



FIVE
ESTUARIES
OFFSHORE WIND FARM

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VOLUME 6, PART 6, ANNEX 4.6: WINTERING BIRD DATA ANALYSIS IN RELATION TO ONSHORE WORKS

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Wintering Bird Data Analysis in relation to Onshore Works

Five Estuaries Offshore Wind Farm

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1	22 November 2023	Michelle Robertson	Duncan Watson	Duncan Watson
2	7 February 2024	Michelle Robertson	Duncan Watson	Duncan Watson

Basis of Report

This document has been prepared by SLR Consulting Limited (SLR) with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with GoBe Consultants (on behalf of Five Estuaries Offshore Wind Farm Ltd) (the Applicant) as part or all of the services it has been appointed by the Applicant to carry out. It is subject to the terms and conditions of that appointment.

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1.0 Introduction

Five Estuaries Offshore Wind Farm (VE) is a Nationally Significant Infrastructure Project (NSIP), and an Environmental Impact Assessment (EIA) is being undertaken as part of a Development Consent Order (DCO) application under the Planning Act 2008.

To inform the EIA, various wintering/non-breeding bird surveys have been undertaken covering the proposed landfall zones, onshore Export Cable Corridor (ECC) and Onshore Substation (OnSS) areas under consideration as part of the Project. The five reports detailing the results of these bird surveys are listed below, along with details of where the reports are provided, either within the VE Preliminary Environmental Information Report (PEIR) or VE Environmental Statement (ES):

Landfall Zones:

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys (PEIR Annex 4.10);
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys (PEIR Annex 4.11); and
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations) (PEIR Annex 4.6).

Onshore Export Cable Corridor and Onshore Substation Areas:

- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22 (PEIR Annex 4.12); and
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23 (Volume 6, Part 6, Annex 4.5: Onshore Cable Route: Non-breeding Bird Surveys 2022-23).

It is noted that several of the reports listed above contain survey data collected on behalf of North Falls Offshore Wind Farm. However, the surveys are also relevant to VE and North Falls Offshore Wind Farm Ltd has granted permission for the reports to be used to inform the EIA for VE and to be included as Annexes to the VE PEIR and VE ES.

SLR Consulting Ltd (SLR) was commissioned by GoBe Consultants, on behalf of Five Estuaries Offshore Wind Farm Ltd, to undertake a GIS-based analysis of wintering bird survey data to inform the EIA. This report presents the findings of the data analysis.

1.1 Study Area

The study area used for this report covers the Onshore Order Limits for VE¹, plus a 400m buffer, refer to **Drawing 1**. A 400m buffer is included to allow for possible disturbance effects outside the Onshore Order Limits. The 400m buffer was requested by Natural England in line with advice provided to other offshore wind farm projects. No significant disturbance effects to birds are likely beyond 400m from the Onshore Order Limits. The survey areas used for the surveys listed above mostly cover a much wider area than the study area used for this report (see **Drawing 2**). There are also a few small areas where the surveys did not

¹ The analysis presented in this reported was based on the Onshore Order Limits that were under consideration at the time the analysis was undertaken (November 2023). The Onshore Order Limits have subsequently been subject to minor changes, primarily in the vicinity of the OnSS, which may affect some of the figures presented in this report. However, none of the changes are likely to affect the conclusions of this report. Please note that all references to the Onshore Order Limits in this report refer to the Onshore Order Limits under consideration at the time the analysis was undertaken, not the final Order Limits included within the DCO application and elsewhere within the ES.



provide full coverage of the 400m buffer used for this report. These are discussed further in Section 2.2.3 and shown in **Drawing 2**.

1.2 Purpose of this Report

The aim of this report is to present the results of a spatial analysis of wintering bird survey data to identify the abundance and distribution of wintering waterbirds² within the Onshore Order Limits and 400m buffer, which could potentially be affected by disturbance due to the Project.

The analysis considers peak survey counts within the study area in relation to national and site-specific thresholds for the relevant species. Specifically, counts are compared with relevant data for nearby designated sites, to which the study area may be functionally linked, to determine whether the numbers of birds recorded within the study area could represent a significant proportion of nearby designated site populations.

The output from the analyses is intended to be used to identify whether the Project could potentially cause disturbance to significant numbers of birds, particularly in terms of nearby designated site populations, and if so, to which species and in which areas. Detailed assessment of impacts on these species, and the development of any necessary mitigation measures, are beyond the scope of this report however and are covered in the ES, Volume 6, Part 3, Chapter 4: Onshore Biodiversity and Nature Conservation³.

1.3 Evidence of Technical Competence and Experience

This report has been authored by Joseph Marcus Graduate Ornithologist at SLR, Guy Ostler, Ecologist at SLR and a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and Michelle Robertson, Associate Ecologist at SLR and a full member of CIEEM (MCIEEM). Duncan Watson provided technical support and a Quality Assurance review of this report. Duncan is a Technical Director at SLR Consulting with over 25 years' professional ecological experience. He is also a Chartered Environmentalist (CEnv) and MCIEEM. Joseph, Michelle, Guy and Duncan all specialise in ornithology.

² The definition of waterbirds used here follows that used by the Wetland Bird Survey (WeBS) and includes wildfowl (ducks, geese and swans), waders, rails, divers, grebes, cormorants and herons.

³ An assessment of effects relating to European sites is also provided in the Report to Inform an Appropriate Assessment (RIAA).



2.0 Methodology

2.1 Field Surveys

2.1.1 Landfall Zones Methodology

Surveys at the proposed landfall zones under consideration at that time were conducted by MacArthur Green and SLR Consulting. A summary of the methodologies used is provided below with further details provided within the relevant reports (see Section 1).

2.1.1.1 MacArthur Green

The landfall surveys conducted by MacArthur Green involved twice monthly surveys between October and March 2020/21 and 2021/22. The 2021/22 surveys also included monthly surveys between August and September 2021/22. A walkover method was used, comprising a walked transect with regularly spaced vantage points. The transect route covered the seafront, but also spanned further inland, involving the farmland between Holland-on-Sea and Frinton-on-Sea. Minor amendments were made to the transect route between the 2020/21 and 2021/22 survey periods due to changes in landowner access. The transect routes ensured all suitable areas within the landfall search area were surveyed to within 500m and counts of birds were made using the 'look-see' method advised by the BTO WeBS Core Count methodology for waterbirds⁴. To account for movement in bird populations during survey periods, the survey area was compartmentalised into five sections based on habitat type and/or field boundaries. This meant the peak counts per species, per survey could be determined within each section. Aiming to locate roost sites, surveys were timed to overlap with dawn and dusk periods, continuing into the day to determine feeding sites.

2.1.1.2 SLR Consulting

Surveys undertaken by SLR took place twice per month from September to March 2021/22 (inclusive) and focused on the seafront at two possible landfall zones under consideration at that time. To account for changes in bird numbers and distribution due to the tidal state six hourly surveys were conducted 'through the tide', either starting at low tide and ending at high tide or starting at high tide and ending at low tide. Counts of waterbird species were taken hourly, noting the location and behaviour of each flock (i.e., foraging, loafing, roosting, and maintenance).

2.1.2 Onshore Export Cable Corridor and Onshore Substation Areas Methodology

Surveys covering the onshore ECC and OnSS areas under consideration at the time of each survey, plus a 400m buffer, were undertaken by MacArthur Green. Following a reconnaissance visit in September 2021, surveys were conducted twice each month between October and March 2021/22 and October and March 2022/23. The survey area was split into discrete sections to avoid surveyor overlap and allow peak counts for each species to be recorded within each section. Surveyors scanned the survey area using a combination of walkovers, vehicles and vantage points, ensuring all suitable areas were surveyed to within 500m. The 'look-see' method advised by the WeBS Core Count methodology for waterbirds⁴⁴ was adopted. Counts of each species were recorded alongside their location, time/date, behaviour and where applicable, the direction of their movement. The full methodology is detailed in the original reports (see Section 1).

⁴ https://www.bto.org/sites/default/files/02_-_core_count_0.pdf [accessed October 2023]



2.1.3 Survey Coverage

The coverage of each non-breeding survey is displayed on **Drawing 2 (Appendix A)**. The full extent of the area within the Onshore Order Limits was covered by at least one year of survey and there are two winters of survey data for the vast majority of the area within the Onshore Order Limits. Areas within the Onshore Order Limits that only have one year's data are limited to two proposed access routes and a small extent of the proposed National Grid substation site at the north-western tip of the proposed order limits. These areas extend to 16.41 ha, which represents only 3.97% of the area within the Onshore Order Limits.

There were some areas of the 400m buffer that were not covered by the surveys in either year, the orange shaded areas in **Drawing 2 (Appendix A)**. The total area of these data gaps is 93.90 ha, with the total area of the 400m buffer being 3,280.22 ha the percentage for which there are data gaps is equivalent to 2.86% of the 400m buffer.

The data gaps described above have arisen due to changes in the scheme design since the relevant surveys were undertaken. The data gaps are very small in the context of the wider study area and are not considered to significantly affect the validity of the assessment.

2.2 Data analysis

2.2.1 Determination of Species Subject to Analysis

There are five Special Protection Areas (SPA), four Ramsar sites and one additional Site of Special Scientific Interest (SSSI) specifically with bird qualifying interest features that are within 15km of the onshore application site and which were scoped in for detailed assessment within the PEIR and draft Report to Inform Appropriate Assessment (RIAA). These are:

- Hamford Water SPA⁵;
- Hamford Water Ramsar Site⁶;
- Stour and Orwell Estuaries SPA⁷;
- Stour and Orwell Estuaries Ramsar Site⁸;
- Colne Estuary (Mid-Essex Coast Phase 2) SPA⁹;
- Colne Estuary (Mid-Essex Coast Phase 2) Ramsar Site¹⁰;
- Abberton Reservoir SPA¹¹;
- Abberton Reservoir Ramsar Site¹²;
- Blackwater Estuary (Mid-Essex Coast Phase 4) SPA¹³; and
- Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar Site¹⁴; and

⁵ Hamford Water SPA citation <https://publications.naturalengland.org.uk/publication/6658670226046976>

⁶ Hamford Water Ramsar site information sheet <https://jncc.gov.uk/jncc-assets/RIS/UK11028.pdf>

⁷ Stour and Orwell Estuaries SPA citation <https://publications.naturalengland.org.uk/publication/6069687402102784>

⁸ Stour and Orwell Estuaries Ramsar site information sheet <https://jncc.gov.uk/jncc-assets/RIS/UK11067.pdf>

⁹ Colne Estuary (Mid-Essex Coast Phase 2) SPA citation <https://publications.naturalengland.org.uk/publication/5664206519009280>

¹⁰ Colne Estuary (Mid-Essex Coast Phase 2) Ramsar site information sheet <https://jncc.gov.uk/jncc-assets/RIS/UK11015.pdf>

¹¹ Abberton Reservoir SPA Citation <https://publications.naturalengland.org.uk/publication/5673002612031488>

¹² Abberton Reservoir Ramsar site information sheet <https://jncc.gov.uk/jncc-assets/RIS/UK11001.pdf>

¹³ Blackwater Estuary (Mid-Essex Coast Phase 4) SPA citation <https://publications.naturalengland.org.uk/publication/4888693533835264>

¹⁴ Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar site information sheet <https://jncc.gov.uk/jncc-assets/RIS/UK11007.pdf>



- Holland Haven Marshes SSSI¹⁵.

Analysis of the wintering bird survey data focussed on waterbird and raptor/owl species that were recorded during the wintering surveys and which represent interest features for any of the above listed sites during the non-breeding period. The Holland Haven Marshes SSSI designation also includes two wintering passerine species, Lapland bunting *Calcarius lapponicus* and twite *Linaria flavirostris*. However, there were no records for twite or Lapland bunting within the study area during the surveys.

Waterbird target species were selected through the following process. Any waterbird species recorded during the surveys was included in the analysis that is:

- A qualifying interest feature during the non-breeding season of one or more of the nationally or internationally designated sites listed above (individually or named as an assemblage feature);
- Mentioned in the citation of a relevant SSSI in respect of its wintering population; and/or
- Highlighted in the PEIR as an important ecological feature during the non-breeding season.

All relevant waterbird species and their reason for selection for analysis are listed in Table 2-1. Grey plover *Pluvialis squatarola* and goldeneye *Bucephala clangula*, although present within the citations for some sites were not recorded within the study area during any surveys and are therefore excluded from this report.

For raptor or owl species associated with designated sites, all records of these species were extracted from the data set. The raptor and owl species of interest are:

- Hen harrier *Circus cyaneus* (Colne Estuary SPA (Mid-Essex Coast Phase 2), Blackwater Estuary (Mid-Essex Coast Phase 4) SPA) and Holland Haven Marshes SSSI; and
- Short-eared owl *Asio flammeus* (associated with Holland Haven Marshes SSSI).

2.2.2 Determination of Peak Counts

Due to differences in survey methods, peak counts for individual species were established in different ways for different surveys. For the SLR landfall intertidal surveys the peak count was derived from the highest sum of the flocks during a single hourly count. For the MacArthur Green surveys the peak count was derived from the highest sum of all observations of a particular species within a particular Route Section (see Section 2.2.4.2) on a single day. Due to the large size of the study area, it was not possible to determine peak counts for each species across the whole study area, because each survey visit was undertaken over several days and therefore it is not possible to rule out double counting (i.e. the same birds being recorded in different Route Sections on different days).

¹⁵ Holland Haven Marshes SSSI citation
<https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1006349.pdf>



2.2.3 Nomenclature

The phylogenetic order throughout this report follows The British List (10th Edition)¹⁶, updated by the British Ornithologists' Union Records Committee (BOURC). English names broadly follow Birds of the Western Palearctic¹⁷ and generally concur with those in common usage.

¹⁶ British Ornithologists' Union. 2022. The British List: A Checklist of Birds of Britain (10th edition), *Ibis* 164: pp.860 – 910.

¹⁷ Cramp, S., Simmonds, K. E. M. & Perrins, C. M. [Eds] (1977-1994) The Birds of the Western Palearctic. Volume 1-9. Oxford University Press, Oxford



Table 2-1: Bird species recorded during the various surveys that are associated with designated sites in the non- breeding season (Y-Yes within designation) or highlighted as Important Ecological Features (IEF) in the Preliminary Environmental Information Report (PEIR)

Species	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary ¹⁸ SPA	Colne Estuary ¹⁹ Ramsar site	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Black-water Estuary ²⁰ SPA	Black-water Estuary ²¹ Ramsar	Holland Haven Marshes SSSI	IEF in PEIR
Dark-bellied brent goose <i>Branta bernicla bernicla</i>	Y	Y	Y	Y	Y	Y			Y	Y	Y	
European white fronted goose <i>Anser albifrons</i>												Y
Mute swan <i>Cygnus olor</i>					Y		Y					
Shelduck <i>Tadorna tadorna</i>	Y		Y		Y				Y			
Shoveler <i>Anas clypeata</i>							Y	Y			Y	
Gadwall			Y				Y	Y	Y			

¹⁸ Abbreviated, in full - Colne Estuary (Mid- Essex Coast Phase 2) SPA

¹⁹ Abbreviated, in full - Colne Estuary (Mid- Essex Coast Phase 2) Ramsar site

²⁰ Abbreviated, in full - Blackwater Estuary (Mid-Essex Coast Phase 4) SPA

²¹ Abbreviated, in full - Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar site



Species	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary ¹⁸ SPA	Colne Estuary ¹⁹ Ramsar site	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Black-water Estuary ²⁰ SPA	Black-water Estuary ²¹ Ramsar	Holland Haven Marshes SSSI	IEF in PEIR
<i>Anas strepera</i>												
Wigeon <i>Anas penelope</i>			Y				Y	Y			Y	
Pintail <i>Anas acuta</i>			Y	Y							Y	
Teal <i>Anas crecca</i>	Y						Y		Y		Y	
Pochard <i>Aythya farina</i>							Y				Y	
Tufted duck <i>Aythya fuligula</i>							Y					
Coot <i>Fulica atra</i>							Y					
Great crested grebe <i>Podiceps cristatus</i>			Y				Y					
Avocet <i>Recurvirostra avosetta</i>	Y											
Lapwing <i>Vanellus vanellus</i>			Y									
Golden plover <i>Pluvialis apricaria</i>												Y



Species	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary ¹⁸ SPA	Colne Estuary ¹⁹ Ramsar site	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Black-water Estuary ²⁰ SPA	Black-water Estuary ²¹ Ramsar	Holland Haven Marshes SSSI	IEF in PEIR
Ringed plover <i>Charadrius hiaticula</i>	Y	Y	Y		Y				Y			
Curlew <i>Numenius arquata</i>			Y		Y				Y			
Black-tailed godwit <i>Limosa limosa</i>	Y	Y	Y	Y	Y				Y	Y	Y	
Turnstone <i>Arenaria interpres</i>			Y									
Knot <i>Calidris canutus</i>			Y									
Ruff <i>Philomachus pugnax</i>											Y	
Sanderling <i>Calidris alba</i>					Y							
Dunlin <i>Calidris alpina</i>			Y	Y	Y				Y	Y		
Purple sandpiper <i>Calidris maritima</i>											Y	



Species	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary ¹⁸ SPA	Colne Estuary ¹⁹ Ramsar site	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Black-water Estuary ²⁰ SPA	Black-water Estuary ²¹ Ramsar	Holland Haven Marshes SSSI	IEF in PEIR
Snipe <i>Gallinago gallinago</i>											Y	
Redshank <i>Tringa totanus</i>	Y	Y	Y	Y	Y	Y			Y			
Cormorant <i>Phalacrocorax carbo</i>			Y		Y				Y			
Hen harrier					Y				Y		Y	
Short-eared owl											Y	



2.2.4 GIS Analysis

2.2.4.1 Onshore Order Limits

The Onshore Order Limits for the project include the following:

- Landfall: the area from Mean Low Water to where the offshore export cables are connected to the onshore cable circuits within Transition Joint Bays (TJBs);
- Onshore ECC: where permanent infrastructure connects the cables at Landfall to the proposed OnSS;
- OnSS: where the power supplied from the wind farm is adjusted (including voltage, power quality and power factor as required) to meet the UK System-Operator Transmission-Owner Code for supply to the National Grid East Anglia Connection Node (EACN) Substation; and
- Connection to the National Grid: this will include 400kV underground circuit(s) running from the proposed VE OnSS to the new National Grid EACN Substation.

The Onshore Order Limits include sufficient space to enable the construction of the proposed VE and North Falls Offshore Wind Farms and at this stage it is not known where exactly within the order limits infrastructure specific to VE will be located. A precautionary approach has therefore been adopted whereby it is assumed that any birds recorded within the 400m buffer could potentially be affected by the Project. In practice however, some of these birds may have been recorded >400m from final infrastructure locations.

For the purpose of this report the onshore ECC has been split into sections that are referred to throughout literature pertaining to the Project (Route Sections 1-7), refer to **Drawing 1**. Further differentiation was made in Route Section 1 (the landfall), as this location is likely the most important area for waterbirds. Here, the proposed access route and TCC to the west of Holland Haven Marshes has been assessed separately from the remainder of the landfall area. This was done to enable disturbance impacts associated with the use of the proposed access route and TCC to be assessed separately from disturbance impacts associated with other works at the landfall. The locations of birds recorded in Route Section 1 were also further subdivided into birds recorded offshore, within the intertidal area or inland of the seawall.

2.2.4.2 Waterbird Data

All bird survey data were uploaded into ArcGIS Pro 3.0.3. The Onshore Order Limits were added as a layer and a buffer was added 400m from the order limits (see Section 1.1) to account for potential disturbance to birds located outside the Onshore Order Limits.

All data from MacArthur Green were provided in point format (i.e., a point associated with the number of birds observed, and associated metadata: species, date of observation, behavioural activity etc.).

In the SLR 2020-21 survey report for the landfall, the distribution and relative abundance of each species where more than ten individuals were recorded, are presented as 'heat maps'. To generate these heat maps points to represent individual birds were uniformly distributed across the areas recorded in the field by the survey team as the extent of any flocks. From these point distributions heat maps were generated using kernel densities. For the purposes of this study, these data had to be converted to make the data comparable with the MacArthur Green data. This was done by converting the area data to point data, by allocating a point to the central point of each area and associating the count and other metadata relevant to that observation.



2.2.4.3 Non-waterbird Species Data

For non waterbird species (i.e. hen harrier and short-eared owl), all records were extracted from the data set and the associated metadata and location were provided.

2.3 Limitations

Surveys at the landfall were undertaken using different methodologies, as described in Section 2.3.3.2. However, data have been converted so that they are comparable (see Section 2.2.4.2) and therefore this isn't considered a significant limitation.

Part of the landfall area received considerably more survey coverage than the rest of the onshore ECC, with separate surveys undertaken by MacArthur Green and SLR during winter 2021/22. The SLR surveys also generated considerably more data than the MacArthur Green surveys elsewhere within the study area due to the use of the 'through-the-tide' methodology. Peak counts in the landfall area might therefore be expected to be higher relative to elsewhere within the study area, simply due to additional coverage. This is not considered to be a significant limitation however as it is not the purpose of this report to compare different parts of the study area with one another so there is no need for levels of survey effort to be directly comparable.

As described in Section 2.1.3, not all of the Onshore Order Limits and the 400m buffer was surveyed, however the area not covered amounts to only 2.85% and this was all located within the 400m buffer. Also as described in Section 2.1.3, the majority of the area within the Onshore Order Limits was surveyed over two years. Areas that only have one year of non-breeding bird data account for only 3.97% of the area within the Onshore Order Limits. These small data gaps are not considered to significantly affect the conclusions of this study.

To identify the importance of bird populations within the study area, both in a national context and the in the context of nearby designated site populations, comparison is made between peak counts generated from relatively intensive surveys over a two-year period with national and designated site mean peak counts, determined via BTO WeBS counts over a five-year period. Whilst this means that data are not directly comparable, this is unavoidable as national data and data for designated sites are not available in a form that is directly comparable with survey data collected for this project. It is also a precautionary approach as survey peak counts are likely to be greater than WeBS five-year peak mean counts for comparable areas. This study is therefore likely to over-estimate the proportion of relevant national and designated site populations recorded within the study area.

Overall, the limitations outlined above are not thought significant and are not likely to significantly affect the overall analysis of the data.



3.0 Results

3.1 Designated sites

There are 11 designated sites with relevant winter bird qualifying interest features within 15 km of the Onshore Order Limits and which were scoped in for detailed assessment within the PEIR and draft RIAA, refer to **Table 3-1**. For completeness **Table 3-1** also includes details of ornithological interest features during the breeding season or on passage, although these features are not assessed within this report.

Table 3-1 Designated sites with Bird Qualifying Features within 15km of the Onshore Order Limits

Site Name	Distance to VE Onshore Order Limits (km)	Ornithological Qualifying Features
Holland Haven Marshes SSSI	Within Onshore Order Limits	Species detailed in citation utilising site over winter: <ul style="list-style-type: none"> • Dark-bellied brent goose • Shoveler • Wigeon • Pintail • Teal • Pochard • Ruff • Purple sandpiper • Snipe • Hen harrier • Short-eared owl • Twite • Lapland bunting Breeding <ul style="list-style-type: none"> • Skylark <i>Alauda arvensis</i> • Meadow pipit <i>Anthus pratensis</i> • Yellow wagtail <i>Motacilla flava</i> • Reed warbler <i>Acrocephalus scirpaceus</i> • Ringed plover Passage <ul style="list-style-type: none"> • Black-tailed godwit • Spotted redshank <i>Tringa erythropus</i> • Whimbrel <i>Numenius phaeopus</i> • Green sandpiper <i>Tringa ochropus</i> • Common sandpiper <i>Actitis hypoleucos</i>
Hamford Water SPA	0.78	Over winter: <ul style="list-style-type: none"> • Avocet • Black-tailed godwit



Site Name	Distance to VE Onshore Order Limits (km)	Ornithological Qualifying Features
		<ul style="list-style-type: none"> • Dark-bellied brent goose • Grey plover • Redshank • Ringed plover • Shelduck • Teal During the breeding season: <ul style="list-style-type: none"> • Little tern <i>Sternula albifrons</i>
Hamford Water Ramsar Site	0.78	Internationally important wintering populations of: <ul style="list-style-type: none"> • Black-tailed godwit • Dark-bellied brent goose On passage <ul style="list-style-type: none"> • Redshank • Ringed plover
Stour and Orwell Estuaries SPA	3.15	Over winter: <ul style="list-style-type: none"> • Dark-bellied brent goose • Pintail • Grey plover • Black-tailed godwit • Knot • Dunlin • Redshank • Waterbird assemblage, including the following additional species: • Gadwall • Wigeon • Goldeneye • Shelduck • Great crested grebe • Lapwing • Ringed plover • Curlew • Turnstone • Cormorant On passage: <ul style="list-style-type: none"> • Redshank During the breeding season: <ul style="list-style-type: none"> • Avocet
Stour and Orwell Estuaries Ramsar Site	3.15	Internationally important wintering populations of: <ul style="list-style-type: none"> • Dark-bellied brent goose • Pintail



Site Name	Distance to VE Onshore Order Limits (km)	Ornithological Qualifying Features
		<ul style="list-style-type: none"> • Grey plover • Knot • Black-tailed godwit • Dunlin • Redshank • On passage Redshank Also qualifies for: <ul style="list-style-type: none"> • Wintering waterbird assemblage
Colne Estuary (Mid-Essex Coast Phase 2) SPA	7.30	<ul style="list-style-type: none"> • Over winter: Dark-bellied brent goose • Redshank • Hen harrier • Waterbird assemblage, including the following additional species: • Mute swan • Goldeneye • Shelduck • Grey plover • Ringed plover • Curlew • Black-tailed godwit • Sanderling • Dunlin • Cormorant During the breeding season: <ul style="list-style-type: none"> • Pochard • Ringed plover • Little tern
Colne Estuary (Mid-Essex Coast Phase 2) Ramsar Site	7.30	Over winter: <ul style="list-style-type: none"> • Dark-bellied brent goose • Redshank • Waterbird assemblage
Abberton Reservoir SPA	12.08	Breeding: <ul style="list-style-type: none"> • Cormorant Non-breeding (winter and passage*): <ul style="list-style-type: none"> • Mute swan* • Shoveler* • Gadwall* • Wigeon • Teal • Pochard* • Tufted duck* • Goldeneye



Site Name	Distance to VE Onshore Order Limits (km)	Ornithological Qualifying Features
		<ul style="list-style-type: none"> • Coot • Great crested grebe • Waterbird assemblage
Abberton Reservoir Ramsar Site	12.08	Non-breeding autumn / spring: <ul style="list-style-type: none"> • Shoveler • Gadwall Non-breeding winter <ul style="list-style-type: none"> • Wigeon • Waterbird assemblage
Blackwater Estuary (Mid-Essex Coast Phase 4) SPA	14.37	Non-breeding: <ul style="list-style-type: none"> • Dark-bellied Brent goose • Grey plover • Black-tailed godwit • Dunlin • Hen harrier • Waterbird assemblage, including the following additional species: • Gadwall • Teal • Goldeneye • Shelduck • Ringed plover • Curlew • Redshank • Cormorant Breeding: <ul style="list-style-type: none"> • Little tern • Pochard • Ringed plover
Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar Site	14.37	Wintering: <ul style="list-style-type: none"> • Dark-bellied brent goose • Grey plover • Black-tailed godwit, • Dunlin • Waterbird assemblage



3.2 Field Survey Results Summary

3.2.1 Species Accounts

Summary accounts of the conservation status, behaviours, and numbers and distribution of each recorded waterbird species included in the data analysis are given in Table 3-2.

The distribution of survey records of each species within the study area is shown in **Drawing 3 (Appendix A)**, which shows records of birds from all surveys combined, with counts represented by proportional symbols to provide an indication of abundance. Note that because greater survey effort was employed at the landfall (Route Section 1) **Drawing 3** shows considerably more records for that section than for the rest of the study area.

Drawing 3 should therefore not be used to compare relative abundance between Route Section 1 and the rest of the study area. Note also that **Drawing 3** only includes route sections in which the relevant species were recorded, i.e., if a route section is not shown for a particular species in **Drawing 3** it is because there were no records of that species within that route section or the relevant 400m buffer.

The summary accounts provided here are based on the data provided in the relevant survey reports (see Section 1) but have been combined and summarised for ease of reading. For further detail please consult the relevant survey reports.



Table 3-2 Waterbird Species Accounts

Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
Dark-bellied brent goose	<p>Hamford Water SPA and Ramsar Site, Stour and Orwell Estuaries SPA and Ramsar site, Colne Estuary SPA¹⁸ and Ramsar site¹⁹, Blackwater Estuary SPA²⁰ and Ramsar site²¹<small>Error! Bookmark not defined.</small>.</p> <p>Also listed in Holland Haven Marshes SSSI citation.</p>	<p>Brent goose observations were concentrated in Route Section 1 although there were also records from the 400m buffer within Route Section 3. Within Route Section 1, a total of two observations within the Onshore Order Limits were recorded across all surveys, one of 1,000 individuals and another of one individual. The peak count of Brent geese was 1,100 recorded in Route Section 1 on land and within the intertidal habitat. Brent geese were recorded along the coastline in the intertidal area for 68% of the observations within Route Section 1. Within Route Section 3 brent geese were observed within the 400m buffer only on three occasions, where counts ranged between 65, 40 and nine individuals. Observations were concentrated in the core winter months of December (55% of observations).</p>	<p>Brent geese were recorded on nine occasions within the 400m buffer for the Holland Haven access. Counts ranged from one-900 individuals and were associated with Holland Haven SSSI to the north of the proposed access route. Observations were predominately recorded in December and January (77% of observations).</p>
European white-fronted goose	<p>None (Important Ecological Feature identified in PEIR)</p>	<p>No white-fronted geese were recorded within the Onshore Order Limits however, six observations were made within the 400m buffer, all of which were recorded in Route Section 1. One flock of 26 was observed in January 2021, with the other five observations ranging from one to 40 individuals throughout the December 2021 to February 2022 winter period</p>	<p>A total of 23 observations were made within the 400m buffer of the Holland Haven access, with counts ranging from three to 238 individuals, all recorded on land. Observations were predominantly recorded in January 2022 (65% of observations) and February 2022 (22% of observations), with two being recorded in March 2022 and one in December 2020.</p>
Mute swan	<p>Colne Estuary SPA and Abberton Reservoir SPA</p>	<p>Two observations of mute swan were recorded within the Onshore Order Limits, these were counts of four and one in Route Sections 5 and 4b, in December 2021 and January 2022 respectively. A total of 28 observations of mute swan were made within the 400m buffer (10 in Route Section 1, eight in Route Section 3, four in Route</p>	<p>A total of seven observations of mute swan were recorded within the Holland Haven access buffer. A peak count of seven mute swans was recorded in November 2020, single individuals were most frequently observed (three occasions). The other three observations were of two or three individuals. All observations of mute swan</p>



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
		<p>Section 4b and 5 and two in Route Section 6). The peak count was 12 individuals within Route Section 5 recorded in February 2022. Observations were more frequent in February and March than other winter months, with 64% of observations in the buffer being in those two months.</p>	<p>were on land, outside the intertidal area. Observations were recorded in March (three), January (two), October and November (one respectively).</p>
Shelduck	<p>Hamford Water SPA, Stour and Orwell Estuaries SPA, Colne Estuary SPA, Blackwater Estuary SPA.</p>	<p>Eleven observations of Shelduck were made within the 400m buffer of the Onshore Order Limits, with seven of those within Route Section 3, and four within Route section 1. Counts ranged between 1 and 30 individuals, with eight of the observations recorded in March 2022, two in January 2022 and one in February 2022.</p>	<p>A total of 89 observations of shelduck were recorded within the 400m buffer of the Holland Haven Access and TCC, with counts ranging between 1 and 18, with a peak count of 19 observed in two locations on 17 March 21 and observations recorded during most months in which surveys were undertaken. The majority of observations were on land, with two out at sea and one observation in the intertidal area.</p>
Shoveler	<p>Abberton Reservoir SPA and Ramsar site Also listed in Holland Haven Marshes SSSI citation.</p>	<p>There were three observations of shoveler within the 400m buffer of the Onshore Order Limits, two were located in Route Section 3 (two and four individuals, in February and October respectively) and one observation of three individuals in Route Section 1 in March. All observations were on land.</p>	<p>A total of 91 observations of shoveler were made within the 400m buffer of the Holland Haven Access and TCC, these were all on land. A peak count of 33 individuals was recorded in February 2021. Observations were spread relatively evenly across the survey months.</p>
Gadwall	<p>Stour and Orwell Estuaries SPA, Abberton Reservoir SPA and Ramsar Site and Blackwater Estuary SPA</p>	<p>Gadwall observations were concentrated within the 400m buffer of the Onshore Order Limits, within Route Section 3, although observations were also made within the 400m buffer in Route Sections 1 (a single observation of one individual in January 22), 4a, and 4b. Counts ranged between 1 and the peak count of 44, with most observations taking place within the core winter months of December, January, and February. All observations were on land.</p>	<p>Gadwall were recorded on 12 occasions within the 400m buffer for the Holland Haven access and TTC. Counts ranged from 1 to the peak count of 10 individuals with observations made in September, December February and March 2021, and March 2022. All observations were on land.</p>



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
Wigeon	Stour and Orwell Estuaries SPA, Abberton Reservoir SPA and Ramsar site. Also listed in Holland Haven Marshes SSSI citation.	A total of six observations of wigeon were recorded in the 400m buffer. Numbers ranged from 10 to a peak count of 200. All observations were in Route Section 1. There was a seasonal spread of observations, covering September, November, December and February. All observations of wigeon were offshore.	A total of 91 observations of wigeon were recorded within the 400m buffer for the Holland Haven access and TCC. The majority of these were located on land with only two offshore observations of 18 and 40 individuals. A peak count of 288 individuals was recorded in March 2021, and 19 observations were over 100 individuals (20.8%). In terms of seasonality, observations were most frequently recorded in February and March (52.7%), although observations were recorded in all months.
Pintail	Stour and Orwell Estuaries SPA and Ramsar site. Also listed in Holland Haven Marshes SSSI citation.	One observation of pintail was recorded within the 400m buffer, a count of eight individuals in Route Section 1 within the offshore habitat in September 2021.	One observation of three pintail was recorded on land in the Holland Haven access buffer in February 2021.
Teal	Hamford Water SPA, Abberton Reservoir SPA and Blackwater Estuary SPA. Also listed in Holland Haven Marshes SSSI citation.	There was a total of 27 observations of teal within the 400m buffer of the Onshore Order Limits with observations concentrated in Route Section 3, but also with observations in Route Sections 1, 4a and 4b. Counts ranged between 1 and the peak count of 80, with observations spread relatively evenly across the months within which the surveys took place. There was on intertidal and one offshore observation for this species within Route Section 1.	A total of 124 observations of teal were made within the 400m buffer of the Holland Haven Access and TCC, all observations were on land, with the exception of one which was observed offshore. A peak count of 324 individuals was recorded in December 2021. Observations were spread relatively evenly across the survey months.
Pochard	Abberton Reservoir SPA. Also listed in Holland Haven Marshes SSSI citation.	Two observations of Pochard were recorded within the 400m buffer of the Onshore Order Limits, within Route Section 3. Both observations were of two individuals recorded in February 2022 and March 2023.	No pochard were observed within the Holland Haven access buffer.



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
Tufted duck	Abberton Reservoir SPA	A total of 26 observations of tufted duck were located within 400m of the Onshore Order Limits. Of these observations the peak count was 66 and located in Route Section 3. The majority of observations were located in Route Section 3 (88%), with only two observations, of three and one tufted duck in January and February 2022 in the buffer of Route Section 1 and one observation of two individuals in March 2022 in the buffer near Route Section 5. Observations appear to be concentrated in the latter part of the winter months, with records from February and March across the years accounting for 54% of observations. All observations were on land.	There were no observations of tufted duck within the Holland Haven access and TCC buffer.
Coot	Abberton Reservoir SPA	Coot observations were concentrated within the 400m buffer of the Onshore Order Limits within Route Section 3, although there were also records from the 400m buffer within Route Sections 4a, 4b and 5. Within Route Section 3, counts ranged between 1 and 27 individuals. Only one observation, of two individuals, was made within Route Section 3a, and seven observations ranging between 1 and 4 individuals were made within Route Section 4b. One observation of two individuals was made within Route Section 5. A peak count of 28 individuals was recorded in February 2022 within Route Section 3. Observations were concentrated in January and February (45.16%) with observations also made in October, November and March.	No observations of coot were recorded within the 400m buffer for the Holland Haven access and TCC.
Great crested grebe	Stour and Orwell Estuaries SPA, Abberton Reservoir SPA	A total of seven observations were made of great crested grebe, all of these were within the 400m buffer from the Onshore Order Limits. One observation was within Route Section 1, offshore, of one individual in November. All	No observations of great crested grebe were recorded within the Holland Haven access and TCC buffer.



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
		<p>other observations were within Route Section 3 and the count ranged between one and three individuals observed on each occasion. All observations within Route Section 3 were recorded in February or March 2022.</p>	
Avocet	Hamford Water SPA	<p>There was only one observation of Avocet made within the 400m buffer of the Onshore Order Limits, within Route Section 1, with a count of 40 individuals in March 2022.</p>	<p>Avocet were observed on 70 occasions in all months except November within the 400m buffer for the Holland Haven access and TCC, with counts ranging from 1 to the peak count of 45 individuals. Observations were predominately recorded in January, February and March, with observations also recorded in September, October and December 2021. One observation of two individuals was observed offshore, the other 69 observations were on land.</p>
Lapwing	Stour and Orwell Estuaries SPA	<p>There was a total of five observations within the Onshore Order Limits (Route Sections 1, 4b, 6 and 7), all of which were recorded on land. Counts ranged from 12 to a peak count of 87 in December 2022. Observations within the Onshore Order Limits were recorded across the months of March, November, December and January.</p> <p>There was a total of 48 observations within the 400m buffer, 46% of which in Route Section 1, 29% in Route Section 3, 8% in Route Section 4b, 6% in Route Section 6 and 7, and 2% in Route Sections 2 and 4a. Counts ranged from one to the peak count of 890. All birds recorded in the buffer were recorded on land and although most observations were recorded in January (42% of observations), lapwing were recorded throughout the winter period.</p>	<p>A total of 87 observations were recorded within the 400m buffer of Holland Haven access and TCC, all of which were recorded on land. Counts ranged from one up to a peak count of 150, which was recorded on three occasions on 23 September 2021. 75% of observations had a count between one to 49, 15% had a count between 50 to 99, and 10% had a count between 100 and 150.</p> <p>92% of observations were recorded across the 2021/22 winter period (September 2021 to March 2022), with records being evenly spread throughout these months.</p>



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
Golden plover	None (Important Ecological Feature identified in PEIR)	<p>Three observations were made within the Onshore Order Limits, two of which were recorded in Route Section 4b, consisting of 26 and 41 individuals in November 2021 and December 2022, respectively. The other observation was made in Route Section 7 during November 2021 and consisted of five birds.</p> <p>Most observations (nine) were concentrated within the 400m buffer and golden plover was always observed on land, with four observations in Route Section 1, ranging from 21 to 150 individuals, and four observations in Route Section 4b, ranging from eight to 49 individuals. One bird was also recorded in Route Section 6.</p>	Two observations were made within the 400m buffer of the Holland Haven access, both in September 2021 during intertidal surveys and both consisting of a single bird on land.
Ringed plover	Hamford Water SPA and Ramsar site, Stour and Orwell Estuaries SPA and Blackwater Estuary SPA	One observation of a single ringed plover in flight was recorded in Route Section 1 along the offshore area in September 2021. This observation was within the 400m buffer of the Onshore Order Limits.	No observations of ringed plover were recorded within the 400m buffer of the Holland Haven access.
Curlew	Stour and Orwell Estuaries SPA, Colne Estuary SPA and Blackwater Estuary SPA	<p>There was a total of 26 observations of curlew within the Onshore Order Limits. The majority of these, 92.3%, were within Route Section 1 with two observations of individuals within Route Section 3 in November 2021 and December 2022. The peak count of observations in Route Section 1 was 44, with 29.2% of observations being greater than 20 individuals. The majority of curlew within the Onshore Order Limits were observed on land, with one intertidal observation. Observations were spread across all survey months.</p> <p>Within the 400m buffer, there was a total of 85 observations of curlew, across Route Section 1 (72.9% of observations in the 400m buffer), Route Section 3 (15.3%</p>	A total of 30 curlew observations were recorded within the Holland Haven access 400m buffer. Counts ranged from one to 54, with 50% of records being greater than 10. One observation was offshore, and the rest were on land. Observations were recorded in all survey months, apart from October, with 66.6% of observations in January or February.



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
		<p>of observations in the 400m buffer), Route Section 4a (1 observation of a single curlew) and Route Section 4b (10.6% of observations within the 400m buffer). The peak count of curlew within the 400m buffer was 84 and 44.7% of observations had a count of 10 or greater. Observations were split across most survey months with a concentration of observations in January, February and March over the multiple years of survey (61.2% of observations).</p>	
Black-tailed godwit	<p>Hamford Water SPA and Ramsar Site, Stour and Orwell Estuaries SPA and Ramsar Site, Colne Estuary SPA and Blackwater Estuary SPA²⁰ and Ramsar Site²¹.</p>	<p>There were two observations of black-tailed godwit, both of a single individual, made within the 400m buffer of the Onshore Order Limits, both within Route Section 3, in October 2022.</p>	<p>Black-tailed godwits were observed in all winter survey months within the 400m buffer for the Holland Haven access and TCC, with counts ranging from 1 to 21 individuals. Observations were predominately recorded in January, February and March 2022, with observations also recorded in December 2020 and September, October, November and December 2022. All observations, except one observed in the intertidal area, were on land.</p>
Turnstone	<p>Stour and Orwell Estuaries SPA.</p>	<p>Six observations were made within the Onshore Order Limits, all of which were recorded in Route Section 1. Counts consisted of one (two observations), two (one observation), and the peak count in this location- three birds (three observations). All observations were intertidal.</p> <p>14 observations were made within the 400m buffer, with counts ranging from one to a peak count of 10. All observations were in Route Section 1, seven were intertidal, five were offshore and two were on land. All observations were recorded throughout the September 2021 to March 2022 winter period, with the majority being</p>	<p>A total of 51 observations were recorded within the Holland Haven access and TCC 400m buffer. Counts ranged from 1 to a peak count of 16 in March 2022, with six observations above a count of 10 (12%). 59% of all observations were offshore, 22% of were recorded on land, and 20% were intertidal observations. The majority of observations were recorded within January and November (43%), but generally observations were spread throughout the winter period.</p>



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
		recorded in October 2021 (25% of observations) and March 2022 (25% of observations).	
Knot	Stour and Orwell Estuaries SPA and Ramsar Site	There were no records of knot within the Onshore Order Limits or the 400m buffer.	There was one record of knot within the Holland Haven access and TCC buffer, a single individual was observed in October 2021.
Ruff	Listed in Holland Haven Marshes SSSI citation.	There were no records of ruff within the Onshore Order Limits or 400m buffer.	Five observations were made within the Holland Haven access and TCC buffer. One observation consisting of a single bird was made in both February and March 2021. Three observations were made in September 2021, consisting of counts of one, three and four birds. All observations were recorded on land.
Sanderling	Colne Estuary SPA	A single observation of two sanderlings foraging was recorded within the Onshore Order Limits within Route Section 1 on land in January 2022. A further two records of foraging sanderling were reported in the 400m buffer, in the intertidal and offshore areas of Route Section 1. Flock size was four and one, recorded in October and January 2022 respectively.	Two observations of individual sanderlings on land within the Holland Haven access and TCC buffer were recorded in October and November 2021.
Dunlin	Stour and Orwell Estuaries SPA and Ramsar Site, Colne Estuary SPA, Blackwater Estuary SPA ²⁰ and Ramsar Site ²¹ <small>Error! Bookmark not defined.</small>	No observations of dunlin were made within the 400m buffer or the Onshore Order Limits.	Dunlin were recorded on ten occasions within the Holland Haven access and TCC 400m buffer. Counts ranged from one-six individuals and observations were recorded in March, September, October and December 2021, and February and March 2022. The majority of observations were on land, with two observed offshore.



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
Purple sandpiper	Listed in Holland Haven Marshes SSSI citation.	<p>There were three observations of purple sandpiper within the Onshore Order Limits, all within Route Section 1 and intertidal. A peak count of seven was recorded in March 2022, other observations were of an individual in November 2021 and January 2022.</p> <p>There was a total of 18 observations of purple sandpiper within the Holland Haven access and TCC 400m buffer. Counts ranged from one to a peak count of 12. The majority of observations were offshore (12 observations), five observations were intertidal and one count of two individuals was recorded inland. The majority of observations were in February or March (77.77%).</p>	<p>A total of 60 observations of purple sandpiper were recorded within the Holland Haven access and TCC buffer. Counts ranged from one to a peak count of 27 on 24 February 2022. Records of purple sandpiper were located offshore (68.3%), intertidal (16.7%) and on land 15%. Observations were spread across January, February, March, October, November and December, with 51% of observations in February and March.</p>
Snipe	Listed in Holland Haven Marshes SSSI citation.	<p>Seven observations of snipe were made within the 400m buffer (three in Route Section 1, and one in Route Sections 3, 4b, 5, and 6), but no birds were recorded within the Onshore Order Limits. Counts consisted of one (four observations), two (two observations) and a peak count of five (one observation) birds, where the latter was recorded in Route Section 1 in December 2021. All observations were on land.</p>	<p>A total of 21 observations were made within the Holland Haven access and TCC buffer. A peak count of 36 was recorded twice, once in, in March 2021. Counts of one to nine consisted of 62% of observations and counts of 10 to 22 consisted of 38% of observations. Most observations were recorded throughout the September 2021 to March 2022 winter period (76% of observations), with the other observations being recorded in November 2020, and February and March 2021. All observations were on land.</p>
Redshank	Hamford Water SPA and Ramsar site, Stour and Orwell Estuaries SPA and Ramsar site, Colne Estuary SPA and Ramsar site and Blackwater Estuary SPA	<p>Only one observation of redshank was recorded within the 400m buffer of the Onshore Order Limits, within Route Section 3, of two individuals recorded in December 2022.</p>	<p>A total of 11 observations of redshank were recorded within the 400m buffer of the Holland Haven access, in October 2020, February, March and November 2021 and March 2022. Counts ranged between one and five individuals. All observations were on land except one observation of two flying offshore.</p>



Species	Qualifying species (non- breeding) for Nearby Designated Sites (including named assemblage species)	Species account – Onshore Order Limits and 400m Buffer (General)	Species Account Holland Haven Access Route and TCC Only
Cormorant	Colne Estuary SPA, Stour and Orwell Estuaries SPA, Blackwater Estuary SPA	<p>A total of 12 observations of cormorant were made within the Onshore Order Limits across Route Sections 1, 3, 4b and 7. Except for one intertidal observation, all other observations within the Onshore Order Limits were recorded on land. There was a peak count of 17 recorded in December 2022, but 83% of observations recorded a count of one to four birds. The majority of observations were on land, with only one intertidal observation.</p> <p>A total of 61 observations were recorded within the 400m buffer, concentrated in Route Section 1 (70% of observations), but also being recorded in Route Sections 3, 4a, 4b, 5 and 7. 54% of observations were recorded on land, 44% were offshore observations, and 2% were intertidal observations. A peak count of 31 was recorded in December 2022 on land, other observations ranged from one to nine. Observations within the 400m buffer were concentrated in January, February, and March 2022 (69% of observations).</p>	<p>A total of 68 observations of cormorant were recorded within the Holland Haven access and TCC 400m buffer, 43 observations were of more than one bird, with a peak count of 18 individuals. The majority of observations were recorded in December 2021 and January, February, and March 2022, and three observations in January 2021. 54% of observations were recorded on land, 37% were offshore and 9% were intertidal observations.</p>



3.2.1.1 Hen harrier

Hen harrier is a qualifying interest feature within the Colne Estuary (Mid-Essex Coast Phase 2) SPA and the Blackwater Estuary (Mid-Essex Coast, Phase 4) SPA. It is also listed in Holland Haven Marshes SSSI citation. There was a total of three observations of hen harrier across all surveys, associated with Route Section 1, Section 3 and the Holland Haven access and TCC area, refer to **Drawing 4 (Appendix A)**. Two of the observations were in October 2021 and the final observation was in December 2021.

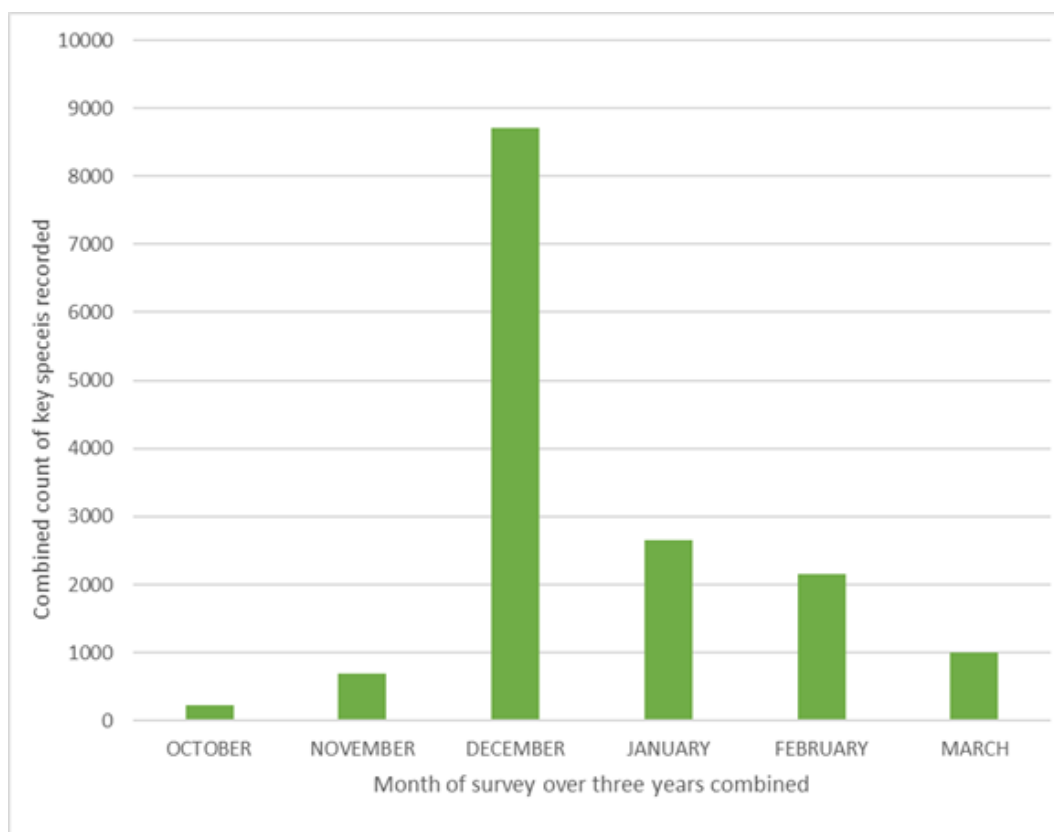
3.2.1.2 Short-eared owl

Short-eared owl is included within the Holland Haven Marshes SSSI citation. A total of two observations of a single short-eared owl were recorded across all surveys. Both observations were in October 2021, one within the 400m buffer of the Onshore Order Limits and one within the 400m buffer of the Holland Haven access and TCC refer to **Drawing 4 (Appendix A)**.

3.2.2 Seasonality

All sightings of species of interest were collated and the spread of the sightings across the winter months of survey were graphed to show any seasonal patterns in the abundance of birds recorded, refer to Figure 3-1. Although the actual number of birds recorded is biased by the higher level of survey effort at the landfall (Route Section 1) in winter 2021/22, levels of survey effort were consistent across the season and therefore overall trends are not likely to be affected. Figure 3-1 shows that the largest number of birds (by far) was recorded in December, with January and February having the next largest numbers, with lower numbers in November and March and much lower numbers in October.

Figure 3-1: Total number of individual birds by month, October to March (all waterbird species and all surveys combined)



3.3 Peak Counts

3.3.1 Peak Counts by Route Section

Peak counts for each species within each Route Section are presented in Table 3-3. As highlighted in Section 2.2.4.1, for Route Section 1 peak counts for the proposed access route and TCC to the west of Holland Haven Marshes are presented separately from the remainder of the landfall area.



Table 3-3: Peak Counts for each Species for each Route Section (Onshore Order Limits and 400m Buffer Combined)

Species	Section 1 (excluding Holland Haven Access)	Section 1 (Holland Haven Access)	Section 2	Section 3	Section 4a	Section 4b	Section 5	Section 6	Section 7
Dark-bellied brent goose	1,100	900		65					
European white-fronted goose	40	238							
Mute swan	12	7		2		2	12	3	
Shelduck	30	18		15					
Shoveler	4	33		4					
Gadwall	44	10		44	11	31			
Wigeon	200	288							
Pintail	8	3							
Teal	80	324		80	14	4			
Pochard	2			2					
Tufted duck	66			66			2		
Coot	28			28	2	4	2		
Great crested grebe	3			3					
Avocet	40	45							
Lapwing	890	150	1	265	27	153		12	56
Golden plover	150	1				49		1	5
Ringed plover	1								
Curlew	84	54		17	1	31			
Black-tailed godwit	1	21		1					
Turnstone	10	16							
Knot		1							
Ruff		4							
Sanderling	4	1							
Dunlin		6							
Purple sandpiper	12	27							
Snipe	5	36		1		1	2	1	
Redshank	2	5		2					
Cormorant	31	18		17	1	3	1		9
Hen harrier	1								
Short-eared owl	1	1							



3.3.2 Peak Counts in Relation to UK Wintering Populations

Peak counts for each of the target species recorded within the Onshore Order Limits and 400m buffer, excluding the Holland Haven access and TCC buffer (separately displayed), are shown in Table 3-4. The route section within which the peak count was recorded is also indicated. These data are presented alongside the most recent UK wintering population estimate for each species²² and the proportion of the national population recorded within the study area has been calculated. This enables the potential value of the recorded species populations to be determined using the standard '1% criterion' method²³. Using this, the presence of >1% of the international population of a species is considered internationally important; >1% of the national population is considered nationally important; etc. Any percentage greater than one is highlighted in bold.

Table 3-4: Peak Count of Species Recorded within the Study Area and the Percentage of the UK Wintering Population represented by the Peak Count

Species	UK Wintering Population	Peak Count Onshore Order Limits and 400m Buffer	Location of Peak Count	% of UK Wintering Population	Peak Count Holland Haven Access	% of UK Wintering population
Dark-bellied brent goose	135,000*	1,100	Sec.1 Buffer	0.81%	900	0.7%
European white-fronted goose	14,000	40	Sec.1 Buffer	0.29%	238	1.70%
Mute swan	53,000	12	Sec.5 Buffer	0.02%	7	0.01%
Shelduck	51,000	30	Sec.1 Buffer	0.06%	18	0.04%
Shoveler	20,000	4	Sec.3 Buffer	0.02%	33	0.17%
Gadwall	31,000	44	Sec.3 Buffer	0.14%	10	0.03%
Wigeon	450,000	200	Sec. 1 Buffer	0.04%	288	0.06%
Pintail	20,000	8	Sec.1 Buffer	0.04%	3	0.02%
Teal	435,000	80	Sec.3 Buffer	0.02%	324	0.07%
Pochard	29,000	2	Sec.3 Buffer	0.01%	0	N/A
Tufted duck	140,000	66	Sec.3 Buffer	0.05%	0	N/A
Coot	205,000	28	Sec.3 Buffer	0.01%	0	N/A
Great crested grebe	18,000	3	Sec.3 Buffer	0.02%	0	N/A
Avocet	8700	40	Sec.1 Buffer	0.46%	45	0.52%
Lapwing	635,000	890	Sec.1 Buffer	0.14%	150	0.02%
Golden plover	410,000	150	Sec.1 Buffer	0.04%	1	0.00%

²² Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, S. & Noble, D. (2020) APEP 4 - Population estimates of birds in Great Britain and the United Kingdom. British Birds Volume: 113

²³ Holt, C., Austin, G., Calbrade, N., Mellan, H., Hearn, R., Stroud, D. Wotton, S. & Musgrove, A. 2012. Waterbirds in the UK 2010/11 The Wetland Bird Survey. British Trust for Ornithology, Royal Society for the Protection of Birds and Joint Nature Conservation Committee in association with Wildfowl & Wetlands Trust.



Species	UK Wintering Population	Peak Count Onshore Order Limits and 400m Buffer	Location of Peak Count	% of UK Wintering Population	Peak Count Holland Haven Access	% of UK Wintering population
Ringed plover	43,000	1	Sec.1 Buffer	0.00%	0	N/A
Curlew	125,000	84	Sec.1 Buffer	0.07%	54	0.04%
Black-tailed godwit	41,000	1	Sec.3 Buffer	0.00%	21	0.05%
Turnstone	43,000	10	Sec.1 Buffer	0.02%	16	0.04%
Knot	265,000	0	N/A	N/A	1	0.00%
Ruff	920	0	N/A	N/A	4	0.43%
Sanderling	21,000	4	Sec.1 Buffer	0.02%	1	0.00%
Dunlin	350,000	0	N/A	N/A	6	0.00%
Purple sandpiper	9,900	12	Sec.1 Buffer	0.12%	27	0.27%
Snipe	1,100,000	5	Sec.1 Buffer	0%	36	0.00%
Redshank	100,000	2	Sec3 Buffer	0%	5	0.01%
Cormorant	65,000	31	Sec.1 Buffer	0.05%	18	0.03%
Hen harrier	1,090	1	Sec. 1 Buffer	0.09%	0	N/A
Short-eared owl	1,240	1	Sec. 1 Buffer	0.08%	1	0.08%

3.3.3 Peak Counts in Relation to Nearby Designated Site Populations

For qualifying species for nearby designated sites, peak counts recorded within the study area have been compared with non-breeding population figures detailed in the citations for and the most up to date BTO WeBS five-year mean peak count²⁴ for the relevant designated sites. The results are detailed in Table 3-5 to Table 3-15. As in Section 3.3.2 the potential importance of the recorded species populations, in relation to nearby designated site populations, can be determined using the '1% criterion' method. Any percentage greater than one is highlighted in bold. Note that a precautionary assumption has been used which assumes that all birds recorded within the study area form part of the relevant designated site populations, even though in practice this is very unlikely to be the case for most species.

²⁴ Austin, G.E., Calbrade, N.A., Birtles, G.A., Peck, K., Shaw, J.M. Wotton, S.R., Balmer, D.E. and Frost, T.M. 2023. Waterbirds in the UK 2021/22: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford. <https://app.bto.org/webs-reporting/numbers.jsp> [Accessed October 2023]



Table 3-5 Peak count of species recorded within the Study Area Compared with Population Data for Holland Haven SSSI (peak counts quoted are from Route Section 1, unless stated otherwise)

SSSI Citation Named Species	SSSI Citation Population	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of SSSI citation population	% of most recent WeBS count	Peak count	% of SSSI citation population	% of most recent WeBS count	Peak count	% of SSSI citation population	% of most recent WeBS count
Dark-bellied brent goose [‡]	Several hundred	889	1,000	N/A	112.49	1,100	N/A	123.73	900	N/A	101.24
Shoveler	20	34	0	N/A	N/A	4 (S3)	20	11.76	33	165.00	97.06
Wigeon	1,000-6,500	406	0	N/A	N/A	200	3.08-20	49.26	288	28.80-32.12	70.94
Pintail	35	2	0	N/A	N/A	8	22.86	400	3	8.57	150.00
Teal	Several hundred	351	0	N/A	N/A	80 (S3)	N/A	22.79	324	N/A	92.31
Pochard	10	0	0	N/A	N/A	2 (S3)	20	N/A	0	N/A	N/A
Ruff	90	3	0	N/A	N/A	0	N/A	N/A	4	4.44	133.33



SSSI Citation Named Species	SSSI Citation Population	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of SSSI citation population	% of most recent WeBS count	Peak count	% of SSSI citation population	% of most recent WeBS count	Peak count	% of SSSI citation population	% of most recent WeBS count
Snipe	Record of 900 in 1988	12	0	N/A	N/A	5	41.66	41.67	36	4	300
Purple sandpiper	10 - 15	5	7	70-45.66	140	12	120-80	240	27	270-180	540
Hen harrier	N/A	N/A	0	N/A	N/A	1	N/A	N/A	0	N/A	N/A
Short eared owl	N/A	N/A	0	N/A	N/A	1	N/A	N/A	1	N/A	N/A



Table 3-6 Peak Count of Species Recorded within the Study Area Compared with Population Data for Hamford Water SPA (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying Species	SPA Citation population	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count
Dark-bellied brent goose	6,892	4,609	1,000	14.51	21.70	1,100	15.96	23.87	900	13.06	19.53
Shelduck	1,629	1,098	0	N/A	N/A	30	1.84	2.73	19	1.17	1.73
Teal	3,631	3,886	0	N/A	N/A	80 (S3)	2.20	2.06	324	8.92	8.34
Avocet	317	772	0	N/A	N/A	40	12.62	5.18	45	14.20	5.83
Ringed plover	520	187	0	N/A	N/A	1	0.19	0.53	0	N/A	N/A
Black-tailed godwit	1,121	844	0	N/A	N/A	1	0.09	0.12	21	1.87	2.49
Redshank	1,462	1,960	0	N/A	N/A	2 (S3)	0.14	0.10	5	0.34	0.26



**Table 3-7 Peak Count of Species Recorded within the Study Area Compared with Population Data for Hamford Water Ramsar site
 (peak counts quoted are from Route Section 1 unless specified otherwise)**

Qualifying Species	Ramsar Population (Ramsar Information Sheet)	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count	Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count	Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count
Dark-bellied brent goose	3,629	4,609	1,000	27.56	21.7	1,100	30.31	23.87	900	24.8	19.53
Ringed plover	1,169†	187	0	0	0	1	0.09	0.53	0	0	0
Black-tailed godwit	377	844	0	0	0	1	0.27	0.12	21	5.57	2.49
Redshank	2,099†	1,960	0	0	0	2 (S3)	0.1	0.1	5	0.24	0.26

† Spring/ autumn counts



Table 3-8 Peak Count of Species Recorded within the Study Area Compared with Population Data for the Stour and Orwell Estuaries SPA (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying Species	SPA citation population	Combined Stour and Orwell Estuaries WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and Buffer		
			Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count
Dark-bellied brent goose	2,627	3,497	1,000	38.07	28.60	1,100	41.87	31.46	900	34.26	25.74
Shelduck	2,955	2,662	0	N/A	N/A	30	1.02	1.13	19	0.64	0.71
Gadwall	97	261	0	N/A	N/A	44 (S3)	45.36	16.86	10	10.31	3.83
Wigeon	3,979	3,646	0	N/A	N/A	200	5.03	5.49	256	6.43	7.02
Pintail	741	347	0	N/A	N/A	8	1.08	2.31	3	0.40	0.86
Great crested grebe	245	109	0	N/A	N/A	3 (S3)	1.22	2.75	0	N/A	N/A
Lapwing	6,242	2,677	87	1.39	3.25	890	14.26	33.25	150	2.40	5.60
Ringed plover	638	414	0	N/A	N/A	1	0.16	0.24	0	N/A	N/A
Curlew	2,153	1,651	44	2.04	3.91	84	3.90	5.09	54	2.51	3.27
Black-tailed godwit	2,559	2,841	0	N/A	N/A	1 (S3)	0.04	0.04	21	0.82	0.74
Turnstone	690	664	3	0.43	0.45	10	1.45	1.51	16	2.32	2.41
Knot	5,970	12,941	0	0.00	0.00	0	N/A	N/A	1	0.02	0.01



Qualifying Species	SPA citation population	Combined Stour and Orwell Estuaries WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and Buffer		
			Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count
Dunlin	19,114	11,866	0	0.00	0.00	0	N/A	N/A	6	0.03	0.05
Redshank	3,687	2,529	0	0.00	0.00	2 (S3)	0.05	0.08	5	0.14	0.20
Cormorant	232	985	17	7.33	1.73	31	13.36	3.15	15	6.47	1.52



Table 3-9 Peak Count of Species Recorded within the Study Area Compared with Population Data for the Stour and Orwell Estuaries Ramsar site (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying species	Ramsar population (Ramsar Information Sheet)	Combined Stour and Orwell Estuaries WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and Buffer		
			Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count	Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count	Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count
Dark-bellied brent goose	2,627	3,497	1,000	38.07	28.60	1,100	41.87	31.46	900	34.26	25.74
Pintail	741	347	0	N/A	N/A	8	1.08	2.31	3	0.40	0.86
Black-tailed godwit	2,559	2,841	0	N/A	N/A	1 (S3)	0.03	0.04	21	0.82	0.74
Knot	5,970	12,941	0	0.00	0.00	0	N/A	N/A	1	0.02	0.01
Dunlin	19,114	11,866	0	N/A	N/A	0	N/A	N/A	6	0.03	0.05
Redshank	3,687	2,529	0	N/A	N/A	2 (S3)	0.05	0.08	5	0.14	0.20



Table 3-10 Peak Count of Species Recorded within the Study Area Compared with Population Data for the Colne Estuary (Mid- Essex Coast Phase 2) SPA (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying Species	SPA Citation population	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count
Dark-bellied brent goose	4,907-5,315	3,566	1,000	18.81 - 20.38	28.04	1,100	20.70 - 22.42	30.85	900	16.93 - 18.34	25.24
Mute swan	354	20	4 (S5)	1.13	20.00	12 (S5)	3.39	60.00	7	1.98	35.00
Shelduck	1,237	823	0	N/A	N/A	30	2.43	3.65	18	1.46	2.19
Ringed plover	355	144	0	N/A	0.00	1	0.28	0.69	0	N/A	N/A
Curlew	938	406	44	4.69	10.84	84	8.96	20.69	54	5.76	13.30
Black-tailed godwit	606	955	0	N/A	N/A	1 (S3)	0.17	0.10	21	3.47	2.20
Sanderling	219	205	2	0.91	0.98	4	1.83	1.95	1	0.46	0.49
Dunlin	11,272	5,947	0	N/A	N/A	0	0.00	0.00	6	0.05	0.10
Redshank	1,252-2,077	1,329	0	N/A	N/A	2 (S3)	0.10-0.16	0.15	5	0.25-0.40	0.38
Cormorant	243	231	17	7.00	7.36	31	12.76	13.42	15	6.17	6.49
Hen harrier	1 to 19	N/A	0	N/A	N/A	1	5.26 - 100	N/A	1	5.26 - 100	N/A



Table 3-11 Peak Count of Species Recorded within the Study Area Compared with Population Data for the Colne Estuary (Mid- Essex Coast Phase 2) Ramsar site (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying Species	Ramsar population (Ramsar Information Sheet)	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count	Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count	Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count
Dark-bellied brent goose	3,165	3,566	1,000	31.60	28.04	1,100	34.76	30.85	900 [‡]	28.44	25.24
Redshank	1,624	1,329	0	0.00	0.00	2 (S3)	0.12	0.15	5	0.31	0.38



Table 3-12 Peak Count of Species Recorded within the Study Area Compared with Population Data for Abberton Reservoir SPA (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying Species	SPA Citation population	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count
Mute swan	500	419	4	0.80	0.95	12	2.40	2.86	7	1.4	1.7
Shoveler	480	1,386	0	N/A	N/A	4	0.83	0.29	33	6.9	2.4
Gadwall	480	832	0	N/A	N/A	44 (S3)	9.17	5.29	10	2.1	1.2
Wigeon	8,400	1,657	0	N/A	N/A	200	2.38	12.07	288	3.4	17.4
Teal	2,200	9,105	0	N/A	N/A	80 (S3)	3.64	0.88	324	14.7	3.6
Pochard	2,400	2,916	0	N/A	N/A	2 (S3)	0.08	0.07	0	N/A	N/A
Tufted duck	3,500	4,443	0	N/A	N/A	66 (S3)	1.89	1.49	0	N/A	N/A
Coot	11,500	7,372	0	N/A	N/A	28 (S3)	0.24	0.38	0	N/A	N/A
Great crested grebe	180	1,737	0	N/A	N/A	3 (S3)	1.67	0.17	0	N/A	N/A



Table 3-13 Peak Count of Species Recorded within the Study Area Compared with Population Data for Abberton Reservoir Ramsar site (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying Species	Ramsar population (Ramsar Information Sheet)	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count	Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count	Peak count	% of Ramsar site population (RIS)	% of most recent WeBS count
Shoveler†	377	1,386	0	0	0	4 (S3)	1.06	0.29	33	8.75	0.63
Gadwall†	550	832	0	0	0	44 (S3)	8.00	5.29	10	1.82	0.22
Wigeon	2,888	1,657	0	0	0	200	6.93	12.07	288	9.97	0.60

† Spring/Autumn population (not winter)



Table 3-14 Peak Count of Species Recorded within the Study Area Compared with Population Data for the Blackwater Estuary (Mid Essex Coast Phase 4) SPA (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying Species	SPA Citation population	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count	Peak count	% of SPA citation population	% of most recent WeBS count
Dark-bellied brent goose	15,392	7,734	1,000	6.50	12.93	1100	7.15	14.22	900	5.85	11.64
Shelduck	2,425	3,033	0	N/A	N/A	30	1.24	0.99	18	0.74	0.59
Gadwall	69	55	0	N/A	N/A	44 (S3)	63.77	80.00	10	14.49	18.18
Teal	2,190	3,862	0	N/A	N/A	80 (S3)	3.65	2.07	324	14.79	8.39
Ringed plover	347	401	0	N/A	N/A	1	0.29	0.25	0	N/A	N/A
Curlew	1847	1353	44	2.38	3.25	84	4.55	6.21	54	2.92	3.99
Black-tailed godwit	1,280	3,070	0	N/A	N/A	1 (S3)	0.08	0.03	21	1.64	0.68
Dunlin	33,267	16,190	0	N/A	N/A	0	N/A	N/A	6	0.02	0.04
Redshank	1,079	2,856	0	N/A	N/A	2 (S3)	0.19	0.07	5	0.46	0.18
Cormorant	243	795	17	7.00	2.14	31	12.76	3.90	15	6.17	1.89
Hen harrier	19	N/A	0	N/A	N/A	1	5.26	N/A	1	5.26	N/A



Table 3-15 Peak Count of Species Recorded within the Study Area Compared with Population Data for the Blackwater Estuary (Mid Essex Coast Phase 4) Ramsar site (peak counts quoted are from Route Section 1 unless specified otherwise)

Qualifying Species	Ramsar population (Ramsar Information Sheet)	WeBS 5 year mean peak count 17/18-21/22	Onshore Order Limits			400m Buffer			Holland Haven Access and 400m Buffer		
			Peak count	% of RAMSAR population (RIS)	% of most recent WeBS count	Peak count	% of RAMSAR population (RIS)	% of most recent WeBS count	Peak count	% of RAMSAR population (RIS)	% of most recent WeBS count
Dark-bellied brent goose	8,689	7,734	1,000	11.51	12.93	1,100	12.66	14.22	900	10.36	11.64
Black-tailed godwit	2,174	3,070	0	0.00	0.00	1 (S3)	0.05	0.03	21	0.97	0.68
Dunlin	27,655	16,190	0	0.00	0.00	0	0.00	0.00	6	0.02	0.04



4.0 Conclusions

4.1 Purpose of this Study and Summary of Analyses Undertaken

As set out in Section 1.2, the key aim of this study was to bring together the data from five wintering bird survey reports to identify the abundance and distribution of wintering waterbirds (plus hen harrier and short-eared owl) within a study area including the Onshore Order Limits and a 400m buffer²⁵. The output from the study is intended to inform a separate assessment of whether the Project could potentially cause disturbance to significant numbers of birds, particularly in terms of nearby designated site populations.

Peak counts for the study area have been compared with relevant data for nearby designated sites, to which the study area may be functionally linked, to determine whether the bird populations identified within the study area could represent a significant proportion of the relevant designated site populations.

Peak counts for the study area have also been compared with national population data to identify whether the study holds any wintering bird populations of national importance.

The study has also sought to identify the relevant importance of different parts of the study area (Route Sections 1-7) for relevant species and has also briefly considered temporal patterns of abundance across the winter period.

The key findings are summarised below.

4.2 Species for which the Study Area Holds Significant Populations

4.2.1 SPA/Ramsar Site Qualifying Features and SSSI Citation Species

For each designated site the peak count of each qualifying species (or species listed in the SSSI citation) observed within the Onshore Order Limits, the 400m buffer from the Onshore Order Limits and the Holland Haven Access and 400m buffer during the two years of survey was compared with the designated site population, both as listed in the relevant citation and the most up to date BTO WeBS five-year mean peak count. Whilst caution must be applied when comparing VE survey data with mean peak count data for designated sites (see Section 2.3) this represents the best method of evaluating the importance of the study area populations in the context of nearby designated sites.

Using the 1% criterion method, >1% of the designated site population would be considered to represent a significant proportion of the designated site population. A precautionary approach has been adopted here that assumes that all birds recorded within the study area form part of the relevant designated site populations, although it is noted that this is very unlikely to be the case in practice for most species. Under this precautionary scenario the study area can be seen to support a significant proportion of the relevant designated site populations for several qualifying species.

Table 4-1 provides a summary, for each species, showing where peak counts within the study area exceed 1% of either the citation population or most recent WeBS mean peak count for the relevant designated sites. Within Table 4-1 the study area is broken down into the Onshore Order Limits (excluding the Holland Haven Access (HHA)), the 400m buffer

²⁵ A 400m buffer was included to allow for possible disturbance effects outside the Onshore Order Limits and was requested by Natural England in line with advice provided to other offshore wind farm projects.



around the Onshore Order Limits (excluding the HHA) and the HHA and associated 400m buffer (as shown in **Drawings 1-4, Appendix A**). Where the peak count for the relevant study area exceeds 1% of the relevant designated site population this is marked by a Y and highlighted in bold. Where the peak count for the relevant study area is less than 1% of the relevant designated site population this is marked with an N. Where cells in the table are blank this signifies that the relevant species is not a qualifying feature for the relevant designated site.

None of the qualifying species for nearby European sites (or citation species for Holland Haven Marshes SSSI) were recorded in numbers exceeding 1% of the national population, however (refer to Table 3-4).



Table 4-1 Summary Table showing where Peak Counts within the Study Area exceed 1% of the relevant Designated Site Populations

Species	Location	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary SPA ¹⁸	Colne Estuary Ramsar site ¹⁹	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Blackwater Estuary SPA ²⁰	Blackwater Estuary Ramsar site ²¹ <small>Error! Bookmark not defined.</small>	Holland Haven Marshes SSSI
Dark-bellied brent goose	Onshore Order Limits	Y	Y	Y	Y	Y	Y			Y	Y	Y
	400m buffer	Y	Y	Y	Y	Y	Y			Y	Y	Y
	HHA	Y	Y	Y	Y	Y	Y			Y	Y	Y
Mute swan	Onshore Order Limits					Y		N				
	400m buffer					Y		Y				
	HHA					Y		Y				
Shoveler	Onshore Order Limits							N	N			N
	Buffer							N	Y			Y
	HHA							Y	Y			Y
Gadwall	Onshore Order Limits			N				N	N	N		
	Buffer			Y				Y	Y	Y		
	HHA			Y				Y	Y	Y		
Wigeon	Onshore Order Limits			N	N			N	N			N
	Buffer			Y	Y			Y	Y			Y



Species	Location	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary SPA ¹⁸	Colne Estuary Ramsar site ¹⁹	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Blackwater Estuary SPA ²⁰	Blackwater Estuary Ramsar site ²¹ <small>Error! Bookmark not defined.</small>	Holland Haven Marshes SSSI
	HHA			Y	Y			Y	Y			Y
Pintail	Onshore Order Limits			N								N
	Buffer			Y								Y
	HHA			N								Y
Teal	Onshore Order Limits	N						N		N		N
	Buffer	Y						Y		Y		Y
	HHA	Y						Y		Y		Y
Pochard	Onshore Order Limits							N				N
	Buffer							N				Y
	HHA							N				N
Tufted duck	Onshore Order Limits							N				
	Buffer							Y				
	HHA							N				
Shelduck	Onshore Order Limits	N		N		N				N		
	Buffer	Y		Y		Y				Y		
	HHA	Y		Y		Y				N		



Species	Location	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary SPA ¹⁸	Colne Estuary Ramsar site ¹⁹	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Blackwater Estuary SPA ²⁰	Blackwater Estuary Ramsar site ²¹ <small>Error! Bookmark not defined.</small>	Holland Haven Marshes SSSI
Coot	Onshore Order Limits							N				
	Buffer							N				
	HHA							N				
Great crested grebe	Onshore Order Limits			N				N				
	Buffer			Y				Y				
	HHA			N				N				
Avocet	Onshore Order Limits	N										
	Buffer	Y										
	HHA	Y										
Lapwing	Onshore Order Limits			Y								Y
	Buffer			Y								Y
	HHA			Y								Y
Ringed plover	Onshore Order Limits	N	N	N		N				N		N
	Buffer	N	N	N		N				N		Y
	HHA	N	N	N		N				N		N



Species	Location	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary SPA ¹⁸	Colne Estuary Ramsar site ¹⁹	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Blackwater Estuary SPA ²⁰	Blackwater Estuary Ramsar site ²¹ <small>Error! Bookmark not defined.</small>	Holland Haven Marshes SSSI
Curlew	Onshore Order Limits			Y	Y	Y				Y		
	Buffer			Y	Y	Y				Y		
	HHA			Y	Y	Y				Y		
Black-tailed godwit	Onshore Order Limits	N	N	N	N	N				N	N	N
	400m buffer	N	N	N	N	N				N	N	Y
	HHA	Y	Y	Y	Y	Y				Y	N	Y
Turnstone	Onshore Order Limits			N	Y							
	400m buffer			Y	Y							
	HHA			Y	Y							
Knot	Onshore Order Limits			N	N							
	400m buffer			N	N							
	HHA			N	N							
Ruff	Onshore Order Limits											N
	400m buffer											N



Species	Location	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary SPA ¹⁸	Colne Estuary Ramsar site ¹⁹	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Blackwater Estuary SPA ²⁰	Blackwater Estuary Ramsar site ²¹ <small>Error! Bookmark not defined.</small>	Holland Haven Marshes SSSI
	HHA											Y
Sanderling	Onshore Order Limits					N						
	400m buffer					Y						
	HHA					N						
Dunlin	Onshore Order Limits			N	N	N				N	N	
	400m buffer			N	N	N				N	N	
	HHA			N	N	N				N	N	
Snipe	Onshore Order Limits											N
	400m buffer											Y
	HHA											Y
Purple sandpiper	Onshore Order Limits											Y
	400m buffer											Y
	HHA											Y
Redshank	Onshore Order Limits	N	N	N	N	N	N			N		



Species	Location	Hamford Water SPA	Hamford Water Ramsar site	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar site	Colne Estuary SPA ¹⁸	Colne Estuary Ramsar site ¹⁹	Abberton Reservoir SPA	Abberton Reservoir Ramsar site	Blackwater Estuary SPA ²⁰	Blackwater Estuary Ramsar site ²¹ <small>Error! Bookmark not defined.</small>	Holland Haven Marshes SSSI
	400m buffer	N	N	N	N	N	N			N		
	HHA	N	N	N	N	N	N			N		
Cormorant	Onshore Order Limits			Y		Y				Y		
	400m buffer			Y		Y				Y		
	HHA			Y		Y				Y		
Hen harrier	Onshore Order Limits					N				N		
	400m buffer					Y				Y		
	HHA					N				N		
Short-eared owl	Onshore Order Limits											N
	400m buffer											Y ²⁶
	HHA											Y

²⁶ Although no population data were available for this species for Holland Haven Marshes SSSI it is reasonable to assume that a peak count of one represents >1% of the SSSI population.



4.2.2 Additional Species included as Important Ecological Features

Additional species assessed included European white-fronted goose and golden plover, which do not feature in any designations, but were highlighted in the PEIR as being IEFs.

The peak count of European white-fronted goose was 238 in the 400m buffer for the Holland Haven Access. This represents 1.7% of the national population, indicating that the study area population is nationally important for this species. European white-fronted goose was only recorded at the landfall (Route Section 1).

The peak count of golden plover was 150 in the 400m buffer at the landfall (Route Section 1). This represents 0.04% of the national population, indicating that the study area population is not nationally important for this species. Most records of golden plover were from Route Section 1, although the species was also recorded in Route Sections 4b, 6 and 7.

4.3 Designated Sites for which the Study Area Holds a Significant Proportion of Qualifying or Citation Species Populations

A summary of the qualifying (or SSSI citation) species for which survey counts within the study area exceeded the 1% criterion for each designated site considered is provided below. Using the 1% criterion method, >1% is considered to represent a significant proportion of the designated site population.

4.3.1 Holland Haven SSSI

Dark-bellied brent goose was the only species for which the peak survey count exceeded the 1% criterion for the SSSI, within the Onshore Order Limits itself. All waterbird species listed in the SSSI citation exceeded 1% of the most recent WeBS mean peak count and/or the population referenced in the SSSI citation within the 400m buffer, with the exception of ruff. The numbers of ruff exceeded 1% of the most recent and/or citation population for the SSSI within the 400m Holland Haven access buffer, along with all other wintering species listed in the SSSI citation, except pochard. Hen harrier was observed within the study area within Route Sections 1 and 3 and short-eared owl was observed only within the Holland Haven access buffer. Although sightings related to single birds only these are considered to represent a significant proportion of the SSSI population.

4.3.2 Hamford Water SPA

Dark-bellied brent goose was the only species for which the peak survey counts exceeded the 1% criterion for the SPA within the Onshore Order Limits, 400m buffer and the Holland Haven access buffer. Shelduck, teal and avocet had a peak count that exceeded the 1% criterion for the SPA in the 400m buffer and the Holland Haven access buffer. Black-tailed godwit had a peak count in the Holland Haven access buffer that exceeded the 1% criterion for the SPA. Ringed plover and redshank did not exceed the 1% criterion at any location.

4.3.3 Hamford Water Ramsar Site

Similar to the above, dark-bellied brent goose had a peak survey count that exceeded the 1% criterion for the OLL, the 400m buffer and the Holland Haven access buffer, with black-tailed godwit being the only other qualifying species to exceed the 1% criterion, within the Holland Haven access buffer only.



4.3.4 Stour and Orwell SPA

Again, dark-bellied brent goose had a peak count that exceeded the 1% criterion for the Onshore Order Limits, the 400m buffer and the Holland Haven access buffer, as did lapwing, curlew and cormorant. Within the 400m buffer and the Holland Haven access buffer, shelduck, gadwall, wigeon and turnstone also exceeded the 1% criterion for the Stour and Orwell SPA. Pintail and great-crested grebe, were recorded in numbers greater than 1% of the SPA population in the 400m buffer only.

4.3.5 Stour and Orwell Ramsar Site

Similar to the SPA, dark-bellied brent goose exceeded the 1% criterion within the Onshore Order Limits, the 400m buffer and the Holland Haven access buffer. Pintail exceeded the 1% criterion in the 400m buffer only. No other qualifying species exceeded the 1% criterion.

4.3.6 Colne Estuary (Mid- Essex Coast Phase 2) SPA

Dark-bellied brent goose, mute swan, curlew and cormorant had peak counts that exceeded the 1% criterion in all three parts of the study area (Onshore Order Limits, 400m buffer and Holland Haven access). Shelduck and hen harrier had peak counts that exceeded the 1% criterion for the 400m buffer and Holland Haven access buffer. Peak counts for sanderling exceeded the 1% criterion in the 400m buffer only and peak counts for black-tailed godwit exceeded the 1% criterion in the Holland Haven Access buffer only. Qualifying species where the peak count did not reach the 1% criterion were ringed plover, dunlin and redshank.

4.3.7 Colne Estuary (Mid- Essex Coast Phase 2) Ramsar Site

Dark-bellied brent goose had a peak count that exceeded the 1% criterion within the Onshore Order Limits, the 400m buffer and the Holland Haven access buffer. Redshank peak counts did not exceed the 1% criterion in any part of the study area.

4.3.8 Abberton Reservoir SPA

The 1% criterion was only reached in the 400m buffer and/or the Holland Haven access buffer for Abberton Reservoir SPA. Mute swan, gadwall, wigeon, teal, had peak counts that were greater than 1% of the SPA designation within the 400m buffer and the Holland Haven access buffer. Tufted duck and great crested grebe had peak counts that accounted for more than 1% of the SPA population within the 400m buffer only. Peak counts for shoveler exceeded the 1% criterion in the Holland Haven access buffer only. No other qualifying species reached the 1% criterion for the SPA in any part of the study area.

4.3.9 Abberton Reservoir Ramsar Site

Similar to the SPA, gadwall, shoveler and wigeon had peak counts that exceeded 1% of the Ramsar site population in the 400m buffer and the Holland Haven access buffer.

4.3.10 Blackwater (Mid Essex Coast Phase 4) SPA

Brent geese, curlew and cormorant had a peak count was greater than the 1% criterion in the Onshore Order Limits, the 400m buffer and the Holland Haven access buffer. Gadwall, teal and hen harrier had peak counts that were greater than the 1% criterion in the 400m buffer and the Holland Haven access buffer. Shelduck had a peak count that was greater than 1% of the SPA population in the 400m buffer and black-tailed godwit had a peak count in the Holland Haven access buffer that exceeded 1% of the SPA population only.



4.3.11 Blackwater (Mid Essex Coast Phase 4) Ramsar Site

Brent geese again had a peak count greater than 1% criteria of the Ramsar citation population in the Onshore Order Limits, the 400m buffer and the Holland Haven access buffer. The peak counts of the black-tailed godwit and dunlin were not greater than 1% of the Ramsar citation or the WeBS counts.

4.4 Seasonality

All sightings of species of interest were collated and the spread of the sightings across the winter months of survey were graphed to show any seasonal patterns in the abundance of birds recorded (Figure 3-1). This showed that the largest number of birds was recorded in December, with January and February having the next largest numbers, with lower numbers in November and March and much lower numbers in October.

4.5 Distribution of Species within the Study Area

A brief description of the distribution of target species within the study area, by Route Section, is provided below. Route Sections are shown in **Drawings 1-4**, the distribution of waterbird records is shown in **Drawing 3** and the distribution of hen harrier and short-eared owl records is shown in **Drawing 4 (Appendix A)**.

4.5.1 Route Section 1 (excluding the Holland Haven Access)

The buffer around this section provided a large number of the peak counts for the whole study area, specifically for dark-bellied brent goose, European white-fronted goose, shelduck, wigeon, pintail, avocet, lapwing, golden plover, ringed plover, curlew, turnstone, sanderling, purple sandpiper, snipe, cormorant, hen harrier and short-eared owl. Route Section 1 includes part of Holland Haven Marshes SSSI, which provides good habitat for a number of waterbird species, particularly when compared to the surrounding arable landscape. The shoreline, including a small area of intertidal habitat is within this Route Section and buffer and waterbirds were also recorded in the fields immediately inland from the coast.

4.5.2 Holland Haven Access Buffer

The Holland Haven access and TCC, and associated 400m buffer, was looked at separately to enable impacts to be assessed separately to works within the main part of the Onshore Order Limits. There were relatively high counts of several species associated with designated sites in this buffer, including the one count of European white-fronted goose that exceeded 1% of the UK population. Other species had their highest count across the study area in this location, specifically: shoveler, wigeon, teal, avocet, black-tailed godwit, turnstone, purple sandpiper and snipe. Dark-bellied brent geese, lapwing, curlew were also recorded frequently in this location. Recorded infrequently across the study area as a whole, knot, ruff and dunlin were only recorded in the Holland Haven access buffer. Within the 400m buffer for the Holland Haven access there is intertidal and coastal habitat and freshwater within Holland Haven Marshes SSSI, that attract considerable numbers of waterbirds.

4.5.3 Route Section 2

Route Section 2 recorded the fewest observations of any waterbird species within this analysis, no waterbirds were recorded in the OLL and only lapwing was observed within the 400m buffer and in low numbers (one).



4.5.4 Route Section 3

This section and associated buffer was frequently the location for relatively large counts of several of waterbird species, specifically waterfowl. Route Section 3 contained the highest number of peak counts after Route Section 1 and the Holland Haven access buffer and provided a number of important counts, specifically:

- Dark-bellied brent geese, three observations, peak count of 65;
- Mute swan, eight observations, relatively low in numbers;
- Shelduck, seven observations, with a peak count of 15;
- Shoveler, two observations and the peak count for this analysis that exceeded 1% of the Abberton Reservoir SPA and Ramsar site population.
- Gadwall, 16 observations, with the peak count of 44 that exceeded 1% of the Stour and Orwell SPA and Abberton Reservoir SPA citation populations and WeBS counts;
- Teal, 14 observations with the peak count of 80 for the OLL buffer in this analysis, that exceeded 1% of the Abberton Reservoir SPA and the Blackwater Estuary (Mid Essex Coast Phase 4) SPA population;
- Pochard, two observations, and a peak count of two that exceeded 1% of the Holland Haven Marshes SSSI population;
- Tufted duck, 23 observations and a peak count of 66 that exceeded 1% of the Abberton Reservoir SPA citation population;
- Great crested grebe, six observations, with a peak count of three that exceeded the 1% of the Stour and Orwell Estuaries and Abberton Reservoir SPA population and
- Lapwing, with the peak count that exceeded 1% of the Stour and Orwell SPA and the Holland Haven Marshes SSSI population/ WeBS count.

Many of the highest counts were specifically associated with two waterbodies to the east of Thorpe-le-Soken.

4.5.5 Route Section 4a

This section was the location for a moderate number of waterfowl records, specifically gadwall, teal and cormorant were frequently recorded (four to six observations). Coot, lapwing and curlew were observed occasionally (one observation each).

4.5.6 Route Section 4b

Gadwall, coot and cormorant were frequently recorded in Section 4b. Curlew was frequently recorded and observed in relatively high numbers (peak count of 31). Lapwing and golden plover were occasionally recorded (four occasions for both species), with relatively high numbers of lapwing recorded, specifically the peak count of 153. Records for golden plover were lower with a peak count of 49. Snipe and teal were occasionally recorded, with one and two observations respectively.

4.5.7 Route Section 5

Relatively few species were recorded in Section 5 and in low numbers, species were limited to mute swan, tufted duck, coot, snipe and cormorant. The highest count across the study area for mute swan (12) was recorded in Section 5, this exceeded 1% of the Stour and Orwell Estuary SPA, Colne Estuary (Mid- Essex Coast Phase 2) SPA and Abberton Reservoir SPA citation populations.



4.5.8 Route Section 6

Within section 6, only four species were recorded, specifically: lapwing, mute swan, golden plover and snipe. Peak counts and the number of observations were low. Lapwing had the greatest number of observations (5) and a peak count of 12 from one observation within the Onshore Order Limits.

4.5.9 Route Section 7

Only lapwing, golden plover and cormorant were recorded in Section 7. Lapwing had the highest number of observations (four) and a peak count of 56 was recorded within the Onshore Order Limits.



Appendix A Drawings

Wintering Bird Data Analysis in relation to Onshore Works

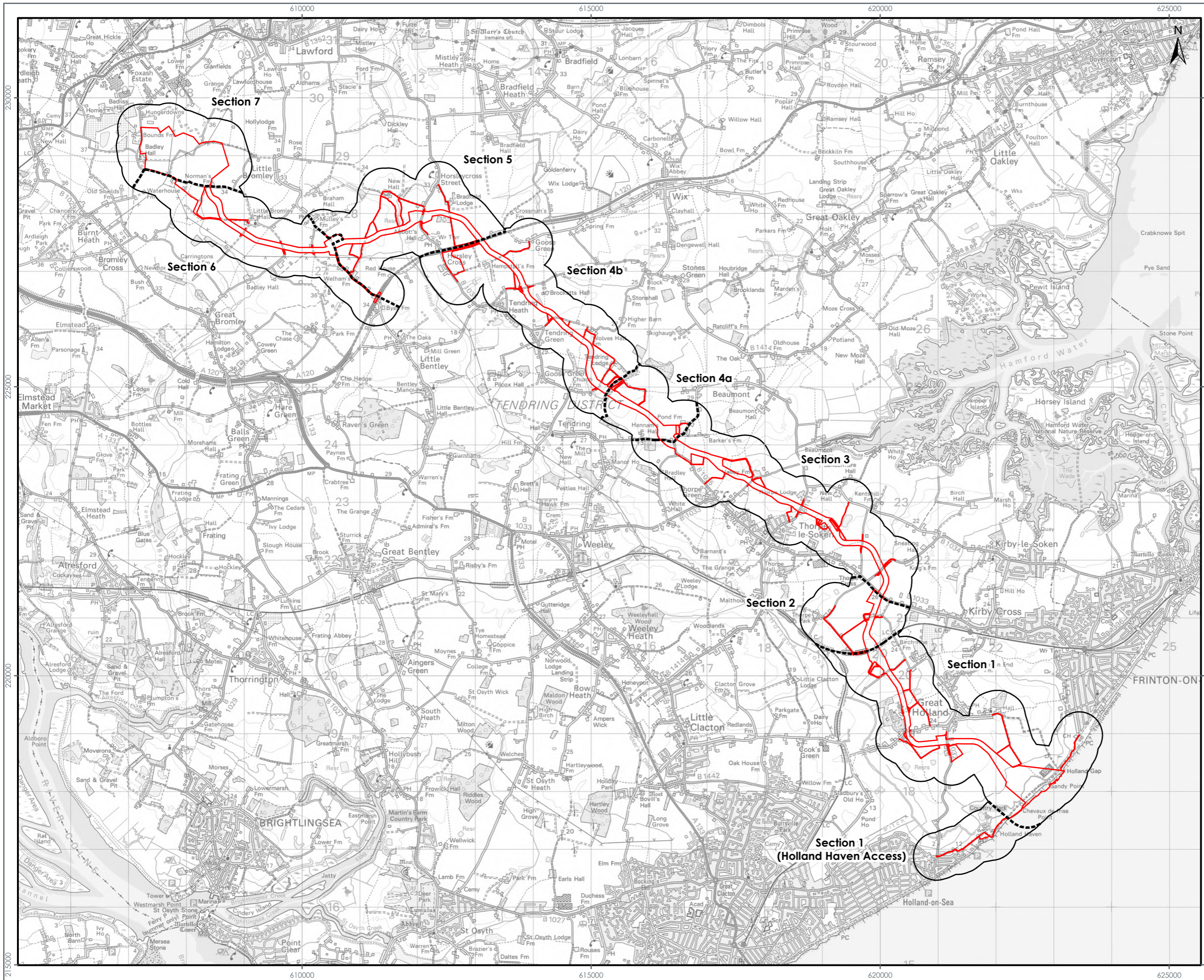
Five Estuaries Offshore Wind Farm

GoBe Consultants (on behalf of Five Estuaries Offshore Wind Farm Ltd)

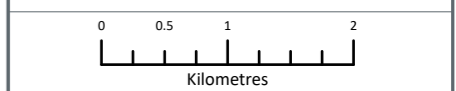
SLR Project No.: 404.V05356.00010

7 February 2024





- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary



Data Source:
 © Crown copyright and database right
 Ordnance Survey data. All rights reserved (2024). License number 0100031673.

PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

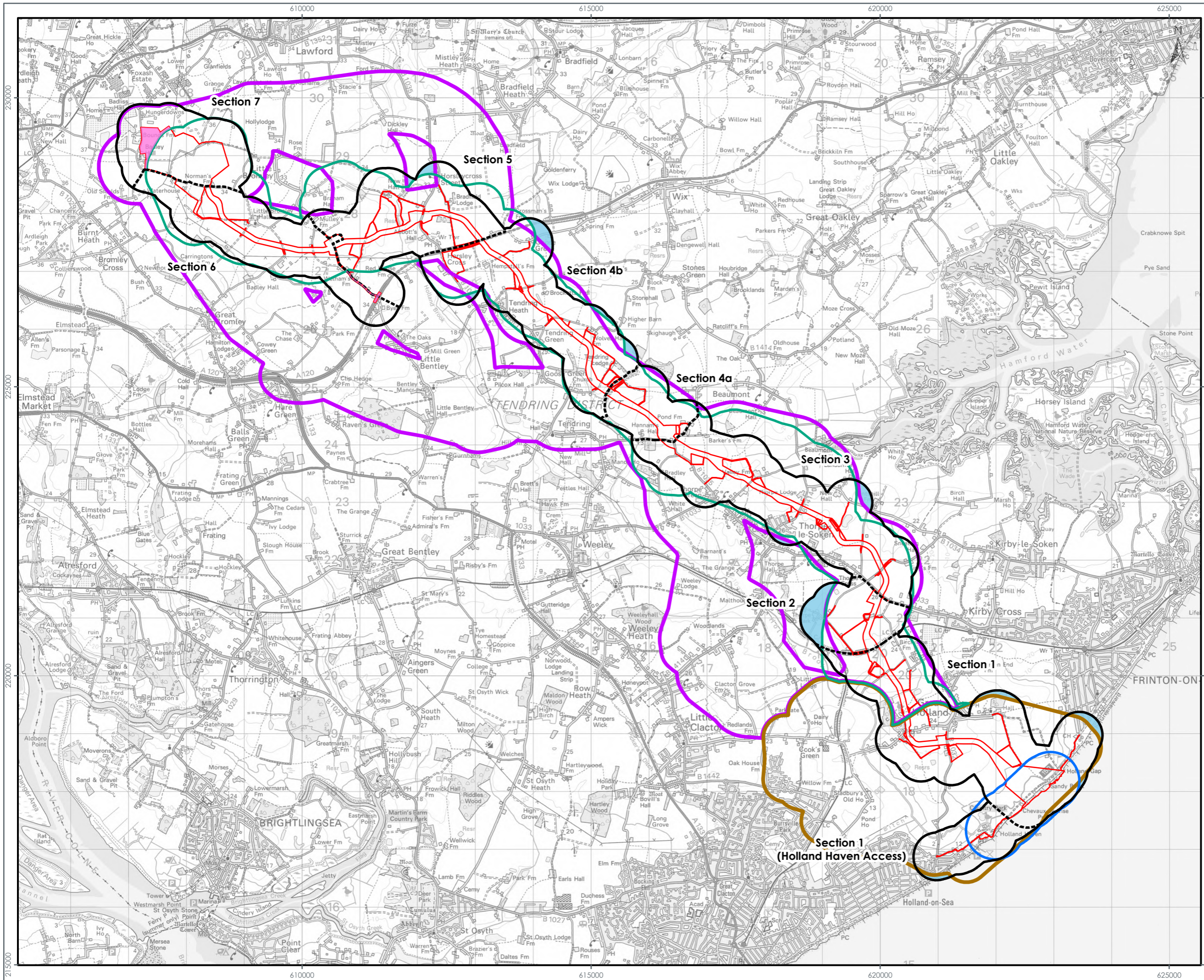
DRAWING TITLE:
 Study Area

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

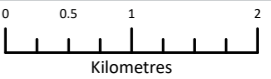
DRAWING NUMBER: 1

SCALE: 1:60,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary
 - North Falls Cable Route Survey Area Non-breeding 2021-22
 - North Falls Landfall Survey Area Non-breeding 2020-21 and 2021-22
 - Five Estuaries Landfall Locations Survey Area Non-Breeding 2021-22
 - North Falls Cable Route Survey Non-breeding 2022-23
 - Areas within Onshore Order Limits 400 m Buffer that Lie Outside Relevant Survey Areas



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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

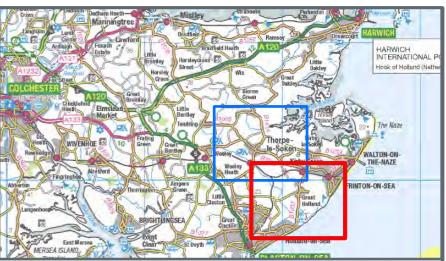
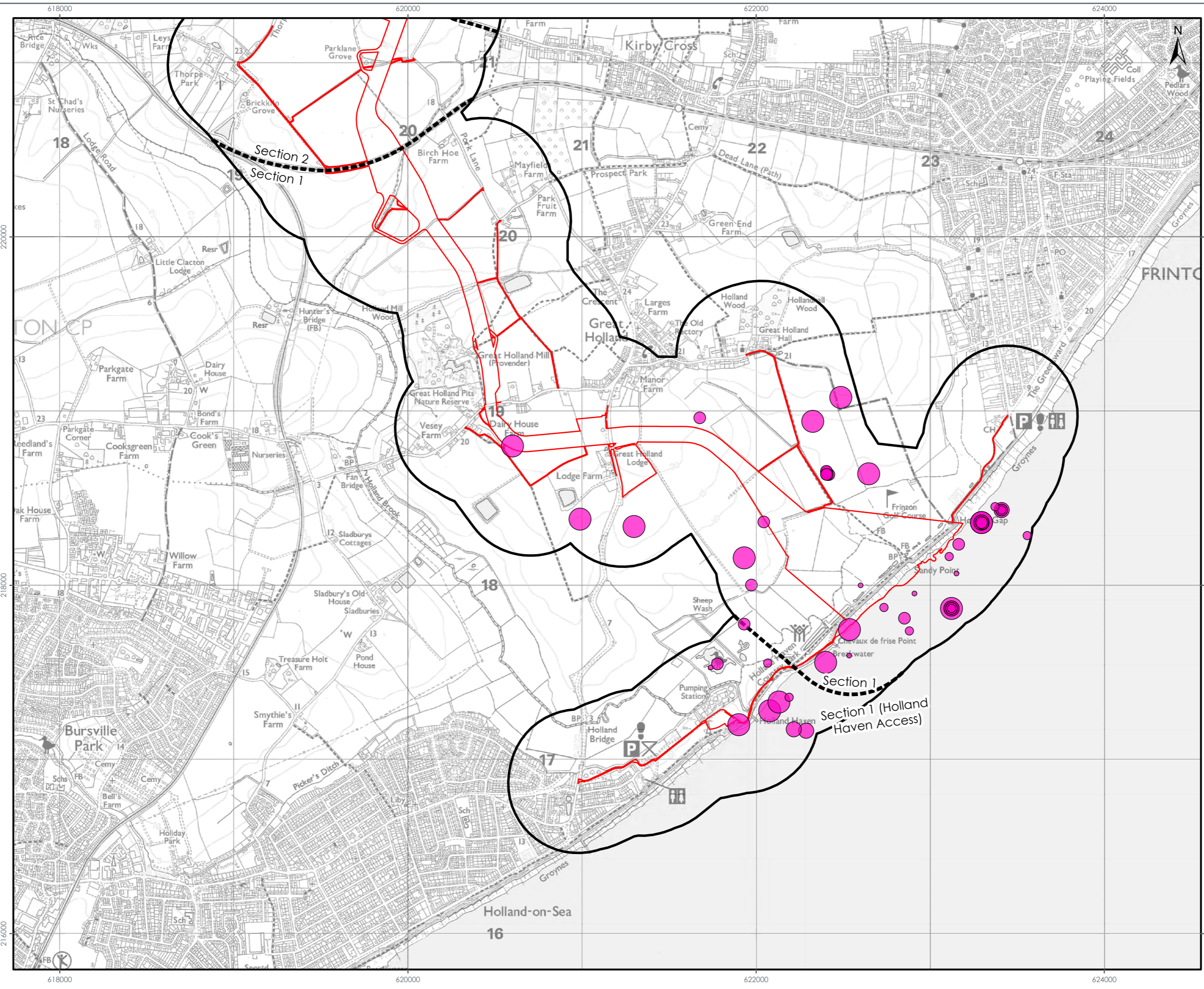
DRAWING TITLE:
 Bird Survey Areas and Data Gaps

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 2

SCALE: 1:60,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid



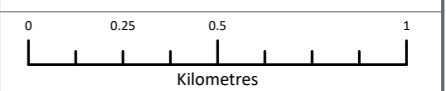


- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary

- Number of Individual Birds Recorded
- 1
 - 2 - 10
 - 11 - 50
 - 51 - 100
 - > 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

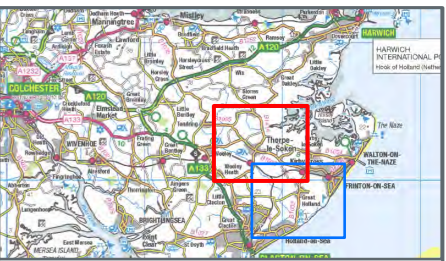
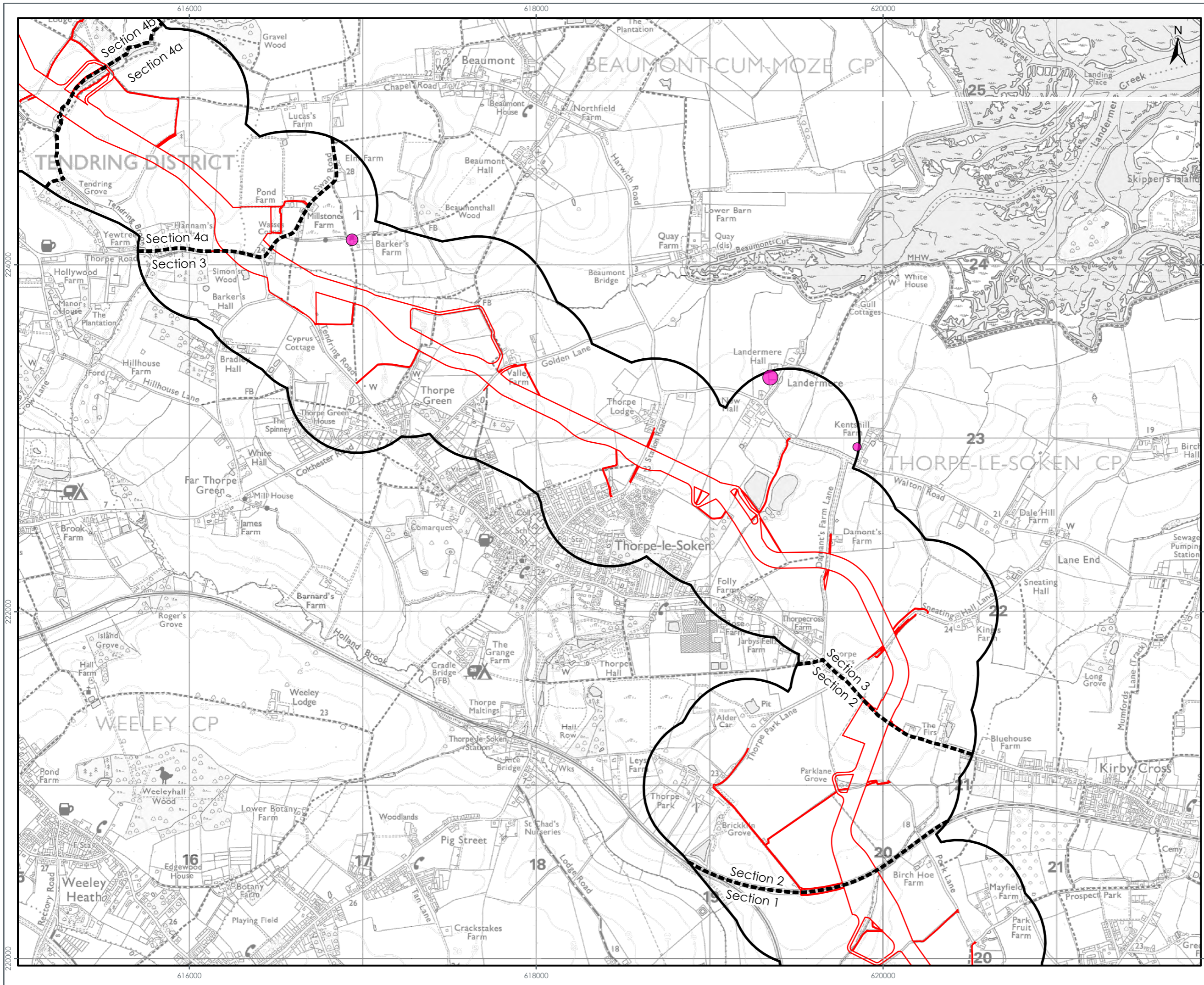
DRAWING TITLE: Survey Observations:
Brent Goose
Section 1 and Holland Haven Access

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 1 of 57
SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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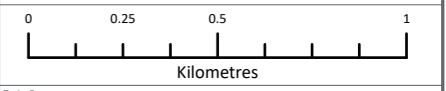
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10
- 11 - 50
- 51 - 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

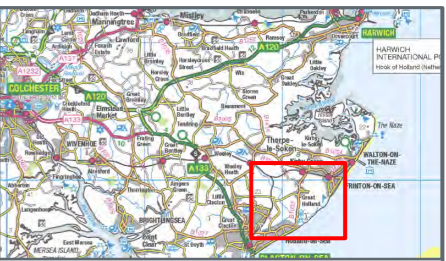
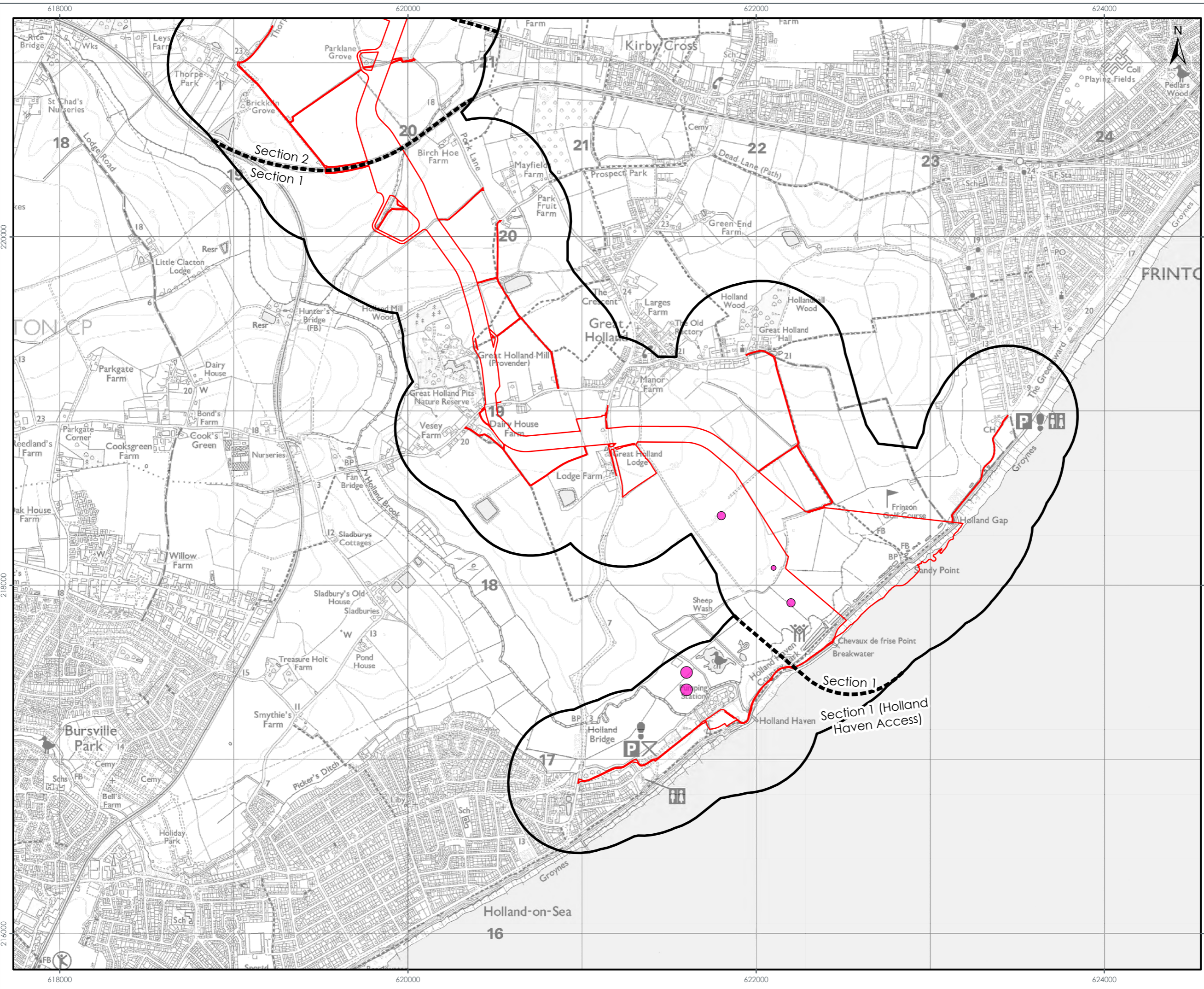
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Survey Observations:
Brent Goose
Sections 2 and 3

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 2 of 57
SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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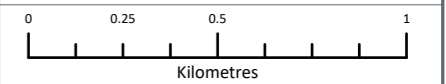
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

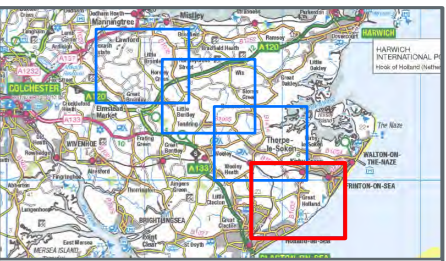
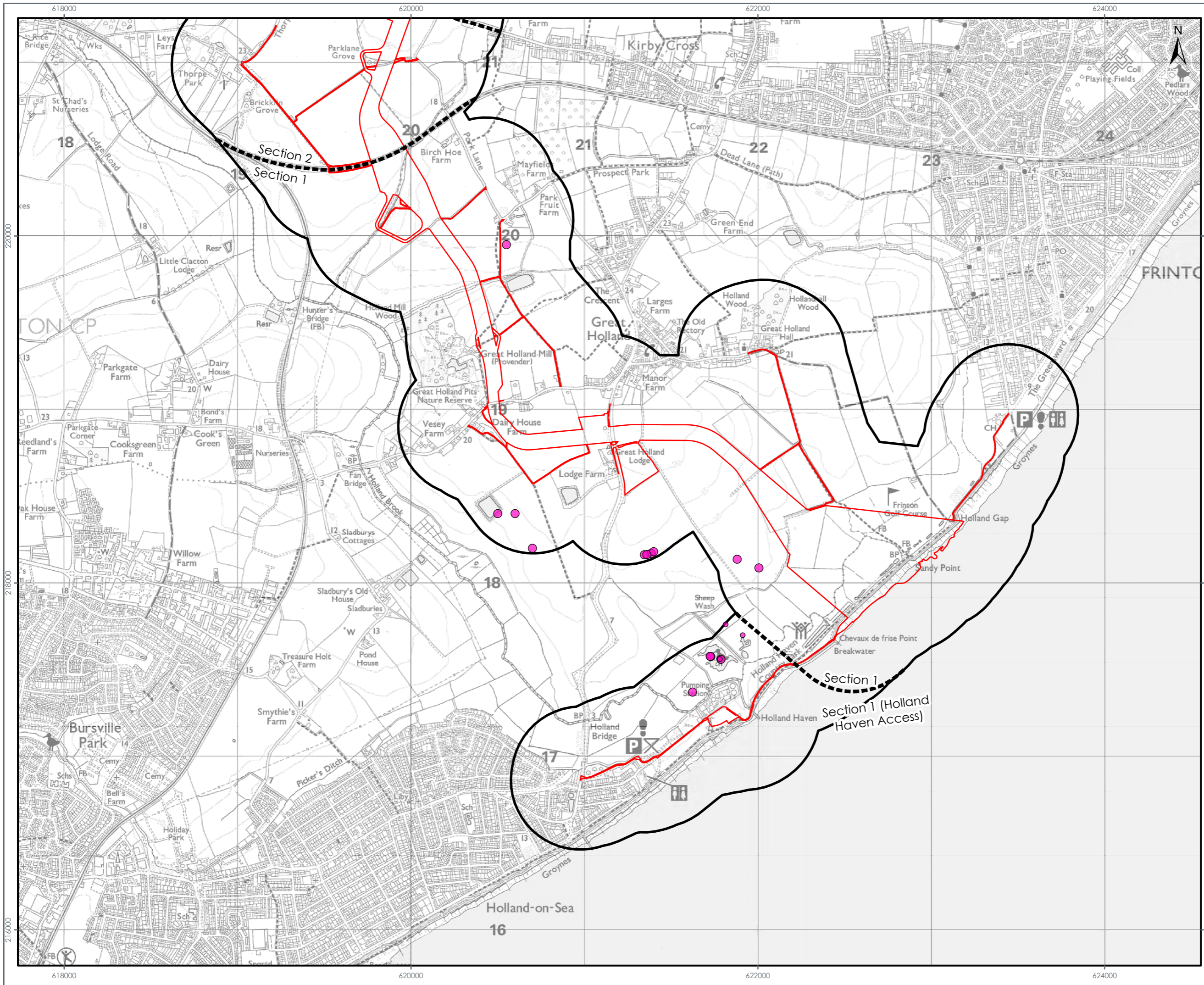
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**Survey Observations:
 European White-Fronted Goose
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 3 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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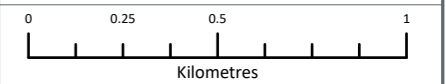
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

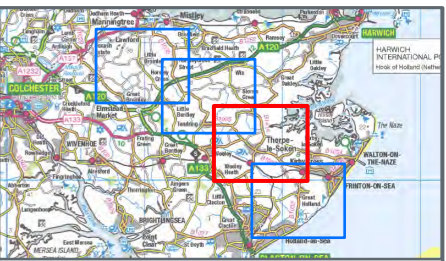
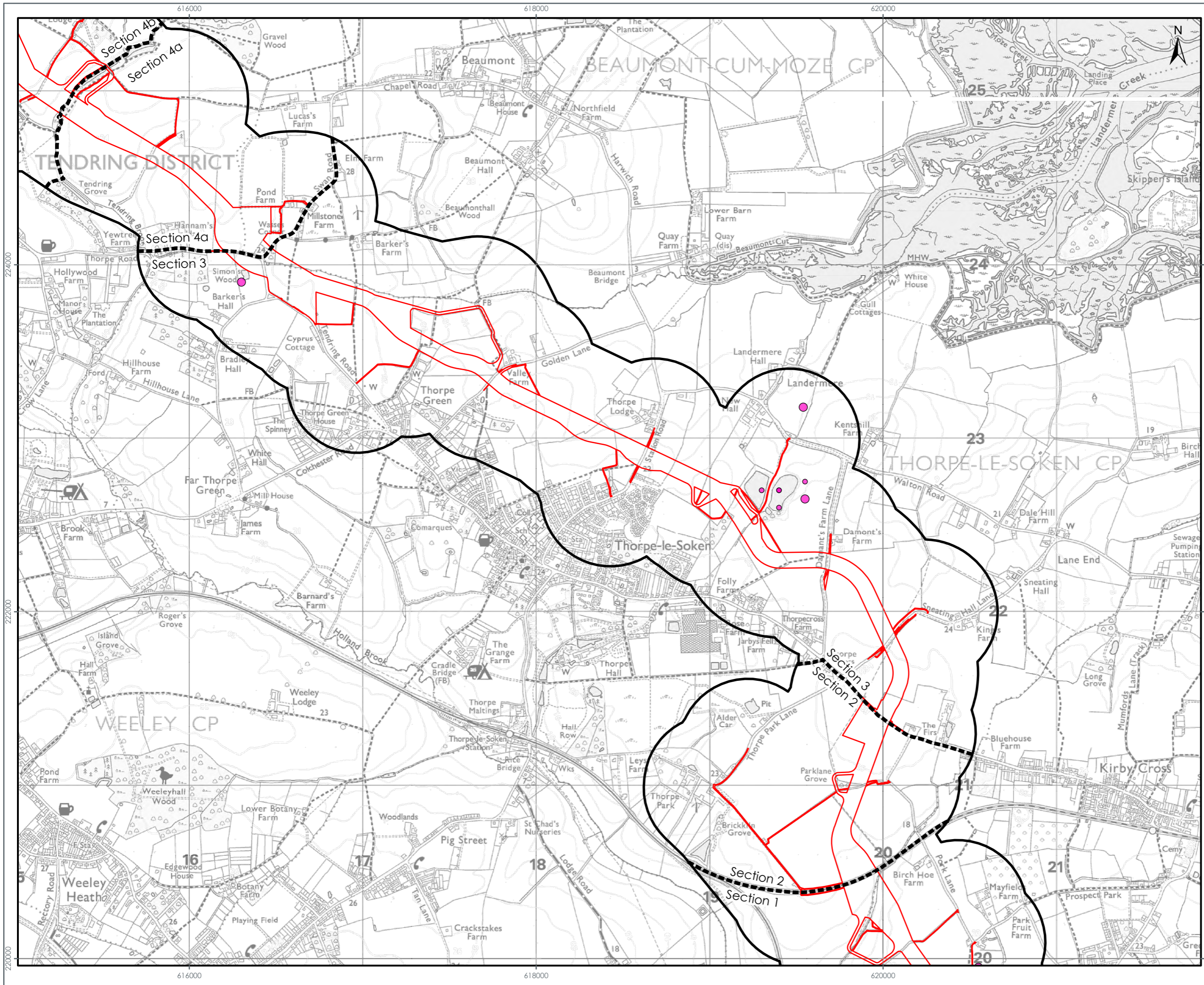
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**Survey Observations:
 Mute Swan
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 4 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSG8 1936 PROJECTION: British National Grid





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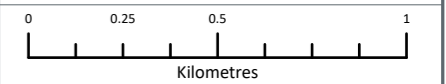
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

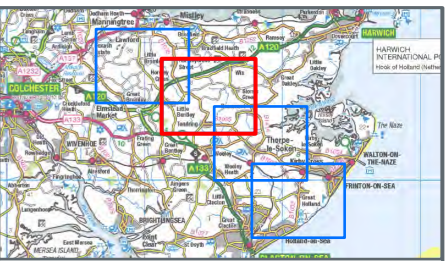
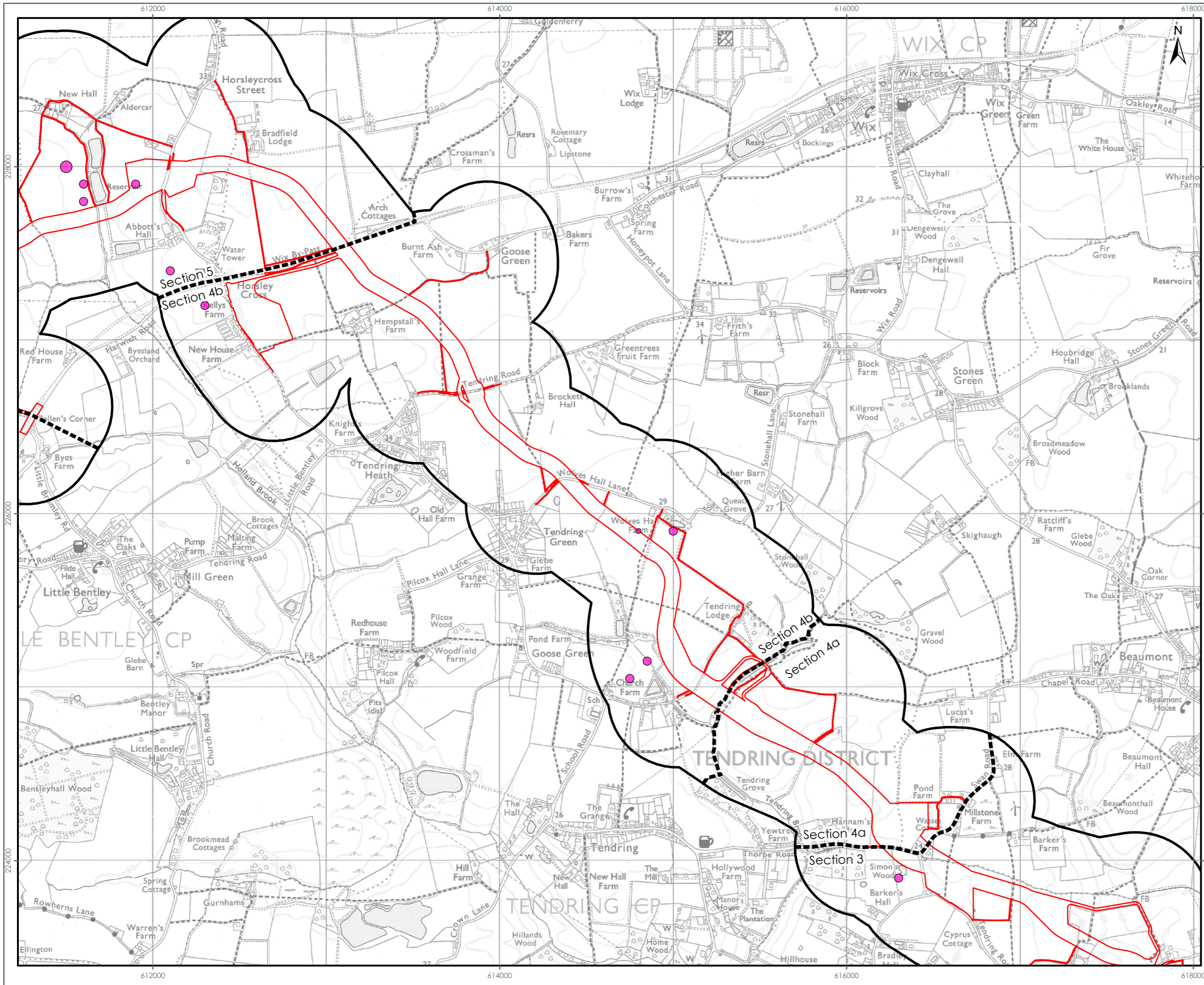
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Survey Observations:
Mute Swan
Sections 2 and 3

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 5 of 57
SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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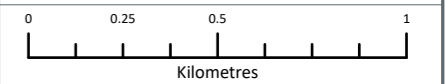
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

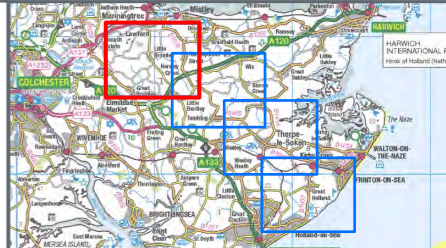
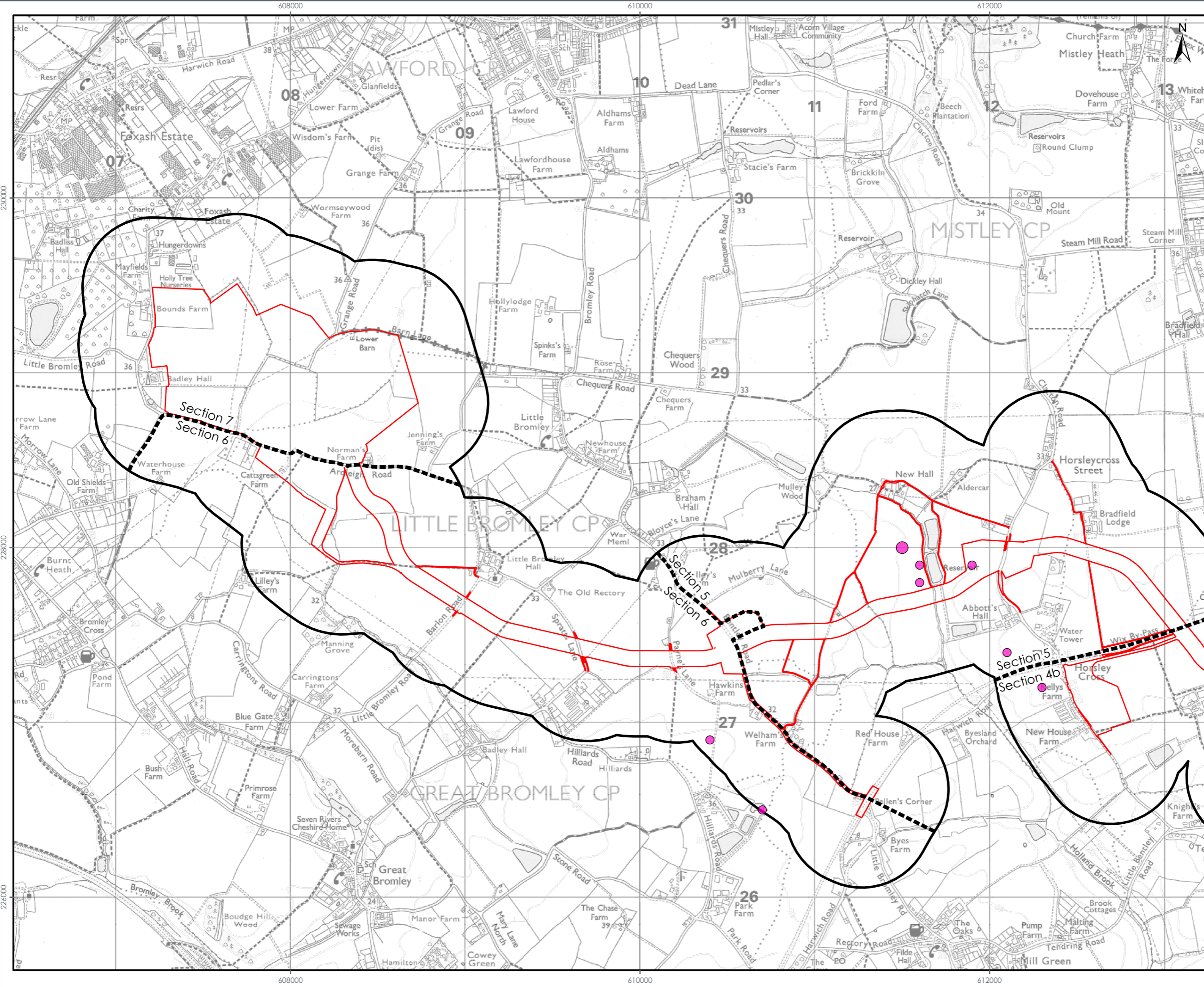
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Survey Observations: Mute Swan Sections 4 and 5

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 6 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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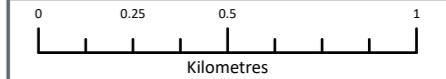
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

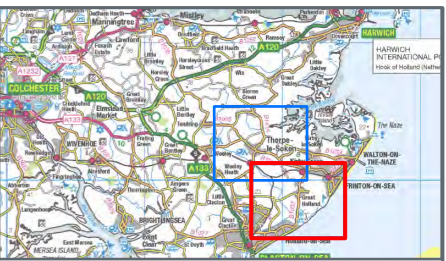
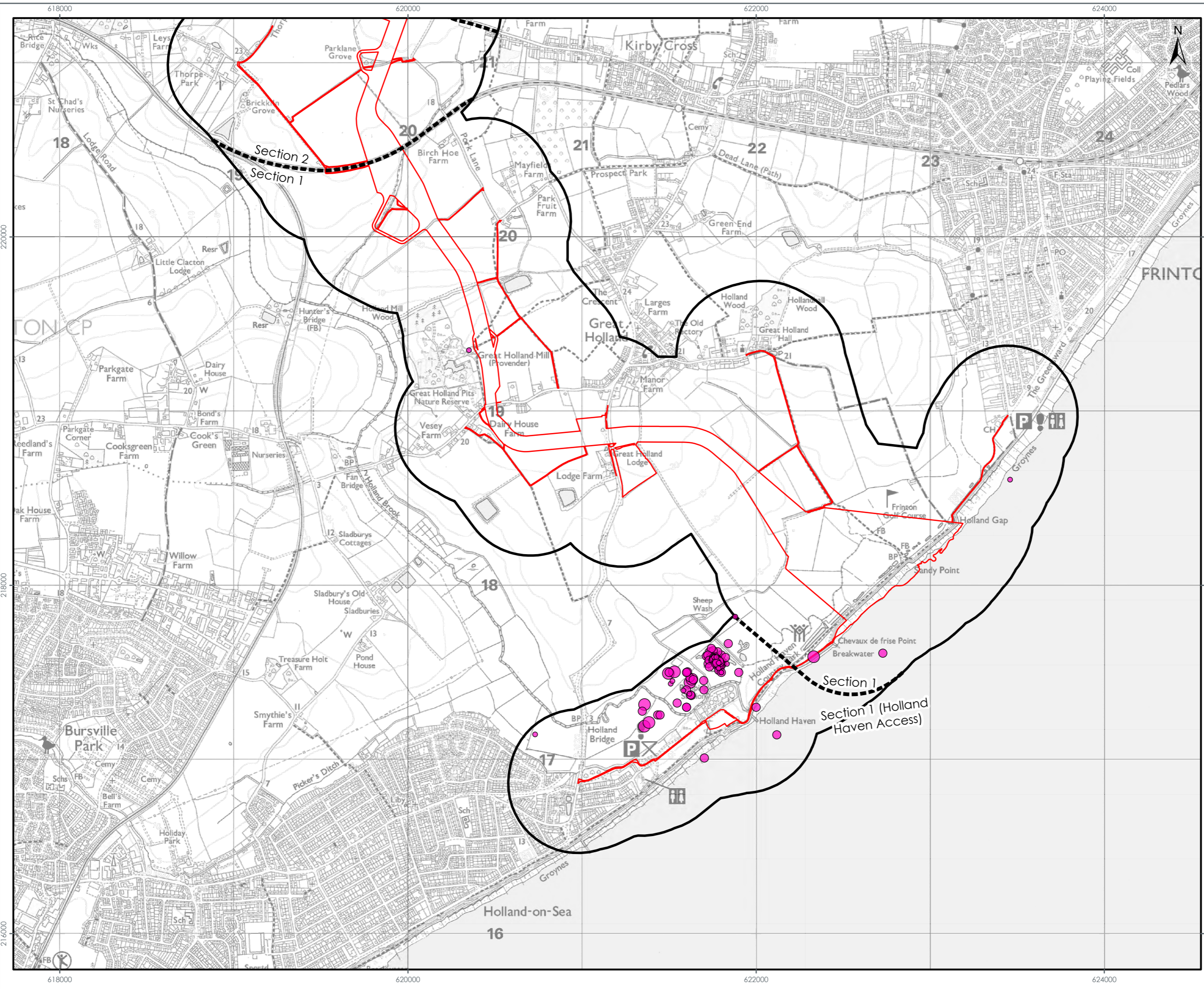
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 Mute Swan
 Sections 5, 6 and 7**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: **7 of 57**
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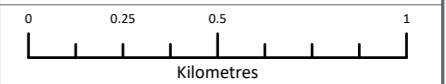
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

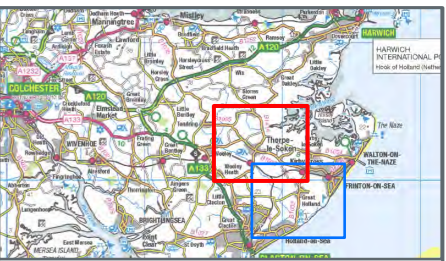
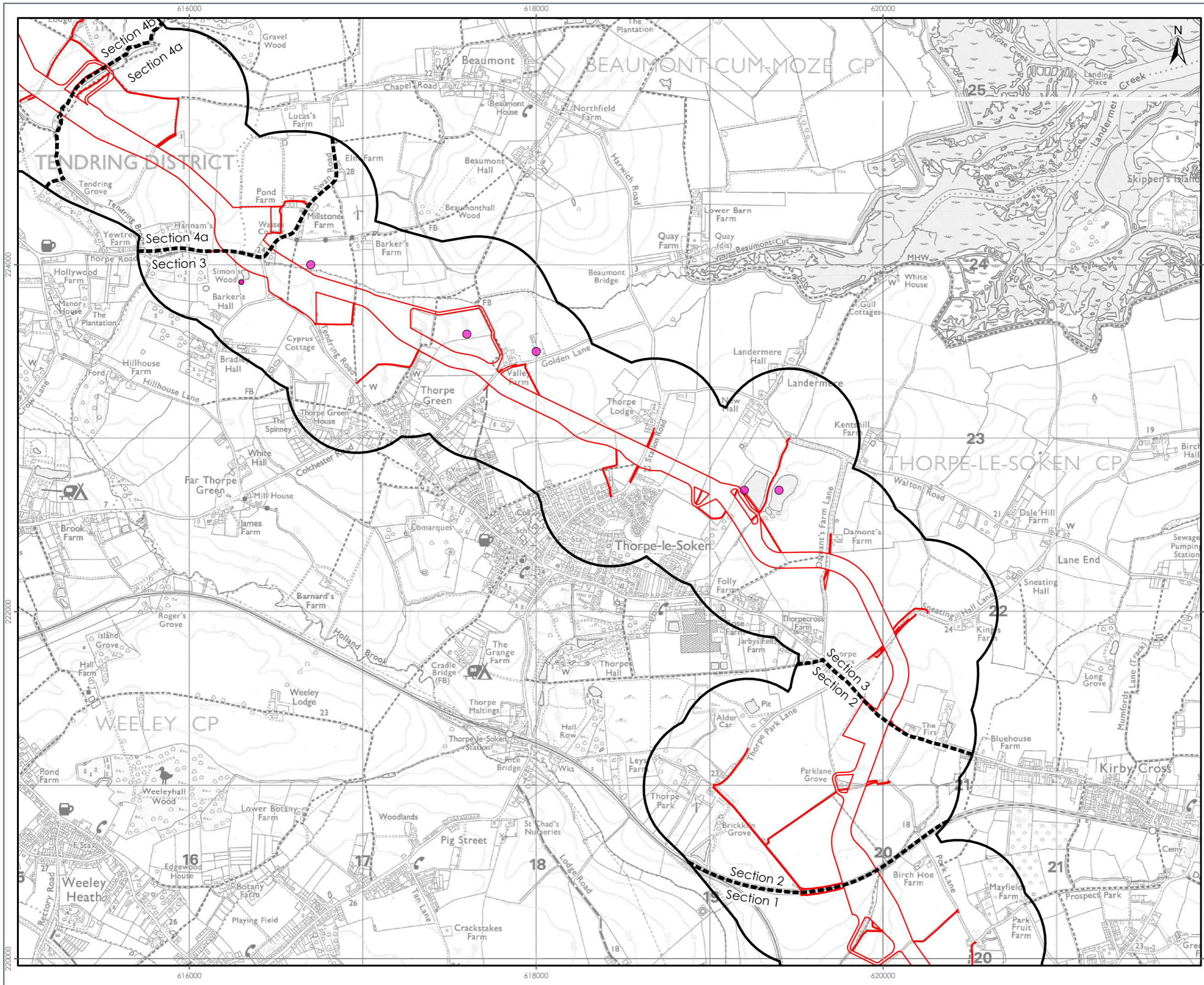
DRAWING TITLE:
**Survey Observations:
 Shelduck
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: **8 of 57**
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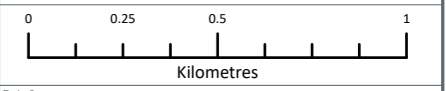
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

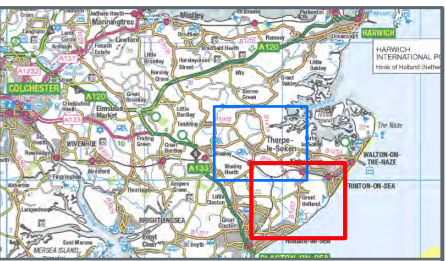
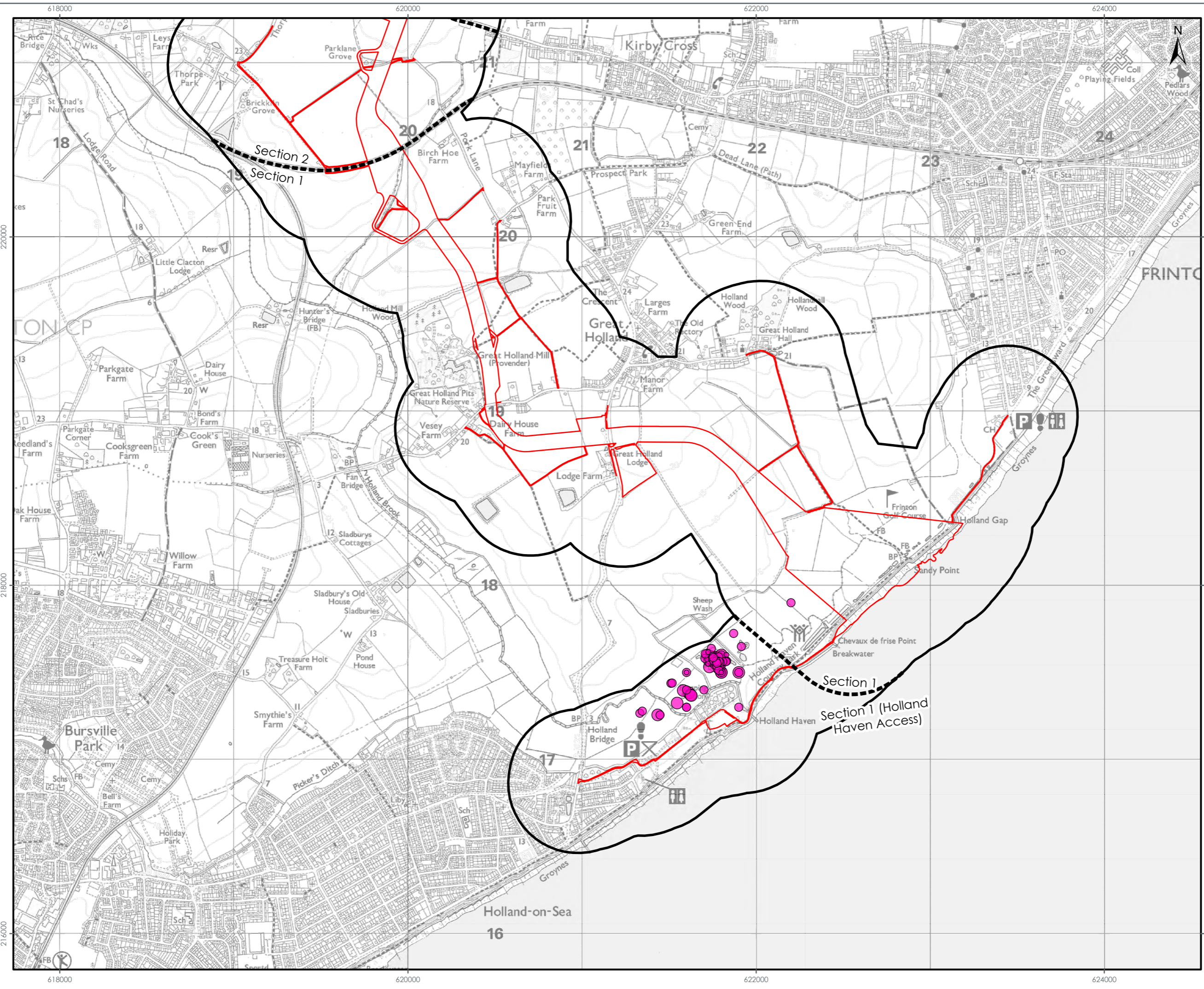
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Survey Observations:
Shelduck
Sections 2 and 3

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 9 of 57
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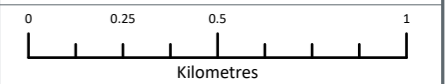
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

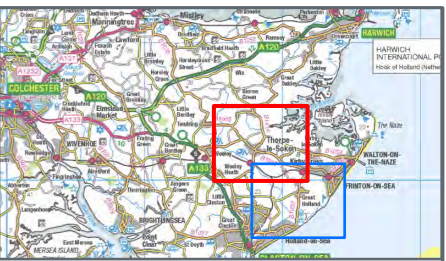
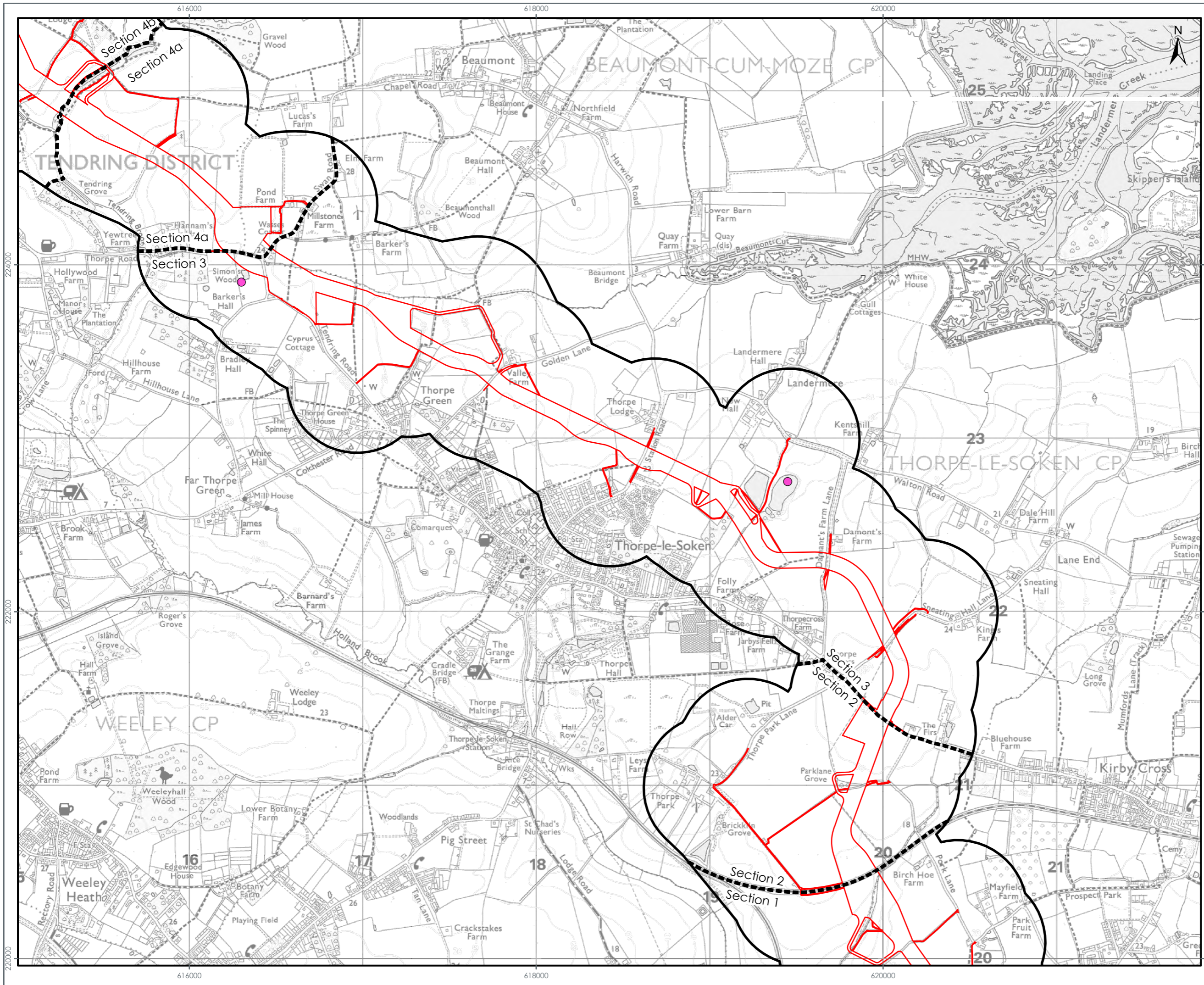
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**Survey Observations:
 Shoveler
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

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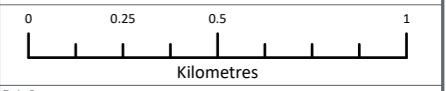
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

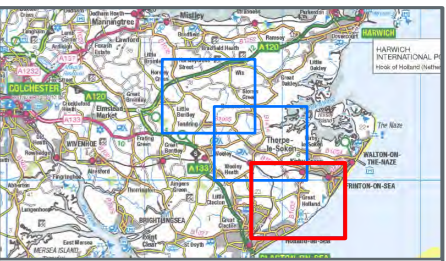
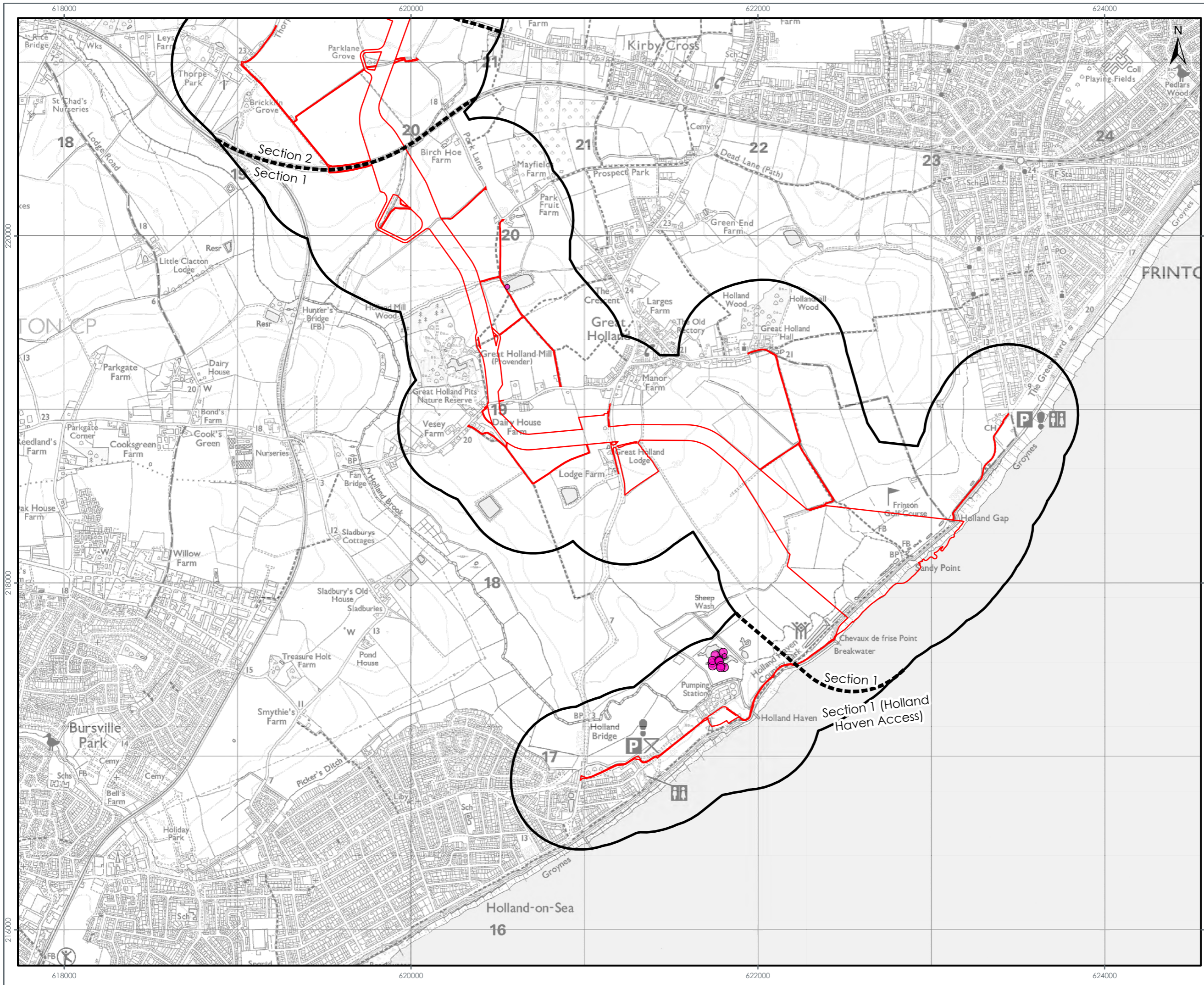
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**Survey Observations:
 Shoveler
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 11 of 57
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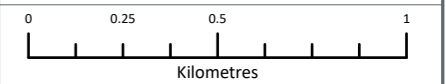
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

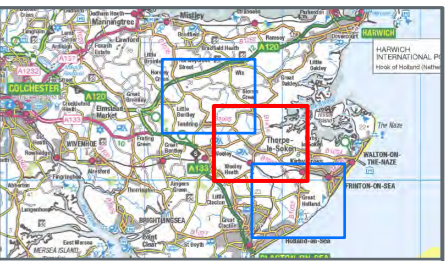
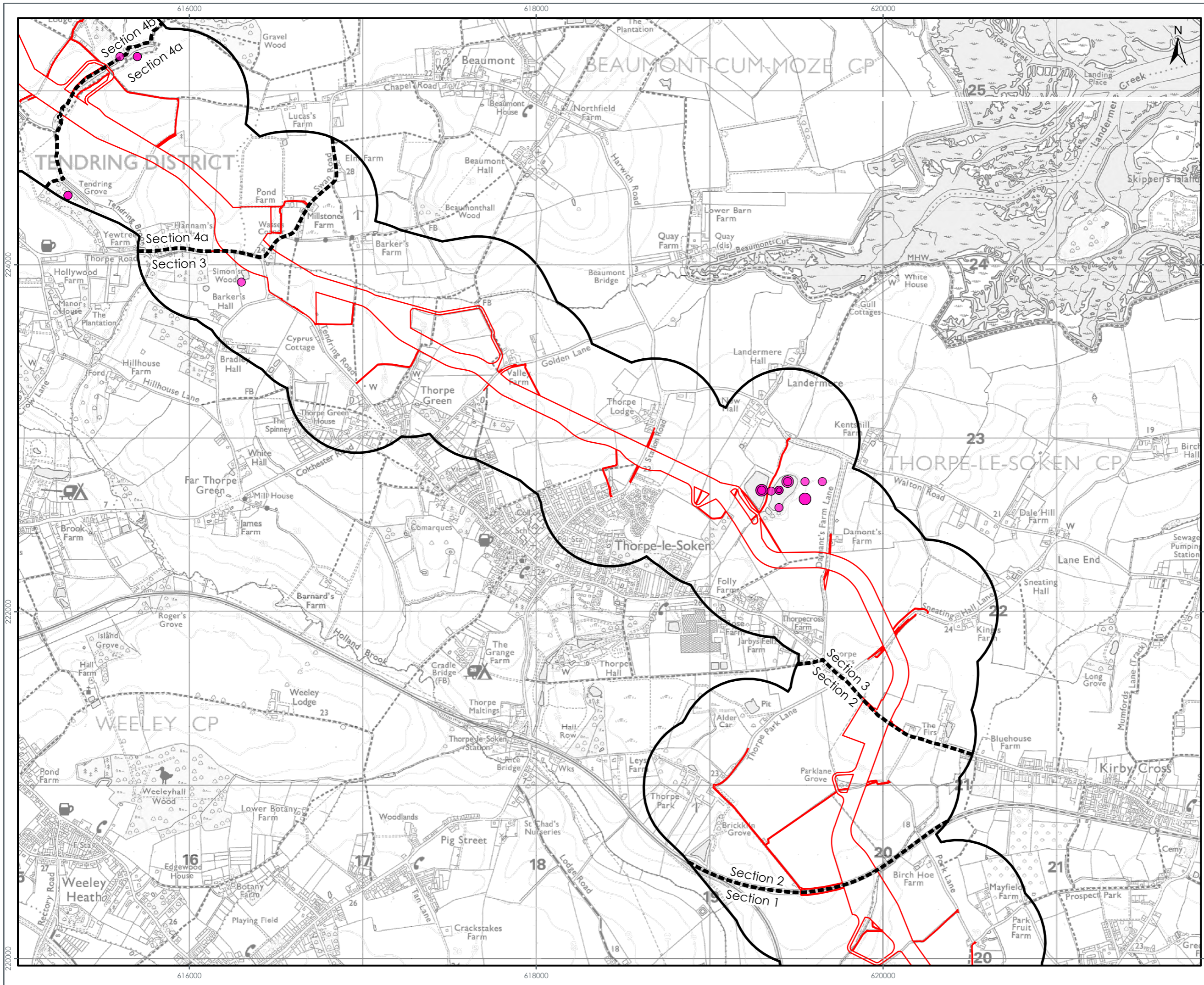
DRAWING TITLE:
**Survey Observations:
 Gadwall
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 12 of 57
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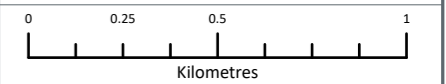
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources:

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

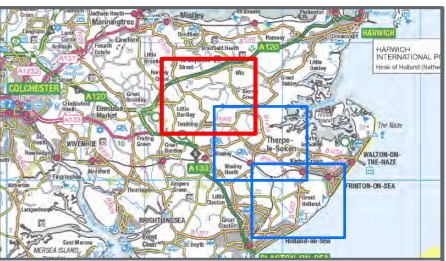
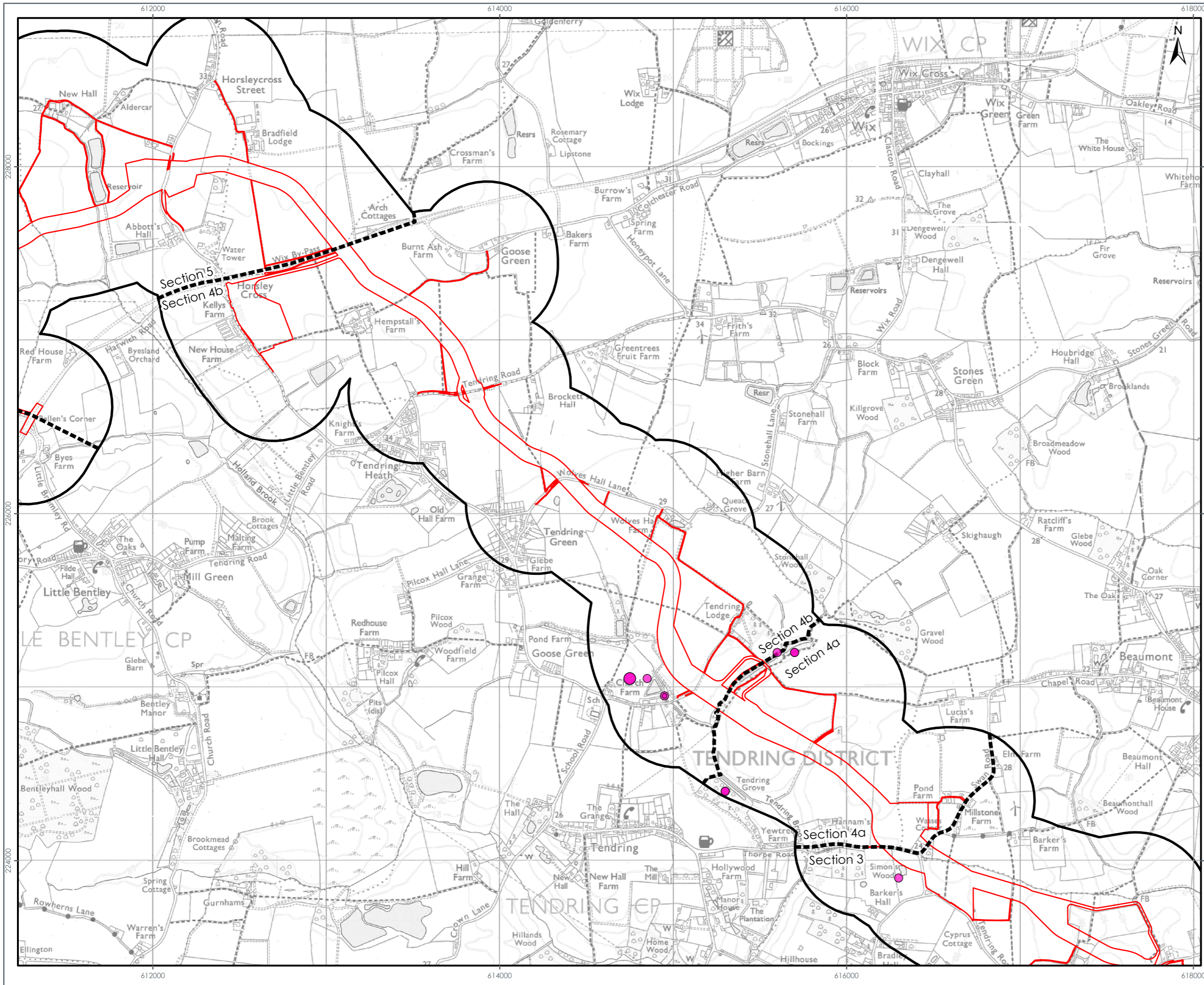
DRAWING TITLE:
**Survey Observations:
 Gadwall
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 13 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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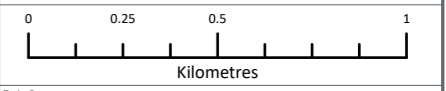
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

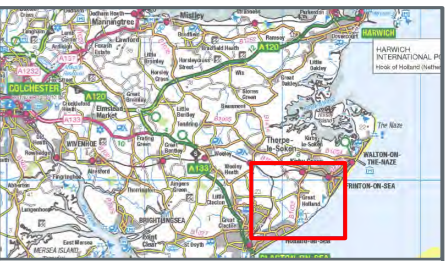
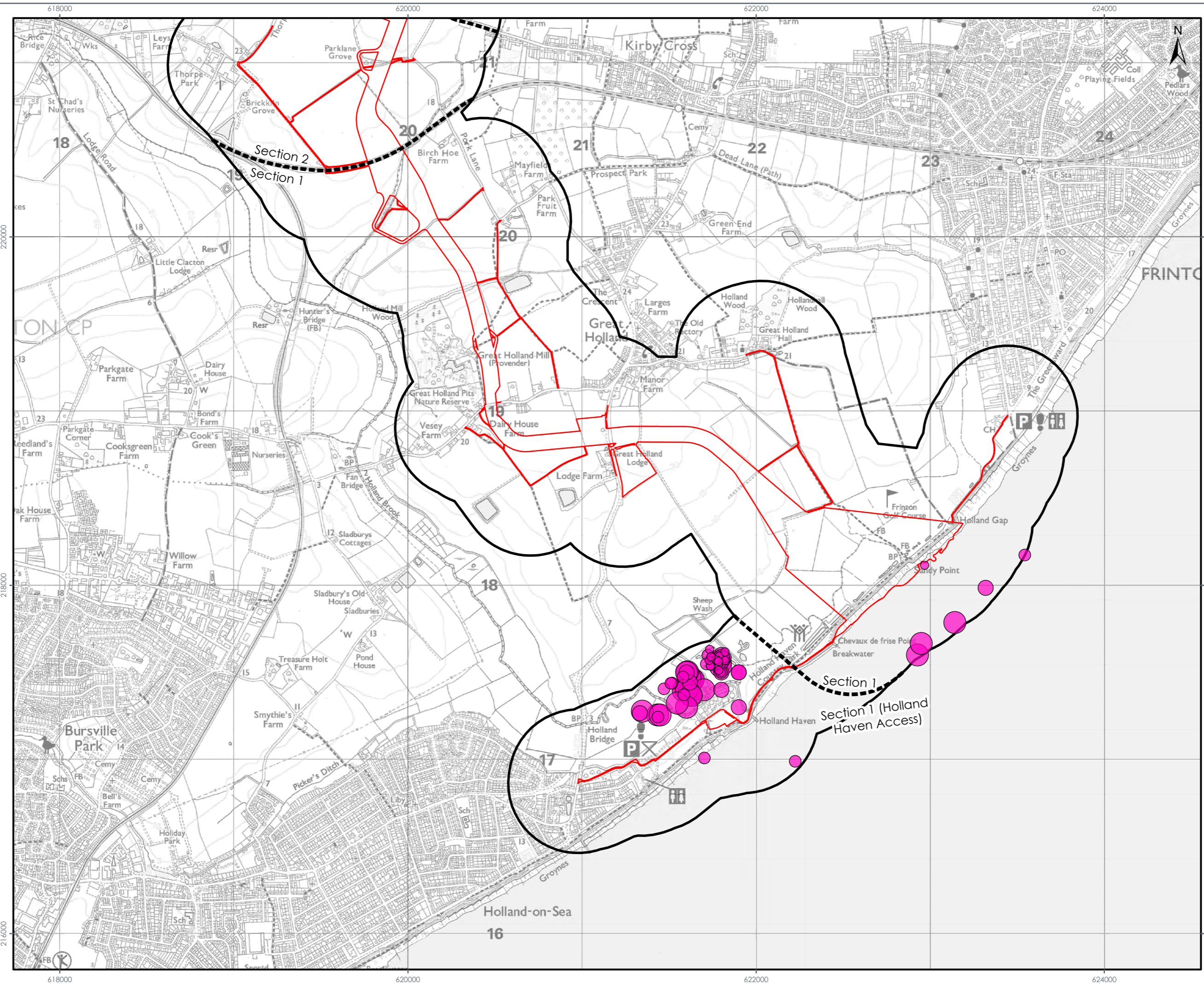
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**Survey Observations:
 Gadwall
 Sections 4 and 5**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 14 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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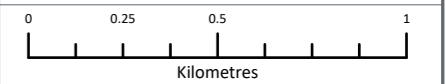
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10
- 11 - 50
- 51 - 100
- > 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
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- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

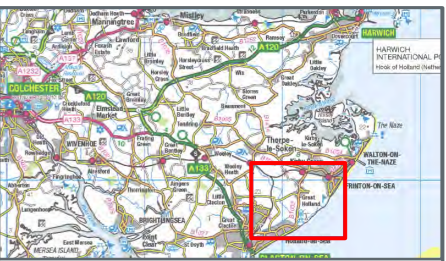
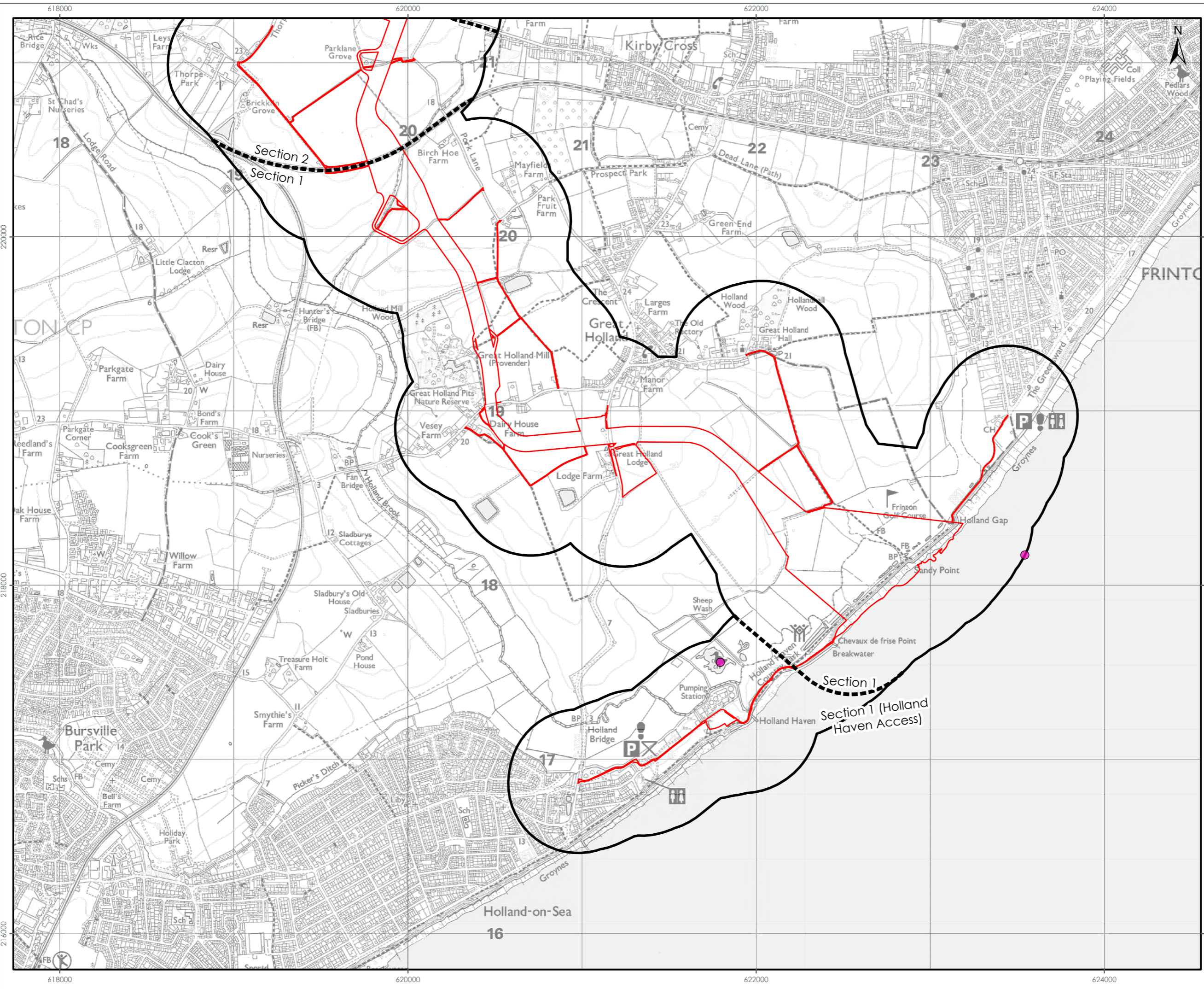
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**Survey Observations:
 Wigeon
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 15 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSG8 1936 PROJECTION: British National Grid

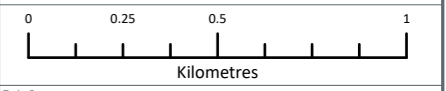




- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary
- Number of Individual Birds Recorded
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

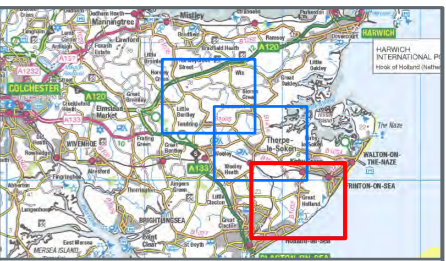
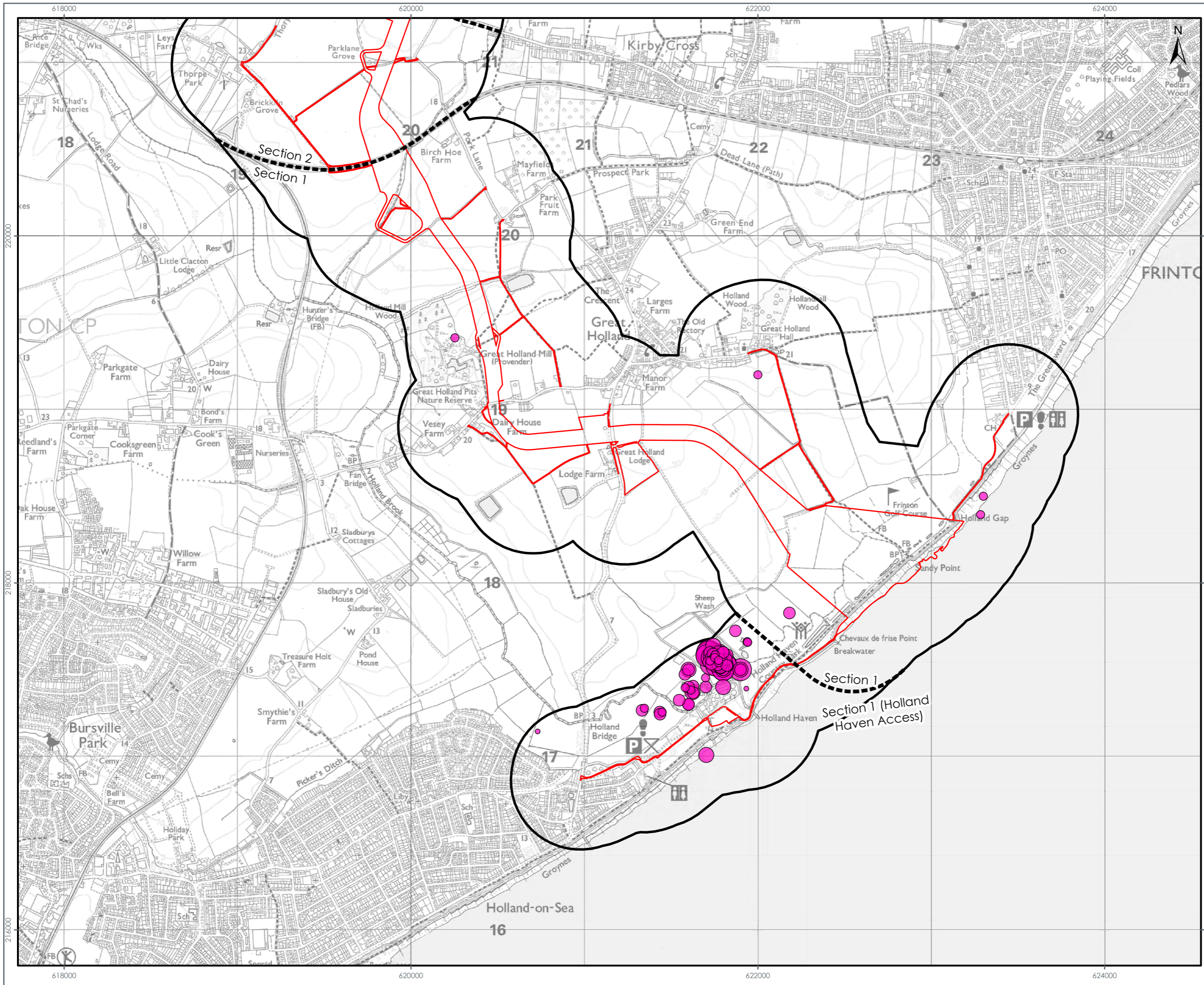
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**Survey Observations:
 Pintail
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 16 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





LEGEND

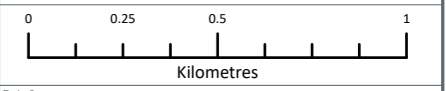
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- > 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

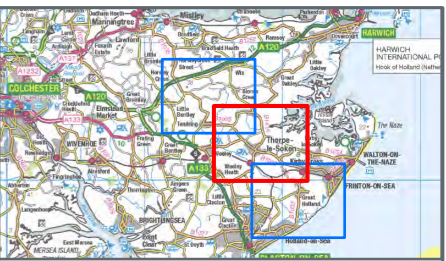
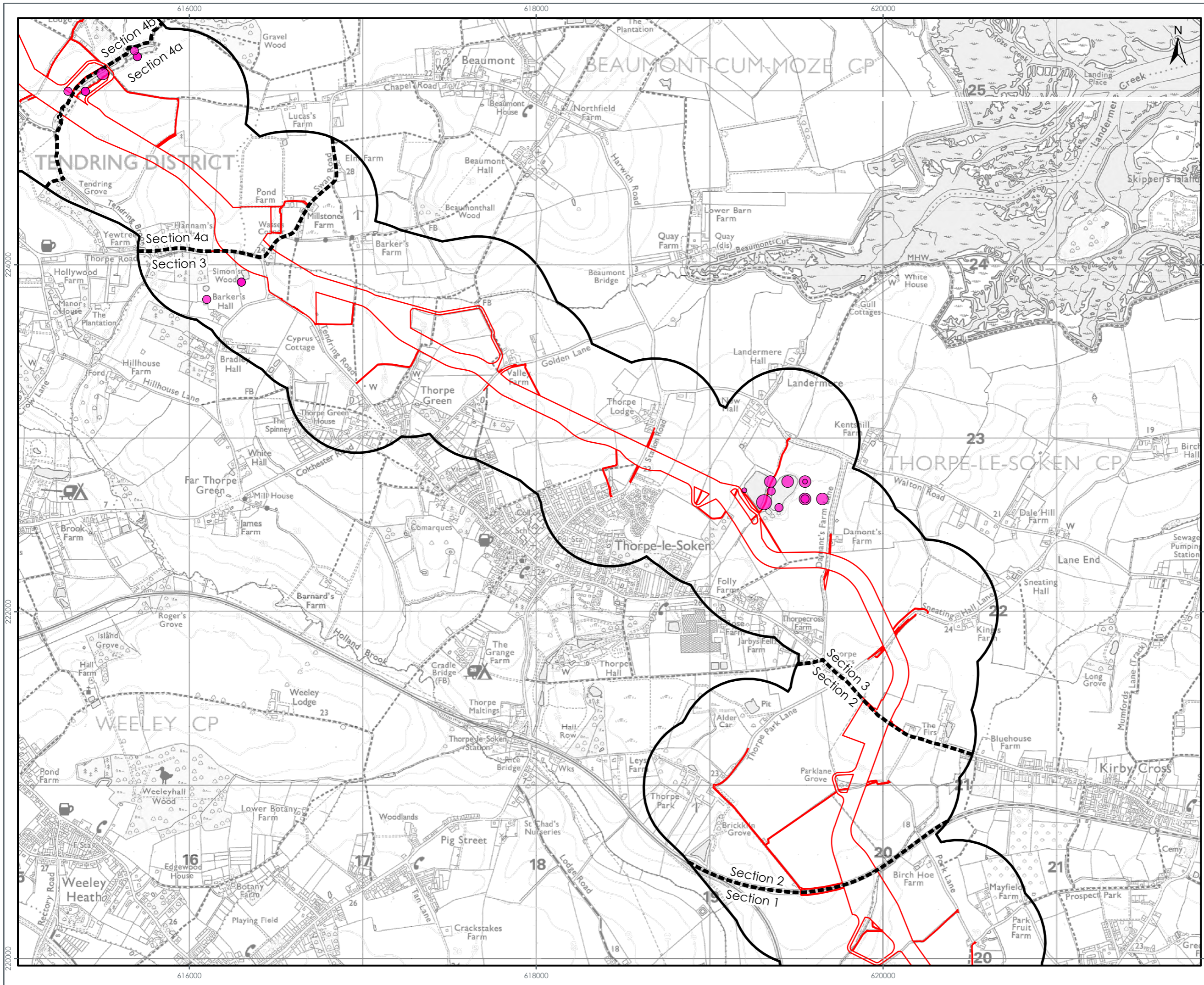
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**Survey Observations:
 Teal
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 17 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSG8 1936 PROJECTION: British National Grid





LEGEND

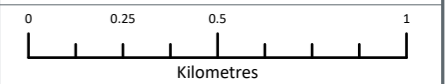
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50
- 51 - 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

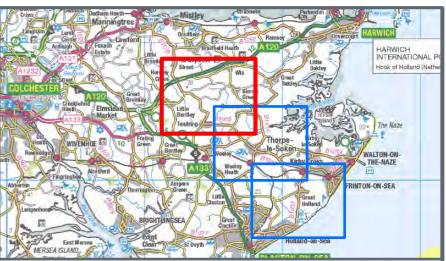
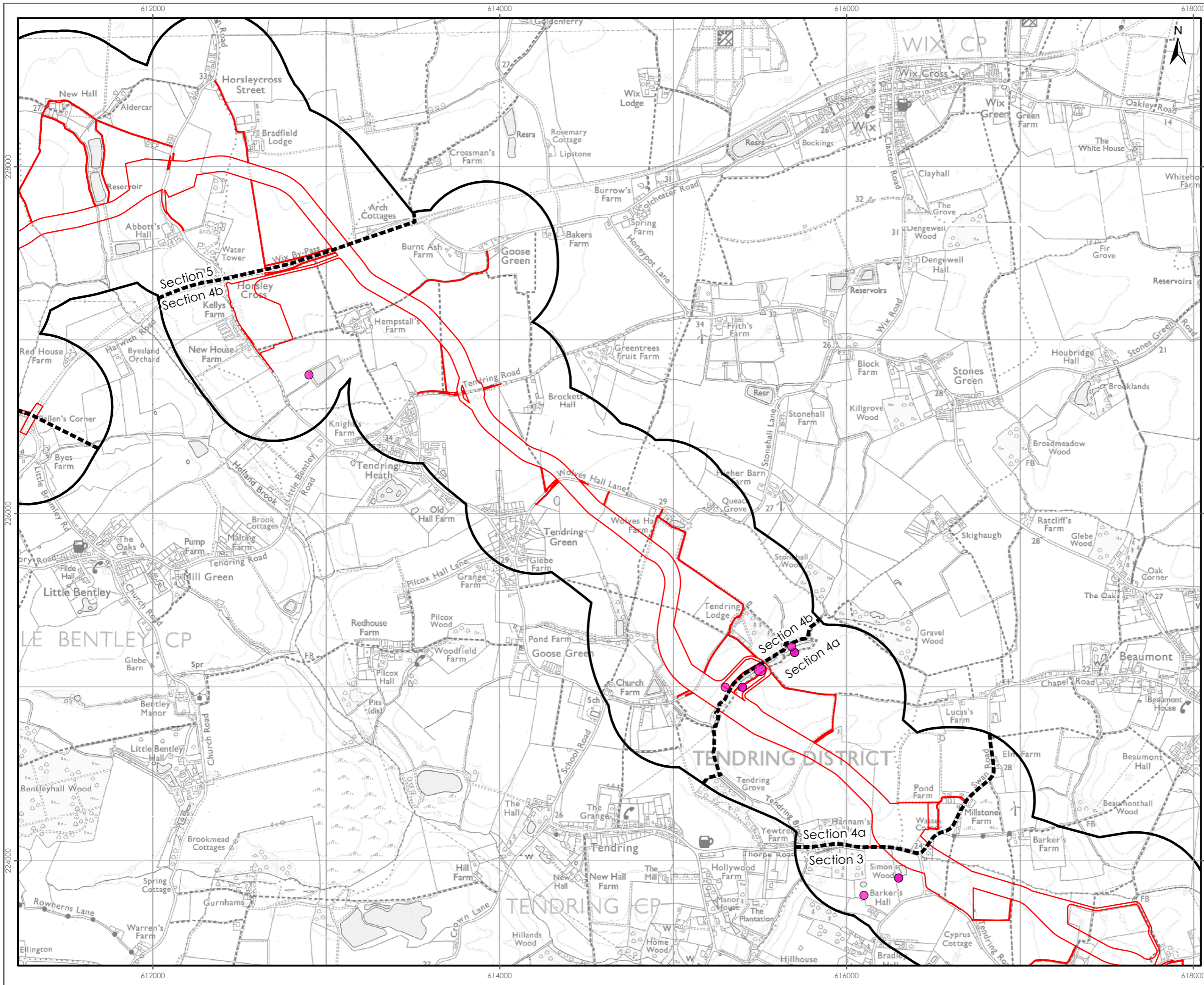
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**Survey Observations:
 Teal
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 18 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





LEGEND

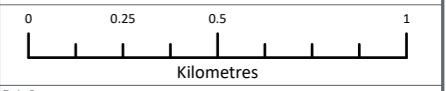
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

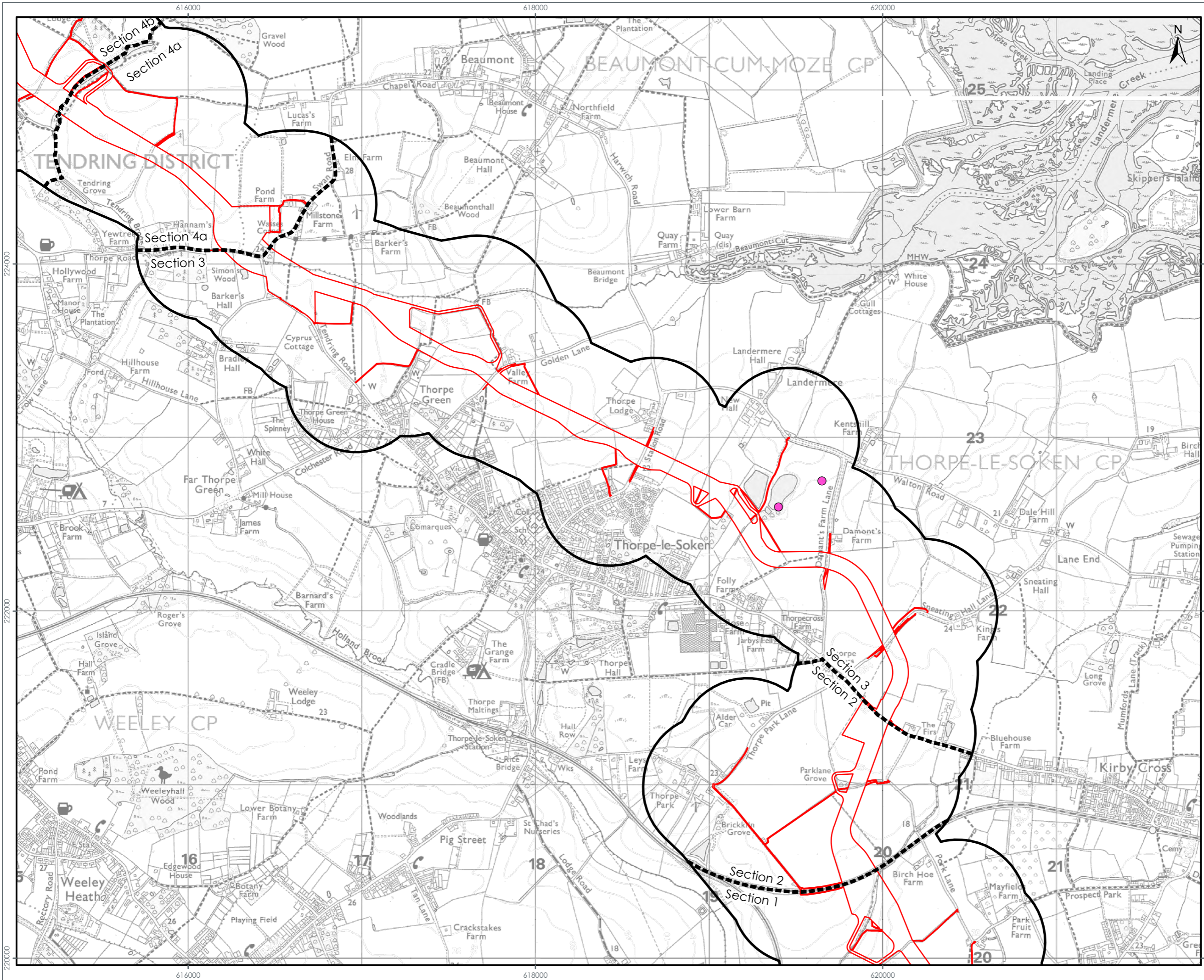
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**Survey Observations:
 Teal
 Sections 4 and 5**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 19 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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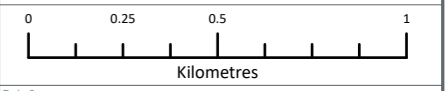
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

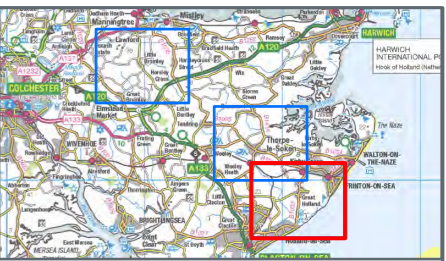
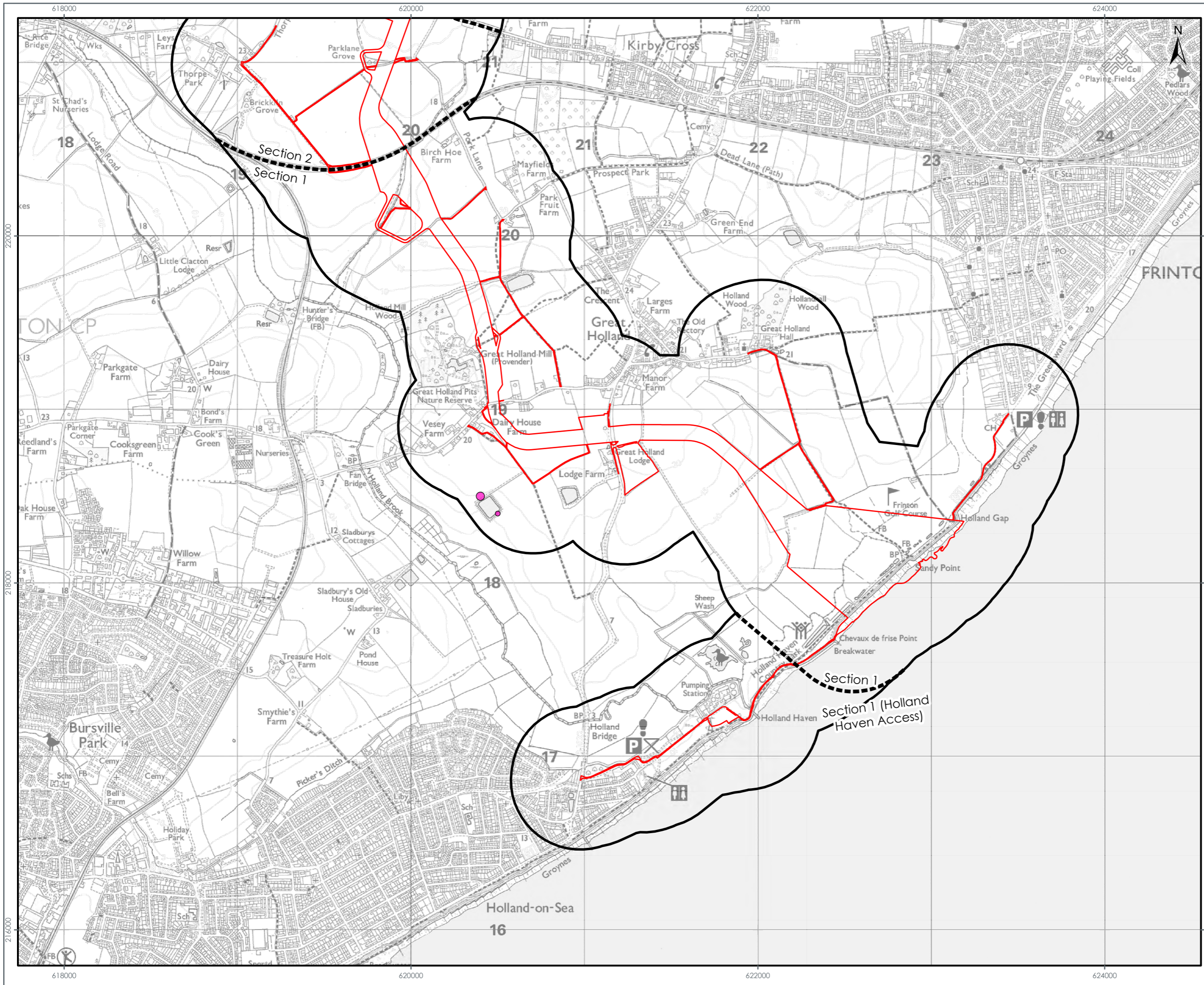
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**Survey Observations:
 Pochard
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 20 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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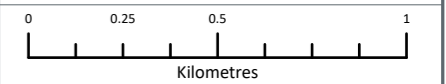
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

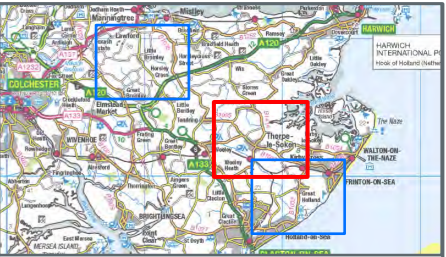
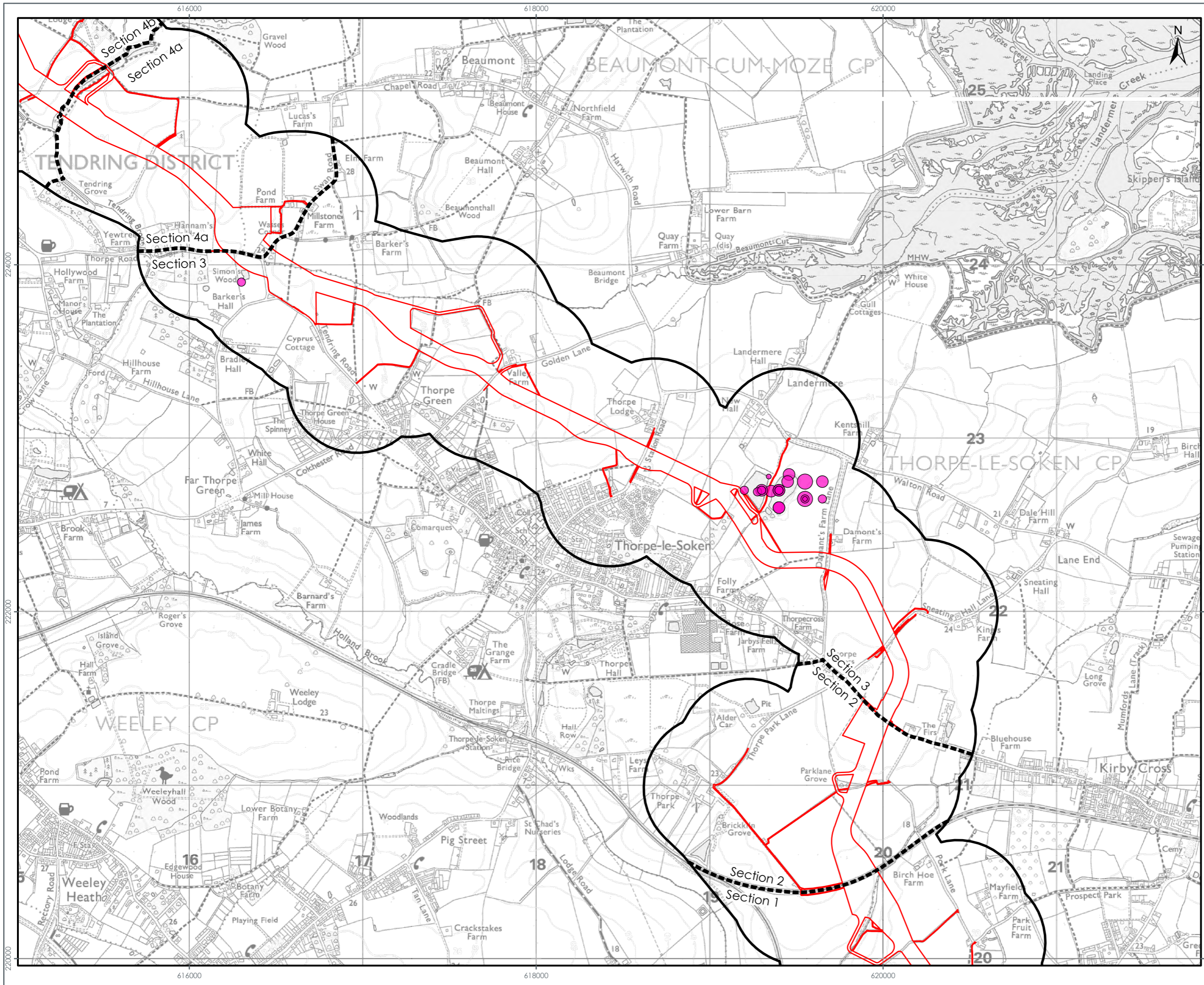
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**Survey Observations:
 Tufted Duck
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 21 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid



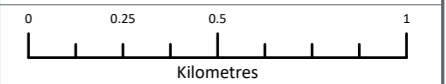


- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary

- Number of Individual Birds Recorded
- 1
 - 2 - 10
 - 11 - 50
 - 51 - 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

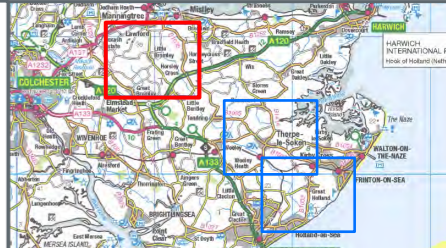
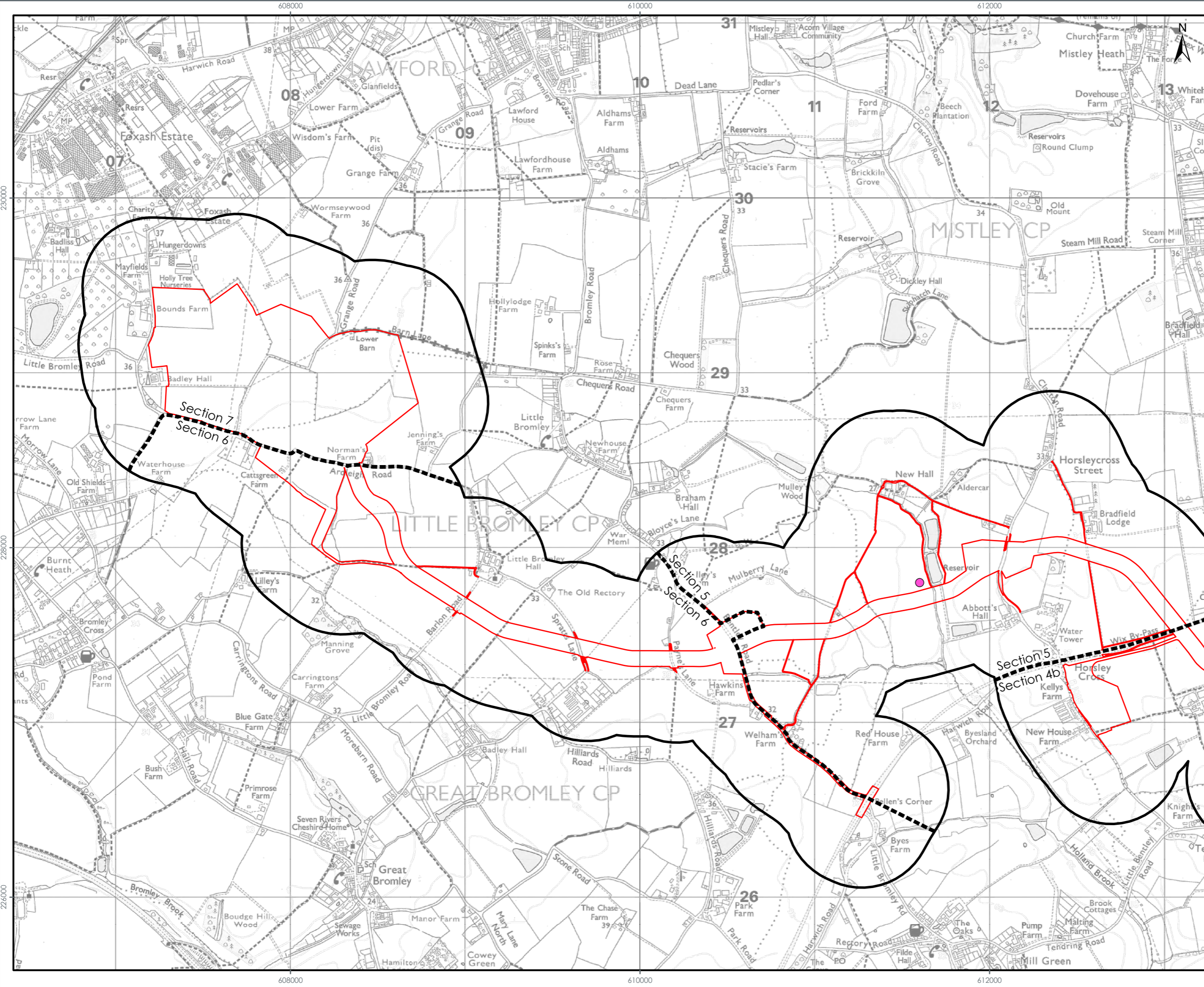
DRAWING TITLE:
**Survey Observations:
 Tufted Duck
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 22 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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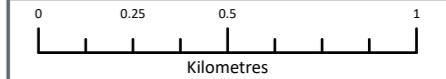
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

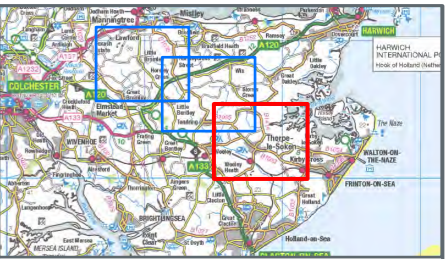
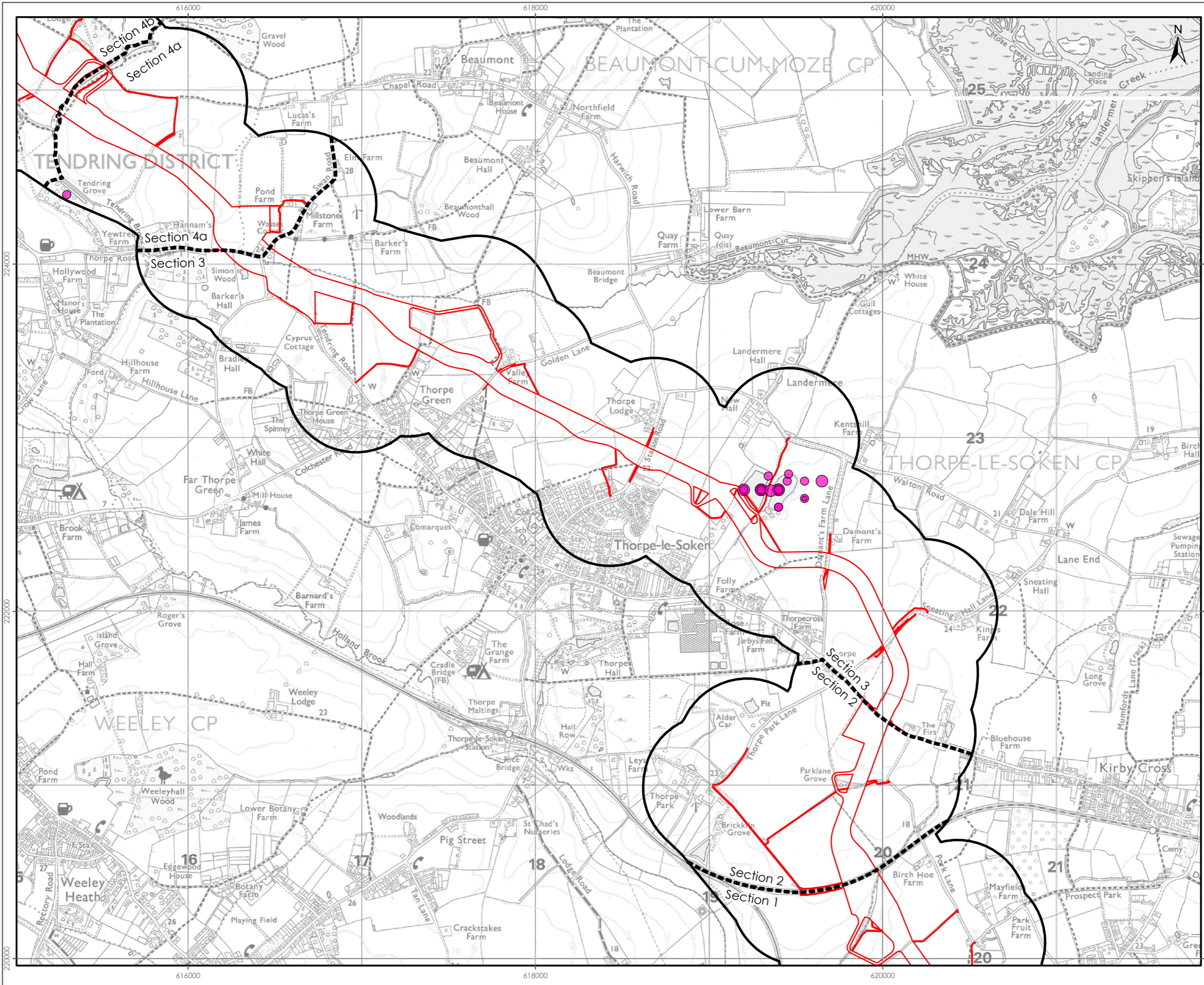
DRAWING TITLE:
**Survey Observations:
 Tufted Duck
 Sections 5, 6 and 7**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 23 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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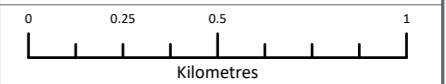
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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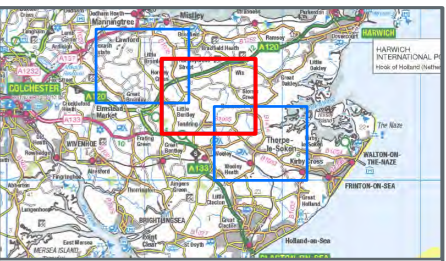
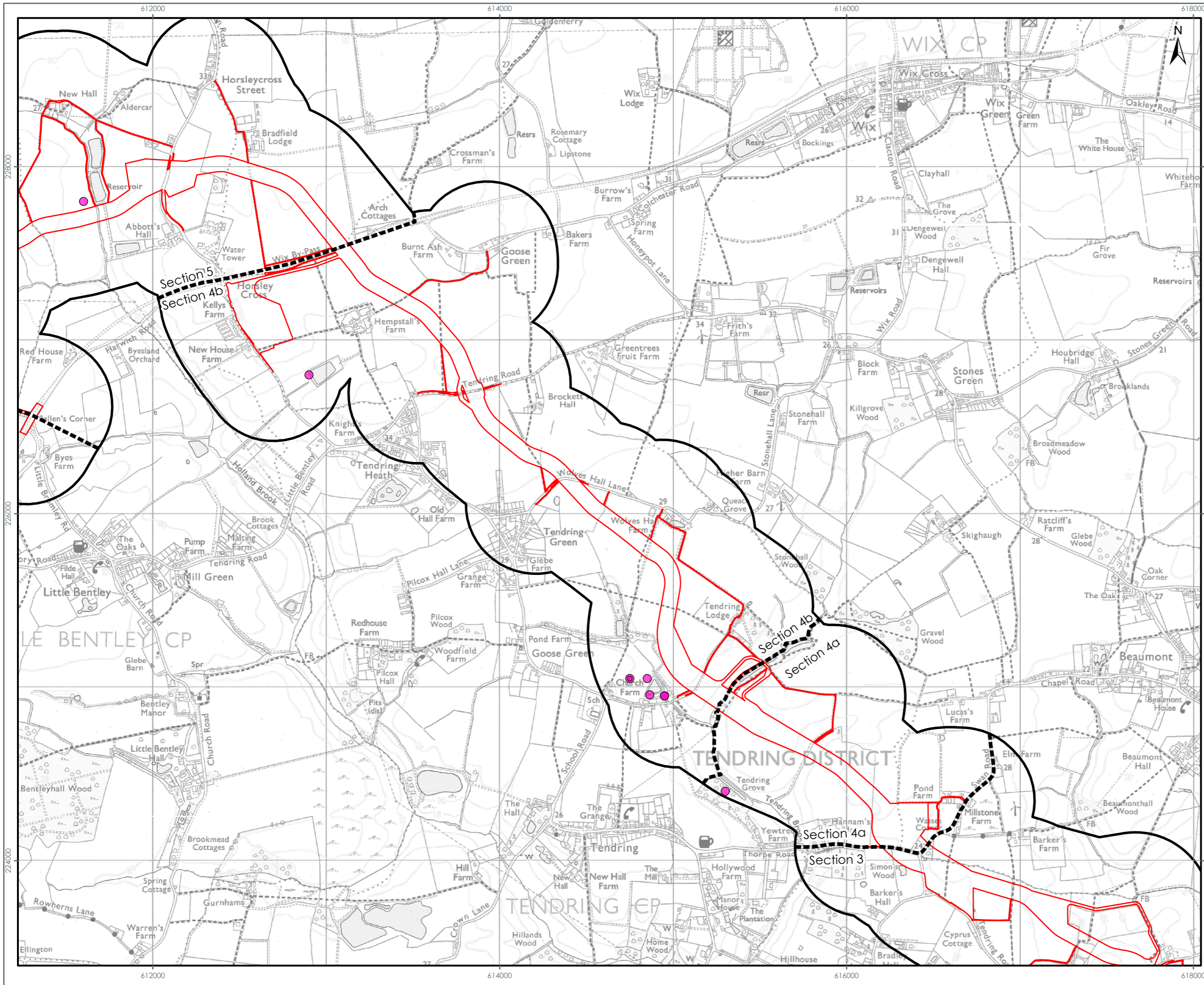
DRAWING TITLE:
Survey Observations:
Cool
Sections 2 and 3

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 24 of 57
SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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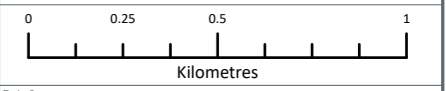
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

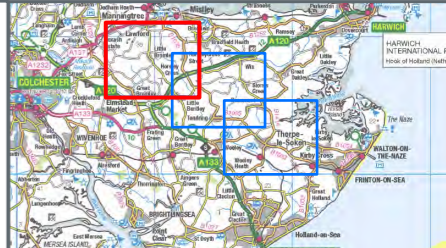
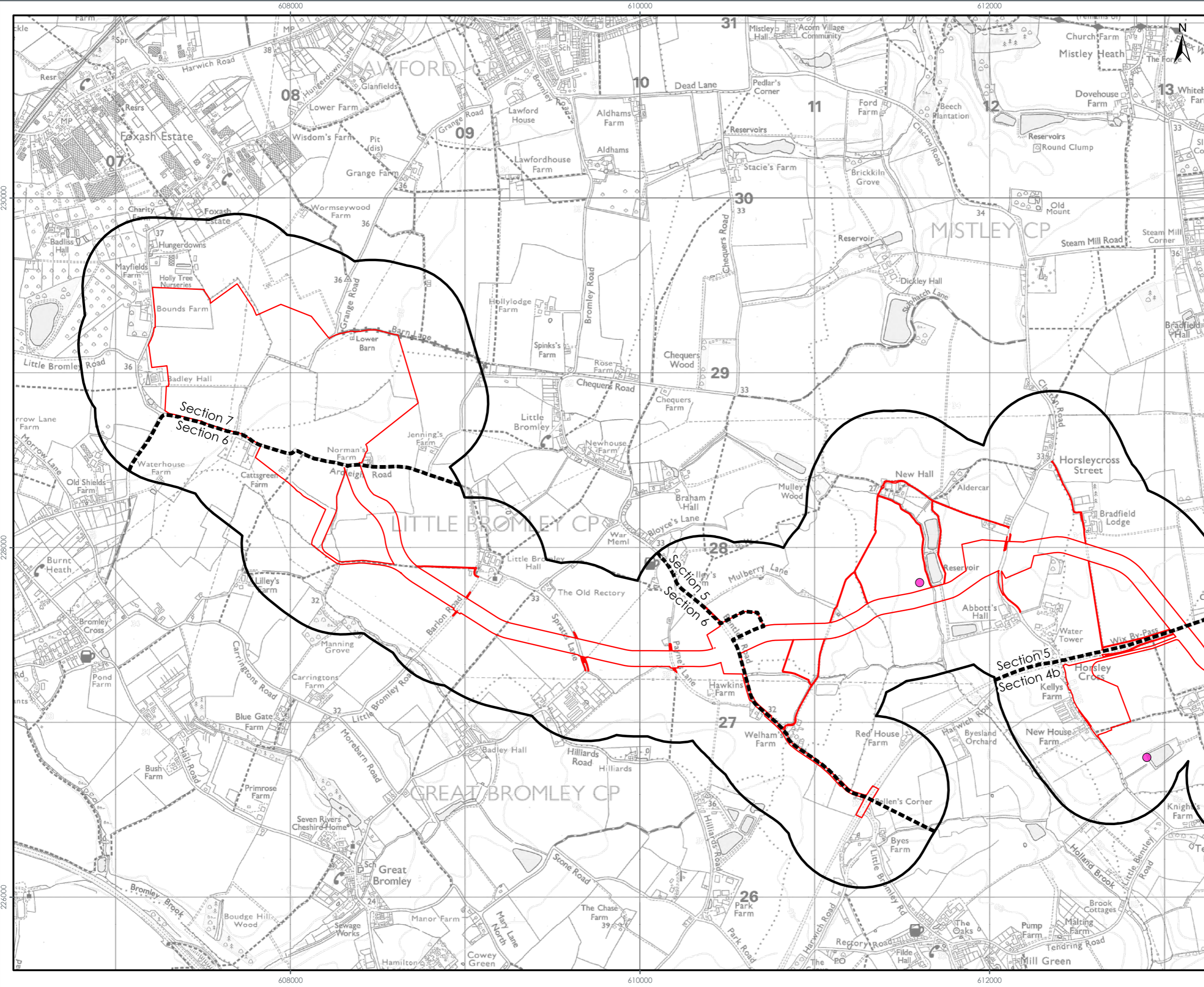
DRAWING TITLE:
**Survey Observations:
 Cool
 Sections 4 and 5**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 25 of 57
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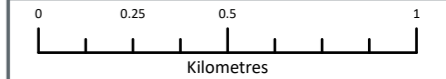




- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary
- Number of Individual Birds Recorded
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

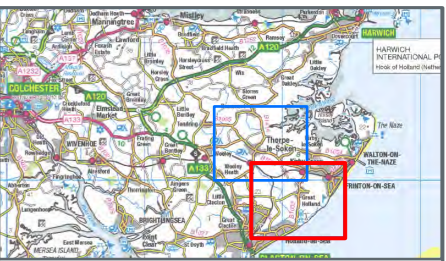
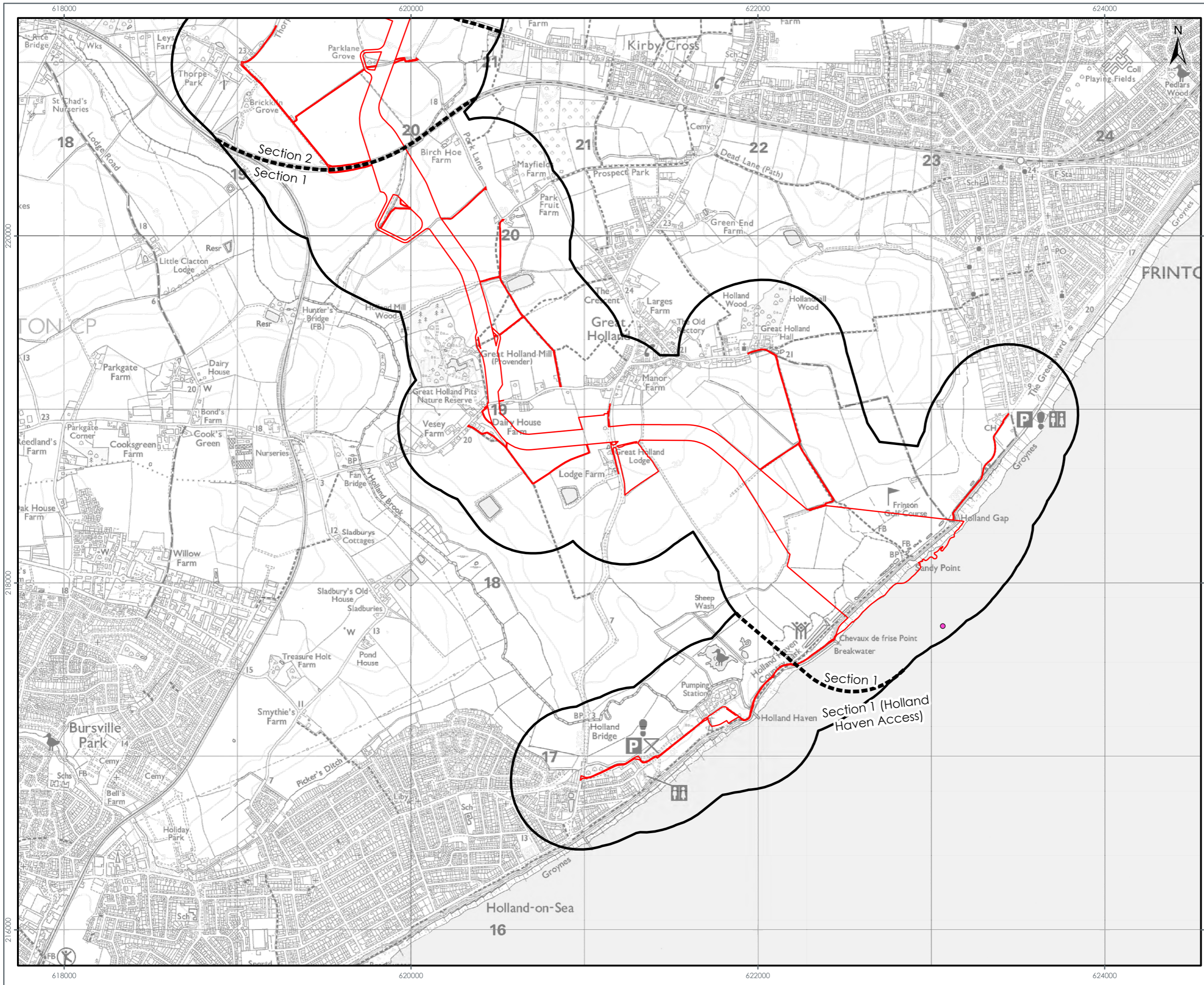
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**Survey Observations:
 Coot
 Sections 5, 6 and 7**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 26 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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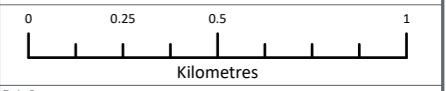
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

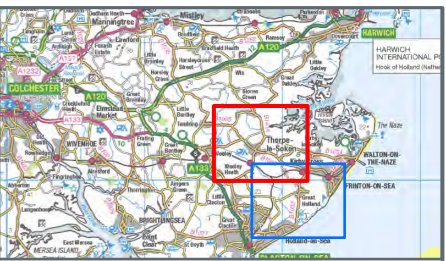
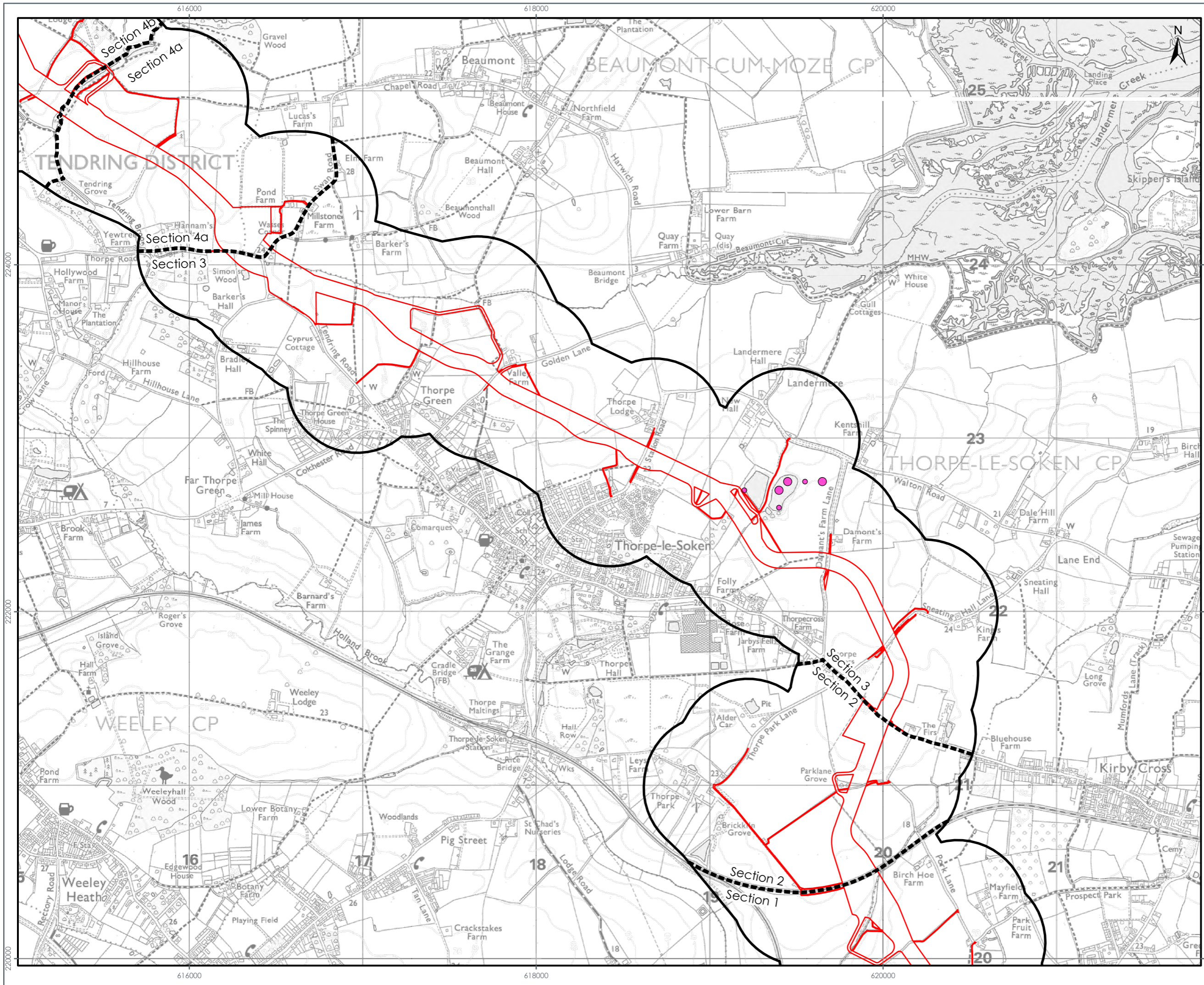
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**Survey Observations:
 Great Crested Grebe
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: **27 of 57**
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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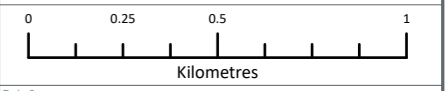
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
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- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

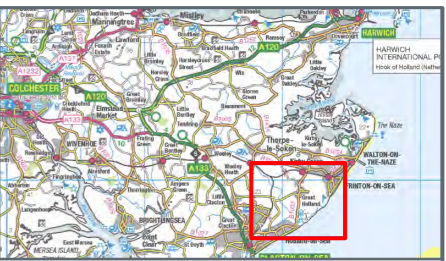
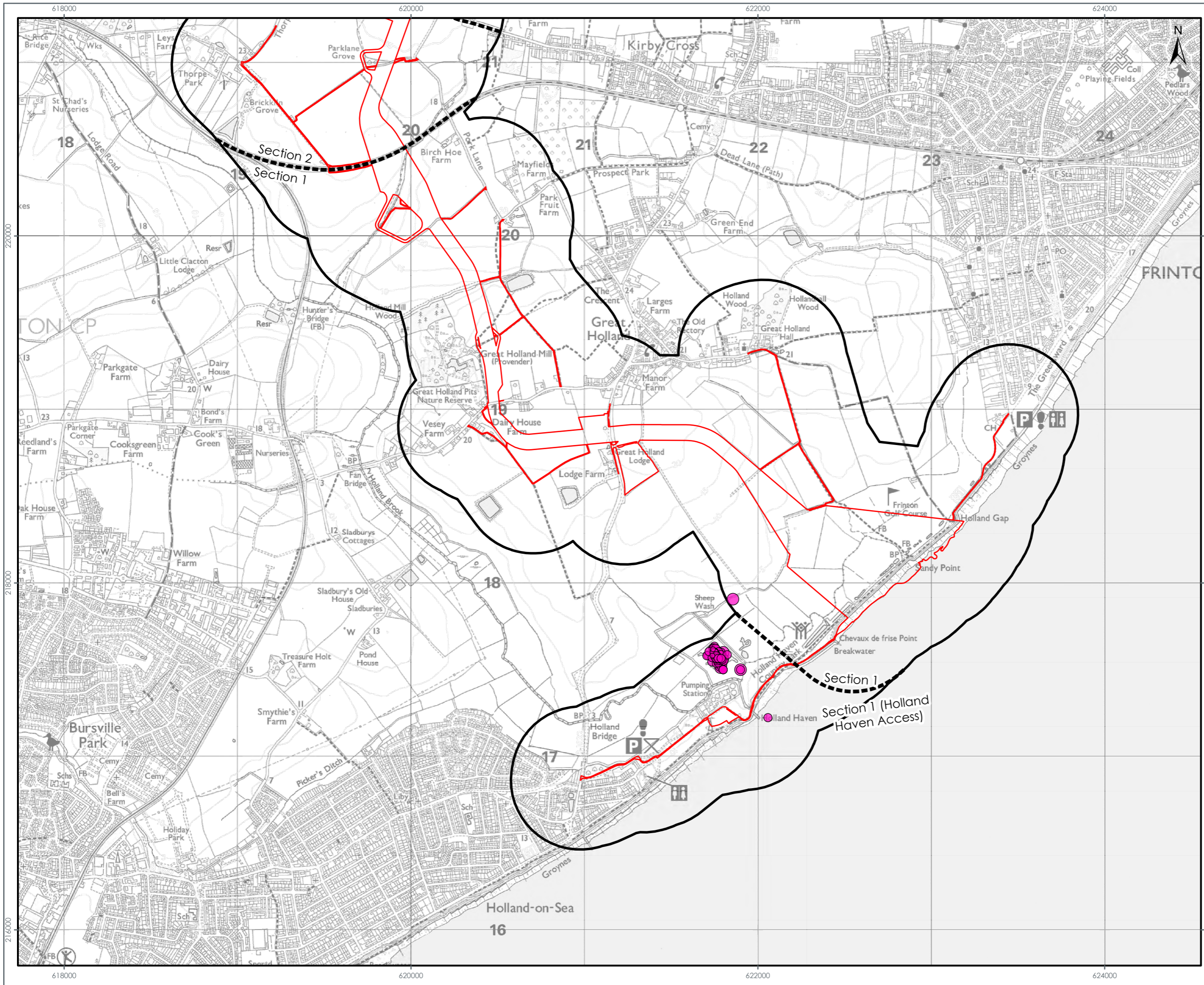
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 Great Crested Grebe
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 28 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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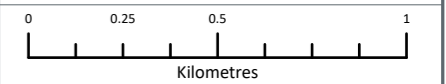
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

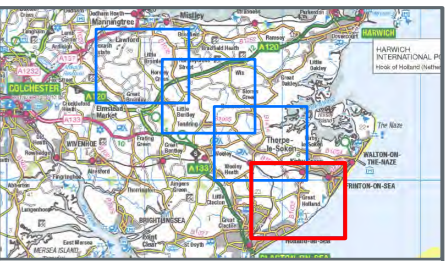
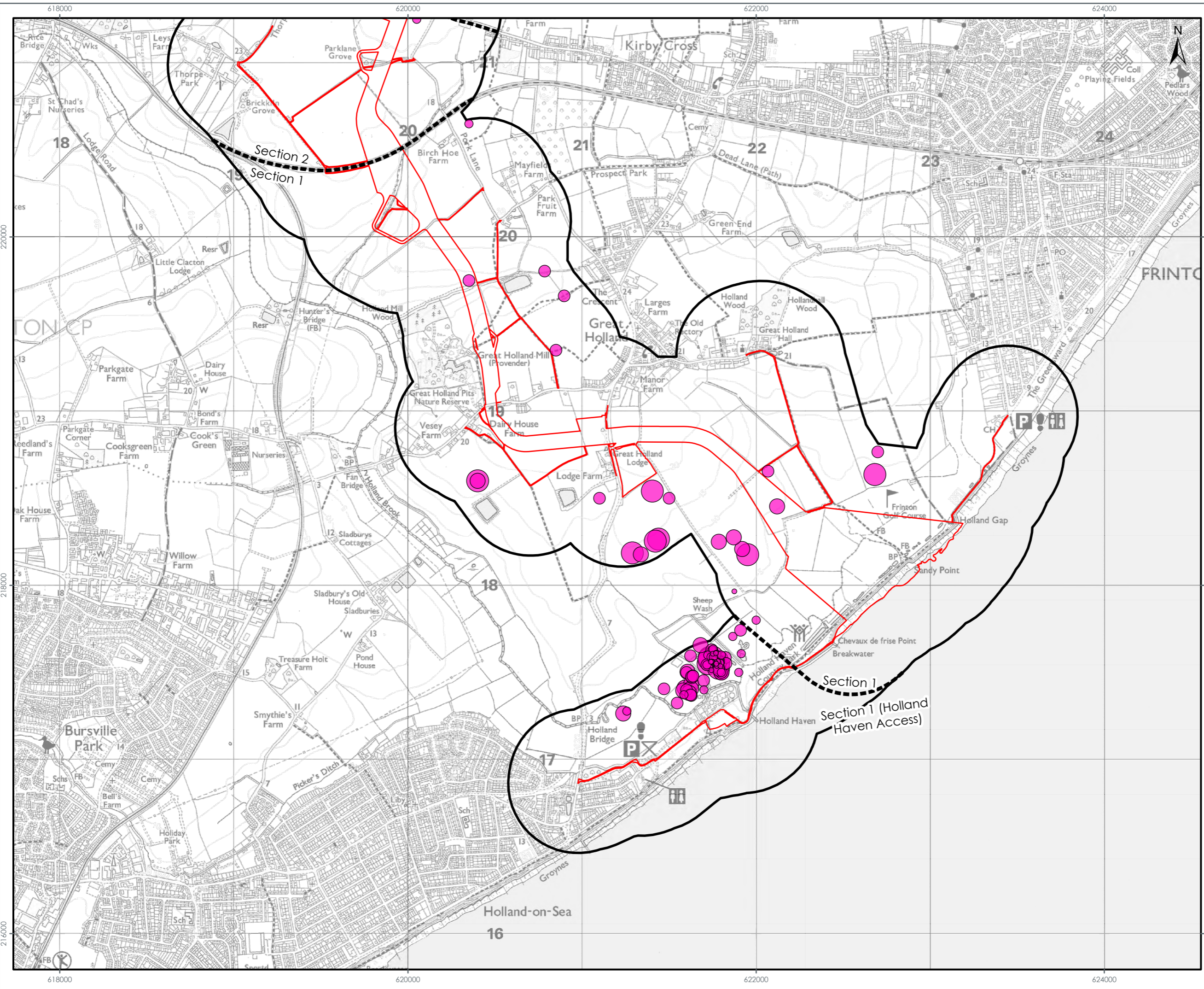
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 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: **29 of 57**
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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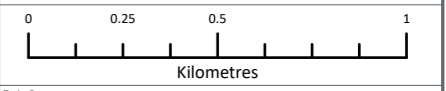
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- > 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

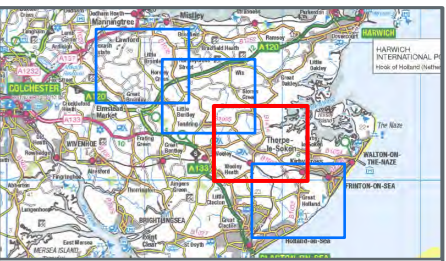
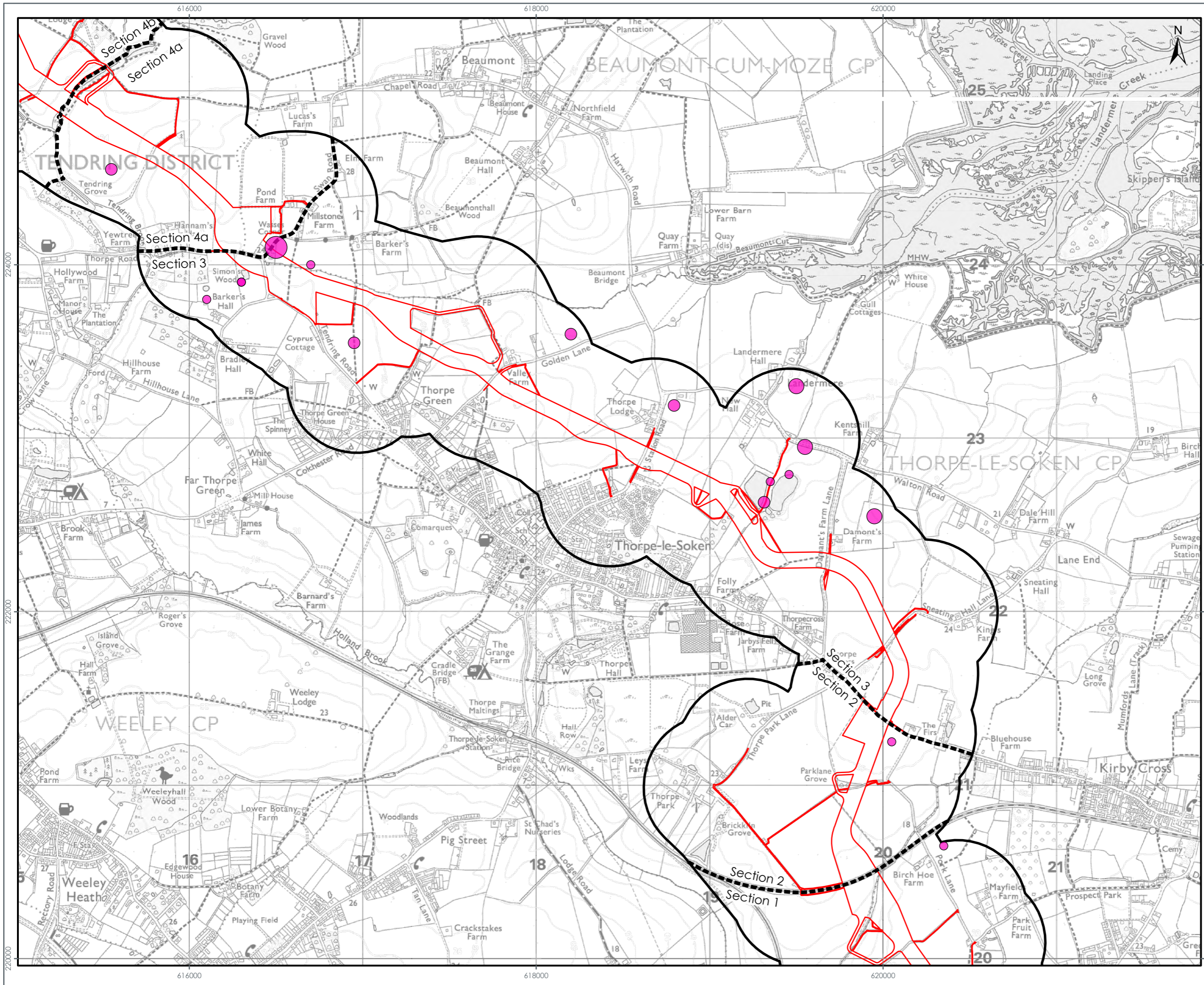
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 Lapping
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 30 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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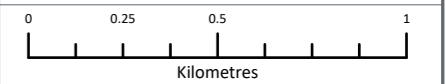
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10
- 11 - 50
- 51 - 100
- > 100

Bird observations have been aggregated from the following sources:

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

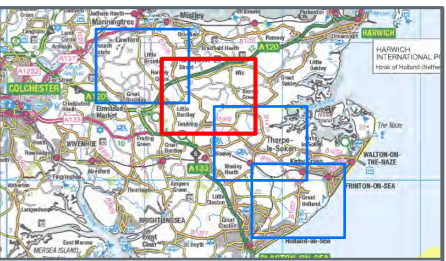
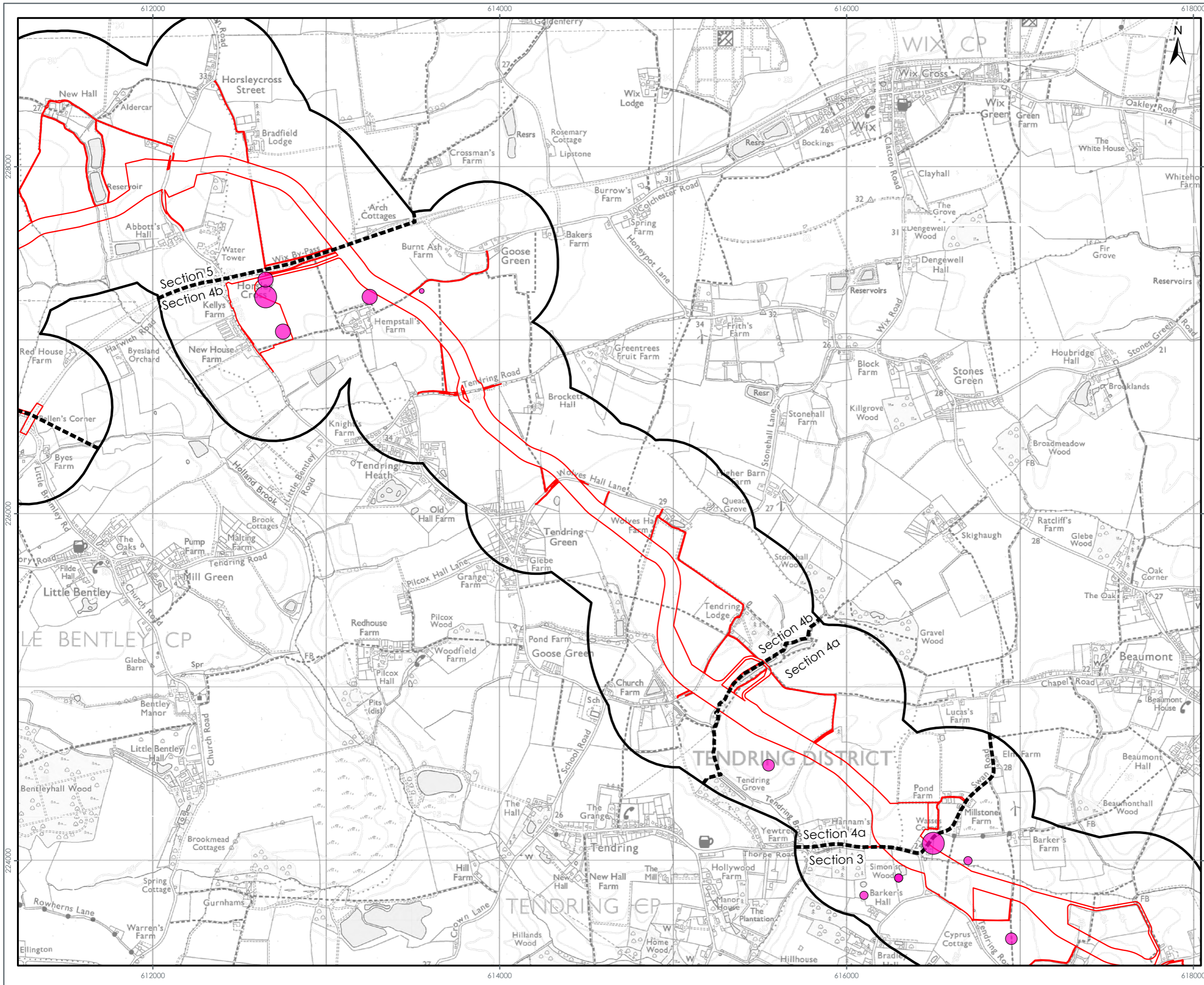
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Survey Observations:
Lapwing
Sections 2 and 3

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 31 of 57
SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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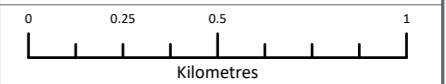
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- > 100

Bird observations have been aggregated from the following sources.

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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
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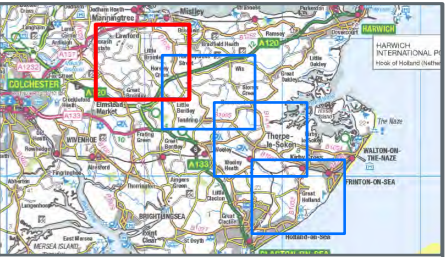
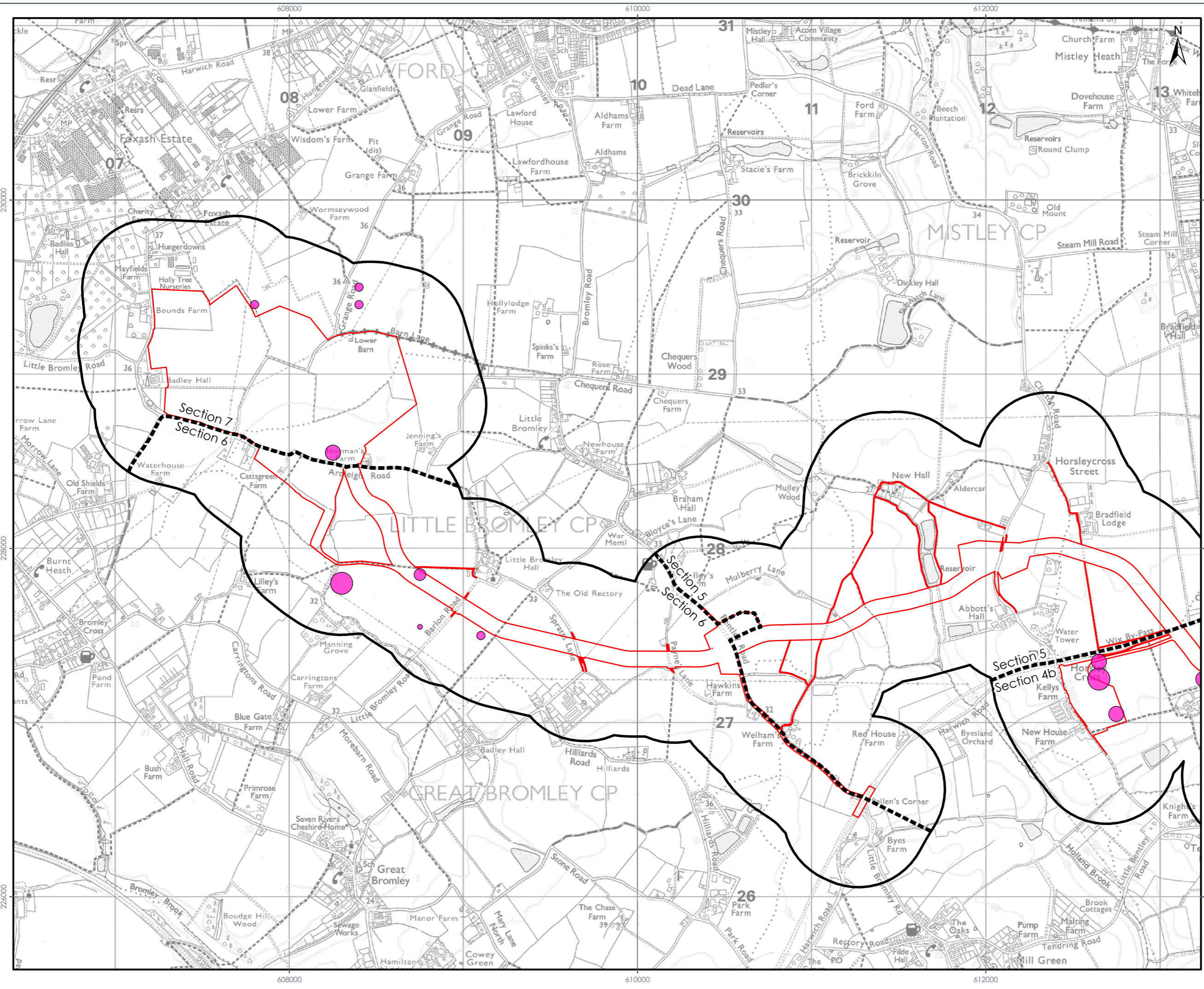
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**Survey Observations:
 Lapping
 Sections 4 and 5**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 32 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid



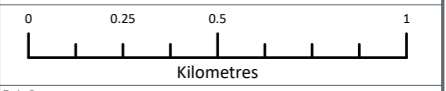


- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary

- Number of Individual Birds Recorded
- 1
 - 2 - 10
 - 11 - 50
 - 51 - 100
 - > 100

Bird observations have been aggregated from the following sources.

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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

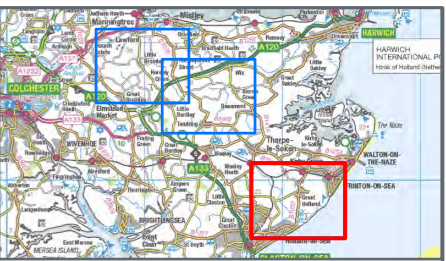
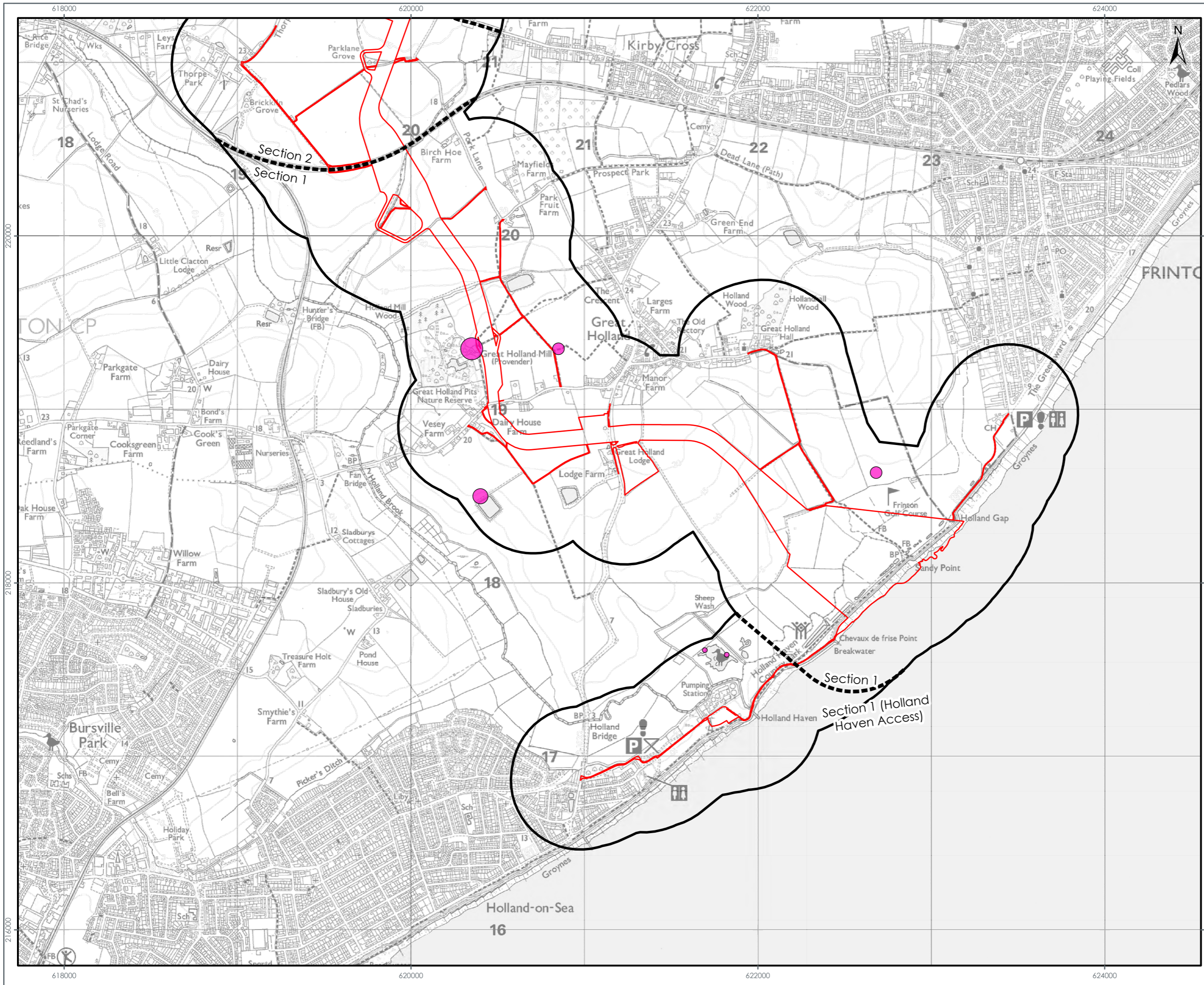
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 Lapping
 Sections 5, 6 and 7**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 33 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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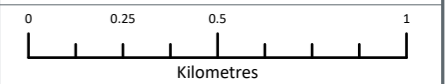
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 11 - 50
- 51 - 100
- > 100

Bird observations have been aggregated from the following sources.

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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

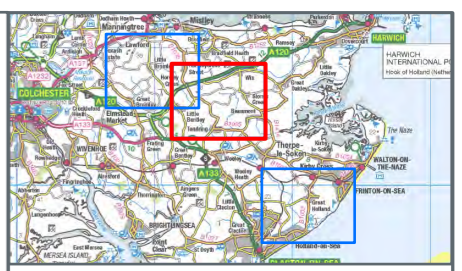
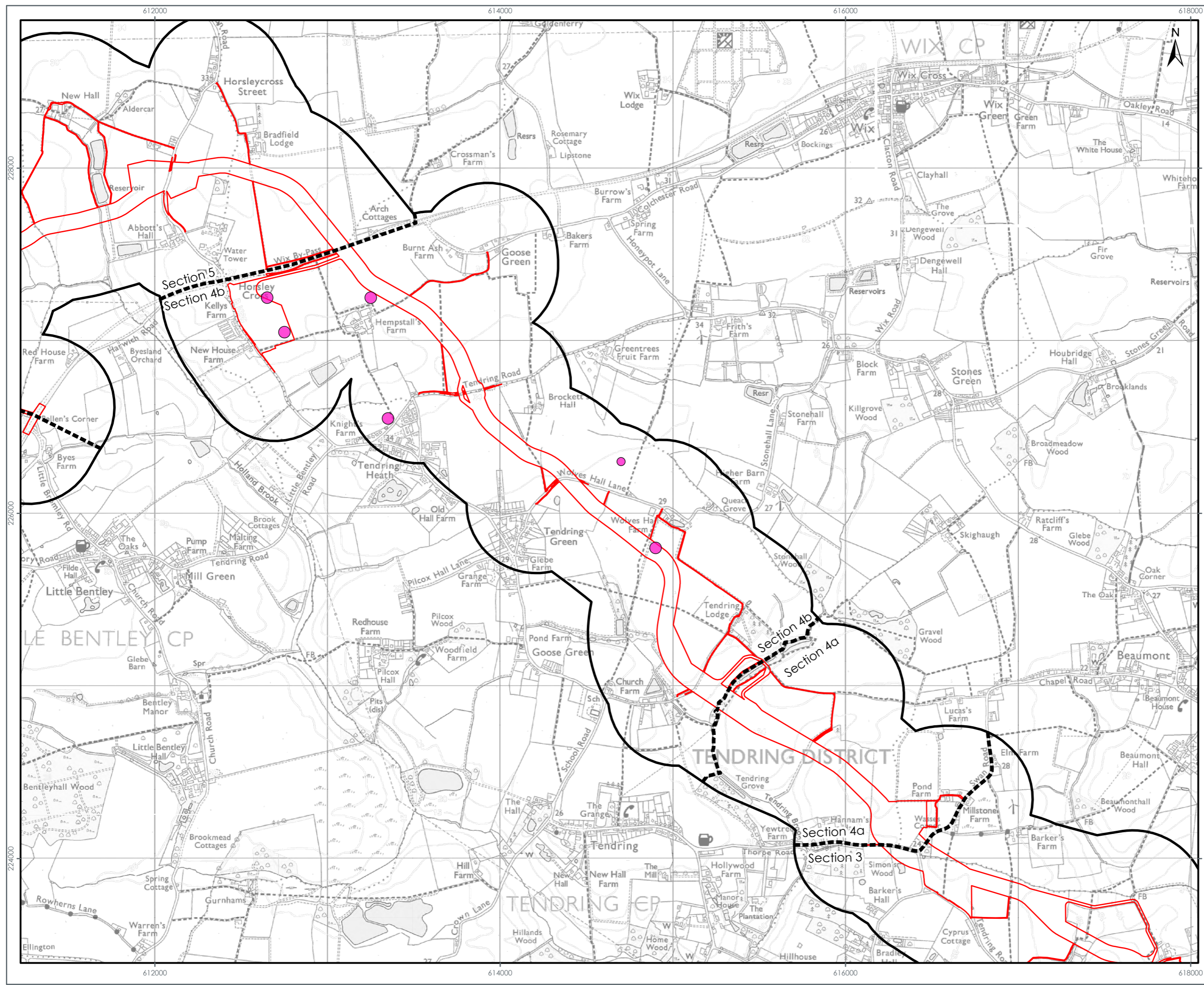
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 Golden Plover
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 34 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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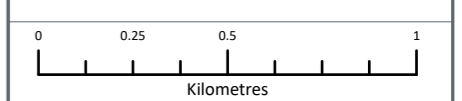
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

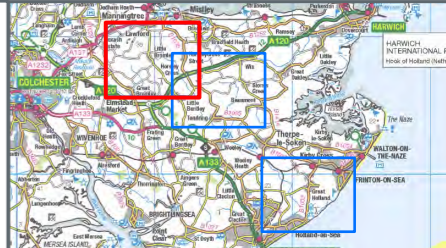
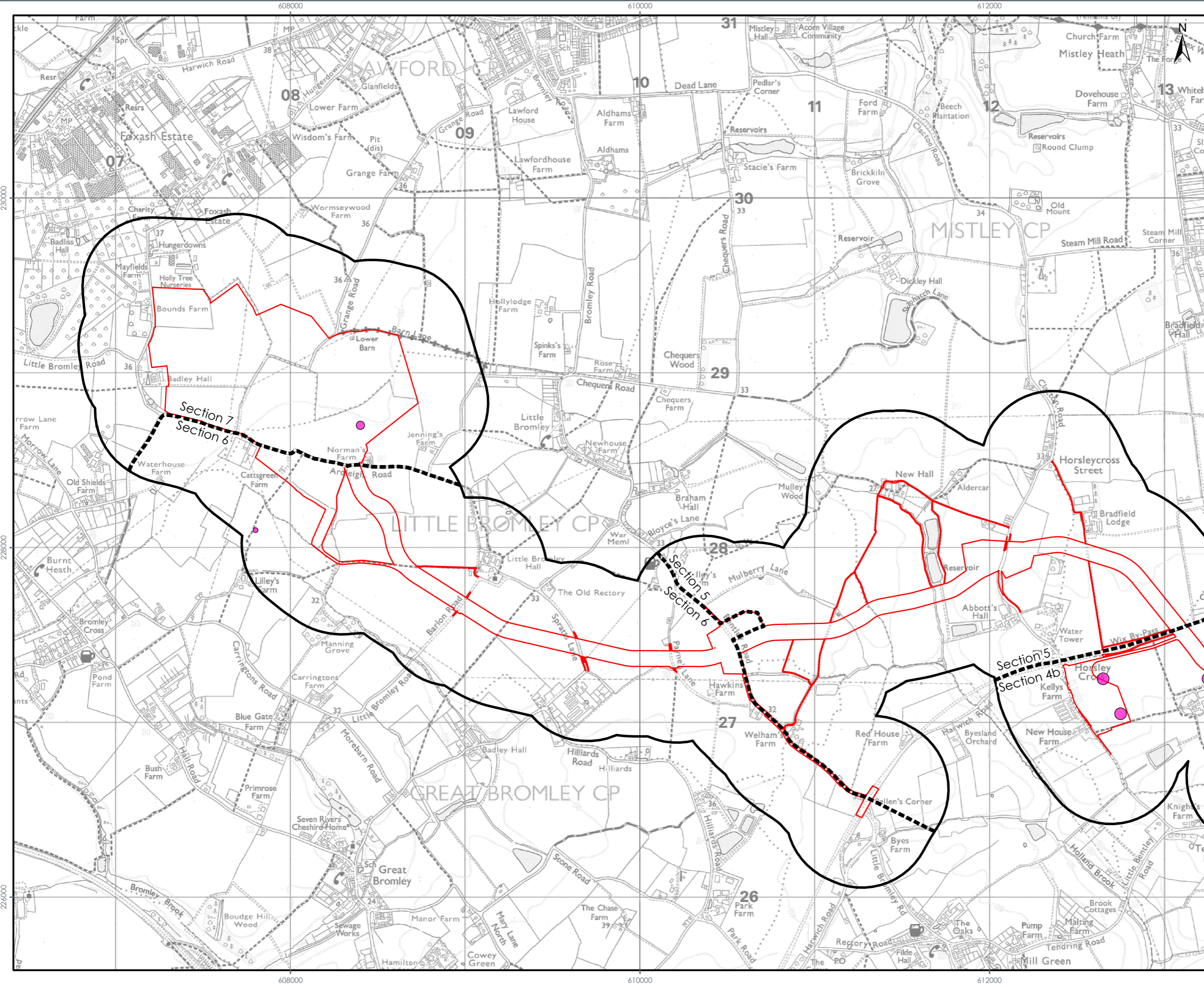
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**Survey Observations:
 Golden Plover
 Sections 4 and 5**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 35 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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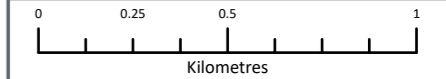
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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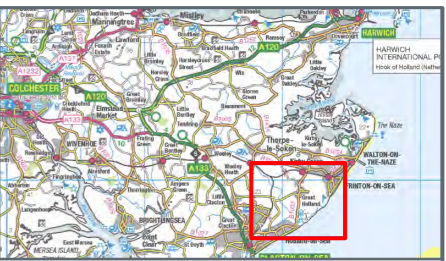
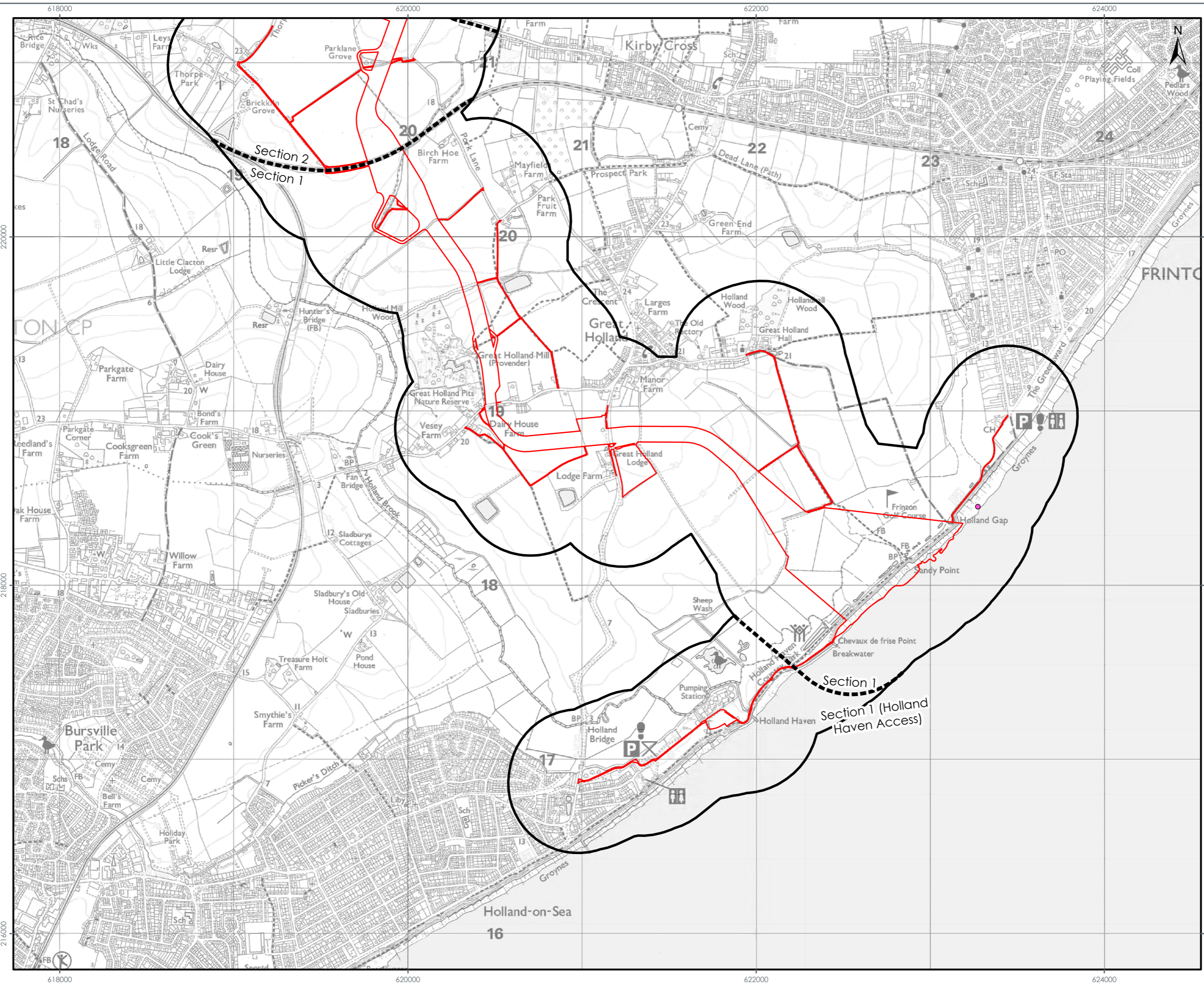
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**Survey Observations:
 Golden Plover
 Sections 5, 6 and 7**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 36 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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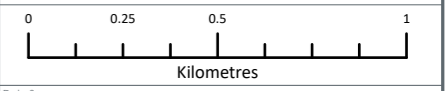
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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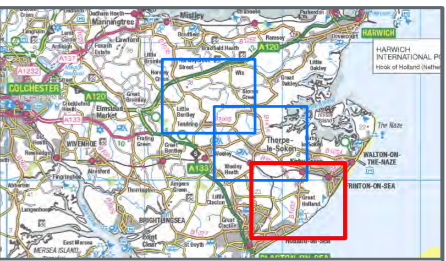
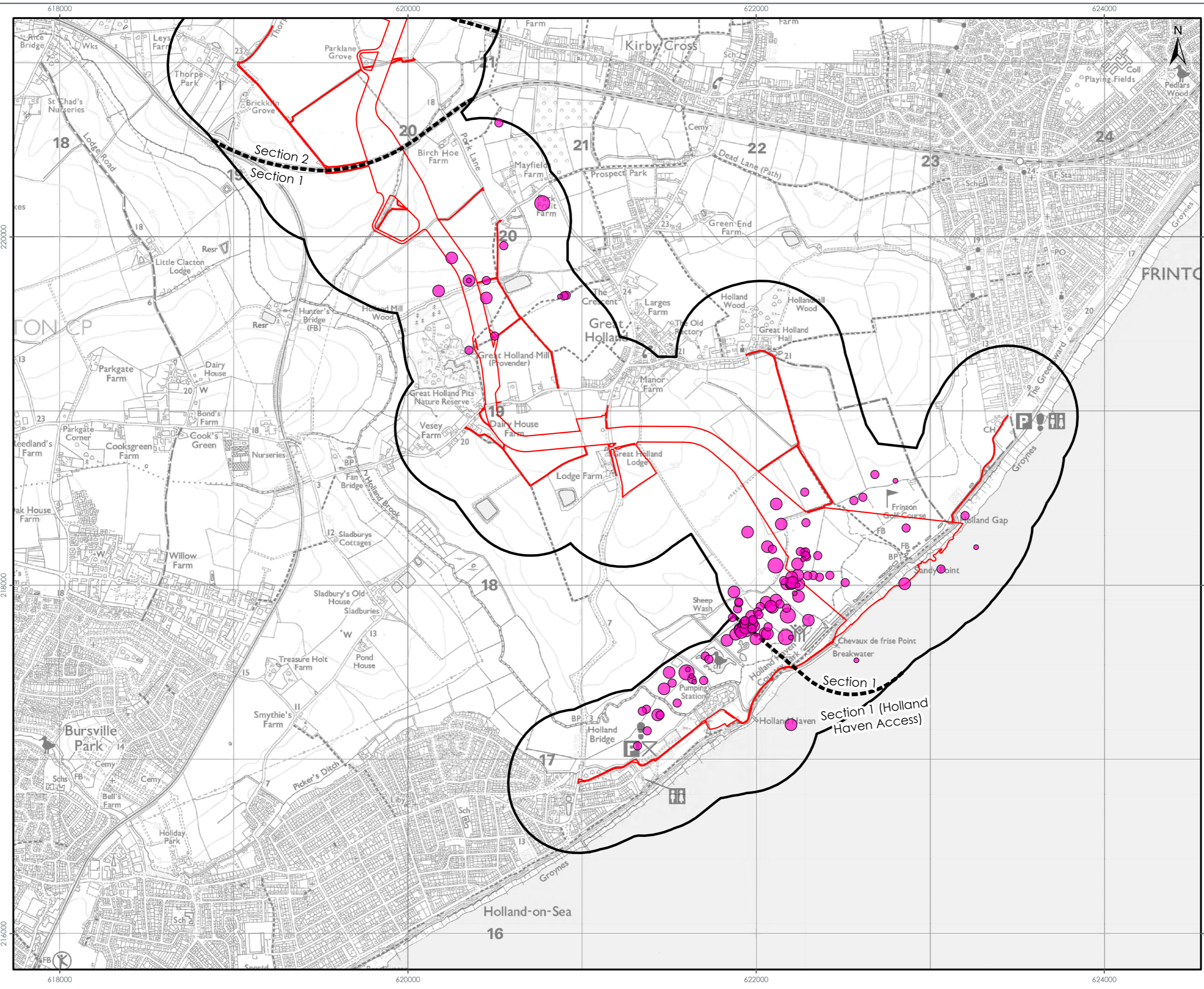
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**Survey Observations:
 Ringed Plover
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 37 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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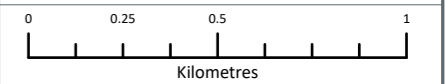
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50
- 51 - 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

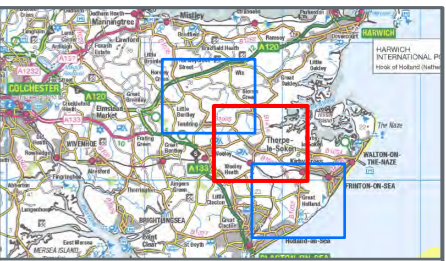
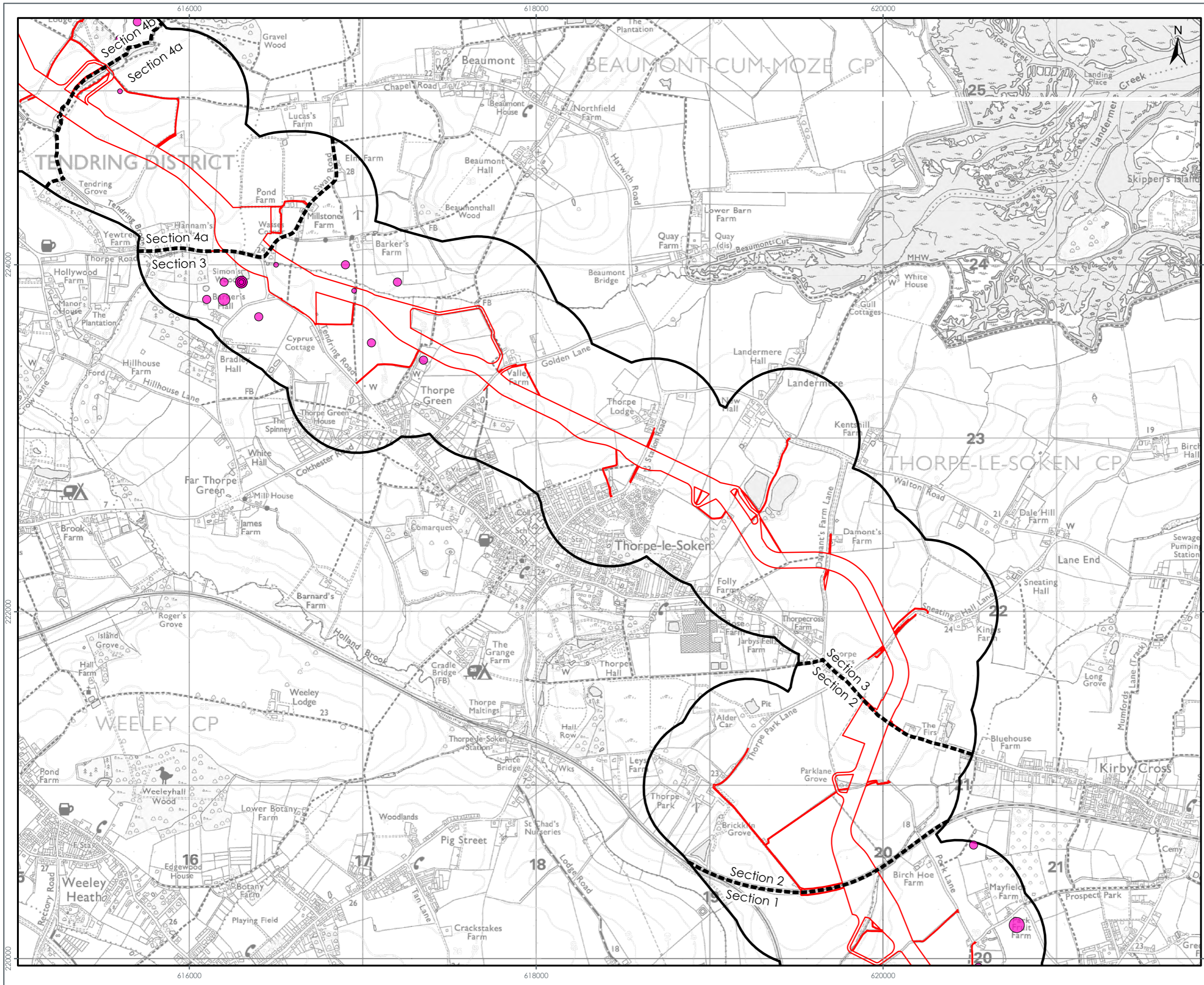
DRAWING TITLE:
**Survey Observations:
 Curlew
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 38 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid



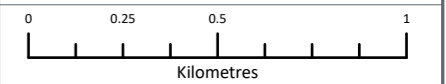


- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary

- Number of Individual Birds Recorded
- 1
 - 2 - 10
 - 11 - 50
 - 51 - 100

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

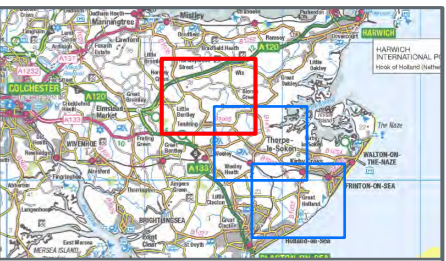
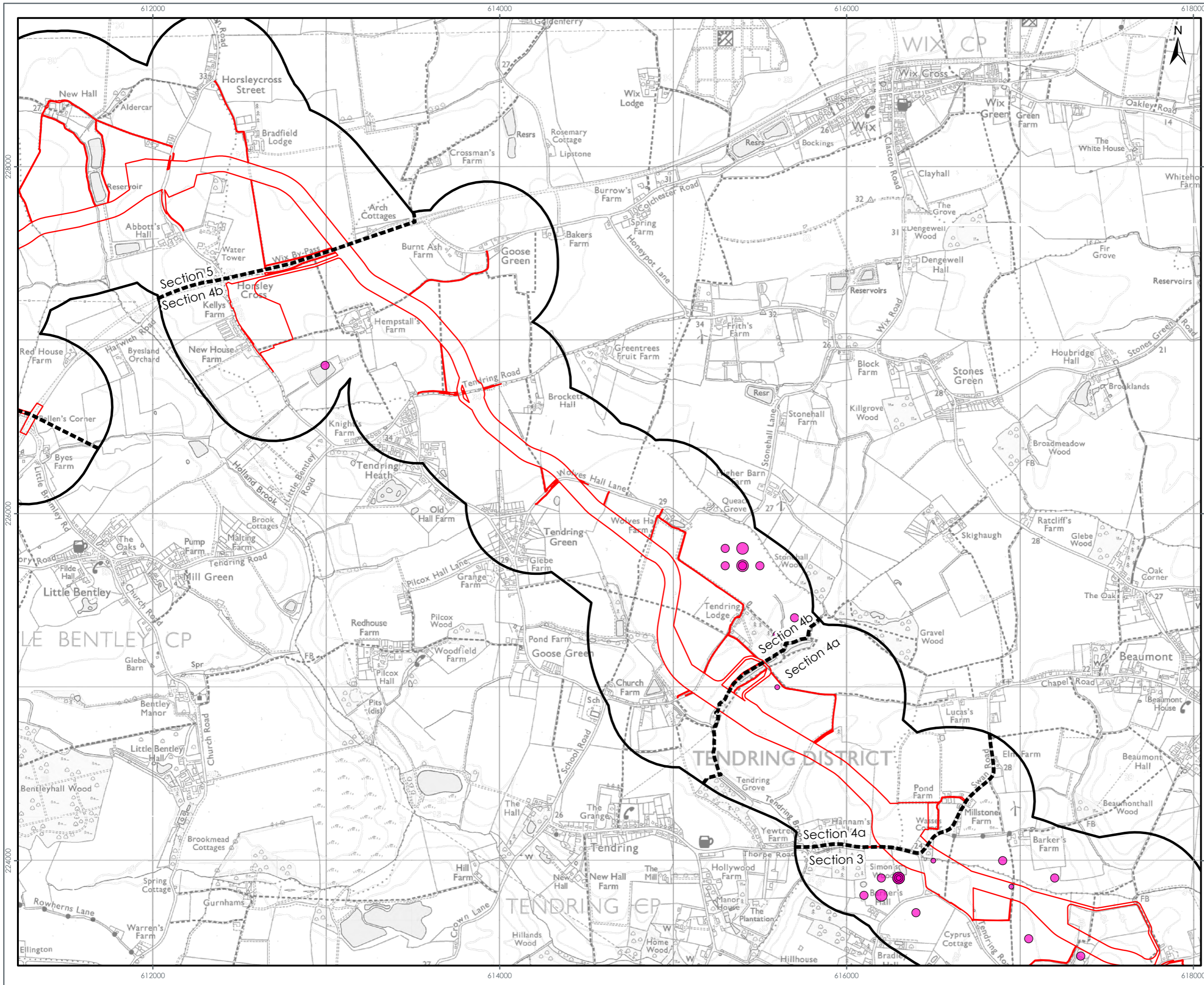
DRAWING TITLE:
Survey Observations: Curlew Sections 2 and 3

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 39 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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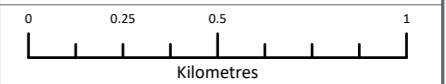
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

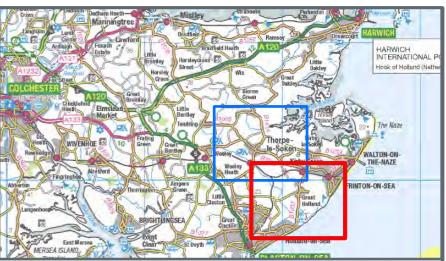
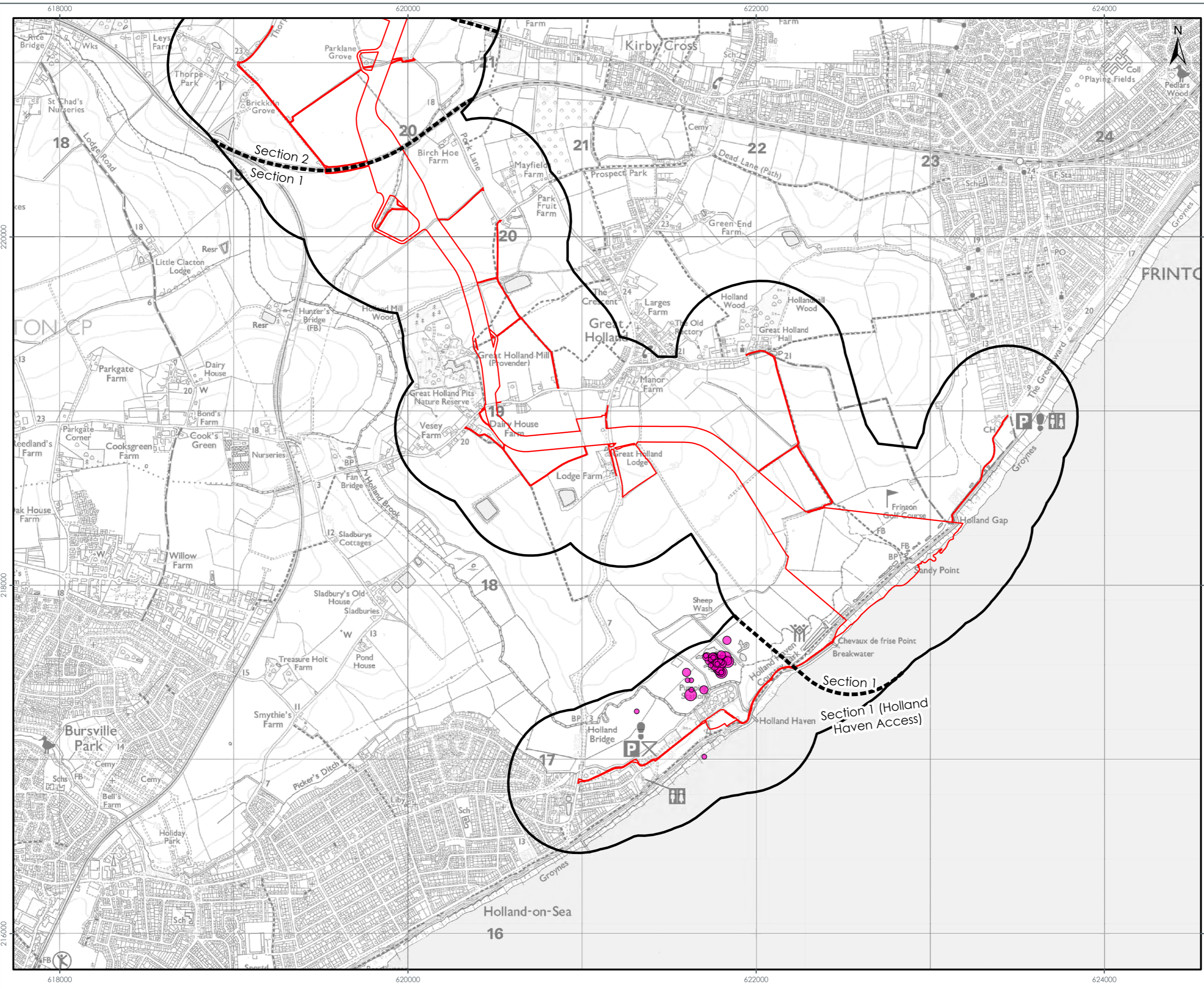
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Survey Observations: Curlew Sections 4 and 5

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 40 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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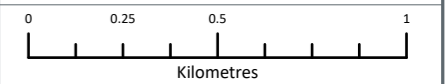
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

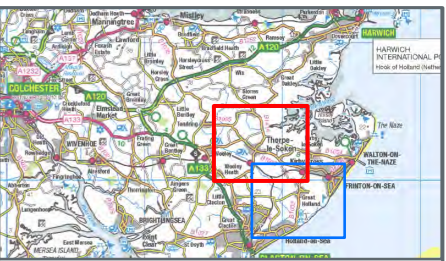
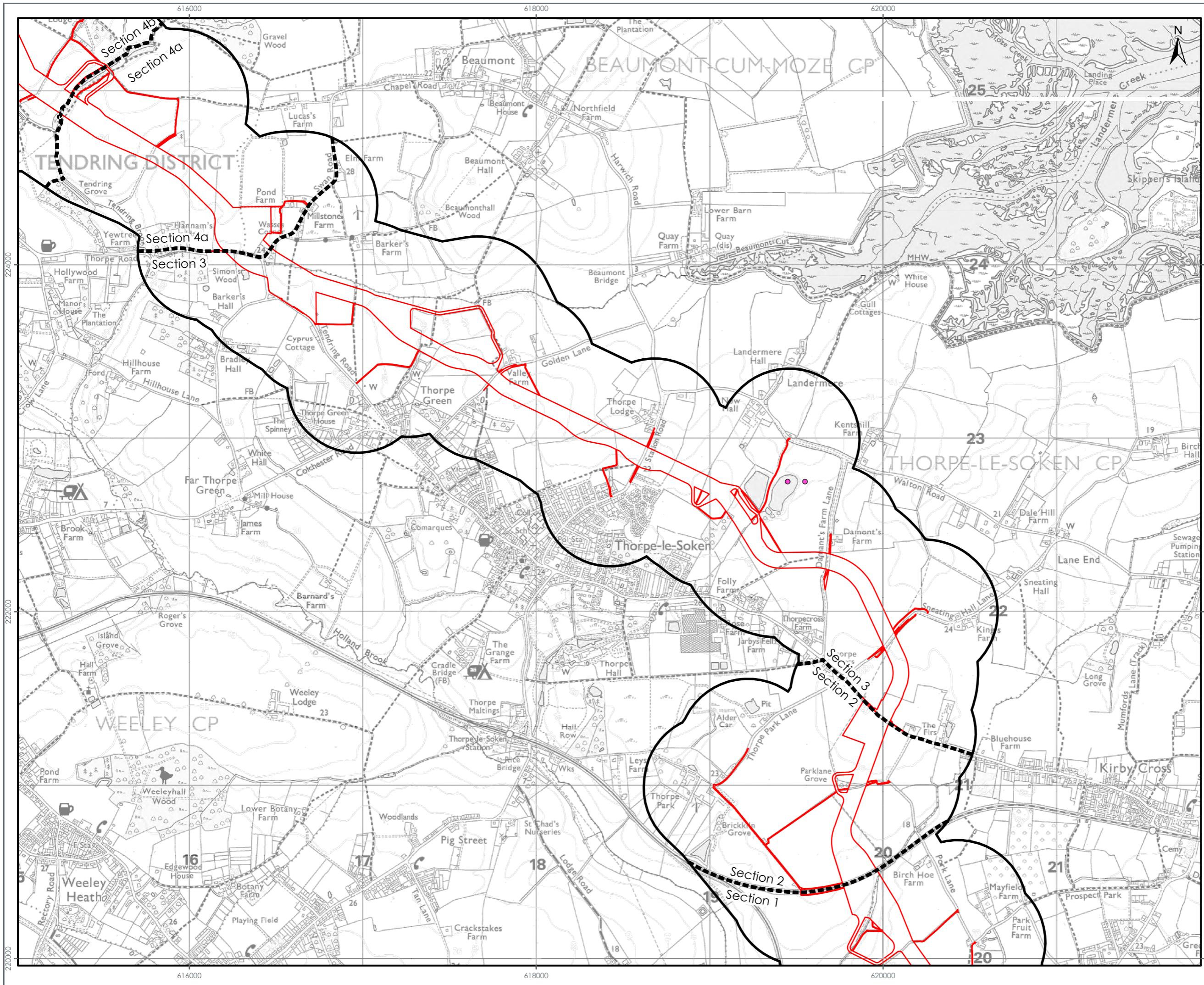
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**Survey Observations:
Black-tailed Godwit
Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 41 of 57
SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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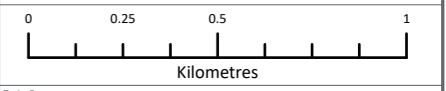
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

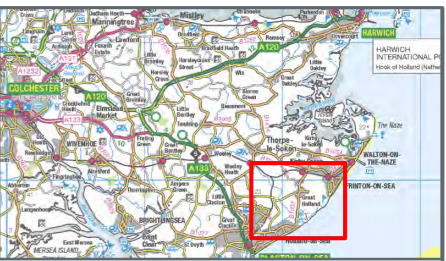
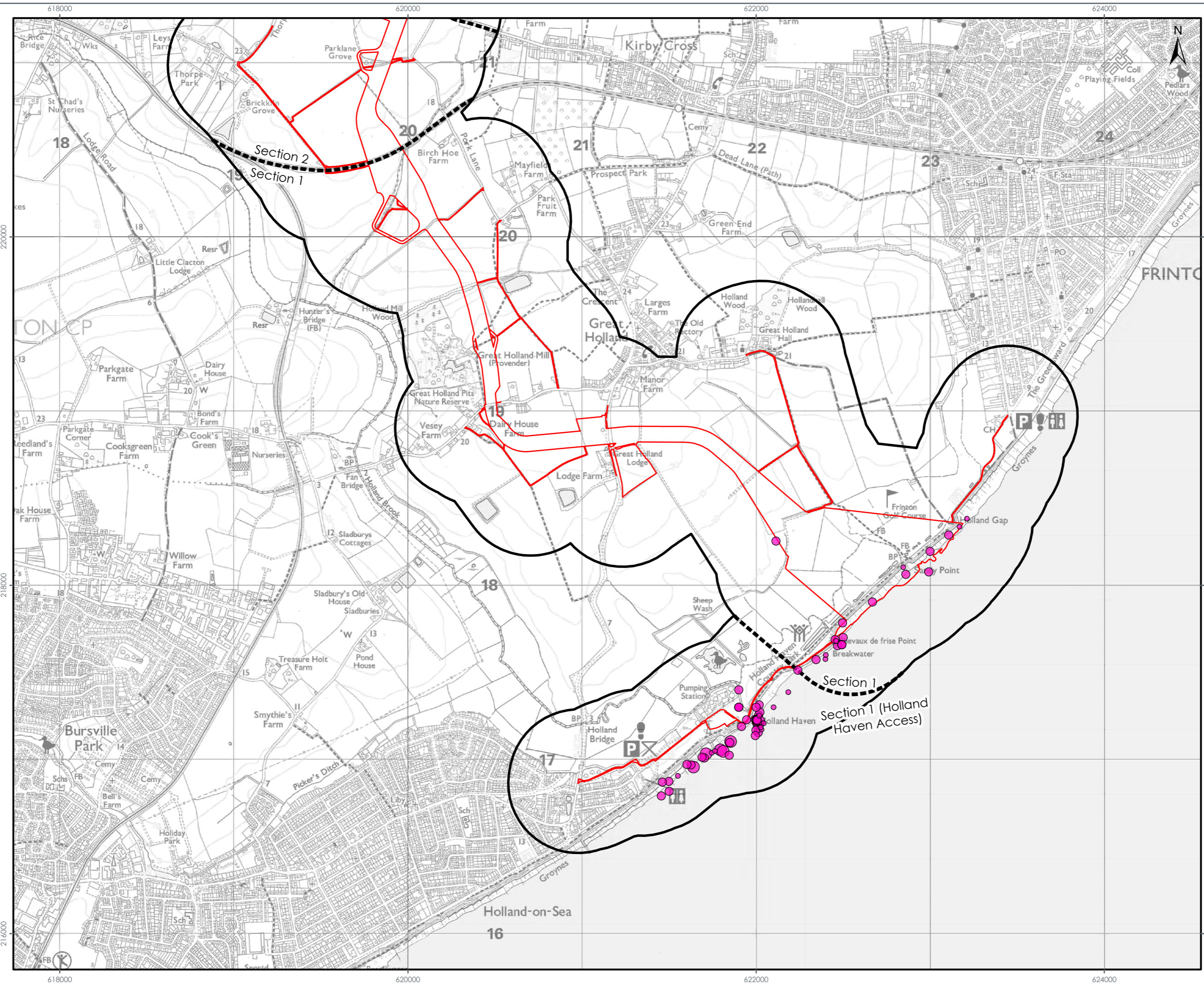
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Survey Observations:
Black-tailed Godwit
Sections 2 and 3

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 42 of 57
SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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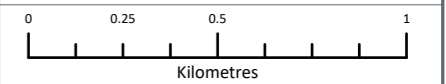
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

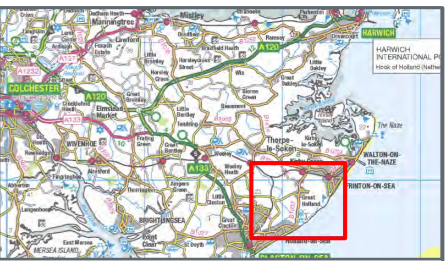
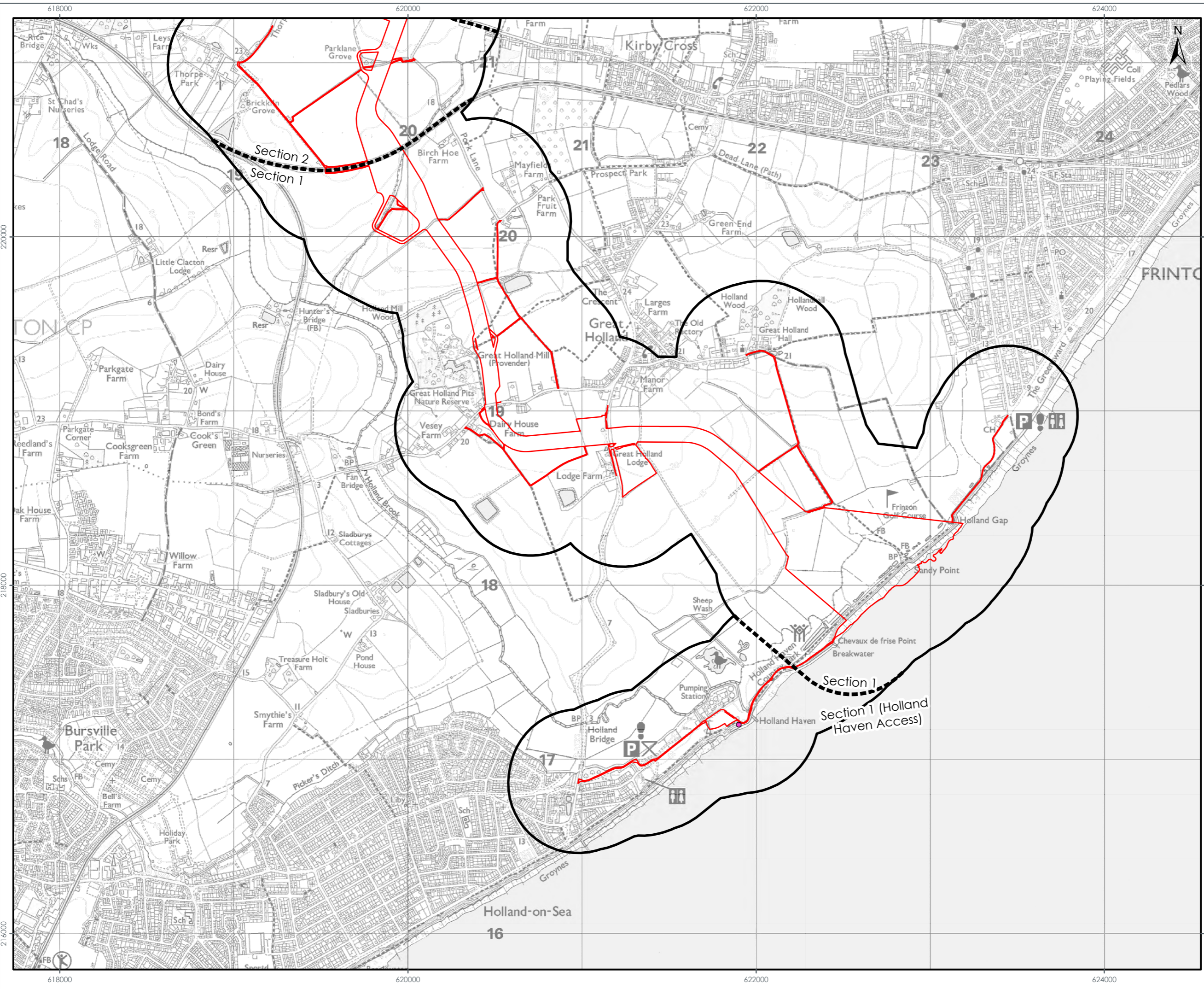
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**Survey Observations:
 Turnstone
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 43 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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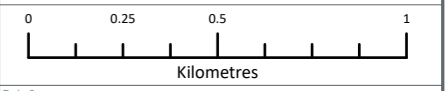
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

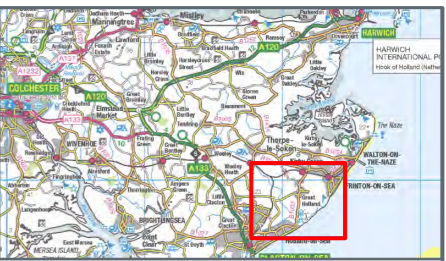
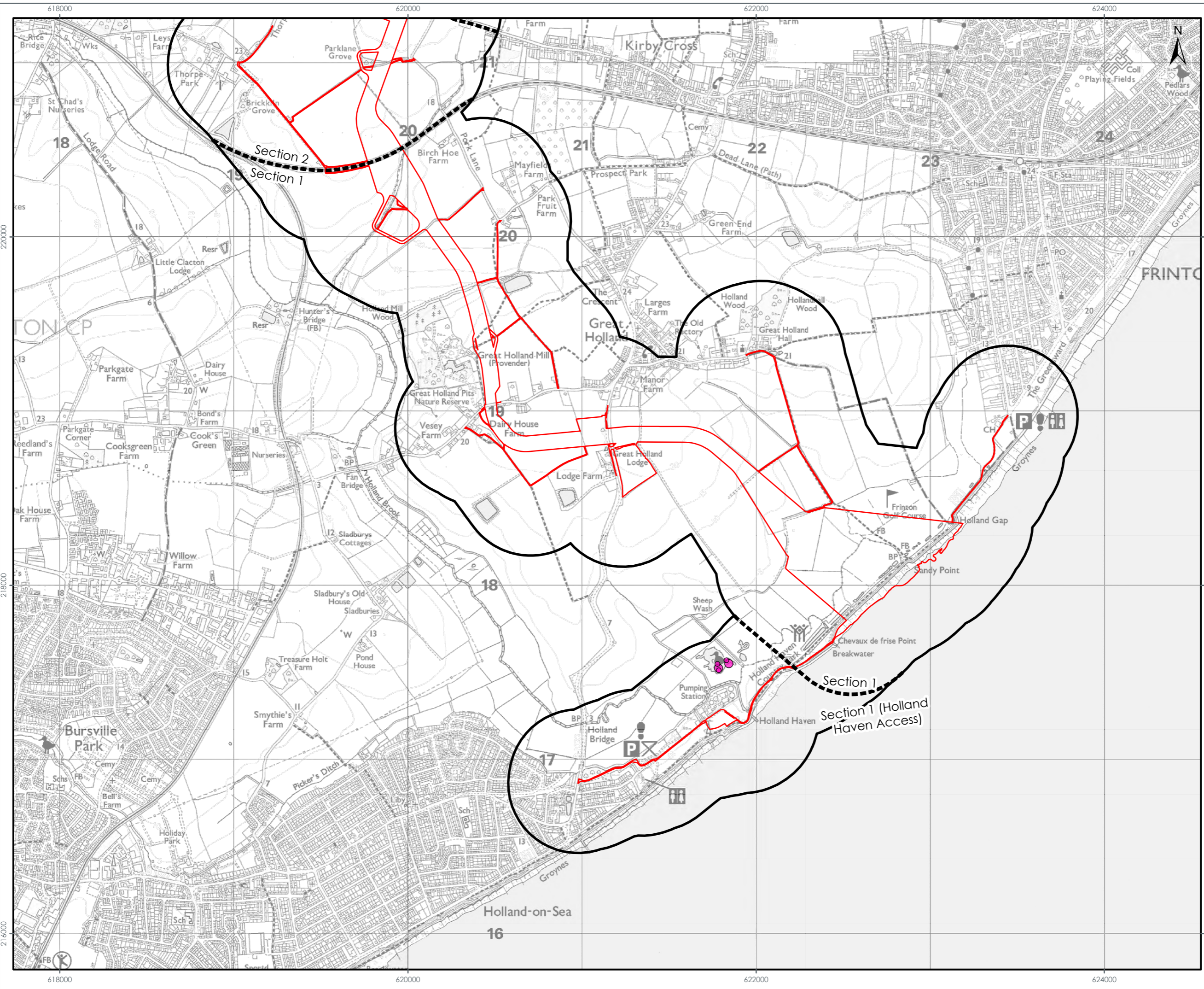
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**Survey Observations:
 Knot
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: **44 of 57**
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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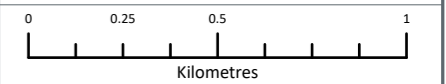
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

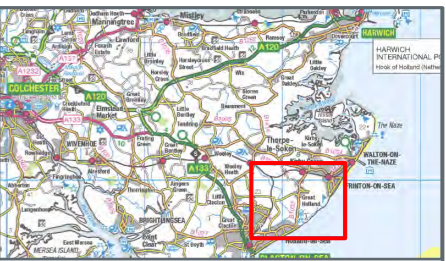
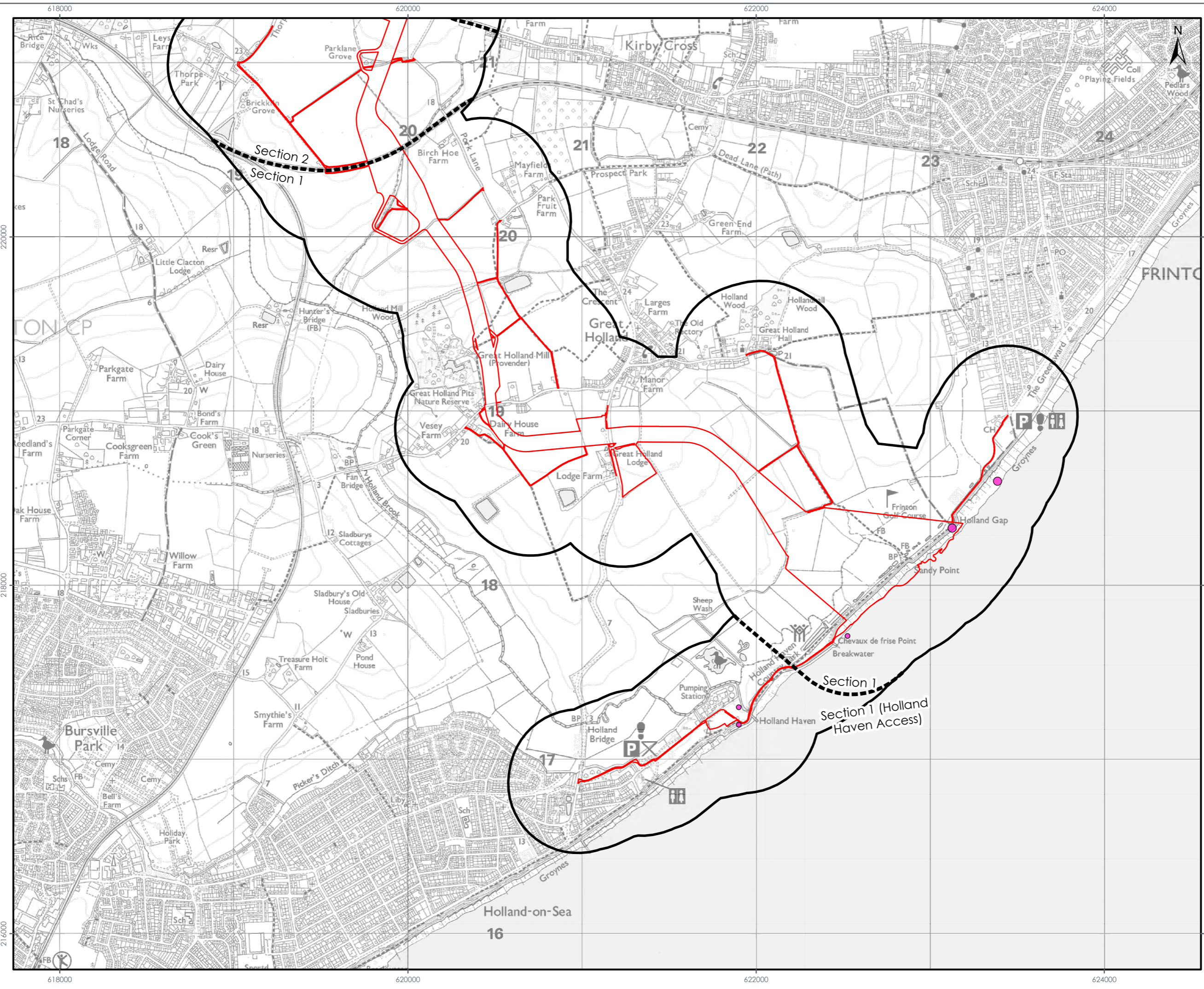
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*Survey Observations:
Ruff
Section 1 and Holland Haven Access*

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 3

Sheet No: 45 of 57
SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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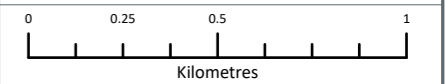
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

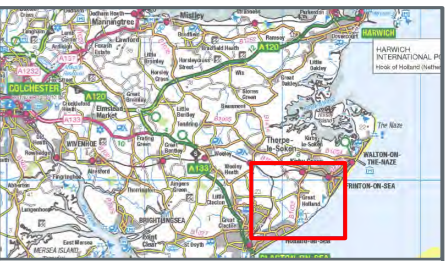
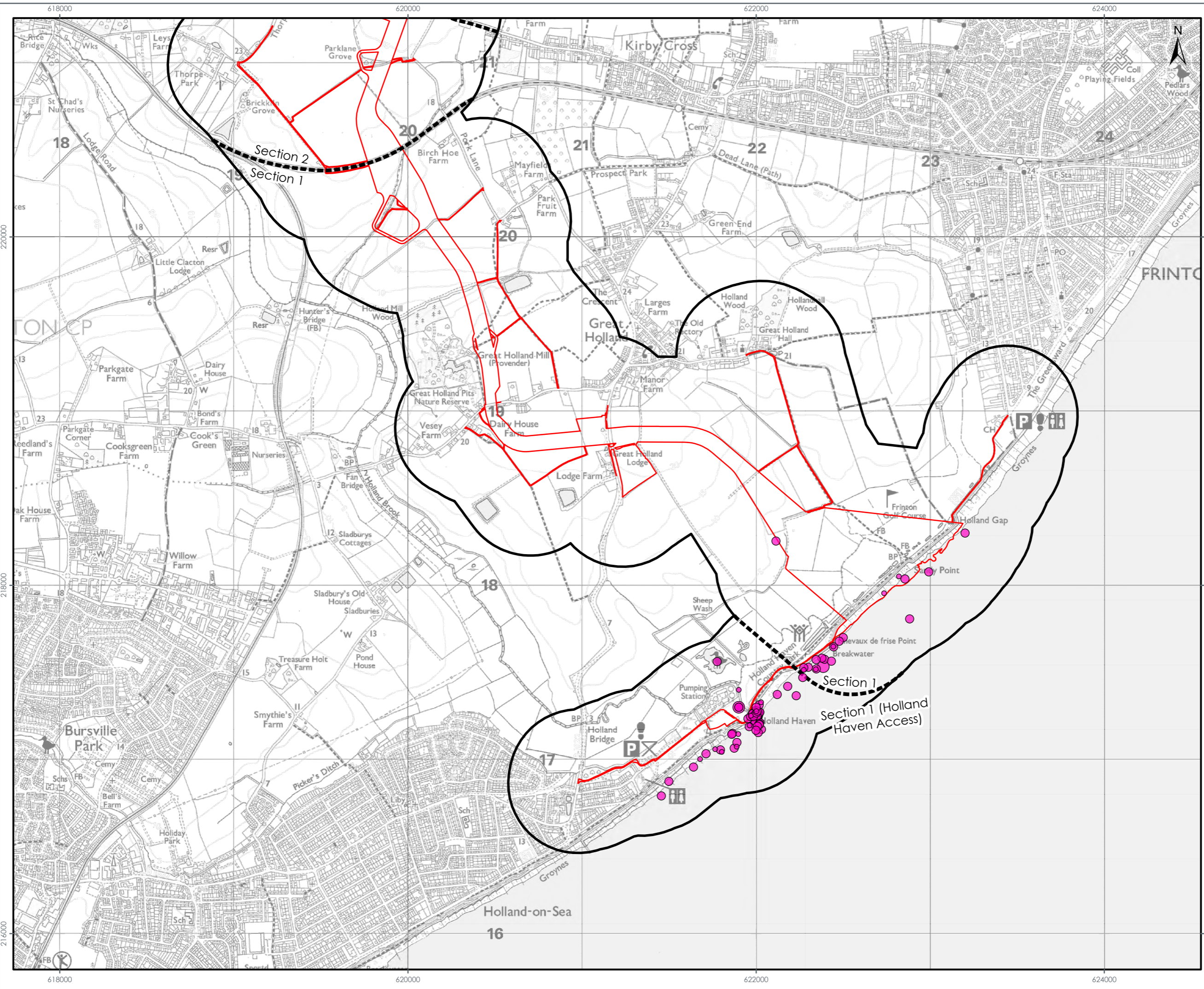
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**Survey Observations:
 Sanderling
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: **46 of 57**
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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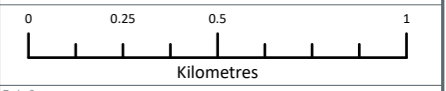
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

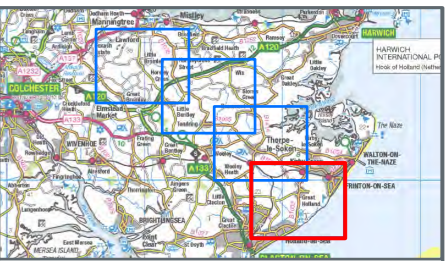
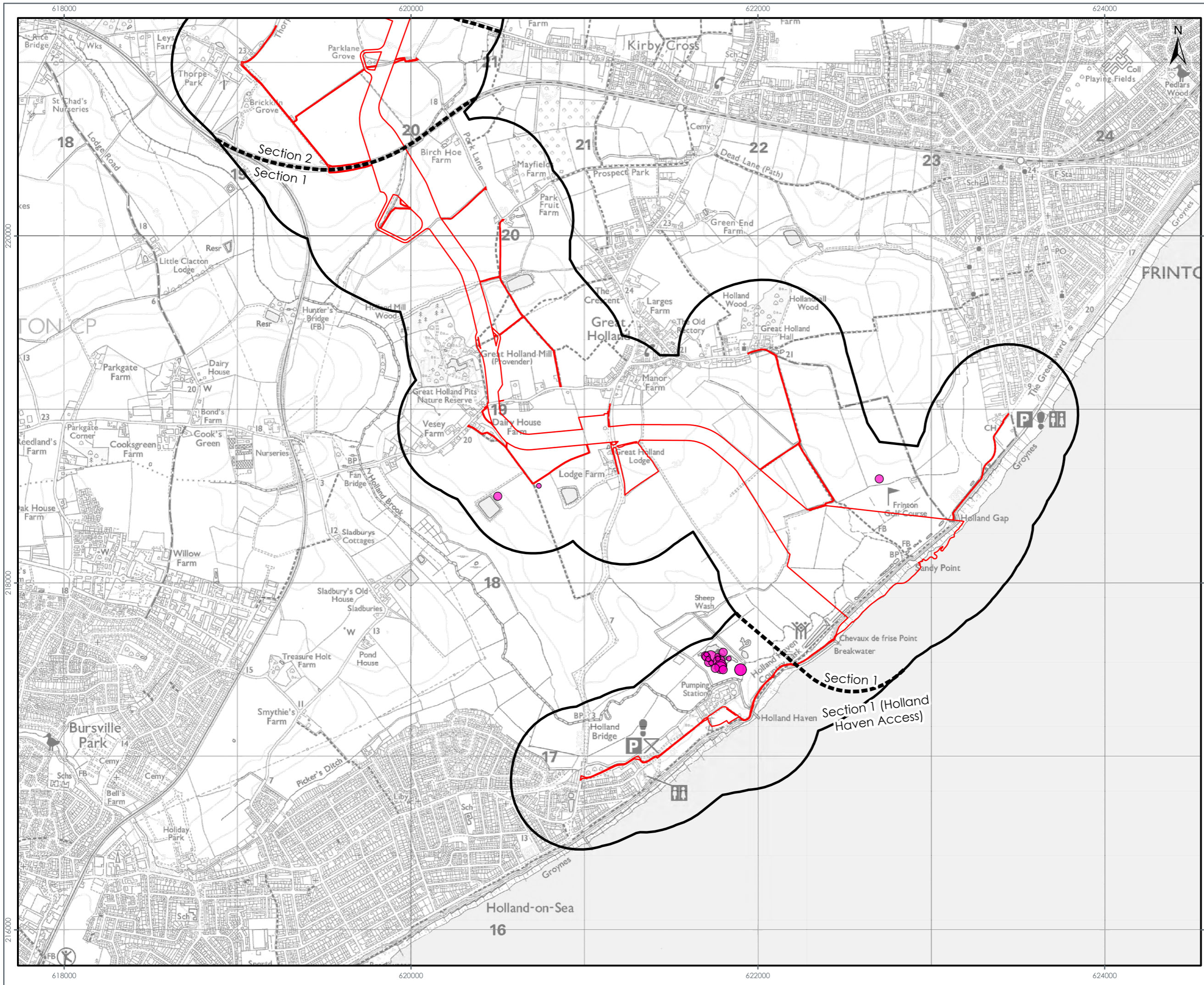
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**Survey Observations:
 Purple Sandpiper
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 47 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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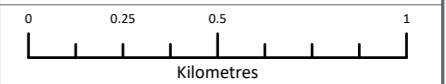
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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FIVE ESTUARIES OFFSHORE WINDFARM

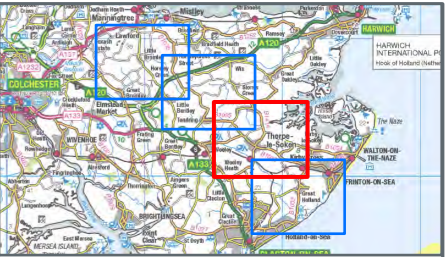
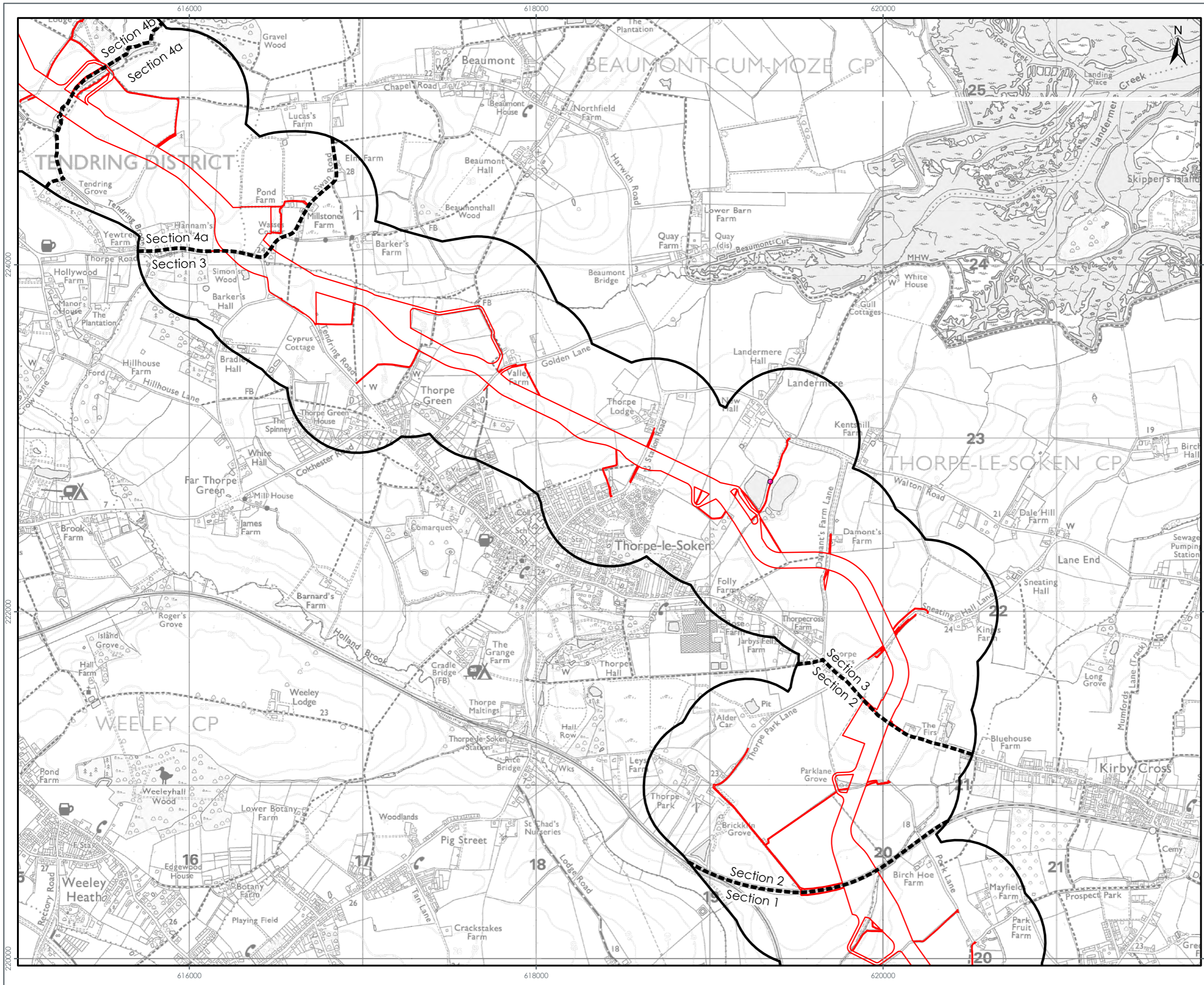
DRAWING TITLE:
**Survey Observations:
 Snipe
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 48 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





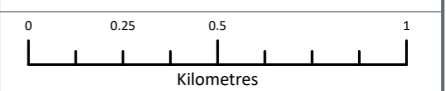
- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary

Number of Individual Birds Recorded

- 1

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

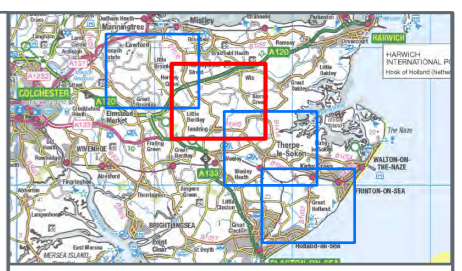
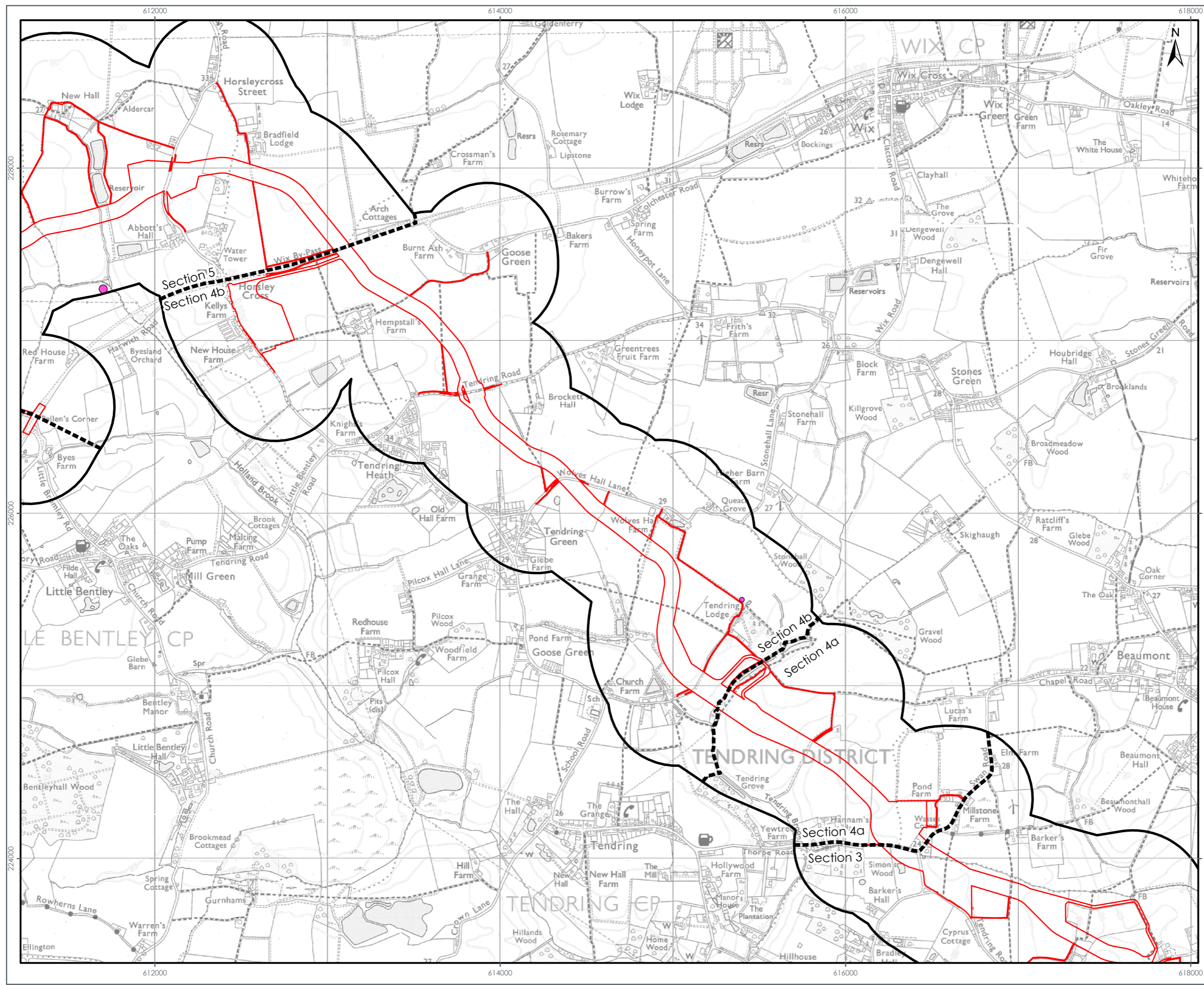
DRAWING TITLE:
**Survey Observations:
 Snipe
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 49 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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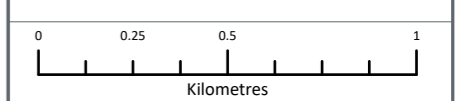
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

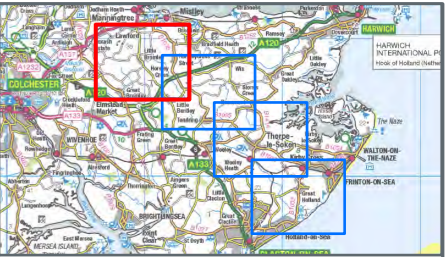
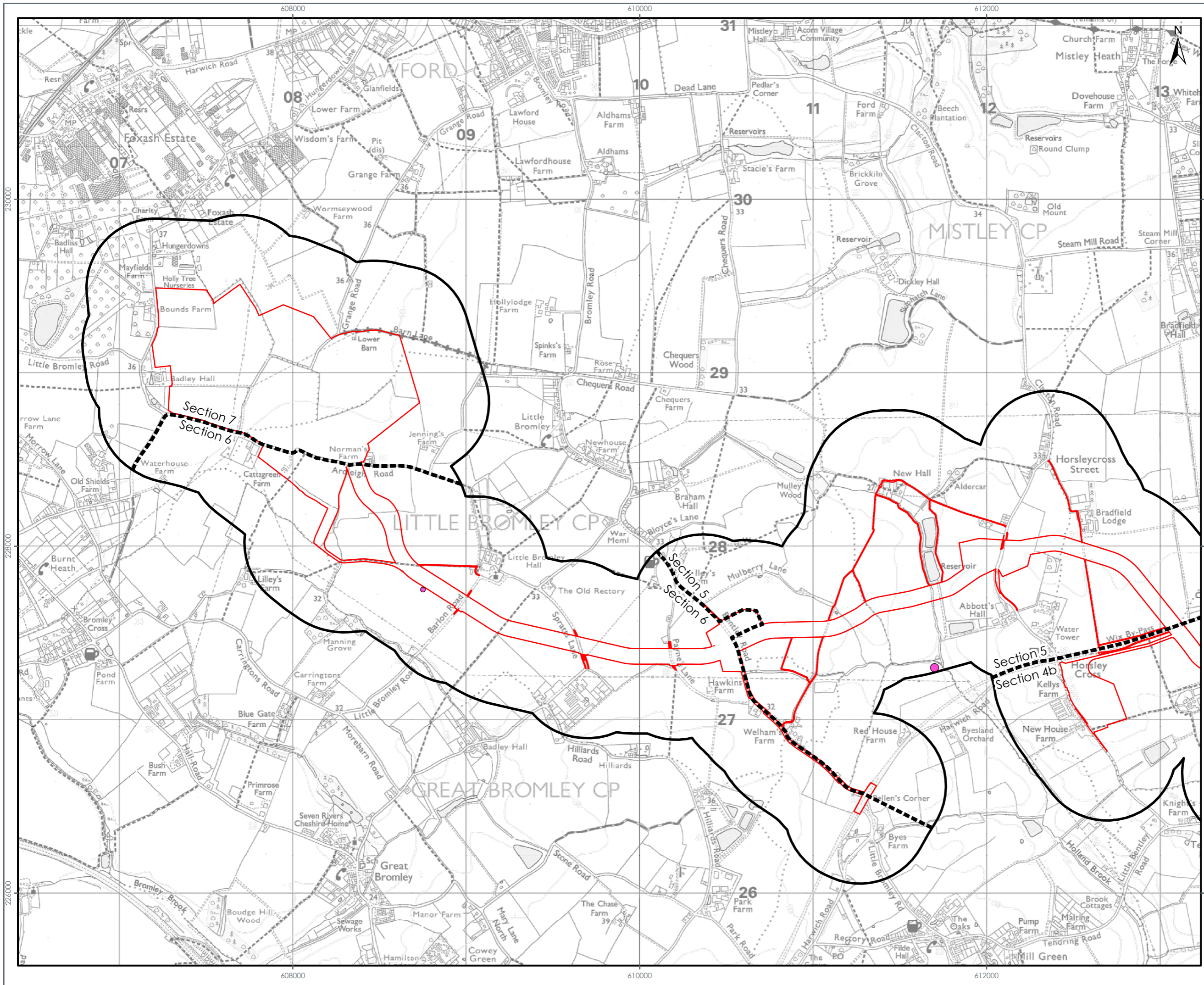
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Survey Observations: Snipe Sections 4 and 5

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 50 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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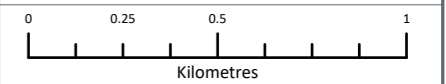
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

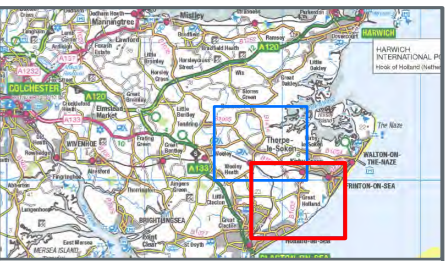
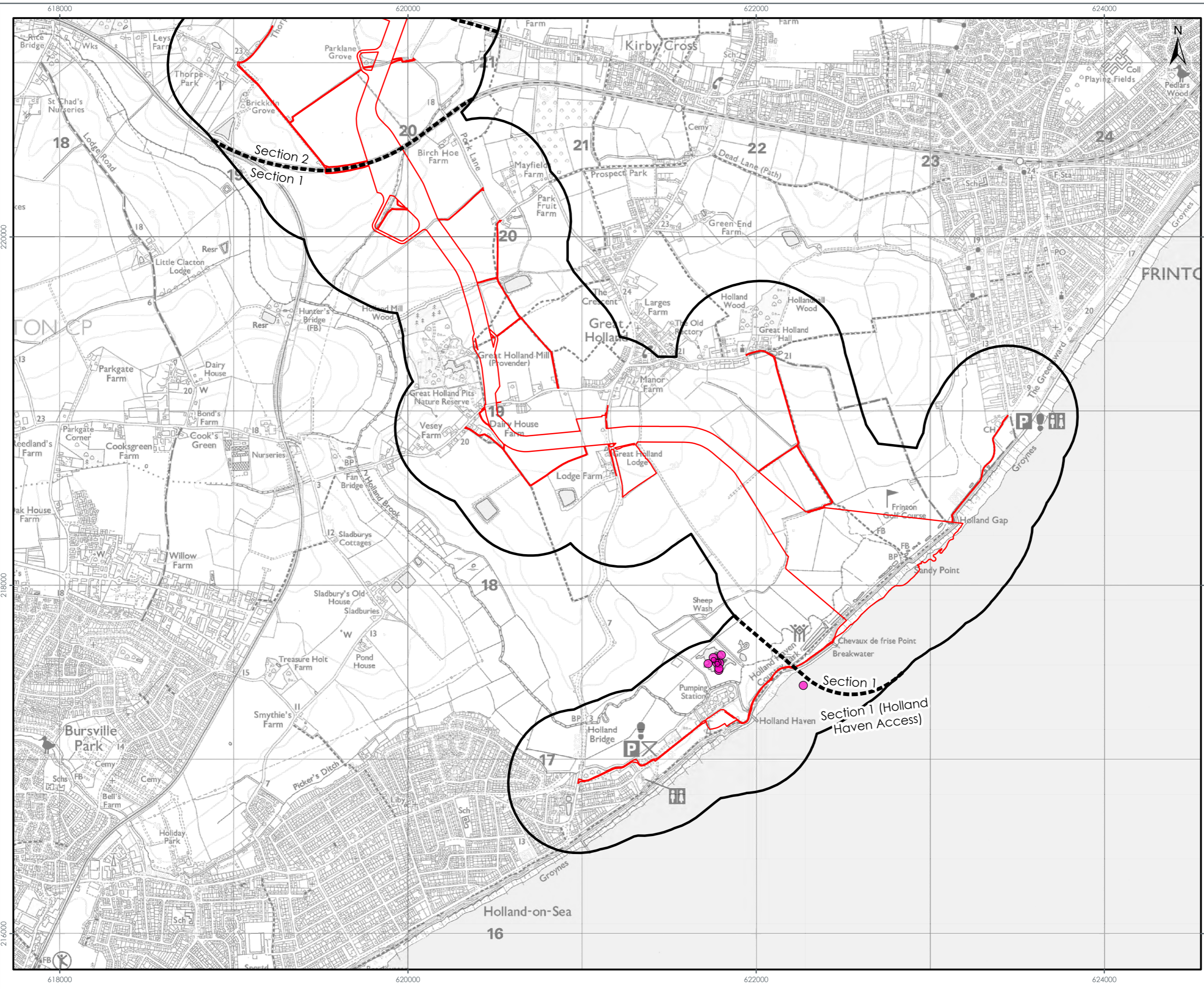
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**Survey Observations:
 Snipe
 Sections 5, 6 and 7**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 51 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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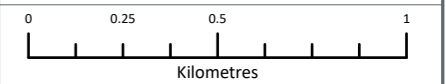
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

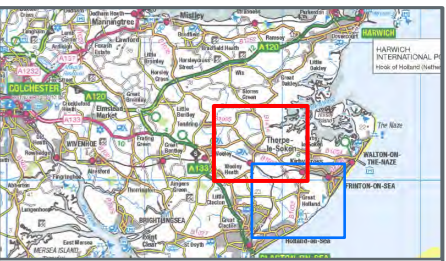
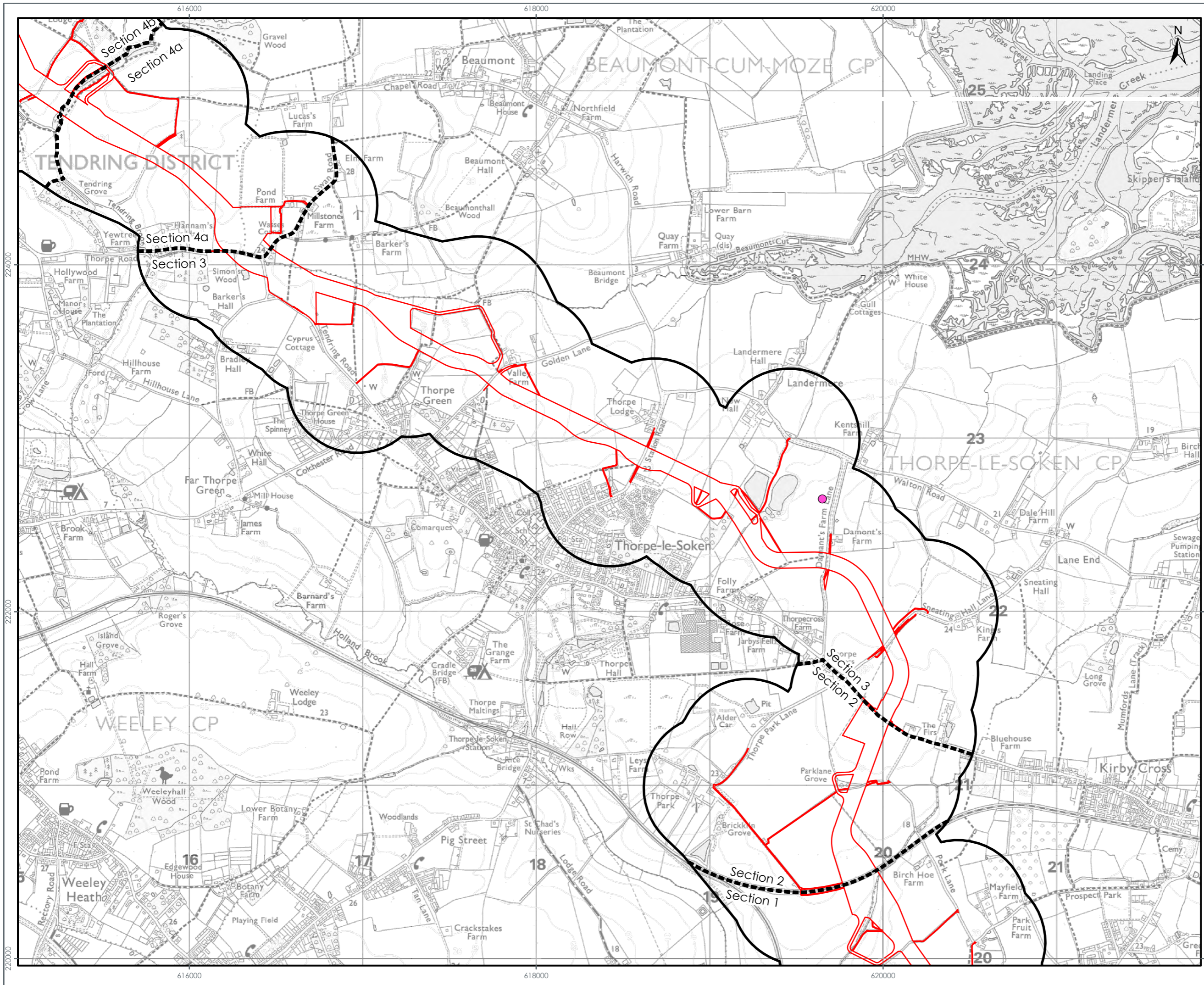
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**Survey Observations:
 Redshank
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: **52 of 57**
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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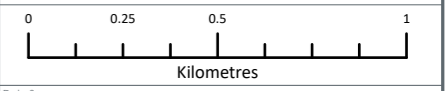
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
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- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

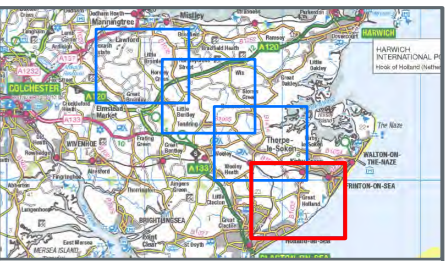
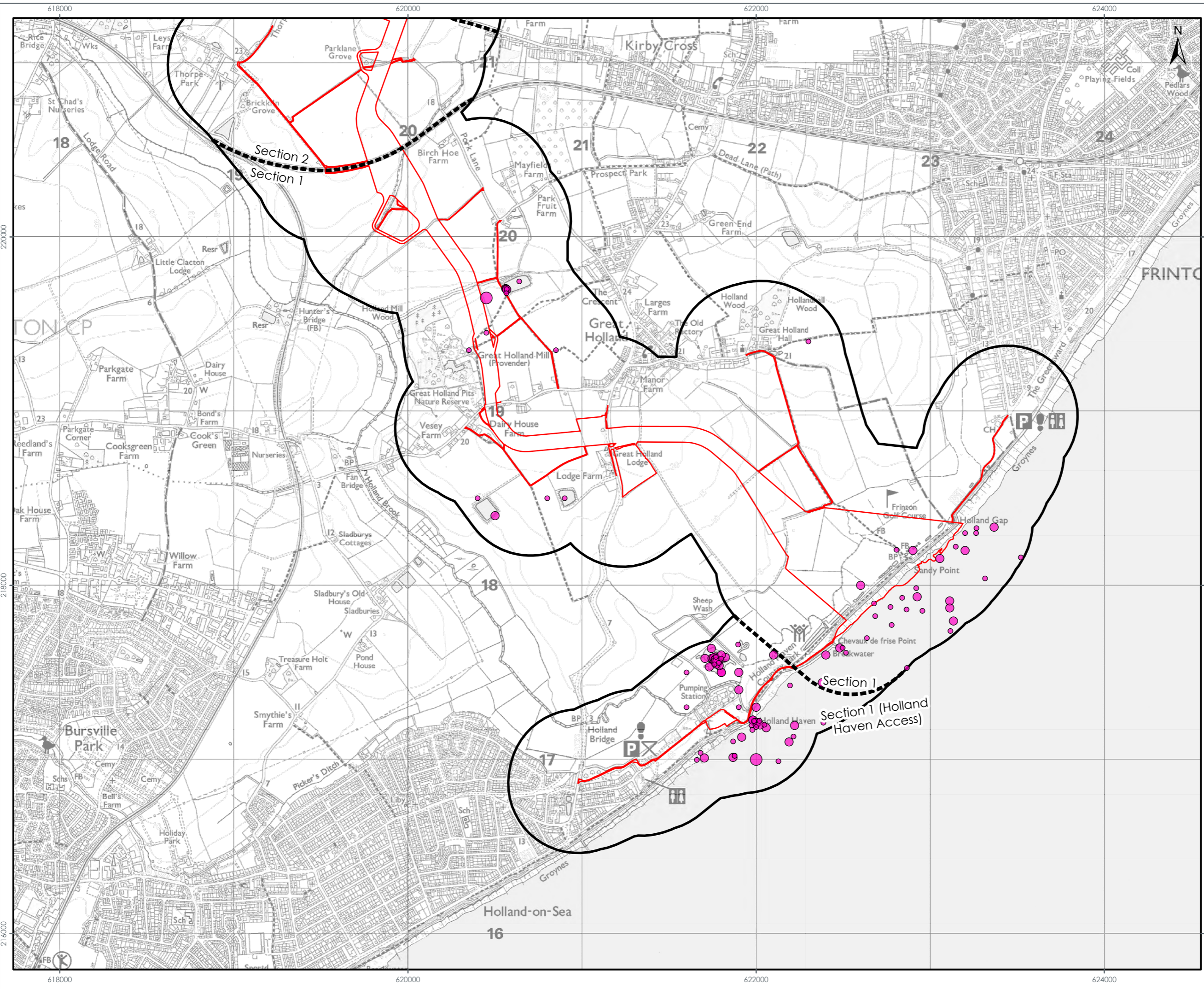
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 Redshank
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 53 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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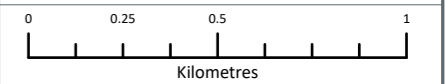
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

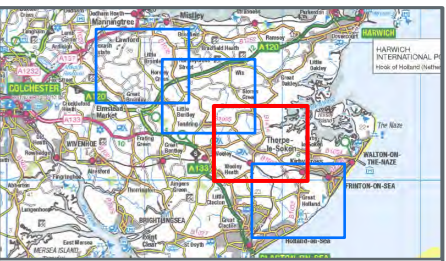
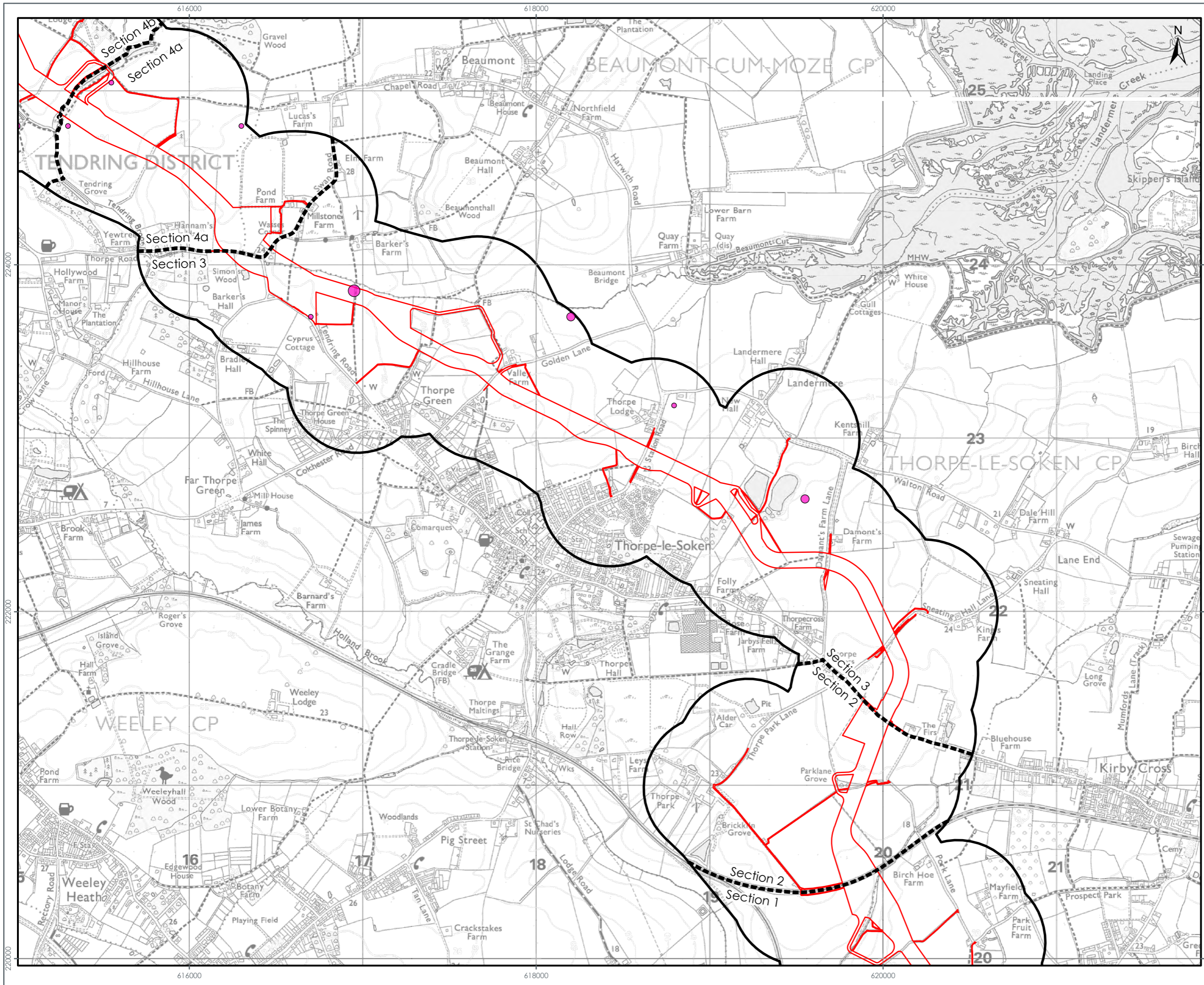
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**Survey Observations:
 Cormorant
 Section 1 and Holland Haven Access**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: **54 of 57**
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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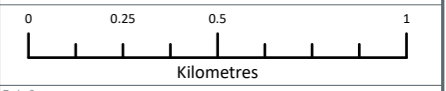
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
- MacArthur Green (2023) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2022-23



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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

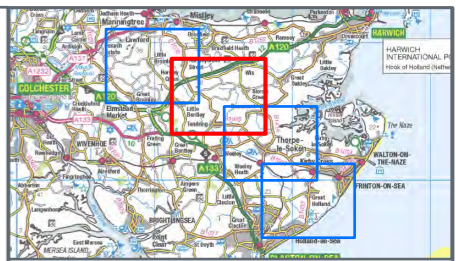
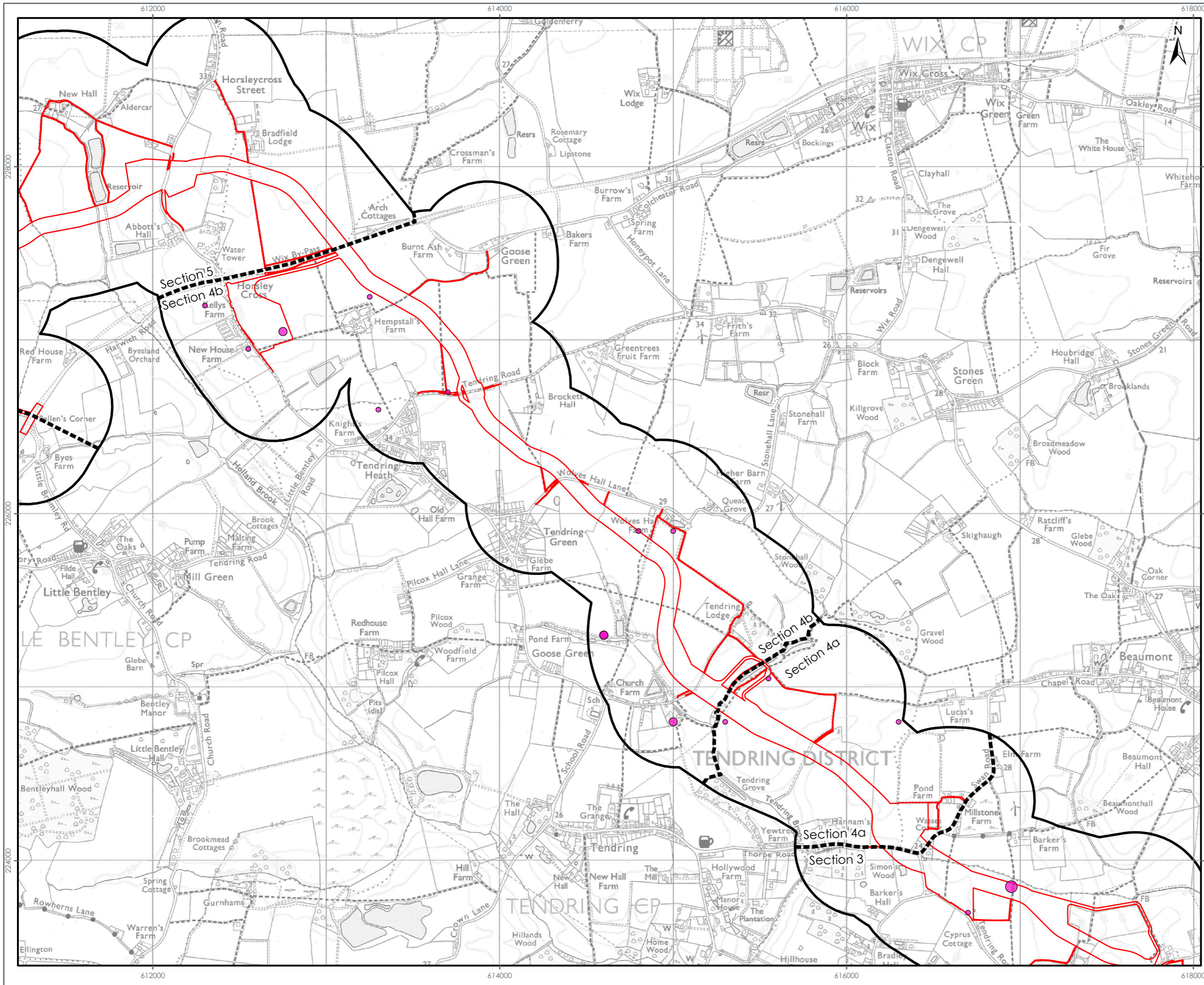
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**Survey Observations:
 Cormorant
 Sections 2 and 3**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 55 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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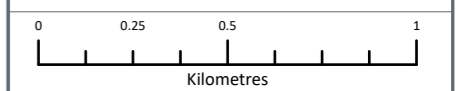
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10
- 11 - 50

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
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FIVE ESTUARIES OFFSHORE WINDFARM

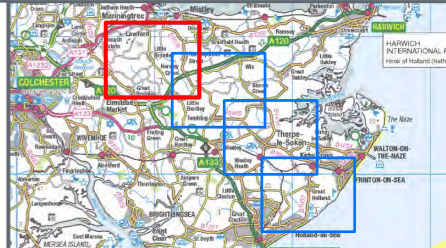
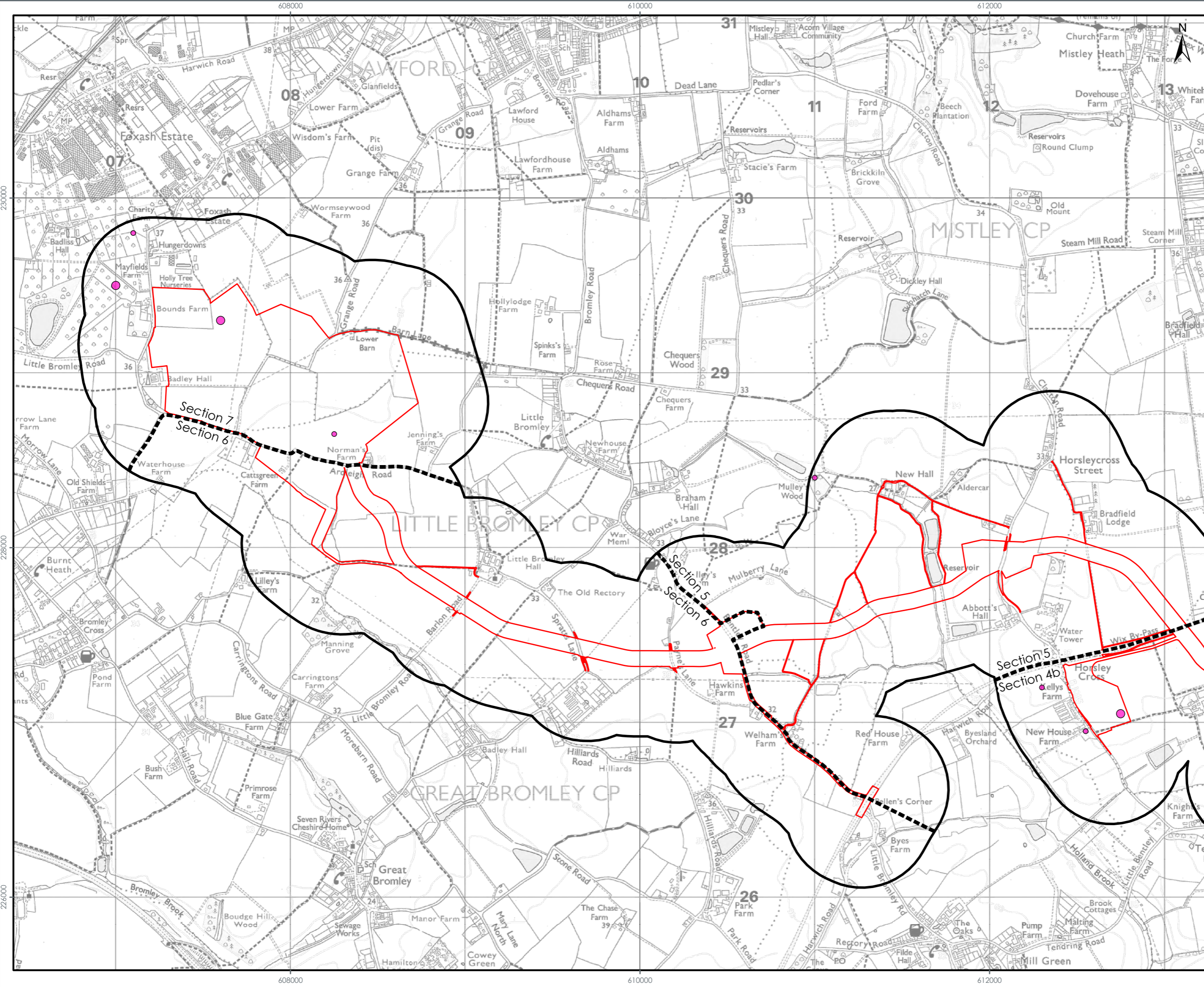
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Survey Observations: Cormorant Sections 4 and 5

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: **3**

Sheet No: 56 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





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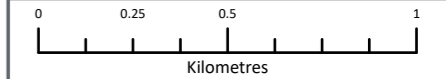
- Onshore Order Limits
- Onshore Order Limits 400 m Buffer
- Analysis Section Boundary

Number of Individual Birds Recorded

- 1
- 2 - 10

Bird observations have been aggregated from the following sources.

- MacArthur Green (2021) North Falls Offshore Wind Farm: Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys.
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys
- SLR Consulting (2022) Five Estuaries Offshore Wind Farm Wintering Bird Survey (Landfall Locations)
- MacArthur Green (2022) North Falls Offshore Wind Farm Onshore Cable Route Non-breeding Bird Surveys 2021-22
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FIVE ESTUARIES OFFSHORE WINDFARM

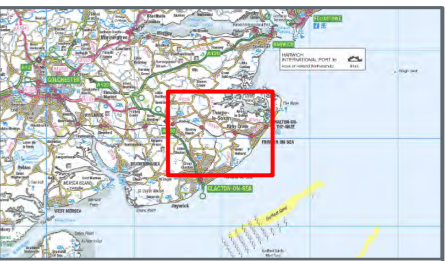
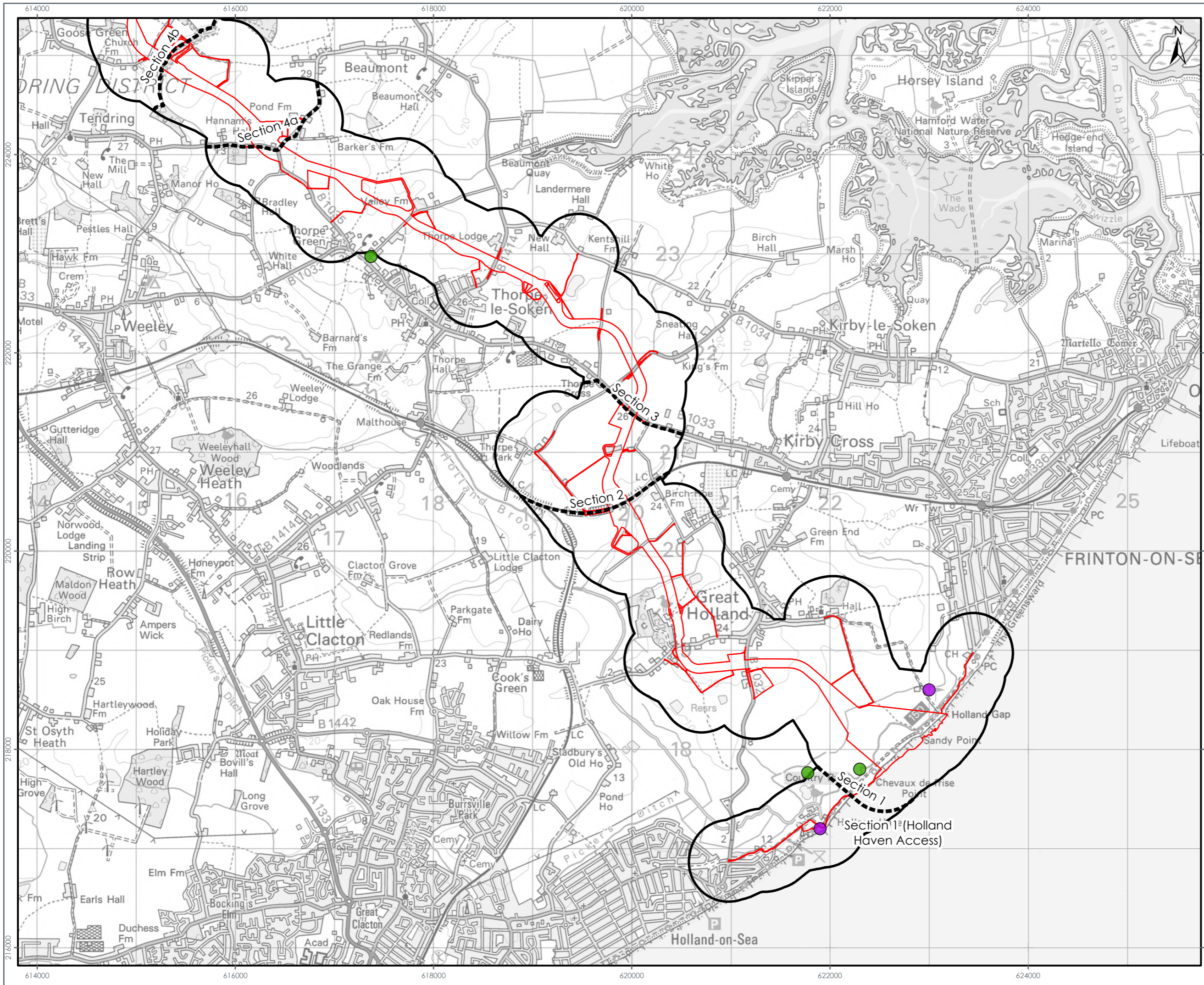
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**Survey Observations:
 Cormorant
 Sections 5, 6 and 7**

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

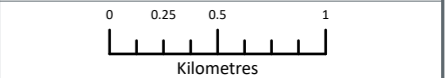
DRAWING NUMBER: **3**

Sheet No: 57 of 57
 SCALE: 1:20,000 PLOT SIZE: A3 DATUM: OSGB 1936 PROJECTION: British National Grid





- LEGEND**
- Onshore Order Limits
 - Onshore Order Limits 400 m Buffer
 - Analysis Section Boundary
- Species Observation
- Hen Harrier
 - Short-eared Owl



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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
 Survey Observations:
 Hen Harrier and Short-eared Owl

VER	DATE	REMARKS	Drawn	Checked
1	22/02/2024	ES Submission	JO	JRS

DRAWING NUMBER: 4

SCALE: 1:50,000 | PLOT SIZE: A3 | DATUM: OSGB 1936 | PROJECTION: British National Grid







F I V E 
ESTUARIES
OFFSHORE WIND FARM

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fiveestuaries@rwe.com
www.fiveestuaries.co.uk

COMPANY NO

Five Estuaries Offshore Wind Farm Ltd
Windmill Hill Business Park
Whitehill Way, Swindon, SN5 6PB
Registered in England and Wales
company number 12292474

