey Wagtail	RW	Reed Warbler
BI	Battens	GU	Guillemot	RZ	Ring Ouzel
BK	Black Grouse	HF	Hawfinch	RI	Ring-necked Parakeet
ВН	Black-headed Gull	HH	Hen Harrier	RP	Ringed Plover
BW	Black-tailed Godwit	HG	Herring Gull	R.	Robin
DV	Black-throated Diver	HY	Hobby	DV	Rock Dove
ВХ	Black Redstart	HZ	Honey Buzzard	RC	Rock Pipit
B.	Blackbird	HC	Hooded Crow	RO	Rook
ВС	Blackcap	HP	Ноорое	RS	Roseate Tern
TY	Black Guillemot	НМ	House Martin	RY	Ruddy Duck
BN	Black-necked Grebe	HS	House Sparrow	RU	Ruff
BJ	Black Tern	JD	Jackdaw	SM	Sand Martin
BU	Bluethroat	J.	Jay	SS	Sanderling
ВТ	Blue Tit	K.	Kestrel	TE	Sandwich Tern
BL	Brambling	KF	Kingfisher	VI	Savi's Warbler
BG	Brent Goose	KI	Kittiwake	SQ	Scarlet Rosefinch
BF	Bullfinch	KN	Knot	SP	Scaup
BZ	Buzzard	LM	Lady Amherst's Pheasant	CY	Scottish Crossbill
C.	Carrion Crow	LA	Lapland Bunting	SW	Sedge Warbler
CG	Canada Goose	L.	Lapwing	NS	Serin
СР	Capercaillie	TL	Leach's Petrel	SA	Shag
CW	Cetti's Warbler	LB	Lesser Black-backed Gull	SU	Shelduck
СН	Chaffinch	LS	Lesser Spotted Woodpecker	SX	Shorelark
CC	Chiffchaff	LW	Lesser Whitethroat	SF	Short-eared Owl
CI	Chough	LI	Linnet	SV	Shoveler
CL	Cirl Bunting	ET	Little Egret	SK	Siskin
CT	Coat Tit	LG	Little Grebe	S.	Skylark
CD	Collared Dove	LU	Little Gull	SZ	Slavonian Grebe
СМ	Common Gull	LO	Little Owl	SN	Snipe
CS	Common Sandpiper	LP	Little Ringed Plover	SB	Snow Bunting
CX	Common Scoter	AF	Little Tern	ST	Song Thrush
CN	Common Tern	LE	Long-eared Owl	SH	Sparrowhawk
CE	Corncrake	IT	Long-tailed Tit	AK	Spotted Crake
CO	Coot	MG	Magpie	SF	Spotted Flycatcher
CA	Cormorant	MA	Mallard	SG	Starling

CB Corn Bunting MN Mandarin SD Stock Dove CT Crested Tit MX Manx Shearwater SC Stonechat CR Crossbill MR Marsh Harrier TN Stone-curlew CK Cuckoo MT Marsh Tit TM Storm Petrel CU Curlew MW Marsh Warbler SL Swallow DW Dartford Warbler MP Meadow Pipit SI Swift DI Dipper MU Mediterranean Gull TO Tawny Owl DO Dotterel ML Merlin T. Teal DN Dunlin M. Mistle Thrush TK Temminck's Stint D. Dunnock MH Moorhen TP Tree Pipit EG Egyptian Goose MO Montagu's Harrier TS Tree Sparrow E. Eider MS Mute Swan TC Treecreeper FP Feral Pigeon N. Nightingale TU Tufted Duck FF Fieldfare NJ Nightigar TT Turnstone FC Firecrest NH Nuthatch TD Turtle Dove F. Fulmar OP Osprey TW Twite GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Plover PM Ptarmigan WT Willow Tit GN Gossander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GR Great Black-backed Gull RG Red Grouse GR Great Crested Grebe ED Red-backed Shrike WR Wren			вто	Bird Species Codes		
CT Crested Tit MX Manx Shearwater SC Stonechat CR Crossbill MR Marsh Harrier TN Stone-curlew CK Cuckoo MT Marsh Tit TM Storm Petrel CU Curlew MW Marsh Warbler SL Swallow DW Dartford Warbler MP Meadow Pipit SI Swift DI Dipper MU Mediterranean Gull TO Tawny Owl DO Dotterel ML Merlin T. Teal DN Dunlin M. Mistle Thrush TK Temminck's Stint D. Dunnock MH Moorhen TP Tree Pipit EG Egyptian Goose MO Montagu's Harrier TS Tree Sparrow E. Eider MS Mute Swan TC Treecreeper FP Feral Pigeon N. Nightingale TU Tufted Duck FF Fieldfare NJ Nightjar TT Turnstone FC Firecrest NH Nuthatch TD Turtle Dove F. Fulmar OP Osprey TW Twite GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Plover PM Ptarmigan WT Willow Tit GN Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GD Goosander Q. Quail WK Woodclork GR Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	СВ	Corn Bunting	_	<u> </u>	SD	Stock Dove
CK         Cuckoo         MT         Marsh Tit         TM         Storm Petrel           CU         Curlew         MW         Marsh Warbler         SL         Swallow           DW         Dartford Warbler         MP         Meadow Pipit         SI         Swift           DI         Dipper         MU         Mediterranean Gull         TO         Tawny Owl           DO         Dotterel         ML         Merlin         T.         Teal           DN         Dunlin         M.         Mistle Thrush         TK         Termaninck's Stint           D.         Dunnock         MH         Moorhen         TP         Treal           D.         Dunnock         MH         Moorhen         TP         Tree Pipit           E.         Eider         MS         Mute Swan         TC         Tree Sparrow           E.         Eider         MS         Mute Swan         TC         Treecreeper           FP         Feral Pigeon         N.         Nightjar         TT         Turtstone           FF         Fieldfare         NJ         Nightjar         TT         Turnstone           FF         Fieldfare         NJ         Nightjar         TT		•	MX			
CK         Cuckoo         MT         Marsh Tit         TM         Storm Petrel           CU         Curlew         MW         Marsh Warbler         SL         Swallow           DW         Dartford Warbler         MP         Meadow Pipit         SI         Swift           DI         Dipper         MU         Mediterranean Gull         TO         Tawny Owl           DO         Dotterel         ML         Merlin         T.         Teal           DN         Dunlin         M.         Mistle Thrush         TK         Termaninck's Stint           D.         Dunnock         MH         Moorhen         TP         Treal           D.         Dunnock         MH         Moorhen         TP         Tree Pipit           E.         Eider         MS         Mute Swan         TC         Tree Sparrow           E.         Eider         MS         Mute Swan         TC         Treecreeper           FP         Feral Pigeon         N.         Nightjar         TT         Turtstone           FF         Fieldfare         NJ         Nightjar         TT         Turnstone           FF         Fieldfare         NJ         Nightjar         TT	CR	Crossbill	MR	Marsh Harrier	TN	Stone-curlew
CU         Curlew         MW         Marsh Warbler         SL         Swallow           DW         Dartford Warbler         MP         Meadow Pipit         SI         Swift           DI         Dipper         MU         Mediterranean Gull         TO         Tawny Owl           DO         Dotterel         ML         Merlin         T.         Teal           DN         Dunlin         M.         Mistle Thrush         TK         Temminck's Stint           D.         Dunnock         MH         Moorhen         TP         Tree Pipit           E.         Eder         MS         Mute Swan         TC         Tree Sparrow           E.         Eider         MS         Mute Swan         TC         Treecreeper           FP         Feral Pigeon         N.         Nightingale         TU         Tufted Duck           FF         Fieldfare         NJ         Nightingale         TU         Tufted Duck           FF         Fieldfare         NJ         Nightingale         TU         Tufted Duck           FF         Fieldfare         NJ         Nightingale         TU         Tufted Duck           FE         Fieldfare         NJ         Nightingale <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td>			_			
DW         Dartford Warbler         MP         Meadow Pipit         SI         Swift           DI         Dipper         MU         Mediterranean Gull         TO         Tawny Owl           DO         Dotterel         ML         Merlin         T.         Teal           DN         Dunlin         M.         Mistle Thrush         TK         Temminck's Stint           D.         Dunnock         MH         Moorhen         TP         Tree Pipit           EG         Egyptian Goose         MO         Montagu's Harrier         TS         Tree Sparrow           E.         Eider         MS         Mute Swan         TC         Treecreeper           FP         Feral Pigeon         N.         Nightingale         TU         Tufted Duck           FF         Fieldfare         NJ         Nightingale         TU         Tufted Duck           FF         Fieldfare         NJ         Nightingale         TU         Tufted Duck           FF         Fieldfare         NJ         Nightingale         TU         Turtstone           FF         Fieldfare         NJ         Nightingale         TU         Turtled Duck           FF         Fieldfare         NJ			MW		SL	
DI Dipper MU Mediterranean Gull TO Tawny Owl DO Dotterel ML Merlin T. Teal  DN Dunlin M. Mistle Thrush TK Temminck's Stint D. Dunnock MH Moorhen TP Tree Pipit EG Egyptian Goose MO Montagu's Harrier TS Tree Sparrow E. Eider MS Mute Swan TC Treecreeper FP Feral Pigeon N. Nightingale TU Tufted Duck FF Fieldfare NJ Nightjar TT Turnstone FC Firecrest NH Nuthatch TD Turtle Dove F. Fulmar OP Osprey TW Twite GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Crested Grebe ED Red-brassted WR Wren	DW	Dartford Warbler	MP	Meadow Pipit	SI	Swift
DO Dotterel ML Merlin T. Teal DN Dunlin M. Mistle Thrush TK Temminck's Stint D. Dunnock MH Moorhen TP Tree Pipit EG Egyptian Goose MO Montagu's Harrier TS Tree Sparrow E. Eider MS Mute Swan TC Treecreeper FP Feral Pigeon N. Nightingale TU Tufted Duck FF Fieldfare NJ Nightjar TT Turnstone FC Firecrest NH Nuthatch TD Turtle Dove F. Fulmar OP Osprey TW Twite GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Wren EGD Goreat Crested Grebe ED Red-breasted	DI	Dipper		·		Tawny Owl
D.         Dunnock         MH         Moorhen         TP         Tree Pipit           EG         Egyptian Goose         MO         Montagu's Harrier         TS         Tree Sparrow           E.         Eider         MS         Mute Swan         TC         Treecreeper           FP         Feral Pigeon         N.         Nightingale         TU         Tufted Duck           FF         Fieldfare         NJ         Nightingale         TU         Tutted Duck           FF         Fieldfare         NJ <td></td> <td></td> <td>ML</td> <td></td> <td></td> <td>-</td>			ML			-
D.         Dunnock         MH         Moorhen         TP         Tree Pipit           EG         Egyptian Goose         MO         Montagu's Harrier         TS         Tree Sparrow           E.         Eider         MS         Mute Swan         TC         Treecreeper           FP         Feral Pigeon         N.         Nightingale         TU         Tufted Duck           FF         Fieldfare         NJ         Nightingale         TU         Tutted Duck           FF         Fieldfare         NJ <td>DN</td> <td>Dunlin</td> <td>M.</td> <td>Mistle Thrush</td> <td>TK</td> <td>Temminck's Stint</td>	DN	Dunlin	M.	Mistle Thrush	TK	Temminck's Stint
EG Egyptian Goose MO Montagu's Harrier TS Tree Sparrow  E. Eider MS Mute Swan TC Treecreeper  FP Feral Pigeon N. Nightingale TU Tufted Duck  FF Fieldfare NJ Nightjar TT Turnstone  FC Firecrest NH Nuthatch TD Turtle Dove  F. Fulmar OP Osprey TW Twite  GA Gadwall OC Oystercatcher WA Water Rail  GX Gannet PE Peregrine W. Wheatear  GW Garden Warbler PH Pheasant WM Whimbrel  GY Garganey PF Pied Flycatcher WC Whinchat  GC Goldcrest PW Pied Wagtail WO White-fronted Goo  EA Golden Eagle PT Pintail WH Whitethroat  OL Golden Oriole PO Pochard WS Whooper Swan  GF Golden Pheasant PG Pink-footed Goose WN Wigeon  GP Golden Plover PM Ptarmigan WT Willow Tit  GN Goldeneye PU Puffin WW Willow Warbler  GO Goldfinch PS Purple Sandpiper WO Wood Warbler  GD Goosander Q. Quail WK Woodcock  GI Goshawk RN Raven WL Woodlark  GH Grasshopper Warbler RA Razorbill WP Woodpigeon  GB Great Black-backed Gull RG Red Grouse  GRed-breasted	D.	Dunnock	МН		TP	
E. Eider MS Mute Swan TC Treecreeper FP Feral Pigeon N. Nightingale TU Tufted Duck FF Fieldfare NJ Nightjar TT Turnstone FC Firecrest NH Nuthatch TD Turtle Dove F. Fulmar OP Osprey TW Twite GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	EG	Egyptian Goose	МО	Montagu's Harrier	TS	•
FP Feral Pigeon N. Nightingale TU Tufted Duck FF Fieldfare NJ Nightjar TT Turnstone FC Firecrest NH Nuthatch TD Turtle Dove F. Fulmar OP Osprey TW Twite GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse DRA WY Wen	E.	· · ·	MS	-	TC	
FF Fieldfare NJ Nightjar TT Turnstone FC Firecrest NH Nuthatch TD Turtle Dove F. Fulmar OP Osprey TW Twite GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GO Gosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse GRed-breasted	FP	Feral Pigeon	N.	Nightingale	TU	·
FC Firecrest NH Nuthatch TD Turtle Dove F. Fulmar OP Osprey TW Twite GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GO Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse GG Great Crested Grebe ED Red-backed Shrike  Red-breasted  WA Water Rail TWA Water Rail WA Whimbrel WC Whinchat WO White-fronted Goo White-fronted G	FF		NJ		TT	Turnstone
GA Gadwall  GX Gannet  PE Peregrine  W. Wheatear  WM Whimbrel  GY Garganey  PF Pied Flycatcher  GC Goldcrest  PW Pied Wagtail  WO White-fronted Goo  EA Golden Plover  GF Golden Plover  GP Goldeneye  PU Puffin  GN Goldeneye  PU Puffin  WW Willow Warbler  GO Goldfinch  PS Purple Sandpiper  GO Goldark  GO Goldark  RN Raven  GR Great Black-backed Gull  RG Red-breasted  WA Water Rail  WA Wheatear  W. Wheatear  WM Whitehroat  WC Whinchat  WO White-fronted Goo  Wh Wigeon  Whooper Swan  WT Willow Tit  WW Willow Warbler  WO Wood Warbler  WO Wood Warbler  WH Woodcock  WH Woodcock  WH Woodcock  WH Woodcock  WH Woodpigeon  WH Woodpigeon  WH Woodpigeon  WH Woodpigeon  WH Wood Sandpiper  WH Wren	FC	Firecrest	NH		TD	Turtle Dove
GA Gadwall OC Oystercatcher WA Water Rail GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	F.	Fulmar	OP	Osprey	TW	Twite
GX Gannet PE Peregrine W. Wheatear GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	GA	Gadwall	ОС		WA	Water Rail
GW Garden Warbler PH Pheasant WM Whimbrel GY Garganey PF Pied Flycatcher WC Whinchat GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	GX	Gannet	PE	-	W.	Wheatear
GC Goldcrest PW Pied Wagtail WO White-fronted Goo EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse GG Great Crested Grebe ED Red-backed Shrike WR Wren	GW	Garden Warbler	PH		WM	Whimbrel
EA Golden Eagle PT Pintail WH Whitethroat OL Golden Oriole PO Pochard WS Whooper Swan GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	GY	Garganey	PF	Pied Flycatcher	WC	Whinchat
OL Golden Oriole PO Pochard WS Whooper Swan  GF Golden Pheasant PG Pink-footed Goose WN Wigeon  GP Golden Plover PM Ptarmigan WT Willow Tit  GN Goldeneye PU Puffin WW Willow Warbler  GO Goldfinch PS Purple Sandpiper WO Wood Warbler  GD Goosander Q. Quail WK Woodcock  GI Goshawk RN Raven WL Woodlark  GH Grasshopper Warbler RA Razorbill WP Woodpigeon  GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper  GG Great Crested Grebe ED Red-backed Shrike WR Wren	GC	Goldcrest	PW	Pied Wagtail	WO	White-fronted Goose
GF Golden Pheasant PG Pink-footed Goose WN Wigeon GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	EΑ	Golden Eagle	PT	Pintail	WH	Whitethroat
GP Golden Plover PM Ptarmigan WT Willow Tit GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	OL	Golden Oriole	PO	Pochard	WS	Whooper Swan
GN Goldeneye PU Puffin WW Willow Warbler GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	GF	Golden Pheasant	PG	Pink-footed Goose	WN	Wigeon
GO Goldfinch PS Purple Sandpiper WO Wood Warbler GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	GP	Golden Plover	PM	Ptarmigan	WT	Willow Tit
GD Goosander Q. Quail WK Woodcock GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-breasted	GN	Goldeneye	PU	Puffin	WW	Willow Warbler
GI Goshawk RN Raven WL Woodlark GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	GO	Goldfinch	PS	Purple Sandpiper	WO	Wood Warbler
GH Grasshopper Warbler RA Razorbill WP Woodpigeon GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren	GD	Goosander	Q.	Quail	WK	Woodcock
GB Great Black-backed Gull RG Red Grouse OD Wood Sandpiper GG Great Crested Grebe ED Red-backed Shrike WR Wren  Red-breasted	GI	Goshawk	RN	Raven	WL	Woodlark
GG Great Crested Grebe ED Red-backed Shrike WR Wren	GH	Grasshopper Warbler	RA	Razorbill	WP	Woodpigeon
Red-breasted	GB	Great Black-backed Gull	RG	Red Grouse	OD	Wood Sandpiper
Red-breasted	GG	Great Crested Grebe	ED	Red-backed Shrike	WR	Wren
ND   Great Northern Diver   RM   Merganser   VVX   Waxwing	ND	Great Northern Diver	RM	Red-breasted Merganser	WX	Waxwing
GS Great Spotted Woodpecker RQ Red-crested Pochard WY Wryneck	GS		RQ	Red-crested Pochard	WY	Wryneck
NX Great Skua FV Red-footed Falcon YB Yellow-browed Warbler	NX	Great Skua	FV	Red-footed Falcon	YB	
GT Great Tit KT Red Kite YW Yellow Wagtail	GT	Great Tit	KT	Red Kite	YW	
GE Green Sandpiper RL Red-legged Partridge Y. Yellowhammer			RL	Red-legged Partridge	Y.	•

\_\_\_\_\_ Version: 2 46 Issued: April 2018

#### **APPENDIX D: DESK STUDY RESULTS**

#### **ERIC North East Data**

#### Key

Amber and Red Lists - Birds of Conservation Concern 4 (Eaton *et al.* 2015)

LBAP – Northumberland Local Biodiversity Action Plan

NERC - Natural Environment & Rural Communities Act 2006: Section 41 List of Species of Principal Importance

Schedule 1 - Schedule 1 Wildlife and Countryside Act 1981 (as amended)

Annex 1 – Annex 1 of the Birds Directive

#### **Section A**

					Co	nservation Stat	us / Legal Prote	ction	
Species	Scientific name	No. Records	Maximum Count	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Barn Owl	Tyto alba	4	1			Υ		Υ	
Bullfinch	Pyrrhula pyrrhula	1	N/A	Y			Y		
Common Scoter	Melanitta nigra	1	20+		Y		Y	Y	
Corn Bunting	Miliaria calandra	1	N/A		Y	Υ	Y		
Cuckoo	Cuculus canorus	1	N/A		Y	Υ	Y		
Curlew	Numenius arquata	4	6	Y		Υ	Y		
Grasshopper Warbler	Locustella naevia	1	1		Υ	Υ			
Grey Partridge	Perdix perdix	1	N/A		Υ	Υ	Υ		
Hen Harrier	Circus cyaneus	1	N/A		Υ	Υ	Y	Y	Υ
Herring Gull	Larus argentatus	3	12		Υ		Y		
House Sparrow	Passer domesticus	4	27		Υ	Y	Υ		
Lapwing	Vanellus vanellus	10	500+		Υ	Υ	Y		

Version: 2 Issued: April 2018

Marsh Tit	Poecile palustris	1	N/A		Y	Υ	Υ		
Reed Bunting	Emberiza schoeniclus	4	4	Y		Υ	Y		
Skylark	Alauda arvensis	6	20+		Υ	Υ	Y		
Song Thrush	Turdus philomelos	2	3		Y	Y	Υ		
Starling Sturnus vulgaris		6	100+		Y	Υ	Υ		
Yellow Wagtail	Motacilla flava	1	N/A		Y	Y	Y		
Yellowhammer	Emberiza citrinella	1	N/A		Y	Y	Y		
TOTAL – 19 species	•	53		3	15	16	17	3	1

#### Section B

					Со	nservation Sta	tus / Legal Prote	ction	
Species	Scientific name	No. Records	Maximum Count	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Barn Owl	Tyto alba	1	2			Y		Y	
Black-tailed Godwit	Limosa limosa	1	4		Υ		Y	Y	
Bullfinch	Pyrrhula pyrrhula	4	1	Y			Y		
Curlew	Numenius arquata	4	50+	Y		Y	Y		
Dunnock	Prunella modularis	5	50+	Y			Y		
Grey Partridge	Perdix perdix	2	5		Υ	Y	Y		
Grey Wagtail	Motacilla cinerea	1	1		Υ	Y			
Herring Gull	Larus argentatus	3	10		Υ		Y		
House Sparrow	Passer domesticus	6	12		Υ	Υ	Y		
Lapwing	Vanellus vanellus	3	8		Υ	Υ	Y		
Reed Bunting	Emberiza schoeniclus	1	3	Y		Y	Y		
Starling	Sturnus vulgaris	2	100+		Υ	Υ	Y		
Tree Sparrow	Passer montanus	3	1		Υ	Υ	Y		
Yellowhammer	Emberiza citrinella	4	3		Υ	Υ	Y		
TOTAL – 14 species		40		4	9	10	12	2	0

\_\_\_\_\_ Version: 2
48 Issued: April 2018

A1 in Northumberland	
Breeding Bird Survey Report	

### Northumberland & Tyneside Bird Club Data

#### Key

Amber and Red Lists - Birds of Conservation Concern 4 (Eaton et al. 2015)

LBAP – Northumberland Local Biodiversity Action Plan NERC - Natural Environment & Rural Communities Act 2006: Section 41 List of Species of

Principal Importance
Schedule 1 - Schedule 1 Wildlife and Countryside Act 1981 (as amended)
Annex 1 - Annex 1 of the Birds Directive

#### Section A

															Num	ber of	Birds	in Tetr	ad												(	Conserv	ation S	tatus / Leç	gal Protectio	n
Species	Scientific name	Breeding Status	NU10K	NU10L	NU10Q	NU10R	NU10V	NU10W	NZ18T	NZ18U	NZ18Y	NZ18Z	NZ19N	NZ19P	NZ19Q	NZ19R	NZ19S	NZ19T	NZ19U	NZ19V	NZ19W	NZ19X	NZ191	NZ28D	NZ28E	NZ29A	NZ29B	NZ29C	NZ29D	NZ29E	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Barn Owl	Tyto alba	Confirmed											1			N/A	N/A					1 1							1				Υ		Υ	
Black Redstart	Phoenicurus ochruros	Non- breeding				1																										Υ			Υ	
Blackbird	Turdus merula	Confirmed	12	10	16	46	30	26	16	10	16	9	16	6	9	1	6	7	6	5	4	8 3	6	17	3	20	12	7	7	4						
Blackcap	Sylvia atricapilla	Confirmed	4	8	8	3	4	4	9	6	6	5	10	4	2	1	2	4	3			1 1	4	5	1	2	1	2	3							
Black-headed Gull	Chroicocephalus ridibundus	Confirmed		45							1		48	105	5			5	5	2	1	2	7	3					30	2	Υ					
Blue Tit	Cyanistes caeruleus	Confirmed	10	11	5	12	3	6	10	8	4	5	18	19	11	6	4	7	7	10	2	4 2	7	6	1	6	3	2	14	6						
Brambling	Fringilla montifringilla	Non- breeding											1																						Y	
Bullfinch	Pyrrhula pyrrhula	Confirmed		1		2	1	1		3	2		4	3				3	5	1		1 1	1	2		1	1	2	2	1	Υ			Y		
Buzzard	Buteo buteo	Confirmed	4	2	3	2	2	2	3	2			1	1	2	2		2	3			1 2	2	1	1	1	1	1	2	2						
Canada Goose	Branta canadensis	Confirmed	1		2					2			N/A						2				1		33											
Carrion Crow	Corvus corone	Confirmed	17	10	15	11	11	10	4	2	2	28	11	4	22	7	3	5	4	2	3 2	24 3	4	7	10	14	9	7	13	17						
Chaffinch	Fringilla coelebs	Confirmed	26	21	28	32	24	23	8	13	7	9	21	25	7	3	7	10	8	8	15	2 10	10	6	6	24	35	20	23	15					<u> </u>	
Chiffchaff	Phylloscopus collybita	Confirmed	8	12	13	4	4	8	2	6	10	3	13	6	3		6	2	4	1	1	3 4	2	5	1	8	1		6	1						
Coal Tit	Periparus ater	Confirmed	3	2	4	1	4	1	1	1	2	3	6	3		4	3	1	3	1	1	1 4	1	2	3	2	2	1	2	2						
Collared Dove	Streptopelia decaocto	Confirmed				6	5			N/A	2	2	2		3	4	1	1			1	1	2	2	1	7	1	2	1							
Common Crossbill	Loxia curvirostra	Confirmed											1								15	7							2						Y	
Common Gull	Larus canus	Non- breeding											1	18				10					1		11				3		Y					
Common Sandpiper	Actitis hypoleucos	Non- breeding																						1							Y					
Coot	Fulica atra	Confirmed								6			2										2		4	3									<u> </u>	
Cormorant	Phalacrocorax carbo	Non- breeding											1																				Y			
Corn Bunting	Miliaria calandra	Probable											1																			Υ	Υ	Y		
Crane	Grus grus	Non- breeding																											1	1	Υ					Y
Cuckoo	Cuculus canorus	Probable										1	1		1	2			1										1			Υ	Υ	Υ		
Curlew	Numenius arquata	Probable	2	4						3		2	1	1	6	1	1		1		1				1		1	1	1	2		Υ	Υ	Υ		
Dipper	Cinclus cinclus	Confirmed		1			1		1		3			1					1					1							Y					
Dunnock	Prunella modularis	Confirmed	7	2	3	4	2	4	2	3	3	4	6	6	7	1	3	3	2	3	1	2 3	4	5	2	13	2	3	8	3	Υ			Υ	<u> </u>	
Fieldfare	Turdus pilaris	Non- breeding								200			70																1	250		Υ			Y	
Gadwall	Anas strepera	Probable																								2					Υ					
Garden Warbler	Sylvia borin	Confirmed	1					1		1	1		8	2		1		1				1		1		2			1						<u> </u>	

															Mirma	har af	Divdo	in Tatr	d														`anaan	ration Ct	otus / Lo	val Duatantia	
			, ,															in Tetr															onser	ration St	atus / Le	gal Protection	/II
Species	Scientific name	Breeding Status	NU10K	NU10L	NU10Q	NU10R	NU10V	NU10W	NZ18T	NZ18U	NZ18Y	NZ18Z	NZ19N	NZ19P	NZ19Q	NZ19R	NZ19S	NZ19T	NZ19U	NZ19V	NZ19W	NZ19X	NZ19Y	NZ19Z	NZ28D	NZ28E	NZ29A	NZ29B	NZ29C	NZ29D	NZ29E	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Goldcrest	Regulus regulus	Confirmed		1	1	1	1				1	1	7	5				1	1	1		2	2	1	3	2				3							
Golden Plover	Pluvialis apricaria	Non- breeding											128					1													200			Υ			Y
Goldfinch	Carduelis carduelis	Confirmed	5	3	2	4	4	4	7	17	2	8	27	6	2	6	8	3	2	4	2	5	6	3	4	2	13	1	2	11	3						
Goosander	Mergus merganser	Probable									2			2																							
Grasshopper Warbler	Locustella naevia	Probable				1	2						1												1	1							Υ	Υ	Υ		
Great Black-backed Gull	Larus marinus	Non- breeding													1																	Y					
Great Spotted Woodpecker	Dendrocopos major	Confirmed	3	1		1			3	1	1	1	5	2	1			2	2			1	1		4	1	1			2	2						
Great Tit	Parus major	Confirmed	6	4	1	2	3	2	2	1	4	3	13	4	3	2	2	3	3	3	1	5	1	1	9	1	2	3	1	8							
Green Sandpiper	Tringa ochropus	Non- breeding																												2		Y				Υ	
Green Woodpecker	Picus viridis	Possible									1		1												1		1										
Greenfinch	Chloris chloris	Confirmed	8	2	1	10	9	4	2	5	1	6	6	3	5			5	1	2	3	2	5	6	3		11	12	2	3	5						
Grey Heron	Ardea cinerea	Probable					1			4	1		1	1				N/A	1		1			1	1	2	2										
Grey Partridge	Perdix perdix	Confirmed	3					1				2	3	9		4		2						2	2	1	4	3		2	2		Υ	Υ	Υ		
Grey Wagtail	Motacilla cinerea	Confirmed		1			1		4		2	1	2	1			1								5	1				1			Υ	Υ			
Greylag Goose	Anser anser	Possible													2																	Y					
Herring Gull	Larus argentatus	Non- breeding												140	1			1	1	1	5					70							Υ		Υ		
House Martin	Delichon urbicum	Confirmed				6	12		4	5	4	4	18	8		2	10	35			8		1	1	5	N/A	13	3	2	2		Υ		Υ			
House Sparrow	Passer domesticus	Confirmed	24	7	6	87	58	2	12	8	4 2	26	9	12	6	16	14	5	1	3	31	24	5	6	6		30	23	3	53	15		Υ	Υ	Υ		
Jackdaw	Corvus monedula	Confirmed	5	14	10	24	34	20	3	13	14	4	27	14	6	3	9	N/A	3	21	20	1	7	11	16		160	46	10	34	12						
Jay	Garrulus glandarius	Confirmed		2	1		2		2		2	1	2	3					1						4		2			2	2						
Kestrel	Falco tinnunculus	Confirmed			2	1	1	2	2	1	1	1	3	1	1			1	1		1	1		1	1		1			2	1	Υ		Υ			
Kingfisher	Alcedo atthis	Confirmed							1		1																	1				Υ				Y	Y
Lapwing	Vanellus vanellus	Confirmed	4	12	1	4		2	1	3		6	8	2	16	2	1	10	4		4	3	13	6		19	10	1	6	72	17		Υ	Υ	Y		
Lesser Black-backed Gull	Larus fuscus	Confirmed												45				2	2				20							1		Υ					
Lesser Redpoll	Acanthis cabaret	Probable											4							1			5		1	1	2			3			Υ	Υ	Y		
Lesser Whitethroat	Sylvia curruca	Probable			1				1	1		1	1				1					4	1		1	1	1										
Linnet	Linaria cannabina	Confirmed	80	4	1	2	4	3	2	4		7	100	6	4	9	4		1	4	3	4	6	9	11	45	15	12	4	7	4		Υ	Υ	Υ		
Little Grebe	Tachybaptus ruficollis	Confirmed								2	N/A		1											1			1										
Little Owl	Athene noctua	Confirmed			1						1																		1	1							
Long-tailed Tit	Aegithalos caudatus	Confirmed	2	1	2	1	1	1	5		8		4	5					3			2	6		5		1			4	4						
Magpie	Pica pica	Confirmed	7	3	1	2	3	3		1	1	1	3	4	4	2	1	2	2	1	1	3	1	4	2	1	1	1	3	2							
Mallard	Anas platyrhynchos	Confirmed	6	2	2		11			21	3		5	8	13	3			23	7					10	6	7			60		Υ					1
Marsh Tit	Poecile palustris	Confirmed	2				2		2		2		3	2		4			3														Υ	Υ	Y		
Meadow Pipit	Anthus pratensis	Confirmed		5			4			1		8	2		1	8	1				1				4	6	3	N/A				Υ					
Mistle Thrush	Turdus viscivorus	Confirmed	1	2	2		1	1	3	2		2	7		1	1	1	2	1				1		1		2			2			Υ	Y			
Moorhen	Gallinula chloropus	Confirmed	1	2	2		1				1		3	2	2									2	2	2	1										
Mute Swan	Cygnus olor	Confirmed											6	2										2		4			2			Υ					
Nuthatch	Sitta europaea	Confirmed	1	1		1					7	1	6	3	2				1											2							1
Oystercatcher	Haematopus ostralegus	Confirmed	1				1			1			3		4	2			1	1	1			1		3	2			2	4	Y					

															Nun	nber of	f Birds	s in Tet	rad													(	Conserv	vation St	atus / Le	gal Protection	on
Species	Scientific name	Breeding Status	NU10K	NU10L	NU10Q	NU10R	NU10V	NU10W	NZ18T	NZ18U	NZ18Y	NZ18Z	NZ19N	NZ19P	NZ19Q	NZ19R	NZ19S	NZ19T	NZ19U	NZ19V	NZ19W	N719X	NZ19Y	NZ19Z	NZ28D	NZ28E	NZ29A	NZ29B	NZ29C	NZ29D	NZ29E		Red List		NERC	Schedule 1	
Peregrine	Falco peregrinus	Non- breeding					1															1												Υ		Y	Y
Pheasant	Phasianus colchicus	Confirmed	13	9	7	6	4	5	8	2		4	18	4	11	3	3	6	4	6	5	1	10	5		4	19	6	4	7	11						
Pied Flycatcher	Ficedula hypoleuca	Probable						1																									Υ	Υ			
Pied Wagtail	Motacilla alba yarrellii	Confirmed	3	2	2	3	1	2		2	1	1	44	2	1		1	3	1	2	1	1	2	2	1	2	2	1	1	1	1						
Quail	Coturnix coturnix	Probable									1					1	1					1							1			Y				Y	
Raven	Corvus corax	Non- breeding																				1															
Red-legged Partridge	Alectoris rufa	Probable	3	1			2	1		5		5	2	2	2			1								1	4	2	3	2	1						
Redstart	Phoenicurus phoenicurus	Confirmed	1	3					1	1			2	2	1		1		1				1	1								Y					
Redwing	Turdus iliacus	Non- breeding								1			4																				Υ			Y	
Reed Bunting	Emberiza schoeniclus	Confirmed	2	1			2	1		1		1	3			4		4				2	3	2	5	4		2	4			Y		Υ	Υ		
Robin	Erithacus rubecula	Confirmed	10	23	13	15	7	12	3	10	13	4	8	6	7	3	8	5	6	2	1	2	3	2	5	1	9	5	1	6	1						
Rock Dove / Feral Pigeon	Columba livia	Probable	2	4			6	2					2	12		2	4		1	10	19	5		5			13	1		1							
Rook	Corvus frugilegus	Confirmed		17		N/A	7		100	6	20	5	4	18	42	5	N/A	5		45	50		20	5	120	18	160	61	3	12	16						
Sand Martin	Riparia riparia	Confirmed					15						3	2										2	3												
Sandwich Tern	Sterna sandvicensis	Non- breeding					1																									Y		Υ			Y
Sedge Warbler	Acrocephalus schoenobaenus	Probable					2		1				1			1										2	1										
Shelduck	Tadorna tadorna	Probable																												2		Y		Υ			
Siskin	Spinus spinus	Confirmed				2					8		20	3				2												2							
Skylark	Alauda arvensis	Confirmed	2	7	2	3	2	8	1	3	1	6	8	1	5	9	2	6	3	3	4	15	5 5	8	5	13	4	3	11	6	16		Υ	Υ	Y		
Song Thrush	Turdus philomelos	Confirmed	1	7	7	5	4	6	3	3	4	3	5	6	2		3	2	3	1		5	4	2	3	2	6	2		1			Υ	Υ	Υ		
Sparrowhawk	Accipiter nisus	Confirmed	1		1	1	1		1		1		1		1				1						1		N/A			1							
Spotted Flycatcher	Muscicapa striata	Confirmed			1	N/A	1		2		1	1	4	2						1			1							2			Υ	Y	Y		
Starling	Sturnus vulgaris	Confirmed		29	9	40	16	3	2	2	1	22	13	10	1		4	2	1		1	6	1	5	2	12	9	N/A	3	1	1		Y	Υ	Υ		
Stock Dove	Columba oenas	Probable	1								2		1	1													4			2	2	Y					
Swallow	Hirundo rustica	Confirmed	18	14	13	19	16	10	12	10	4	8	10	10	30	10	9	5	2	12			7 9	10	7	1	19	18	11	5	12			Υ			
Swift	Apus apus	Probable				1	6	3	55	1	1		2		3			3	1		2				100	2	3		13	1		Y		Y			
Tawny Owl	Strix aluco	Confirmed							N/A	N/A	1		1		N/A			1								N/A						Y					
Tree Pipit	Anthus trivialis	Possible																										1					Y	Y	Y		
Tree Sparrow	Passer montanus	Confirmed	-			2	1				2		4	11			4		4	4	4	2	5	3	1		1	8	8	10	5		Y	Y	Y		
Treecreeper	Certhia familiaris	Confirmed				1			2		1		1	1				1	1						1	1											
Tufted Duck	Aythya fuligula	Confirmed Non-											2			-										7	5										
Wheatear	Oenanthe oenanthe	breeding		3									1																								
Whimbrel	Numenius phaeopus	Non- breeding											2					1															Υ			Y	
White Stork	Ciconia ciconia	Non- breeding																					1														Y
White-tailed Eagle	Haliaeetus albicilla	Non- breeding																			1												Υ			Y	Υ
Whitethroat	Sylvia communis	Confirmed	3		4	4	3	6	2	7	1	3	4	4	1	2	4	2	1	1		3	2	4	1	1	5		5	3	4						
Whooper Swan	Cygnus cygnus	Non- breeding																													13	Y				Y	Y
Wigeon	Anas penelope	Non- breeding											1																			Υ					

															Num	ber of	Birds	in Tetı	rad												(	Conserv	ation St	atus / Le	gal Protectio	n
Species	Scientific name	Breeding Status	NU10K	NU10L	NU10Q	NU10R	NU10V	NU10W	NZ18T	NZ18U	NZ18Y	NZ18Z	NZ19N	NZ19P	NZ19Q	NZ19R	NZ19S	NZ19T	NZ19U	NZ19V	NZ19W	NZ19X	NZ19Y	NZ19Z	NZ28E	NZ29A	NZ29B	NZ29C	NZ29D	NZ29E	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Willow Tit	Poecile montana	Probable											2			2					:	2							1			Υ	Υ	Υ		
Willow Warbler	Phylloscopus trochilus	Confirmed	14	12	8	3	10	6	1	11	2	3	19	17	2	4	4	9	3	3		1 6	6 5	5 1	1	7		3	2		Υ		Υ			
Woodcock	Scolopax rusticola	Probable									1					2													1			Υ	Υ			
Woodpigeon	Columba palumbus	Confirmed	26	43	26	39	30	35	18	21	6	7	27	18	44	18	19	10	19	27 2	24 1	0 1	2 1	9 14	30	51	12	13	24	62						
Wren	Troglodytes troglodytes	Confirmed	5	10	12	7	8	11		10	13	3	12	11	6	3	5	6	6	2	1 :	2 (	6 6	16	3	10	4	4	3	5						
Yellow Wagtail	Motacilla flava	Probable									1	2								:	2				1							Υ	Υ	Υ		
Yellowhammer	Emberiza citrinella	Confirmed	7	1	5	1		11	7	8	3	6	15	6	2	7	1	6	2	7 :	2 4	4	7 5	2	2	5	6	10	10			Υ	Υ	Υ		
TOTAL – 113 species			48	48	41	46	56	40	45	53	59	47	88	62	49	43	40	51	54	36 4	10 4	6 4	6 5	57	55	59	40	39	68	40	30	29	35	23	13	8

#### Section B

													Nun	nber c	of Bird	ls in T	etrad												Conserv	ation St	atus / Le	gal Protection	n
Species	Scientific name	Breeding Status	NU11P	NU11S	NU11T	NU11U	N N	NU11X	NII17	NU11Z	NU12K	NU12L	NU12M	NU12Q	NU12R	NU12S	NU12V	NU12X	A FCI IN	NU21B	NU21C	NU21D	NU21E	NU21F	NU21G	NU21H	NU22A	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Barn Owl	Tyto alba	Confirmed			N/A		1			1					1						1	N/A	1	1	N/A					Y		Υ	
Blackbird	Turdus merula	Confirmed	1	16	1	5 1	5 54	13	4	17	4	3	7	12	20	29	14 27	25	23	13	7	8	12	12	21	13	7						
Blackcap	Sylvia atricapilla	Confirmed		1	N/A	1 3	2	2		4	1	1		2	13	5	12	11	1	1		3	2	5	5	6	2						
Black-headed Gull	Chroicocephalus ridibundus	Possible	1	50	1	5	43		1	4	2	37	4	1	2	1	5 3		18	37			120	11	8	2		Υ					
Blue Tit	Cyanistes caeruleus	Confirmed	3	11	6	4 6	14	13	8	10	1		1	7	8	3	5 6	3	4	8	7	3	5	13	14	4	7						
Brambling	Fringilla montifringilla	Non- breeding		2																				5								Y	
Bullfinch	Pyrrhula pyrrhula	Probable						1		1						1		1	1		1		1	2		1		Y			Υ		
Buzzard	Buteo buteo	Confirmed	5	8	1	1	5	3	2	3	3	2	3	2	1		2		3	2	2	2	1	4	3	4	2						
Carrion Crow	Corvus corone	Confirmed	3	20	1	6 3	3	4	15	3	5	3	2	3	8	5	4 7	7	7	2		5	2	2	15	6	6						
Chaffinch	Fringilla coelebs	Confirmed	10	46	15	18 12	2 19	15	5	29	12	36	22	47	24	20	35 33	28	15	29	15	22	15	26	41	32	41						
Chiffchaff	Phylloscopus collybita	Confirmed	3	6	3	1 12	2 17	5	2	7	4	1	1	2	9	4	6 7	12	8	17	4	5	2	6	9	6	5						
Coal Tit	Periparus ater	Confirmed	1	20	1	4 3	3	8	8	2	1	7	7		3	6	7 8	2	4	2	2	2	2	3	6	3	6						
Collared Dove	Streptopelia decaocto	Confirmed			1	2	6	1	1	3		2	2	6	1	6	2 9	1	1	1	1	2	2	4	4	2	1						
Common Crossbill	Loxia curvirostra	Confirmed										16				1																Υ	
Common Gull	Larus canus	Non- breeding	8	1		9						1																Y					
Common Sandpiper	Actitis hypoleucos	Probable					1													2					2			Y					
Coot	Fulica atra	Confirmed				1				1							4	7					1										
Cormorant	Phalacrocorax carbo	Non- breeding					2																			2				Y			
Cuckoo	Cuculus canorus	Possible		1																									Υ	Υ	Υ		
Curlew	Numenius arquata	Confirmed	1	4		5					1	1		1						2				58	9				Υ	Υ	Υ		
Dipper	Cinclus cinclus	Confirmed		3			1																	1				Y					
Dunlin	Calidris alpina	Non- breeding																						2				Υ		Y			
Dunnock	Prunella modularis	Confirmed	1	5	2	2 10	7	3	1	4	1	3	5	2	4	10	3 5	3	8	4	5	5	4	9	10	4	7	Y			Υ		
Fieldfare	Turdus pilaris	Non- breeding		100		1																							Y			Y	

																	ds in T														Conser	vation St	atus / Le	gal Protection	n
Species	Scientific name	Breeding Status	NU11P	NU11S	NU11T	NU11U	NU11V	NU11W	NU11X	NU11Y	NU11Z	NU12K	NU12L	NU12M	NU12Q	NU12R	NU12S	NU12V	NU12W	NU12X	NU21A	NU21B	NU21C	NU21D	NU21E	NU21F	NU21G	NU21H	NU22A	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Fulmar	Fulmarus glacialis	Confirmed																										10		Υ		Υ			
Garden Warbler	Sylvia borin	Probable				1		1			3			1	1			2					1			1		1	1						
Goldcrest	Regulus regulus	Confirmed	1	13			3	3	3	1	2		1	1			2			3	5					1		2	1						
Golden Plover	Pluvialis apricaria	Non- breeding																							130							Υ			Υ
Goldfinch	Carduelis carduelis	Confirmed	2	2	5	5		5	14	12	3	2	7	3	6	12	10	6	6	14	12	10	9	17	15	8	22	12	6						
Goosander	Mergus merganser	Confirmed		2																						6									
Grasshopper Warbler	Locustella naevia	Possible				1																				2					Υ	Υ	Υ		
Great Black-backed Gull	Larus marinus	Non- breeding																										3		Υ					
Great Spotted Woodpecker	Dendrocopos major	Confirmed		6	1		1	1	2		3			1	1	3	5	1	7	1	2	1	1	1	2	2	1	1	1						
Great Tit	Parus major	Confirmed		10	1		3	4	4	1	1				1	3	1	1	5	1	3	4		2	1	4	4	5	8						
Green Sandpiper	Tringa ochropus	Non- breeding																										1		Υ				Y	
Green Woodpecker	Picus viridis	Possible		5								1								1						1									
Greenfinch	Chloris chloris	Confirmed	1	5	7	5	3	11	14		2	1		1	9	1	6	2	4	16	3	3	5	6	7	12	5	4	15						
Grey Heron	Ardea cinerea	Possible		3				1	1													2			1	1	3		1						
Grey Partridge	Perdix perdix	Confirmed	2			2	2	2		6	1			1	1		1	2			2	2	9	7		2	2	1	2		Y	Υ	Υ		
Grey Wagtail	Motacilla cinerea	Confirmed		12				3								4	1					1				2	1				Υ	Υ			
Greylag Goose	Anser anser	Confirmed							1		2					10				2		1								Υ					
Hen Harrier	Circus cyaneus	Possible												1																	Υ	Υ	Υ	Y	Υ
Herring Gull	Larus argentatus	Probable	1			3		1	6			1	340	3		9			3		4					6		7	1		Υ		Υ		
House Martin	Delichon urbicum	Confirmed	10	10	3	18		11	34	9	22	2		16	14		6		2	N/A	2	6			16	5		9	6	Y		Υ			
House Sparrow	Passer domesticus	Confirmed	38			29	8	79	20		18	3	8	8	13	11	60	8	28	13	12	5	22	32	38	44	10	10	8		Y	Υ	Υ		<u> </u>
Jackdaw	Corvus monedula	Confirmed	19	79	14	17	8	50	37	2	8	26	15	5	28	44	81	2	17	10	18	19	14	18	44	15	17	31	27						
Jay	Garrulus glandarius	Probable		4				1	2		1								1				1					1							<u> </u>
Kestrel	Falco tinnunculus	Confirmed	2	4	1	1	1	1	7		1	2			1		1				1	2	1	2		1	1	1	1	Y		Υ			
Lapwing	Vanellus vanellus	Confirmed	2	3	2	6	7		2	3	11	1	7	5	1	20		3		1	5	8	5	3	17	1	10	2	7		Y	Υ	Υ		
Lesser Black-backed Gull	Larus fuscus	Non- breeding	2						2			2	11	4		5			1							1		3		Υ					
Lesser Redpoll	Acanthis cabaret	Confirmed				4					6		1	2																	Υ	Υ	Υ		
Lesser Whitethroat	Sylvia curruca	Probable	1														1				1				2										<u> </u>
Linnet	Linaria cannabina	Confirmed	13	45	1	5	55		6	2	4	9	12	14	6	5	2	4	3	2	3	3	5	12	12	18	10	10	2		Υ	Υ	Υ		
Little Egret	Egretta garzetta	Non- breeding																								1									Υ
Little Grebe	Tachybaptus ruficollis	Confirmed				1													2	1									2						
Little Owl	Athene noctua	Confirmed	1			1																				1									
Long-tailed Tit	Aegithalos caudatus	Confirmed		1				3			4					3	2				8	3						1							
Magpie	Pica pica	Confirmed					2	1				1	1		2						3	1		1		3	1	1	1						
Mallard	Anas platyrynchos	Confirmed	4	26		5	2	10	5		6	1	2		2	13			17	45	3	14				5	2	2	7	Υ					
Meadow Pipit	Anthus pratensis	Confirmed	10	32		6						17	4	11							1					1				Y					
Mistle Thrush	Turdus viscivorus	Confirmed		30	1			1	2				1	8	2	4	3		4	5	1	2				4	1	2	2		Υ	Υ			
Moorhen	Gallinula chloropus	Confirmed	2	4		2		3			1				1	4	1		4	6		3			5	2		1	2						
Mute Swan	Cygnus olor	Confirmed						2											2	2		2				2	_	2		Y					

													Nun	nber c	of Birds	s in T	etrad _												Conserv	ation St	atus / Le	gal Protection	n
Species	Scientific name	Breeding Status	NU11P	NU11S	NU11T	NU11U	NU11W	NU11X	NU11Y	NU11Z	NU12K	NU12L	NU12M	NU12Q	NU12R	NU12S	NU12V	NU12X	NU21A	NU21B	NU21C	NU21D	NU21E	NU21F	NU21G	NU21H	NU22A	Amber List	Red List		NERC	Schedule 1	Annex 1
Night-heron	Nycticorax nycticorax	Non- breeding																						1	1								Υ
Nuthatch	Sitta europaea	Confirmed		2		1	6	6		2						1	3	2		1				1		2	2						
Oystercatcher	Haematopus ostralegus	Confirmed	1	4	2	2	1	2	2	2	2	4		2	1			2		7	1		3	2	4	2		Υ					
Pheasant	Phasianus colchicus	Confirmed	2	50	6	5 6	6	8	4	7	3	7	4	4	11	11	9 8	8	5	11	2	10	2	3	13	11	12						
Pied Wagtail	Motacilla alba yarrellii	Confirmed	2	5	2	2 1	2			1	1	3	2	2	2	1			1		1	1	1	2	1	2	1						
Quail	Coturnix coturnix	Probable				2							2					3						1				Y				Υ	
Raven	Corvus corax	Non- breeding															2																
Red Grouse	Lagopus lagopus	Non- breeding		17																								Y			Υ		
Red-legged Partridge	Alectoris rufa	Confirmed	2			2					2	5	2	1			1	2		1				2									
Redshank	Tringa totanus	Non-																						110				Y		Y			
Redstart	Phoenicurus phoenicurus	breeding Probable		2														1										Y		-			
Reed Bunting	Emberiza schoeniclus	Confirmed	2			9	1	2		1	2	1		2	1		2	!		1		1	1	3				Y		Y	Y		
Reed Warbler	Acrocephalus scirpaceus	Probable					+ '			'		<u>'</u>			-					'		'	'	1				'		'	'		<del>                                     </del>
Robin	Erithacus rubecula	Confirmed	1	12	6	5 11	3	3	4	8	2	5	5	6	10	10	9 12	19	6	2	2	3	2	15	6	2	9						
Rock Dove / Feral	Columba livia	Confirmed	9	1-		3 6	15	3	<u> </u>	15	_	8	2	2	14	3	4 5				14	18	_	2	3	4	5						
Pigeon Rook	Corvus frugilegus	Confirmed	5	20	1	35 15	120	12		64	41	281	17	30	50	10	4 50	1	94	46	19	84	22	37	9	12	56						
Sand Martin	Riparia riparia	Confirmed		23			35	2			2						5	1	12					20		20							
Sedge Warbler	Acrocephalus schoenobaenus	Confirmed				3 1		3			1						1			1	1		1	2		2	N/A						
Shelduck	Tadorna tadorna	Confirmed								1	2	2		5									2			2		Y		Υ			
Siskin	Spinus spinus	Probable		2			8		3				1				5		1					2									
Skylark	Alauda arvensis	Confirmed	4	1	5	28 7			2	6	21	10	22	8	5	2	10 8	3	10	3	1	5	4	2	5	5	11		Υ	Υ	Υ		
Snipe	Gallinago gallinago	Probable	3									2																Y		Y			
Song Thrush	Turdus philomelos	Confirmed	1	8	2	1 5	8	3	2	4	2	2		2	3	26	4 9	14	3	6	1	2	6	3	5	2	5		Υ	Y	Υ		
Sparrowhawk	Accipiter nisus	Confirmed		1			1					1						2	2					1	1	1							
Spotted Flycatcher	Muscicapa striata	Confirmed	1	1			1	1					1			2		3			2								Υ	Υ	Υ		
Starling	Sturnus vulgaris	Confirmed	4	200	2	10 14	26	5		2	1	1		3	41	12	3	4	4	4			14	6	2	1	15		Υ	Υ	Υ		
Stock Dove	Columba oenas	Confirmed		5			1	4	4							2		2		2	1			2	1	3		Υ					
Stonechat	Saxicola rubicola	Confirmed		4							1																						
Swallow	Hirundo rustica	Confirmed	6	8	7	42 10	23	75	8	13	10	14	16	9	15	20	10 18	19	32	2	40	25	38	8	13	12	6			Υ			
Swift	Apus apus	Confirmed		9		2	45	12									2		6	6		1	9	8	1			Y		Υ			
Tawny Owl	Strix aluco	Confirmed		1																		N/A	1	1	_			Y					
Teal	Anas crecca	Probable					6													2								Y					
Tree Sparrow	Passer montanus	Confirmed				8		1		2				1		1			9	1		7	2	8	4	4	2		Υ	Υ	Υ		
Treecreeper	Certhia familiaris	Probable		2			1			1						1	1	1		1						2							
Tufted Duck	Aythya fuligula	Confirmed		5		1	5							1	1		6	1		3				1		8	5						
Wheatear	Oenanthe oenanthe	Confirmed	4			3					1	2	4	3						1													
Whimbrel	Numenius phaeopus	Non- breeding																						1					Υ			Y	
Whitethroat	Sylvia communis	Confirmed	1		2	3 2	2	2	5	2	2		2		6	3	4 4	4	7	4	1	6	4	2	3	1	1						
Willow Tit	Poecile montana	Possible		1					1																				Υ	Υ	Υ		

														Nun	nber c	of Bird	ds in T	etrad												C	onserv	ation Sta	atus / Leç	gal Protection	n
Species	Scientific name	Breeding Status	NU11P	NU11S	NU11T	NU11U	NU11V	NU11W	NU11X	NU11Y	NU11Z	NU12K	NU12L	NU12M	NU12Q	NU12R	NU12S	NU12V	NU12W	NU12X	NU21A	NU21B	NU21C	NU21D	NU21E	NU21F	NU21G	NU21H	NU22A	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Willow Warbler	Phylloscopus trochilus	Confirmed	10	6	1	3	7	1	1		10	9	3	6	3	10	12	2	8	2	4	2	3	2	4	3	2	13	5	Υ		Υ			
Woodcock	Scolopax rusticola	Possible		1																											Υ	Υ			
Woodpigeon	Columba palumbus	Confirmed	13	41	26	23	33	34	106	41	42	12	344	17	22	35	30	44	38	36	28	154	38	27	80	64	46	31	26						
Wren	Troglodytes troglodytes	Confirmed	2	11	8	7	20	25	5	6	17	11	1	8	13	13	15	24	10	16	6	12	3	4	4	27	6	9	14						
Yellowhammer	Emberiza citrinella	Confirmed	4		6	13	7		2	7	4	7	7	2	11	4	2	6	7	4	10	6	5	5	5	10	13	7	9		Υ	Υ	Υ		
TOTAL - 107 specie	es	•	48	63	36	54	38	60	50	30	53	46	46	44	47	45	47	36	46	50	49	58	38	39	47	77	49	62	48	30	22	33	21	8	4

#### **APPENDIX E: BREEDING BIRD SURVEY RESULTS**

#### Key

Amber and Red Lists - Birds of Conservation Concern 4 (Eaton *et al.* 2015)

LBAP – Northumberland Local Biodiversity Action Plan

NERC - Natural Environment & Rural Communities Act 2006: Section 41 List of Species of Principal Importance

Schedule 1 - Schedule 1 Wildlife and Countryside Act 1981 (as amended)

Annex 1 – Annex 1 of the Birds Directive

#### **Section A**

				Nu	umber of	Birds			Conser	vation Sta	tus / Legal	Protection	
Species	Scientific name	Breeding Status	Visit 1	Visit 2	Visit 3	Visit 4	Max	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Blackbird	Turdus merula	Confirmed	107	95	176	29	176						
Blackcap	Sylvia atricapilla	Confirmed		1	58	20	58						
Black-headed Gull	Chroicocephalus ridibundus	Possible	59	26	194	7	194	Y					
Blue Tit	Cyanistes caeruleus	Confirmed	94	106	96	42	106						
Bullfinch	Pyrrhula pyrrhula	Probable	8	6	7	2	8	Y			Υ		
Buzzard	Buteo buteo	Confirmed	9	11	10	5	11						
Canada Goose	Branta canadensis	Confirmed	1	1	1		1						
Carrion Crow	Corvus corone	Confirmed	68	115	93	33	115						
Chaffinch	Fringilla coelebs	Confirmed	186	216	265	39	265						
Chiffchaff	Phylloscopus collybita	Probable		103	95	24	103						
Coal Tit	Periparus ater	Probable	31	23	33	12	33						
Collared Dove	Streptopelia decaocto	Probable	8	11	14	2	14						
Common Crossbill	Loxia curvirostra	Probable	12		1		12					Y	
Common Gull	Larus canus	Non-breeding	29	24	1	50	50	Υ					

				No	umber of	Birds			Conser	vation Sta	tus / Legal	Protection	
Species	Scientific name	Breeding Status	Visit 1	Visit 2	Visit 3	Visit 4	Max	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Cuckoo	Cuculus canorus	Possible			2		2		Υ	Υ	Y		
Curlew	Numenius arquata	Probable	8	17	3	4	17		Υ	Υ	Y		
Dunnock	Prunella modularis	Confirmed	75	56	98	50	98	Y			Y		
Feral Pigeon	Columba livia	Probable	4		39	1	39						
Fieldfare	Turdus pilaris	Non-breeding	13	8			13		Υ			Y	
Garden Warbler	Sylvia borin	Possible			5		5						
Goldcrest	Regulus regulus	Probable	15	20	41	9	41						
Golden Plover	Pluvialis apricaria	Non-breeding		95			95			Υ			Y
Goldfinch	Carduelis carduelis	Confirmed	31	82	84	38	84						
Goosander	Mergus merganser	Non-breeding			2		2						
Great Spotted Woodpecker	Dendrocopos major	Confirmed	8	4	3	6	8						
Great Tit	Parus major	Confirmed	49	35	38	10	49						
Green Woodpecker	Picus viridis	Possible		1			1						
Greenfinch	Chloris chloris	Probable	21	16	33	8	33						
Grey Heron	Ardea cinerea	Possible	2		1	1	2						
Grey Partridge	Perdix perdix	Probable	6	7	3		7		Υ	Υ	Y		
Grey Wagtail	Motacilla cinerea	Possible	6				6		Υ	Υ			
Greylag Goose	Anser anser	Non-breeding			2	2	2	Y					
Herring Gull	Larus argentatus	Non-breeding	48	21	8	2	48		Υ		Y		
House Martin	Delichon urbicum	Confirmed			52	22	52	Y		Υ			
House Sparrow	Passer domesticus	Confirmed	73	139	155	74	155		Υ	Υ	Y		
Jackdaw	Corvus monedula	Confirmed	180	283	264	125	283						
Jay	Garrulus glandarius	Probable	2	4	4	2	4						
Kestrel	Falco tinnunculus	Confirmed	4	5	3	1	5	Y		Υ			
Kingfisher	Alcedo atthis	Possible			1		1	Υ				Y	Υ

Version: 2 Issued: April 2018

				N	umber of	Birds			Conser	vation Sta	tus / Legal	Protection	
Species	Scientific name	Breeding Status	Visit 1	Visit 2	Visit 3	Visit 4	Max	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Lapwing	Vanellus vanellus	Confirmed	43	30	28	19	43		Y	Υ	Υ		
Lesser Black-backed Gull	Larus fuscus	Non-breeding	1	8	16		16	Y					
Lesser Redpoll	Acanthis cabaret	Probable		1	17	2	17		Y	Υ	Υ		
Lesser Whitethroat	Sylvia curruca	Probable			3	4	4						
Linnet	Linaria cannabina	Confirmed	11	42	87	27	87		Y	Υ	Υ		
Long-tailed Tit	Aegithalos caudatus	Confirmed	12	7	14	1	14						
Magpie	Pica pica	Probable	18	11	22	5	22						
Mallard	Anas platyrynchos	Probable	22	16	25		25	Υ					
Marsh Tit	Poecile palustris	Possible	1		1		1		Y	Υ	Υ		
Meadow Pipit	Anthus pratensis	Probable	10	40	5	9	40	Y					
Mistle Thrush	Turdus viscivorus	Confirmed	17	6	5	5	17		Y	Υ			
Moorhen	Gallinula chloropus	Probable	1		2		2						
Mute Swan	Cygnus olor	Non-breeding	3				3	Y					
Nuthatch	Sitta europaea	Probable		1	4		4						
Oystercatcher	Haematopus ostralegus	Probable		6	7	2	7	Y					
Pheasant	Phasianus colchicus	Probable	72	75	47	6	75						
Pied Wagtail	Motacilla alba yarrellii	Confirmed	25	35	34	11	35						
Pink-footed Goose	Anser brachyrhynchus	Non-breeding	2	1			2	Y		Υ			
Red-legged Partridge	Alectoris rufa	Probable	18	6	11		18						
Redstart	Phoenicurus phoenicurus	Confirmed			4	2	4	Y					
Redwing	Turdus iliacus	Non-breeding	209	2			209		Υ			Υ	
Reed Bunting	Emberiza schoeniclus	Probable	11	4	5	3	11	Y		Υ	Υ		
Robin	Erithacus rubecula	Confirmed	123	118	152	30	152						
Rook	Corvus frugilegus	Confirmed	48	172	301	67	301						
Sand Martin	Riparia riparia	Non-breeding			1		1						

Version: 2 Issued: April 2018

				N	umber of	Birds			Conserv	vation Stat	tus / Legal	Protection	
Species	Scientific name	Breeding Status	Visit 1	Visit 2	Visit 3	Visit 4	Max	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Sedge Warbler	Acrocephalus schoenobaenus	Possible			1		1						
Shelduck	Tadorna tadorna	Non-breeding		2			2	Υ		Υ			
Siskin	Spinus spinus	Probable	11	15	16	3	16						
Skylark	Alauda arvensis	Confirmed	52	87	103	9	103		Υ	Υ	Υ		
Song Thrush	Turdus philomelos	Confirmed	41	33	58	15	58		Υ	Υ	Υ		
Sparrowhawk	Accipiter nisus	Possible		1		1	1						
Spotted Flycatcher	Muscicapa striata	Confirmed			2	2	2		Y	Υ	Y		
Starling	Sturnus vulgaris	Confirmed	194	74	192	35	194		Y	Υ	Υ		
Stock Dove	Columba oenas	Probable		12	8	10	12	Y					
Swallow	Hirundo rustica	Confirmed		1	186	72	186			Υ			
Swift	Apus apus	Possible			16	23	23	Y		Υ			
Tree Pipit	Anthus trivialis	Possible			1		1		Y	Υ	Υ		
Tree Sparrow	Passer montanus	Confirmed	41	11	57	24	57		Y	Υ	Y		
Treecreeper	Certhia familiaris	Probable	6	4	8	3	8						
Whitethroat	Sylvia communis	Confirmed			58	14	58						
Willow Tit	Poecile montana	Probable		2	2	1	2		Υ	Υ	Υ		
Willow Warbler	Phylloscopus trochilus	Probable		4	55	10	55	Y		Υ			
Woodcock	Scolopax rusticola	Possible	1				1		Y	Υ			
Woodpigeon	Columba palumbus	Confirmed	330	574	372	99	574						
Wren	Troglodytes troglodytes	Confirmed	68	102	129	43	129						
Yellow Wagtail	Motacilla flava	Probable			5	4	5		Y	Υ	Y		
Yellowhammer	Emberiza citrinella	Probable	101	65	84	31	101		Y	Υ	Υ		
TOTAL – 86 species	•		58	62	76	61	86	20	23	29	21	4	2

 Version: 2

 59
 Issued: April 2018

#### **Section B**

				No	umber of	Birds			Conser	vation Stat	tus / Legal	Protection	
Species	Scientific name	Breeding Status	Visit 1	Visit 2	Visit 3	Visit 4	Max	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Barn Owl	Tyto alba	Probable	1				1			Υ		Y	
Blackbird	Turdus merula	Confirmed	81	37	99	2	99						
Blackcap	Sylvia atricapilla	Probable		6	34		34						
Black-headed Gull	Chroicocephalus ridibundus	Non-breeding	1124	37	43	1	1124	Υ					
Blue Tit	Cyanistes caeruleus	Confirmed	61	41	50	2	61						
Brambling	Fringilla montifringilla	Non-breeding		1			1					Υ	
Bullfinch	Pyrrhula pyrrhula	Confirmed	2	1	5		5	Υ			Υ		
Buzzard	Buteo buteo	Probable	8	14	9		14						
Canada Goose	Branta canadensis	Non-breeding		1			1						
Carrion Crow	Corvus corone	Confirmed	46	16	54	2	54						
Chaffinch	Fringilla coelebs	Probable	233	187	201	3	233						
Chiffchaff	Phylloscopus collybita	Confirmed	1	58	44	3	58						
Coal Tit	Periparus ater	Probable	1	23	6		23						
Collared Dove	Streptopelia decaocto	Probable	3	6	12		12						
Common Crossbill	Loxia curvirostra	Possible		1	1		1					Υ	
Common Gull	Larus canus	Non-breeding	3	24		4	24	Υ					
Curlew	Numenius arquata	Possible	6		3		6		Y	Υ	Υ		
Dunnock	Prunella modularis	Probable	46	69	71	4	71	Υ			Υ		
Feral Pigeon	Columba livia	Probable	3	36	5		36						
Fieldfare	Turdus pilaris	Non-breeding	39		1		39		Υ			Υ	
Gadwall	Anas strepera	Probable		4	1		4	Y					
Garden Warbler	Sylvia borin	Probable			7	1	7						
Goldcrest	Regulus regulus	Probable	6	10	11	2	11						
Golden Plover	Pluvialis apricaria	Non-breeding		3			3			Υ			Υ

Version: 2 Issued: April 2018

				N	umber of	Birds			Conser	vation Sta	tus / Legal	Protection	
Species	Scientific name	Breeding Status	Visit 1	Visit 2	Visit 3	Visit 4	Max	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Goldfinch	Carduelis carduelis	Confirmed	2	58	72	2	72						
Great Black-backed Gull	Larus marinus	Non-breeding		1	3		3	Υ					
Great Spotted Woodpecker	Dendrocopos major	Probable	2	2	2		2						
Great Tit	Parus major	Confirmed	15	31	22	2	31						
Greenfinch	Chloris chloris	Probable	6	23	28		28						
Grey Heron	Ardea cinerea	Possible	1				1						
Grey Partridge	Perdix perdix	Probable	6	2	5	1	6		Y	Υ	Υ		
Grey Wagtail	Motacilla cinerea	Confirmed		4	3		4		Y	Υ			
Greylag Goose	Anser anser	Confirmed	45	9	9		45	Y					
Herring Gull	Larus argentatus	Non-breeding	27	188	262		262		Y		Υ		
House Martin	Delichon urbicum	Confirmed	1	2	66		66	Y		Υ			
House Sparrow	Passer domesticus	Confirmed	79	76	55		79		Y	Υ	Υ		
Jackdaw	Corvus monedula	Confirmed	76	60	107		107						
Jay	Garrulus glandarius	Possible	1		3		3						
Kestrel	Falco tinnunculus	Probable	2		3	1	3	Y		Υ			
Lapwing	Vanellus vanellus	Confirmed	136	90	93	1	136		Y	Υ	Υ		
Lesser Black-backed Gull	Larus fuscus	Non-breeding	2	15	55	3	55	Y					
Lesser Redpoll	Acanthis cabaret	Probable			18		18		Y	Υ	Υ		
Linnet	Linaria cannabina	Probable	283	85	58		283		Υ	Υ	Υ		
Long-tailed Tit	Aegithalos caudatus	Probable	7	4	7		7						
Magpie	Pica pica	Possible				1	1						
Mallard	Anas platyrynchos	Probable	72	44	44		72	Υ					
Meadow Pipit	Anthus pratensis	Probable	4	46	36		46	Υ					
Mistle Thrush	Turdus viscivorus	Confirmed	4	13	12	2	13		Y	Υ			
Moorhen	Gallinula chloropus	Probable	6	3	2		6						

Version: 2 Issued: April 2018

	Scientific name	Breeding Status	Number of Birds					Conservation Status / Legal Protection					
Species			Visit 1	Visit 2	Visit 3	Visit 4	Max	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Mute Swan	Cygnus olor	Possible	4	1			4	Y					
Oystercatcher	Haematopus ostralegus	Probable	5	16	21	1	24	Υ					
Pheasant	Phasianus colchicus	Confirmed	116	60	42		116						
Pied Wagtail	Motacilla alba yarrellii	Confirmed	10	21	18		21						
Pink-footed Goose	Anser brachyrhynchus	Non-breeding	1				1	Υ		Υ			
Raven	Corvus corax	Possible		1			1						
Red-legged Partridge	Alectoris rufa	Probable	9	17	10		17						
Redshank	Tringa totanus	Possible		9			9	Y		Υ			
Redwing	Turdus iliacus	Non-breeding	97				97		Υ			Υ	
Reed Bunting	Emberiza schoeniclus	Probable	39	21	14		39	Y		Υ	Υ		
Robin	Erithacus rubecula	Probable	41	51	65	5	65						
Rook	Corvus frugilegus	Confirmed	110	210	388	1	388						
Sand Martin	Riparia riparia	Non-breeding		4	3		4						
Sedge Warbler	Acrocephalus schoenobaenus	Probable		1	12		12						
Shelduck	Tadorna tadorna	Probable	1	5			5	Υ		Υ			
Siskin	Spinus spinus	Possible	5	6	3		6						
Skylark	Alauda arvensis	Confirmed	68	81	80	1	81		Y	Υ	Υ		
Song Thrush	Turdus philomelos	Confirmed	14	24	33	6	33		Y	Υ	Υ		
Sparrowhawk	Accipiter nisus	Non-breeding			1		1						
Starling	Sturnus vulgaris	Confirmed	43	24	35		43		Υ	Υ	Υ		
Stock Dove	Columba oenas	Probable	25	2	8	4	25	Y					
Swallow	Hirundo rustica	Confirmed		9	103	1	103			Υ			
Swift	Apus apus	Non-breeding			4		4	Y		Υ			
Teal	Anas crecca	Possible	10				10	Y					
Tree Sparrow	Passer montanus	Confirmed	45	80	41	1	80		Y	Υ	Υ		

				Number of Birds				Conservation Status / Legal Protection					
Species	Scientific name	Breeding Status	Visit 1	Visit 2	Visit 3	Visit 4	Max	Amber List	Red List	LBAP	NERC	Schedule 1	Annex 1
Treecreeper	Certhia familiaris	Possible	1	3	1		3						
Tufted Duck	Aythya fuligula	Probable		4	2		4						
Whitethroat	Sylvia communis	Probable			25	8	25						
Willow Warbler	Phylloscopus trochilus	Probable		18	41		41	Υ		Υ			
Woodcock	Scolopax rusticola	Possible	1				1		Υ	Υ			
Woodpigeon	Columba palumbus	Confirmed	719	862	396	44	862						
Wren	Troglodytes troglodytes	Probable	35	79	76	3	79						
Yellow Wagtail	Motacilla flava	Probable			6	1	6		Υ	Υ	Υ		
Yellowhammer	Emberiza citrinella	Probable	90	75	63	2	90		Υ	Υ	Υ		
TOTAL – 83 species			61	66	68	31	83	22	18	26	16	5	1

Version: 2 Issued: April 2018

## APPENDIX F: POPULATION STATUS OF BREEDING BIRDS OF CONSERVATION CONCERN IN NORTHUMBRIA

All population data are taken from Dean, T., Myatt, D., Cadwallender, M. & Cadwallender, T. (2015) *Northumbria Bird Atlas 2007-11*. Northumberland & Tyneside Bird Club, Newcastle upon Tyne. Population data relate to the recording area of Northumbria (*i.e.* the administrative districts of Northumberland, North Tyneside and Newcastle upon Tyne). Comparisons are made for all species for which breeding evidence (in accordance with Balmer *et al.* (2013)) was recorded during breeding bird surveys undertaken by Jacobs in 2016 (note that "N/A" indicates that no evidence to suggest breeding was observed, and does not necessarily imply that no birds were observed).

				Jacobs bre survey 2016		% of Nort		Great Britain breeding	
Species	Scientific Name	Northumbria breeding population estimate 2007-11 (breeding pairs, territories or nests)	Northumbria breeding population estimate 2007-11 (single birds) <sup>14</sup>	Section A	Section B	Section A	Section B	population estimate (breeding pairs, territories or nests)	
Barn Owl	Tyto alba	60	120	N/A	1	N/A	0.83	4,000	
Black-headed Gull	Chroicocephalus ridibundus	3,800	7,600	194	1124	2.55	N/A	130,000	
Bullfinch	Pyrrhula pyrrhula	3,300	6,600	8	5	0.12	0.08	190,000	
Common Crossbill	Loxia curvirostra	3,800	7,600	12	1	0.16	0.01	39,000	
Cuckoo	Cuculus canorus	190	380	2	N/A	0.53	N/A	15,000	
Curlew	Numenius arquata	3,200	6,400	17	6	0.27	0.09	66,000	
Dunnock	Prunella modularis	44,000	88,000	98	71	0.11	0.08	2,300,000	
Gadwall	Anas strepera	12	24	N/A	4	N/A	16.67	1,200	

<sup>14</sup> As the population estimates of breeding birds in Northumbria during 2007-11 are based upon pairs, the figures provided have been multiplied by two to obtain a total count for the number of birds to allow comparison with the Jacobs breeding bird survey peak counts. However, it should be noted that not all of the birds recorded during the Jacobs breeding bird surveys were breeding within the survey area.

\_\_\_\_\_ Version: 2

64 Issued: April 2018

				Jacobs bre survey 2016		% of Nort population		Great Britain breeding	
Species	Scientific Name	Northumbria breeding population estimate 2007-11 (breeding pairs, territories or nests)	Northumbria breeding population estimate 2007-11 (single birds) <sup>14</sup>	Section A	Section B	Section A	Section B	population estimate (breeding pairs, territories or nests)	
Grey Partridge	Perdix perdix	2,100	4,200	7	6	0.17	0.14	43,000	
Grey Wagtail	Motacilla cinerea	1,100	2,200	6	4	0.27	0.18	35,000	
Greylag Goose	Anser anser	440	880	2	45	N/A	5.11	46,000	
House Martin	Delichon urbicum	11,000	22,000	52	66	0.24	0.30	510,000	
House Sparrow	Passer domesticus	100,000	200,000	155	79	0.08	0.04	5,100,000	
Kestrel	Falco tinnunculus	1,100	2,200	5	3	0.23	0.14	45,000	
Kingfisher	Alcedo atthis	34	68	1	N/A	1.47	N/A	4,900	
Lapwing	Vanellus vanellus	5,100	10,200	43	136	0.42	1.33	130,000	
Lesser Redpoll	Acanthis cabaret	12,000	24,000	17	18	0.07	0.08	190,000	
Linnet	Linaria cannabina	15,000	30,000	87	283	0.29	0.94	410,000	
Mallard	Anas platyrynchos	1,200	2,400	25	72	1.04	3.00	100,000	
Marsh Tit	Poecile palustris	330	660	1	N/A	0.15	N/A	41,000	
Meadow Pipit	Anthus pratensis	88,000	176,000	40	46	0.02	0.03	1,900,000	
Mistle Thrush	Turdus viscivorus	4,700	9,400	17	13	0.18	0.14	160,000	
Mute Swan	Cygnus olor	140	280	3	4	1.07	1.43	6,000	
Oystercatcher	Haematopus ostralegus	1,600	3,200	7	21	0.22	0.75	110,000	
Redshank	Tringa totanus	390	780	N/A	9	N/A	1.15	24,000	
Redstart	Phoenicurus phoenicurus	2,600	5,200	4	N/A	0.08	N/A	100,000	
Reed Bunting	Emberiza schoeniclus	7,100	14,200	11	39	0.08	0.27	230,000	
Shelduck	Tadorna tadorna	100	200	2	5	N/A	2.50	15,000	
Skylark	Alauda arvensis	52,000	104,000	103	81	0.10	0.08	1,400,000	

				Jacobs bre survey 2016		% of Nort population		Great Britain breeding	
Species	Scientific Name	Northumbria breeding population estimate 2007-11 (breeding pairs, territories or nests)	Northumbria breeding population estimate 2007-11 (single birds) <sup>14</sup>	Section A	Section B	Section A	Section B	population estimate (breeding pairs, territories or nests)	
Song Thrush	Turdus philomelos	23,000	46,000	58	33	0.13	0.07	1,100,000	
Spotted Flycatcher	Muscicapa striata	1,000	2,000	2	N/A	0.10	N/A	33,000	
Starling	Sturnus vulgaris	39,000	78,000	194	43	0.25	0.06	1,800,000	
Stock Dove	Columba oenas	2,300	4,600	12	25	0.26	0.54	260,000	
Swallow	Hirundo rustica	23,000	46,000	186	103	0.40	0.22	760,000	
Swift	Apus apus	1,400	2,800	23	4	0.82	0.14	87,000	
Teal	Anas crecca	58	116	N/A	10	N/A	17.24	2,100	
Tree Pipit	Anthus trivialis	1,900	3,800	1	N/A	0.03	N/A	88,000	
Tree Sparrow	Passer montanus	5,500	11,000	57	80	0.52	0.73	180,000	
Willow Tit	Poecile montana	45	90	2	N/A	2.22	N/A	3,400	
Willow Warbler	Phylloscopus trochilus	75,000	150,000	55	41	0.04	0.03	2,200,000	
Woodcock	Scolopax rusticola	2,000	4,000	1	1	0.03	0.03	78,000	
Yellow Wagtail	Motacilla flava	72	144	5	6	3.47	4.17	15,000	
Yellowhammer	Emberiza citrinella	22,000	44,000	101	90	0.23	0.20	700,000	

\_\_\_\_\_ Version: 2

66 Issued: April 2018

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