



Breeding Bird Survey
of
Phases 2–6 and Relief Road,
Haverhill, Suffolk

On Behalf of:

Persimmon Homes Suffolk

October 2019

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Over 30 Years of Service, Value and Innovation

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Revision	Purpose	Originated	Checked	Authorised	Date
		CB	SR	AC	October 2019
Job Number: JBA 18/351 and 17/364		 JAMES BLAKE ASSOCIATES			
		Title: Breeding Bird Survey of Phases 2-6 & Relief Road, Haverhill, Suffolk			

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James Blake Associates Ltd have made every effort to meet the client's brief. However, no survey ensures complete and absolute assessment of the changeable natural environment. The findings in this report were based on evidence from thorough survey: It is important to remember that evidence can be limited, hard to detect or concealed by site use and disturbance. When it is stated that no evidence was found or was evident at that point in time, it does not mean that species are not present or could not be present at a later date: The survey was required because habitats are suitable for a given protected species, and such species could colonise areas following completion of the survey.

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EXECUTIVE SUMMARY

Breeding bird surveys were carried out on land proposed for Phases 2-6 and the Relief Road, Haverhill, Suffolk on the 11th April, 15th May, 29th May and 14th of June 2019.

Fifty-two bird species were recorded on or close to the site. These included ten Species of Principal Importance (SPI) in England. In terms of the Birds of Conservation Concern (BoCC) categorisation, eight BoCC Red Listed species and ten Amber Listed species were recorded using the site. One Schedule 1 species, Barn Owl, was recorded during the course of another ecological survey.

Thirteen species were confirmed breeding on site, twenty one species were considered probably breeding with twelve species possibly breeding. A total of six species were non-breeding. However, the bird species noted using the site are generally common and widespread. No significant population of any species of interest was recorded.

Key habitat for birds on site includes the mature trees, hedgerows, hedgerow margins and scrub. These habitats should be retained where possible and enhanced by the development.

Off-site compensatory habitat should be provided for the 7 pairs of nesting skylark currently using open fields for breeding which are not able to be retained by the development.

Open space within the development, including SuDS, is recommended to be designed, created and managed to provide nesting and foraging habitat for birds. Public access should be carefully managed to ensure that sensitive bird species and the habitats they depend on are not subject to disturbance. Other enhancements include the provision of bird boxes on new buildings and retained trees. Any vegetation clearance/management should be undertaken outside the breeding bird season. Nesting bird season is deemed to be March to September, weather dependant.

If recommendations outlined in this report, including precautionary measures, are followed, it is considered that impacts to nesting and/or foraging birds would be low.

1 INTRODUCTION

Background to the study

- 1.1 James Blake Associates Ltd. was commissioned by Persimmon Homes Suffolk to undertake a breeding bird survey of Phases 2-6 and Relief Road, Haverhill, Suffolk (Ordnance Survey National Grid Reference TL 6692 4694, taken from the centre of the site).
- 1.2 Nesting birds are protected under the Wildlife and Countryside Act (1981, as amended); birds listed under Schedule 1 of the Act are subject to special protection. Species of Principal Importance (SPIs) are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006, as amended). All protected and priority species are material considerations for individual planning decisions under the National Planning Policy Framework (NPPF) (2019) which places responsibility on Local Planning Authorities to aim to conserve and enhance biodiversity and to encourage biodiversity in and around developments.
- 1.3 Birds of Conservation Concern (BoCC) are split into three criteria; the red list is the highest conservation priority (species needing urgent action). The amber list is the next most critical group, followed by green. Red listed species are those that are globally threatened according to the International Union for Conservation of Nature (IUCN) criteria, species with populations or ranges that have declined rapidly in recent years, and those that have declined historically and have not shown a substantial recent recovery.

Surveyors

- 1.4 Surveys were carried out by Christopher Bridge BSc (Hons), James Booty BSc (Hons), Sam Kench BSc (Hons) QCIEEM, and Alison Collins PhD MCIEEM.

Geographical scope

- 1.5 The site is located to the north of Haverhill. Residential areas lie to the south and agricultural areas to the north, east and west of the site. A143 Haverhill Road runs to the east of the site. The wider landscape is dominated by arable land with a large deciduous woodland (Norney Plantation County Wildlife Site) to the north (see Figure 1).

- 1.6 The site comprised previously cultivated arable fields divided by networks of hedgerows with ditches.

Figure 1: Site Location



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Aims and objectives

- 1.7 The aim of the survey was to;
- determine if significant bird species and/or population sizes were using the site for nesting and/or foraging at the time of the survey;
 - to determine the likely risk of impact on birds and local bird conservation from the proposed development; and
 - to recommend precautionary measures, compensation of habitats or mitigation to prevent harm to birds, if necessary.

2 METHODOLOGY

Methods

- 2.1 Surveys were conducted in optimal weather conditions (dry, with little/moderate wind) and during the peak bird breeding season (April to June). The duration of each survey was approximately two and a half hours.
- 2.2 Surveys were undertaken on the 11th April, 15th May, 29th May and 14th June 2019, within three hours of dawn when territorial behaviour is usually at its peak.
- 2.3 The survey was based on a registration mapping methodology adapted from the British Trust for Ornithology (BTO) Breeding Bird Survey: during each visit, all birds seen or heard were recorded on a plan along with any significant behaviour, particularly regarding breeding activity e.g. territorial singing, display, carrying food or nesting material, active nests etc.

Constraints

- 2.4 There were no constraints to the surveys.

3 RESULTS

Survey results

3.1 Fifty-two bird species were recorded on or close to the site. All species heard/seen on site or flying over were recorded (see Table 1 for a species list and summary of results and Appendix A for maps of activity).

Table 1: Summary of survey results

Species	BTO code	Suffolk BAP	Schedule 1	NERC SPI	BoCC	Survey dates & summary of results			
						11.04.19	15.05.19	29.05.19	14.06.19
Barn owl <i>Tyto alba</i>	BO	✓	✓						
Blackcap <i>Sylvia atricapilla</i>	BC					✓	✓	✓	✓
Blackbird <i>Turdus merula</i>	B.					✓	✓	✓	✓
Black-headed gull <i>Chroicocephalus ridibundus</i>	BH				Amber	✓			
Blue tit <i>Cyanistes caeruleus</i>	BT					✓	✓	✓	✓
Bullfinch <i>Pyrrhula pyrrhula</i>	BF			✓	Amber		✓		✓
Buzzard <i>Buteo buteo</i>	BZ								✓
Canada goose <i>Branta canadensis</i>	CG						✓		
Carrion crow <i>Corvus corone</i>	C.					✓	✓	✓	✓
Chaffinch <i>Fringilla coelebs</i>	CH					✓	✓	✓	✓
Chiffchaff <i>Phylloscopus colybita</i>	CC					✓	✓	✓	✓
Coal tit <i>Periparus ater</i>	CT					✓	✓	✓	
Collared dove <i>Streptopelia decaocto</i>	CD					✓	✓	✓	✓
Dunnock <i>Prunella modularis</i>	D.			✓	Amber	✓	✓	✓	✓
Feral pigeon	FP								✓

<i>Columba livia</i>									
Garden warbler <i>Sylvia borin</i>	GW						✓	✓	✓
Goldcrest <i>Regulus regulus</i>	GC								✓
Goldfinch <i>Carduelis carduelis</i>	GO					✓	✓	✓	✓
Great spotted woodpecker <i>Dendrocopos major</i>	GS					✓			✓
Great tit <i>Parus major</i>	GT					✓	✓	✓	✓
Greenfinch <i>Carduelis chloris</i>	GR					✓	✓	✓	✓
Green woodpecker <i>Picus viridis</i>	G.					✓	✓	✓	✓
Grey wagtail <i>Motacilla cinerea</i>	GL				Red				✓
Herring gull <i>Larus argentatus</i>	HG			✓	Red Subsp. argentatus	✓			
House sparrow <i>Passer domesticus</i>	HS			✓	Red	✓	✓	✓	✓
Jackdaw <i>Corvus monedula</i>	JD					✓	✓		
Jay <i>Garrulus glandarius</i>	J.					✓			
Kestrel <i>Falco tinnunculus</i>	K.				Amber	✓	✓	✓	✓
Lesser whitethroat <i>Sylvia curruca</i>	LW						✓	✓	✓
Linnet <i>Carduelis cannabina</i>	LI			✓	Red	✓	✓	✓	✓
Long-eared owl <i>Asio otus</i>	LE								
Long-tailed tit <i>Aegithalos caudatus</i>	LT					✓	✓	✓	✓
Magpie <i>Pica pica</i>	MG					✓	✓	✓	✓
Meadow pipit <i>Anthus pratensis</i>	MP				Amber				✓
Pheasant <i>Phasianus colchicus</i>	PH					✓	✓	✓	✓
Red-legged partridge <i>Alectoris rufa</i>	RL						✓		✓
Reed bunting	RB			✓	Amber	✓	✓		✓

<i>Emberiza schoeniclus</i>									
Robin <i>Erithacus rubecula</i>	R.					✓	✓	✓	✓
Rook <i>Corvus frugilegus</i>	RO					✓			
Skylark <i>Alauda arvensis</i>	S.	✓		✓	Red	✓	✓	✓	✓
Song thrush <i>Turdus philomelos</i>	ST	✓		✓	Red	✓	✓	✓	✓
Sparrowhawk <i>Accipiter nisus</i>	SH					✓			
Stock dove <i>Columba oenas</i>	SD				Amber		✓	✓	
Starling <i>Sturnus vulgaris</i>	SG			✓	Red	✓	✓	✓	✓
Swallow <i>Hirundo rustica</i>	SL								✓
Swift <i>Apus apus</i>	SI	✓			Amber				✓
Tawny owl <i>Strix aluco</i>	TO				Amber				
Treecreeper <i>Certhia familiaris</i>	TC								✓
Whitethroat <i>Sylvia communis</i>	WH						✓	✓	✓
Willow warbler <i>Phylloscopus trochilus</i>	WW				Amber		✓	✓	✓
Woodpigeon <i>Columba palumbus</i>	WP					✓	✓	✓	✓
Wren <i>Troglodytes troglodytes</i>	WR					✓	✓	✓	✓
Yellowhammer <i>Emberiza citrinella</i>	Y.			✓	Red	✓	✓	✓	✓

NERC SPI = Species of Principal Importance in England under Section 41 of the NERC Act (2006)

Suffolk BAP = Local Biodiversity Action Plan

BoCC = Birds of Conservation Concern

Schedule 1 = protected (while breeding) under Schedule 1 of the Wildlife and Countryside Act 1981

Black text: Observed using habitats within the site boundary

Red species: observed during other ecological surveys, not on the breeding bird surveys

Weather conditions

3.2 All surveys were conducted in optimal weather conditions (see Table 2).

Table 2: Summary of weather conditions

Visit	Date (2019)	Weather conditions
1	11 th April	5°C to 3°C, 20-30% cloud cover and Beaufort 1 to 2
2	15 th May	8°C, <5% cloud cover and Beaufort 0 to 1
3	29 th May	15°C, 90% cloud cover and Beaufort 1 to 2
4	14 th June	13°C to 17°C, 100% cloud cover and Beaufort 1 to 2

4 EVALUATION

Overview of birds observed during the surveys

4.1 Species of Principal Importance (SPI)

Ten priority species were recorded using the site;

- **Dunnock** were recorded during all four survey visits, singing and foraging within trees and scrub on the boundary and hedgerows throughout the site. This species is considered confirmed breeding at the site due to the presence of juvenile birds recorded on the 14th June. The dunnock is an SPI and BoCC Amber listed species as UK populations declined significantly during the 1970s and 1980s although are now more stable. The species remains widespread throughout Britain including Suffolk. It is recommended that boundary vegetation is retained and enhanced and gaps in retained hedgerows are planted up to maintain breeding and foraging habitat for dunnock. If these measures are undertaken it is considered unlikely that the local population status of dunnock would be significantly impacted by the proposals.
- **Herring gull** were recorded during one survey visit on 11th April, flying over the site. This species is considered unlikely to be breeding at the site due to the lack of suitable nesting sites but may use the arable fields for foraging. It is considered unlikely that the development would impact on the local population status of these gulls.
- **House sparrow** were recorded during all four surveys; foraging mostly in the edges of fields next to existing dwellings. House sparrows are a SPI and BoCC Red listed species due to a rapid decline in their abundance over the last 25 years. It is considered unlikely that this species uses the proposed development site for breeding in significant numbers due to the availability of preferred nesting opportunities within adjacent properties. The house sparrow remains widespread and common throughout England and locally within Suffolk; it was the most recorded bird during the Royal Society for the Protection of Birds, RSPB 'Big Garden Birdwatch' in 2019, being recorded in 63% of participating gardens, respectively. Habitat for foraging sparrows would be provided within suitably

managed buffers to retained hedgerows and tree lines. It is considered unlikely that this species would be significantly impacted by the proposed development.

- **Linnet** were recorded during all four survey visits. It is confirmed that linnets are nesting across the site, particularly within overgrown bramble scrub, with which adult birds were seen carrying food to a nest site, which provides suitable nesting opportunities and within which territorial behaviour was observed. Linnets are a BoCC Red listed species and SPI due to steep declines between 1968 and 1991. Numbers nationally rose slightly in the ten years after 1985 and since then have seen a decline in England and Wales of approximately 30%. Linnet numbers within Suffolk are currently stable; however the linnet population in East England has declined by 21% between 1994 and 2005. Retention and enhancement of hedgerows will benefit this species, particularly if thorny species are included in the planting mix. Additional scrub planting along the boundaries is also recommended to increase this habitat type. If these recommendations are carried out, it is unlikely that the local population status of this species will be significantly impacted by the proposals.
- **Skylark** were seen and heard singing above arable fields on the site during all four survey visits. Approximately seven pairs were recorded, indicating that the site has a significant breeding population. This species is an SPI in England and Suffolk, a BoCC Red listed species and a Suffolk Biodiversity Action Plan (BAP) species, due to significant population declines over the past 25 years, with a rapid decline from the mid-1970s until the mid-1980s. Skylarks are still widespread throughout the UK and Suffolk but showing a slow decline in abundance. It is considered likely that skylarks will be highly impacted by the proposals by the direct loss of nesting habitat. To account for this impact, skylark nest plots should be provided in nearby agricultural land.
- **Song thrush** were recorded singing from perches, foraging and carrying food within the site during all four survey visits. The abundance of hedgerows and scrub provided optimal nesting opportunities and this species was confirmed to be breeding within the site boundary. Fledgling song thrushes were observed within the site boundary during the course of other ecological surveys. The song thrush is an SPI in England, a BoCC Red listed and a Suffolk BAP species, due to significant population declines. Between 1970 and 1995 song thrush declined by

approximately 50%, particularly on farmland, where populations decreased by approximately 70%. Song thrush is widespread within the UK and Suffolk and is showing a general increase, although population levels remain relatively low. Retention of on-site foraging and nesting habitat, including hedgerows, scrub and mature trees within the site and at the boundaries and native hedgerow and tree planting within the scheme, with areas of less intensive management to allow scrub encroachment, will provide additional nesting and foraging habitat for song thrush and should ensure that this species will not be impacted by the development.

- **Starling** were recorded during all four survey visits, predominantly using habitats within the site and along the boundaries, with frequent use of arable fields. Behaviour displayed during the survey visits suggested that this species was using the site for foraging only as the site itself provided limited nesting opportunities. Starlings are a BoCC Red listed species, as well as an SPI in England, due to long term declines in the number of breeding pairs in Britain, reasons for which are under research. Starlings remain widespread within Britain and Suffolk and this species was the second most numerous bird recorded during the RSPB 'Big Garden Birdwatch' in 2019. It is recommended that foraging habitat is retained and/or incorporated into Public Open Space (POS) within landscape plans. If this can be achieved, it is considered unlikely that starlings would be significantly impacted by the proposed development.
- **Yellowhammer** were recorded during all four survey visits using habitats within the site, predominantly the internal hedgerows, and are considered to be probable breeders on site. Yellowhammer is a BoCC Red listed species, as well as an SPI in England, due to > 50% decline nationally within the past 20 years. Hedgerow retention and gapping up, as recommended previously for other species would benefit yellowhammer, along with creation of grassland in suitable areas next to retained hedgerows using a seed mix rich in seed-bearing species. If these measures are included in the development, it is likely that the local conservation status of yellowhammer is unlikely to be affected.
- **Bullfinch** were recorded on the 15th May and 14th June, using boundary hedgerows and scrub to the north and south of the site, indicating that they were probably nesting within and/or in close proximity to these areas. Bullfinches are a

BoCC Amber listed species, as well as an SPI in England, but have declined in Eastern England as a whole by 17% during 1994 and 2005. Retention of on-site foraging and nesting habitat, such as hedgerows and scrub, and inclusion of new native hedgerow, scrub (including dense bramble) and tree planting within the scheme, with areas of less intensive management to allow scrub encroachment, will provide additional nesting and foraging habitat for bullfinch. If these measures are included within the development, it is unlikely that that this species will be significantly impacted by the development.

- **Reed bunting** were recorded on three of the four survey visits using habitats within the site, predominantly hedgerows and arable fields, and were considered to be probably breeding. Reed bunting is a BoCC Amber listed species, as well as an SPI in England, with a long term national trend of a 48% decline between 1968 and 1999. In Eastern England, however, numbers have increased by 20% between 1994 and 2005 due to the clearance of riparian and ditch side vegetation. Hedgerow retention and planting, as recommended previously for other species, would benefit reed bunting. Grassland creation, using a seed mix rich in seed-bearing species, is recommended along the northern and southern boundaries. If these measures are included within the development, it is unlikely that that this species will be impacted by the development.

4.2 Birds of Conservation Concern (BoCC) assigns species to red, amber or green lists under the following criteria:

Red List species

These are species of high national conservation concern. Species are included on this list if they meet one or more of the following criteria:

- Globally threatened;
- Historical population decline in UK during 1800-1995;
- Rapid (> 50%) decline in UK breeding or non-breeding population over last 25 years;
- Rapid (> 50%) contraction of UK breeding range over last 25 years.

Amber List species

These are species of medium national conservation concern. Species are included on this list if they meet one or more of the following criteria:

- Historical population decline during 1800-1995, but now recovering with population size having more than doubled over the last 25 years;
- Moderate (25-49%) decline in UK breeding or non-breeding population or breeding range over the last 25 years;
- Species of European Conservation Concern;
- Between only one and 300 breeding pairs, or one and 900 individuals, in the UK;
- >50% of the UK breeding or non-breeding population in ten or fewer sites;
- >20% of the European breeding population in the UK;
- >20% of the North-West European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in the UK.

Green List Species

All regularly occurring native species that do not qualify under any of the red or amber criteria are green listed. 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.

4.3 [BoCC Red Listed Species](#)

Eight Red listed species were recorded during the survey visits as follows: grey wagtail, herring gull, house sparrow, linnet, skylark, song thrush, starling and yellowhammer.

- **Grey wagtail** (an individual) was recorded overflying the site on 14th June. Grey wagtail is a Red listed species due to declining riverine habitat. Proposed SuDS areas will benefit the grey wagtail by providing drinking and foraging opportunities.

4.4 BoCC Amber Listed Species

Ten BoCC Amber listed species were recorded using habitats within the site boundary. In addition, tawny owl was heard calling within Norney Plantation CWS during bat surveys. The species which have not been discussed above are outlined below:

- **Black-headed gull** was recorded on one of the four surveys. Several individuals were recorded on 11th April flying over the site. This species is considered unlikely to be breeding at the site due to the lack of suitable nesting sites and would likely use the arable fields for foraging only.
- **Kestrel** was recorded on all four surveys. All sightings were of individuals flying over the site and foraging on land within the site. Observations of foraging behaviour suggested that kestrel were breeding near to the site and in nearby woodland. It is considered that the development would not impact the local population status of kestrel.
- **Meadow pipit** is a winter/spring migrant and is resident in the UK. Individual sightings of meadow pipit were of an individual flying over the site and foraging on land within the site. The development would not impact the local population status of meadow pipit.
- **Swift** were recorded foraging around the adjacent nearby buildings; the development would not impact the local population status of swift.
- **Stock dove** were recorded flying over the site during the surveys; the development would not impact the local population status of these species.
- **Willow warbler** were recorded on three of the four surveys. Several pairs were recorded singing on 15th May, 29th May and 14th June. Willow warbler is a BoCC Amber listed species and on a steep decline within Suffolk due to overgrazing of woodland by deer. Nests are usually built in close contact with the ground, often in low vegetation. Provided that the development can provide suitable undisturbed nesting and foraging areas for this species, it is considered unlikely that the development would have an adverse impact on the local population.

4.5 [Schedule 1 Species](#)

A single barn owl was recorded during a bat activity survey on the 18th June 2019, hunting above semi-improved grassland towards the north eastern edge of the site in close proximity to hedgerows. Barn owl is a Wildlife and Countryside Act 1981 Schedule 1 and a Suffolk BAP species, due to population levels falling by more than half since 1932. Reasons for this include a loss of suitable nesting habitat, such as insensitive barn conversions, increasing road deaths (particularly on trunk roads) and a decline in good quality foraging habitat. The mature trees and hedgerow margins at the site provide suitable breeding, roosting and foraging habitat for barn owl although no evidence of breeding has been recorded on site. Barn owls can be difficult to detect and the lack of recorded breeding behaviour does not necessarily imply that birds are not breeding on site. It is recommended that Suffolk Community Barn Owl Project (SCBOP) be contacted to determine if there are any known active nest boxes in the surrounding area. A barn owl check of the trees with nesting potential within the site boundary should be undertaken by an ornithologist prior to any works which may disturb nesting barn owls (i.e. works within 30m of suitable trees).

[Breeding status of species on site](#)

4.6 Table 3 shows the likelihood of bird species breeding on site. Terms follow the BTO code for breeding evidence.

Table 3: Likelihood of species breeding on site:

Species	Breeding status on site			
	Confirmed	Probable	Possible	Non-breeding
Barn owl			✓	
Blackcap		✓		
Blackbird	✓			
Black-headed gull				✓
Blue tit	✓			
Bullfinch		✓		
Buzzard			✓	
Canada goose				✓
Carrion crow		✓		
Chaffinch		✓		

Species	Breeding status on site			
	Confirmed	Probable	Possible	Non-breeding
Chiffchaff		✓		
Coal tit	✓			
Collared dove		✓		
Dunnock	✓			
Feral pigeon				✓
Garden warbler		✓		
Goldcrest			✓	
Goldfinch		✓		
Great spotted woodpecker		✓		
Great tit	✓			
Greenfinch		✓		
Green woodpecker		✓		
Herring gull				✓
House sparrow				✓
Jackdaw		✓		
Jay			✓	
Kestrel			✓	
Linnet	✓			
Lesser whitethroat		✓		
Long-eared owl			✓	
Long-tailed tit	✓			
Magpie	✓			
Meadow pipit		✓		
Pheasant		✓		
Red-legged partridge		✓		
Reed bunting		✓		
Robin	✓			
Rook		✓		
Skylark	✓			
Song thrush	✓			
Sparrowhawk			✓	
Stock dove			✓	
Starling			✓	
Swallow			✓	
Swift			✓	
Tawny owl				✓

Species	Breeding status on site			
	Confirmed	Probable	Possible	Non-breeding
Treecreeper			✓	
Whitethroat	✓			
Willow warbler		✓		
Woodpigeon		✓		
Wren	✓			
Yellowhammer		✓		

5 RECOMMENDED MITIGATION

- 5.1 An indicative layout of the proposed development has been produced (see Appendix B). This shows the direct loss of nesting and foraging habitats, i.e. hedgerows, trees, scrub and hedgerow margins, which are used by seven of the priority species; bullfinch, dunnock, linnet, reed bunting, song thrush, starling and yellowhammer. Of these, dunnock, linnet, song thrush are confirmed as breeding on site and the other SPIs are probable breeders on site. In addition, the development on open field vegetation would result in the loss of habitat for breeding skylark.
- 5.2 In order to maintain the majority of the bird breeding, foraging and commuting habitat on site, it is recommended that mature trees, hedgerows and scrub are retained within the development. Retained hedgerows should have margins (at least 5m) consisting of grassland managed for foraging birds where appropriate. Gapping up of retained hedgerows will provide additional nesting and foraging opportunities for birds and should include site-native fruit and nut bearing species such as hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and field maple (*Acer campestre*).
- 5.3 Planting within the development should aim to increase habitat connectivity for birds within the site and with external habitat. This could include native tree/shrub planting at the boundaries and along access roads, and grouped tree/shrub planting to provide 'islands' of habitat within the development.
- 5.4 Suitable areas of POS should be sown with shrubs, wildflowers and grasses, such as common bent (*Agrostis capillaris*), red fescue (*Festuca rubra*), and smooth-stalked meadow grass (*Poa pratensis*), to provide additional foraging resources for birds. Clear pathways should be mown and maintained in POS to reduce trampling of habitat and disturbance to birds.
- 5.5 Any areas set aside primarily for birds and other key species should be fenced off or designed to reduce access by residents and their dogs (e.g. by planting a barrier of thorny species); willow warbler and other ground-nesting species would benefit from this approach. Post and wire fencing will provide song perches for certain species, e.g. song thrush.

- 5.6 Proposed waterbodies within the SuDS scheme should be planted with emergent and aquatic species, for example marsh marigold (*Caltha palustris*), bog bean (*Menyanthes trifoliata*), water forget-me-not (*Myositis scorpiodes*), common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*) and pendulous sedge (*Carex pendulus*). This will create a valuable wetland area to attract invertebrates for foraging swifts, swallows and house martins post-development.
- 5.7 Any scrub or tree clearance or management should be undertaken outside the nesting bird season. The nesting season is deemed to be March to September (weather dependant). Should vegetation removal be required during the nesting season, it is recommended that a nesting bird survey be undertaken by an ornithologist no more than two days prior to works.
- 5.8 Any trees, hedgerows and scrub (including margins) to be retained should be suitably protected throughout the duration of the works to preserve nesting and foraging habitat for birds.
- 5.9 Skylark cannot be mitigated for within the development; therefore, off-site compensatory habitat, such as skylark nest plots, should be secured in nearby arable land and managed for skylark in perpetuity.
- 5.10 Foraging habitat will be lost. To enable the continuation of barn owl using the site, tussock grassland suitable for small mammals (prey of barn owl) should be provided in perpetuity.
- 5.11 To compensate for and enhance bird nesting opportunities on the site, a variety of bird boxes should be installed on new buildings within the development. It is recommended that bird boxes suitable for house sparrow (Schwegler 1SP), kestrel (Schwegler no.28), swifts (Schwegler 16S swift boxes) and starling (Schwegler 3SV) are used. House martin nest cups (No. 13 Schwegler Modular House Martin Nest) could also be installed on buildings.
- 5.12 Specifically designed barn owl nest boxes should be installed on suitably located retained mature trees as advised and checked by a suitably licensed ornithologist.
- 5.13 A variety of standard bird boxes with different sized and shaped entrance holes should be installed on suitably located retained mature trees along the boundaries to attract a greater diversity of birds to nest. Bird box installation should follow the

advice of an ecologist/ornithologist once a final layout has been produced to ensure the most appropriate locations and fixings.

- 5.14 A Landscape and Ecological Management Plan (LEMP) should be produced which will detail all necessary installation and maintenance works for new nest boxes. In addition, the LEMP should include sensitive hedge-cutting cycles to produce dense, tall hedgerows with a diversity of species and ground flora, management of hedgerow buffers, appropriate establishment techniques for the grassland and wildflower areas, sensitive grass cutting regimes (which should allow for the development of scrub in appropriate locations) and management regimes for ecologically-valuable waterbodies post development. All on-going management regimes for retained areas should also be included.

6 CONCLUSION

- 6.1 The birds identified during the surveys were predominantly common and widespread species, both at a national and local level. SPIs included bullfinch, dunnoek, linnet, herring gull, house sparrow, reed bunting, skylark, song thrush, starling and yellowhammer; all apart from herring gull are either confirmed breeding or considered to be probable breeding species on the site. No significant populations of any species were found.
- 6.2 Areas of higher quality nesting and foraging habitat (boundary vegetation, mature trees, hedgerows, scrub and grassland margins) are recommended for retention by the development with appropriate sensitive ecological management to maintain or enhance their biodiversity interest.
- 6.3 Open space within the development, including SuDS, is recommended to be designed, created and managed to provide nesting and foraging habitat for birds. Public access should be carefully managed to ensure that sensitive bird species and the habitats they depend on are not subject to disturbance.
- 6.4 Off-site compensation for 7 pairs of nesting skylark (i.e. skylark nest plots) will need to be provided on nearby arable land in perpetuity.
- 6.5 A barn owl (Schedule 1 species) was recorded during a separate ecological survey.
- 6.6 It is considered that by avoidance of impact and by sensitive mitigation, compensation and enhancement measures, the value of the site for breeding birds will be maintained and enhanced by the development.

7 REFERENCES

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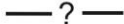




Royal Society for the Protection of Birds (RSPB) www.rspb.org.uk

Species of Principal Importance www.jncc.defra.gov.uk

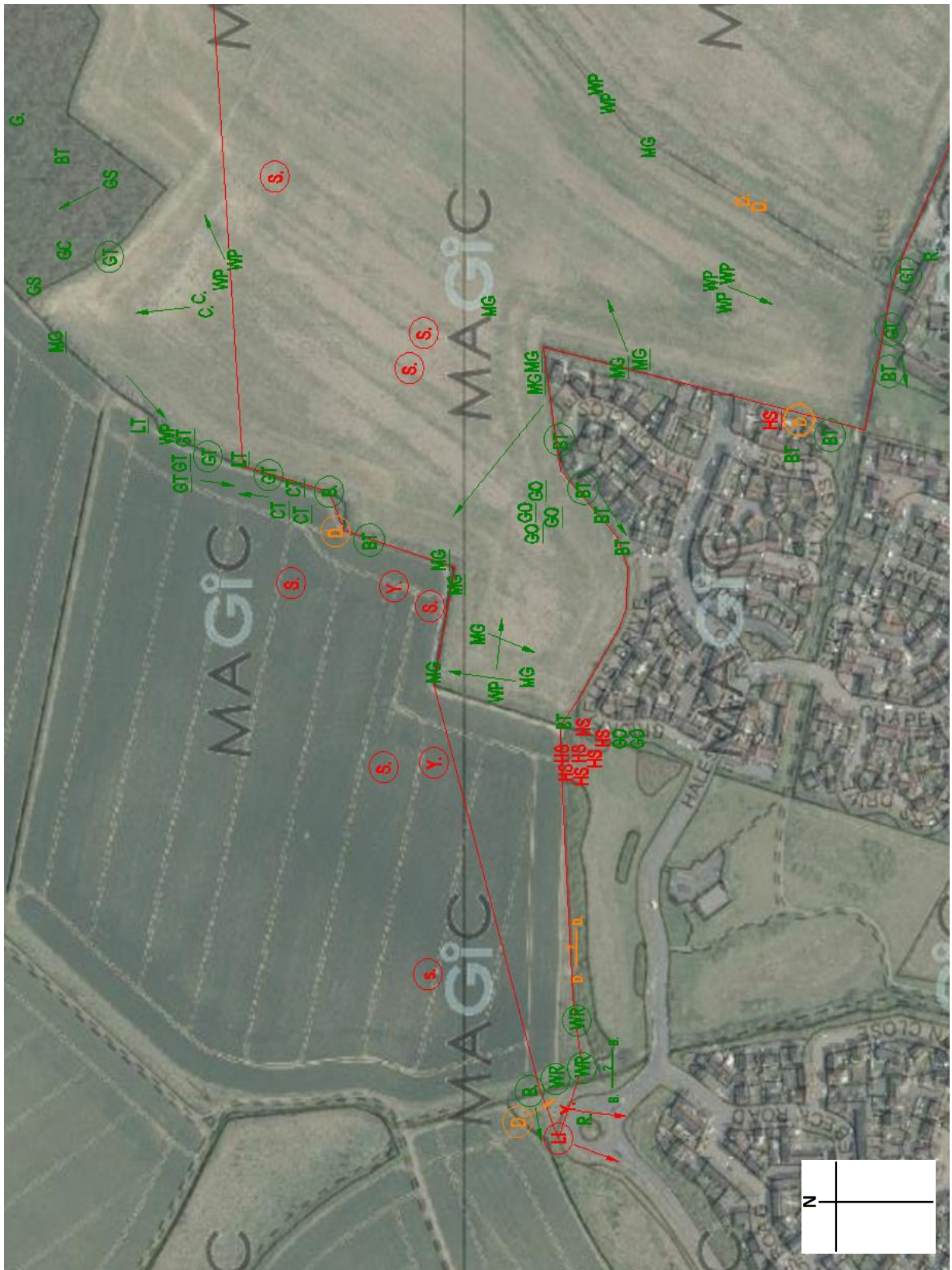
Appendix A: Plans showing bird activity

Species recorded during the four survey visits. The species codes used can be found in Table 1, page 8.

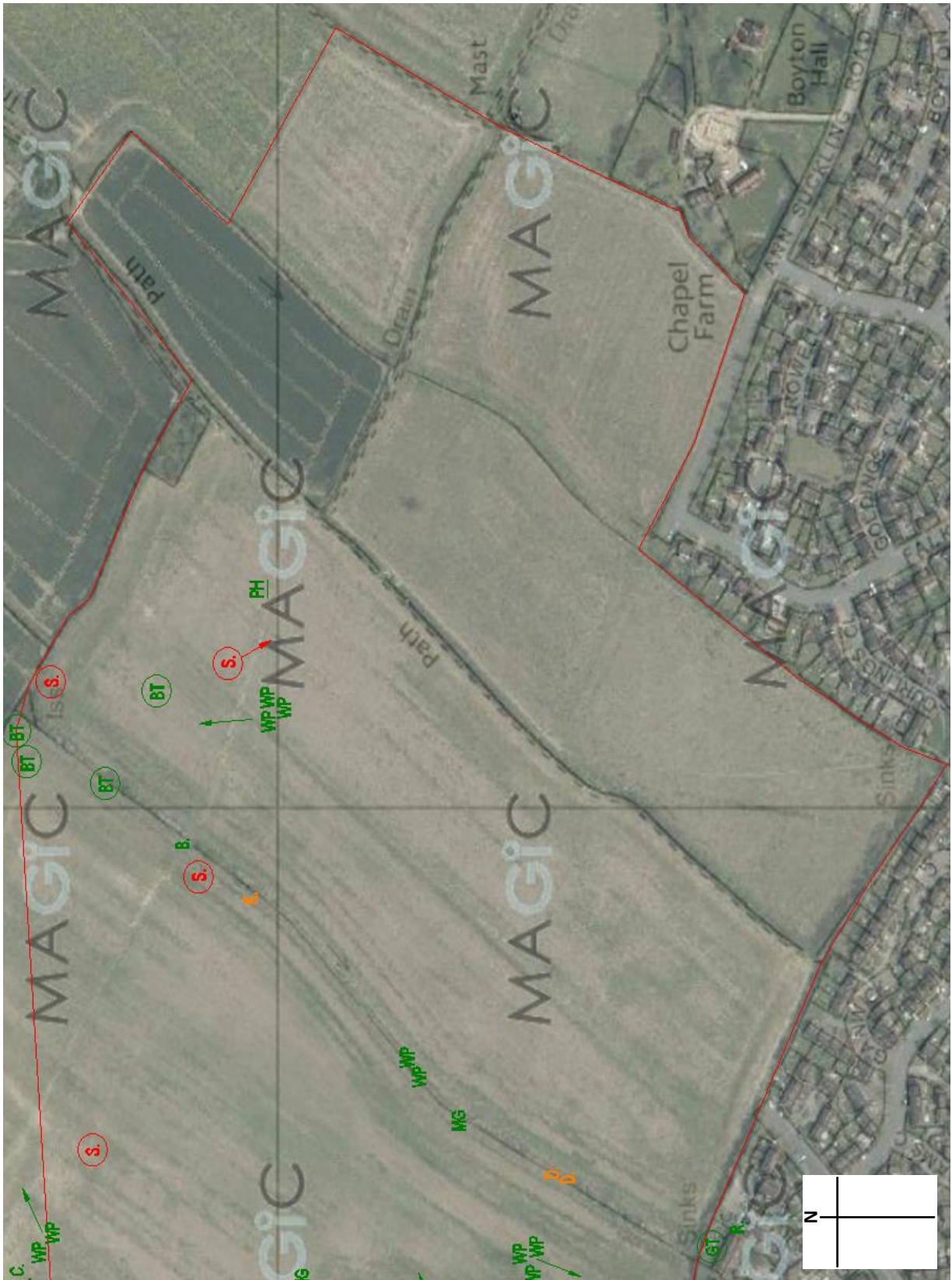
Map Key

C.	BoCC green listed species.		Singing
BH	BoCC amber listed species.		Direction of flight.
ST	BoCC red listed species.		Probably the same bird.
RL	BoCC unlisted species.		NERC Section 41 Species of Principle Importance in England and/or Norfolk BAP
CH	Calling		Two birds in song at the same time (definitely different birds).
	Aggressive encounter between two goldfinches.		
2RBmat	Two reed buntings carrying nest material.	S.pair	A pair (1 male, 1 female) of skylarks likely to be nesting locally

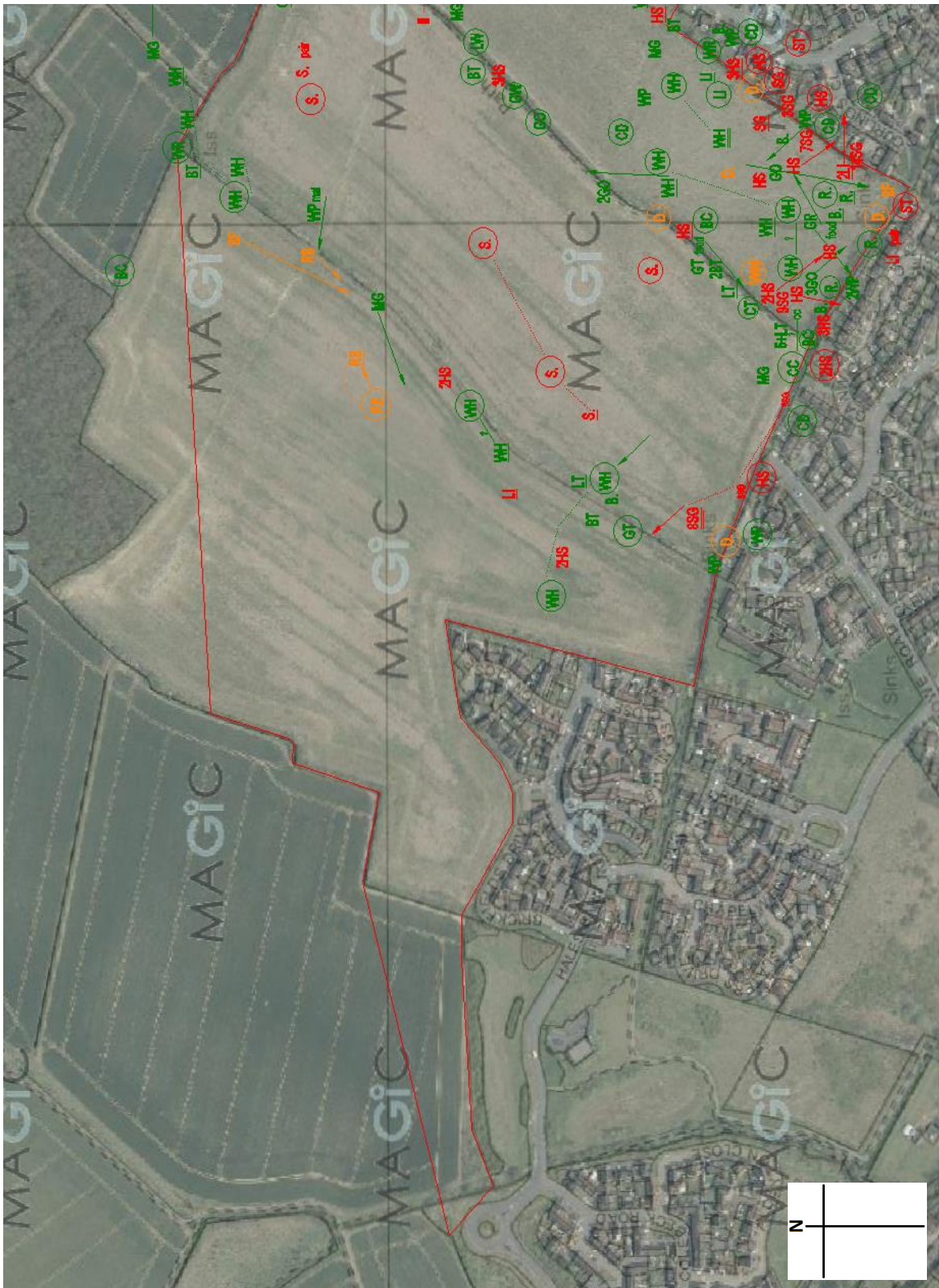
Visit 1: 11th April 2019, Surveyor 2 Map A



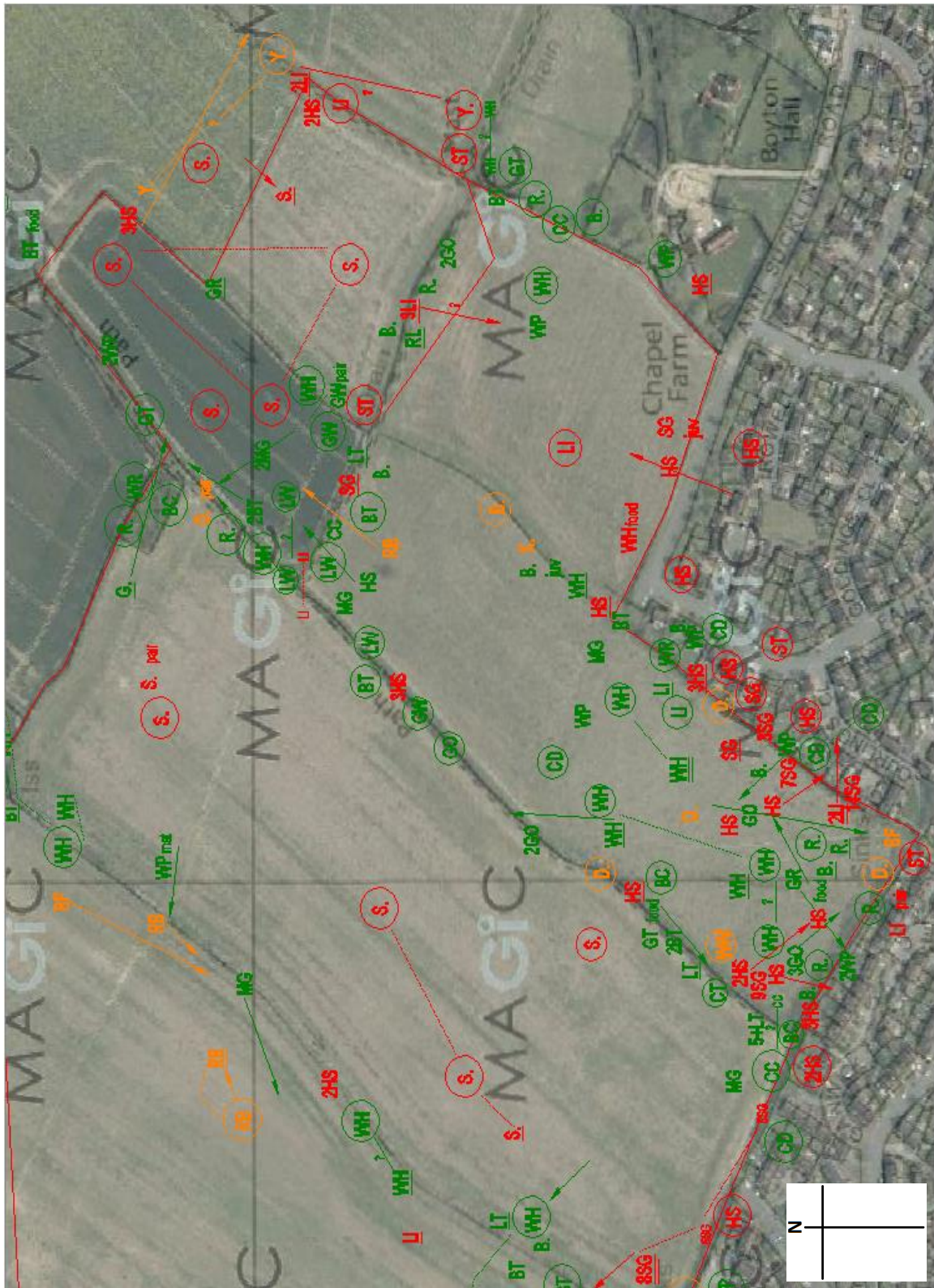
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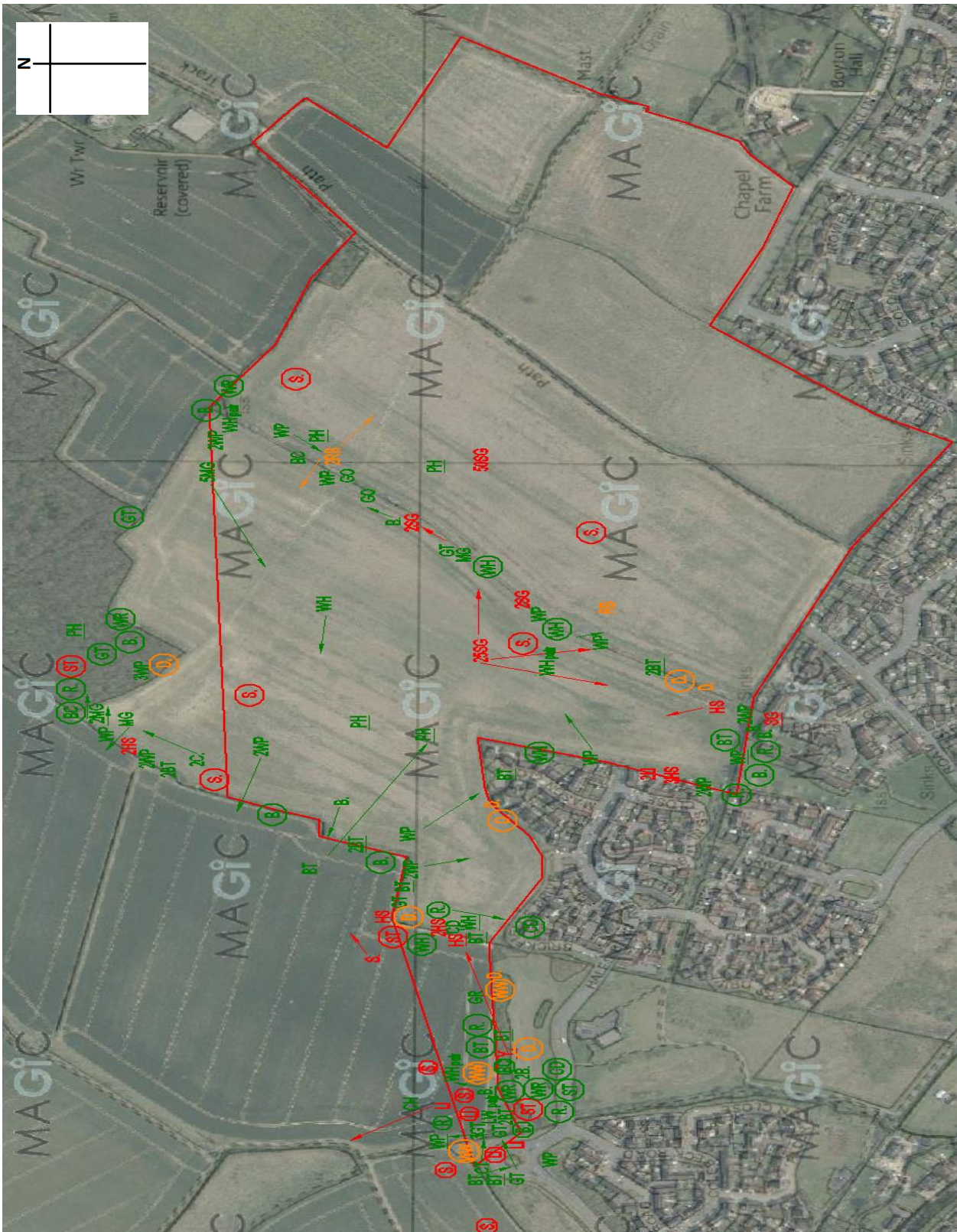
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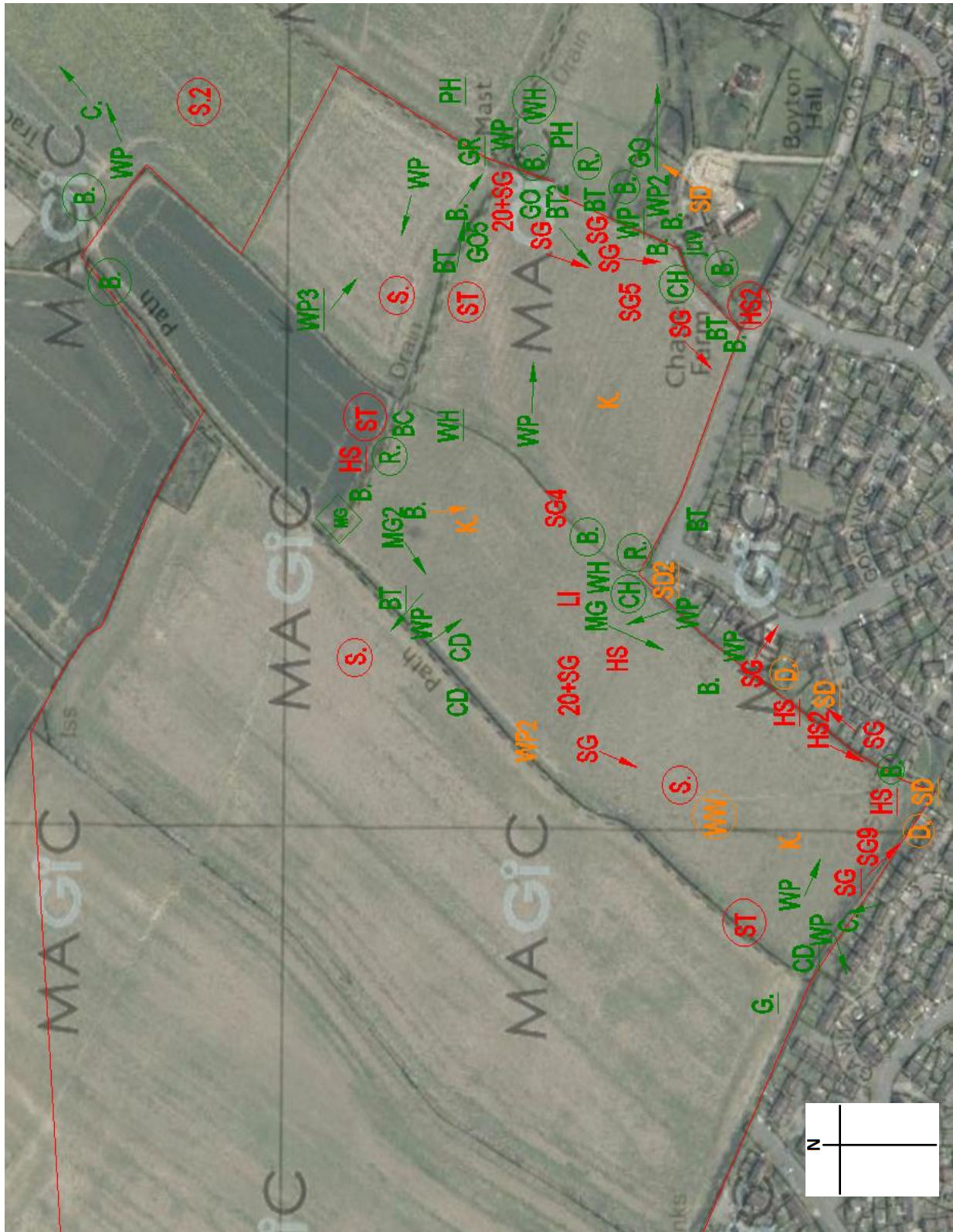
Visit 2: 15th May 2019, Surveyor 1, Map B



Visit 2: 15th May 2019, Surveyor 2, Map A



Visit 3: 29th May 2019, Surveyor 1, Map A



Visit 4: 14th June 2019, Surveyor 2, Map A

