NORTH FALLS

Offshore Wind Farm

ENVIRONMENTAL STATEMENT

Appendix 23.1 Extended Phase 1 Habitat Survey Report (Part 1 of 3)

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REPORT

North Falls Offshore Wind Farm - Extended Phase 1 Habitat Survey

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1 Introduction

1.1 Project background

The North Falls Offshore Wind Farm project (herein 'the project') is a proposed extension to the Greater Gabbard offshore wind farm, which is located off the east coast of England in the Southern North Sea and was opened in 2013. The project is being developed by North Falls Offshore Wind Farm Ltd. (NFOW), a joint venture between SSE Renewables and RWE.

The project is proposed in response to The Crown Estate's (TCE) extension leasing round, launched in 2017, with TCE recognising that extensions to operational wind farms are proven to be a successful way of efficiently developing more offshore generating capacity. NFOW was awarded an Agreement for Lease (AfL) from TCE in September 2020. NFOW have begun the process of baseline data collection to inform an EIA for the project in support of a Development Consent Order (DCO) application proposed to be submitted to the Planning Inspectorate in 2023.

NFOW is currently awaiting confirmation of a grid connection offer from National Grid, which will then inform the detailed site selection of the offshore cable corridor, landfall location, onshore cable route and onshore substation location. Whilst this process is ongoing, in order to ensure that adequate baseline data is collected to inform the project's EIA, NFOW have undertaken a suite of ecological surveys in 2021 so that baseline data for the project can be gathered.

In the first instance, for these 2021 ecological surveys NFOW has targeted an area immediately landward of the coast between the settlements of Clacton-on-Sea and Frinton (herein the 'cable landfall search area'). This area has been targeted as the most likely area in which cable will be brought ashore. Following receipt of preliminary information from National Grid in Summer 2021 regarding the location of potential grid connection points which will be offered to NFOW, NFOW has undertaken an initial site selection exercise to identify potential onshore cable corridor options. These initial onshore cable corridor options have then been used as the basis for identifying an footprint (herein the 'onshore project area', as shown in **Figure 1, Appendix A**) which is the subject of the surveys presented in this report.

Royal HaskoningDHV was commissioned to undertake an Extended Phase 1 Habitat Survey within, and up to 50m from, the onshore project area. It is important to note that these surveys have been conducted on the widest possible onshore project area, as understood at the time of survey. As landfall and cable corridor options narrow down, the geographical extent of the Phase 2 species-specific surveys is also likely to reduce.

1.2 Purpose of this report

The purpose of this report is to:

- Present the results of the Extended Phase 1 Habitat Survey undertaken in April, July, September and October 2021, and March 2022;
- Provide an overall understanding of the existing ecological value of the environment within the onshore project area, in order to characterise the baseline environment and inform the ecological impact assessment of the project's Preliminary Environmental Information Report (PEIR); and
- Inform the requirements and scope of Phase 2 species-specific surveys of the onshore project area.

In order to achieve this purpose, the Extended Phase 1 Habitat Survey consists of three components, which collectively enable a preliminary understanding of the ecological value of the habitats within and up to 50m from the onshore project area (hereafter the 'survey area'). These components include:

- A desk-based review that summarises information on existing protected species records and statutory and non-statutory nature conservation designations.
- A field survey, involving:
    - The recording of all habitats within the survey area.
    - An assessment of the likelihood of the survey area to support legally protected species or species of conservation concern.

This report has been prepared in accordance with the guidelines set out in the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines on Ecological Report Writing (CIEEM, 2017).

2 Legislation and Policy

Table 2.1 presents the relevant information regarding the legal protection afforded to the habitats and species mentioned in this report. However, it should be noted that this is for information only and is not intended to be exhaustive or to replace specialised legal advice.

Table 2.1 – Summary of key legislation and policy relevant to the Extended Phase 1 Habitat Survey area

Legislation	Relevance
Environment Act 2021	The Environment Act makes provisions about targets, plans and policies for improving the natural environment and environmental protection, including biodiversity and conservation covenants. The Environment Act also includes the provision for biodiversity net gain to be a condition of planning permission in England, which includes Nationally Significant Infrastructure Projects (NSIPs).
Wildlife and Countryside Act 1981 (as amended)	Codifies the European Union (EU) Directive 2009/147/EC (the Birds Directive) into UK law; provides legal protection for European designated sites (Special Protection Areas (SPA), Ramsar sites) and Sites of Special Scientific Interest (SSSI); outlines legal offences in relation to wild birds, animals, and invasive species; and provides lists of species which are protected under the Act.
The Conservation of Habitats and Species Regulations 2017 (as amended)	Codifies the EU Directive 92/43/EEC (The Habitats Directive) into UK law, and provides legal protection for European designated sites (Special Area of Conservation (SAC)). The Conservation of Habitats and Species Regulations (2017) were amended in 2019 with the EU Exit Regulations, which includes the provision that the protection of 'European' sites still apply following the UK's exit from the EU.
Natural Environment and Rural Communities Act 2006	Section 41 of the Act requires the relevant Secretary of State (SoS) to compile a list of habitats and species of principal importance for the conservation of biodiversity in England, which Local Authorities to consider in their daily operations.
Protection of Badgers Act 1992	Outlines legal offences in relation to badgers, including taking, injuring or killing badgers, and interfering with badger setts.
The Hedgerow Regulations 1997	Outlines the definition of 'important' hedgerows and legal offences in relation to their disturbance or removal.
UK Post-2010 Biodiversity Framework (JNCC 2012)	Supersedes the UK Biodiversity Action Plan (UK BAP), which fulfilled a legal obligation under the Convention on Biological Diversity to identify and produce action plans for priority habitats and species.

3 Methodology

3.1 Study area

3.1.1 Desk-based study area

The study area for the desk-based review comprised all land within, and within up to 2km of, the onshore project area (up to 5km for bat and bird species information).

3.1.2 Field survey area

The survey area included all habitats within the onshore project area plus an additional 50m buffer. A buffer of 250m was used when searching for potential breeding ponds for great crested newts.

3.2 Desk-based review

The Multi-Agency Geographic Information for the Countryside (MAGIC) website (Defra 2013, updated 2021) was reviewed in April and September 2021 for information on statutory designated nature conservation sites and notable habitats (e.g. ancient woodland) of nature conservation value, within the onshore project area and up to 5km from its boundaries.

A search for waterbodies using 1:25,000 Ordnance Survey (OS) maps was also undertaken to identify the potential aquatic habitats used by great crested newt *Triturus cristatus*. A 250m buffer is considered appropriate having considered the habitats within and around the survey area. Although great crested newt can use suitable terrestrial habitat up to 500m from a breeding pond (English Nature, 2001), research suggests that newts are likely to travel no more than 250m from ponds where suitable habitats for foraging and hibernation exist close to their breeding ponds (Cresswell and Whitworth, 2004).

Biological records data was obtained from the Essex Wildlife Trust biological records centre [1] and supplemented with additional data requested from the Essex Field Club. Information on non-statutory sites was not included within the data received but has subsequently been requested. The report will be further updated once the data on non-statutory sites within the onshore project area has been received. Details of those species listed on the Essex Biodiversity Action Plan (BAP) are also noted.

3.3 Field survey methodology

The Extended Phase 1 Habitat Survey was undertaken over the following dates:

- 20th – 30th April 2021;
- 10th – 11th July 2021;
- 20th September – 10th October 2021; and
- 7th – 11th March 2022

The purpose of the Extended Phase 1 Habitat Survey was to record the habitats within the survey area and to assess the suitability of the habitats present for supporting legally protected and notable species, therefore providing an overall understanding of the existing ecological value of the environment within the

[1] Initial biological records were obtained from Essex Wildlife Trust, however this facility was closed on 30th September 2021, therefore when updated records were required, to account for changes in the onshore project area, additional records were obtained in October 2021 from the Essex Field Club.

onshore project area. For selected species (e.g. badgers), evidence of presence / likely absence was also recorded.

The Extended Phase 1 Habitat Survey was undertaken in accordance with the methodology set out in the Guidelines for Baseline Ecological Assessment (Institute of Environmental Assessment (IEMA, 1995)). This method of survey enables information on the habitats within the survey area to be provided and in turn enables an assessment of the potential for legally protected species to be present within, or adjacent to, the survey area. Habitats have been recorded within the survey area using the system set out within the Joint Nature Conservation Committee (JNCC) *'Handbook for Phase 1 habitat survey: A technique for environmental audit'* (JNCC, 2010).

All of the habitats within the survey area, that were accessible at the time of the survey, have been mapped and Target Notes (TN) have been used to provide details of characteristic habitats, species composition and to highlight any features of ecological interest. All TN descriptions, with photographs where available, are presented in **Appendix B – Target Notes**. In addition, areas where landowner access had not been granted at the time of the survey have been digitised using aerial imagery and will be ground-truthed during a further survey effort once landowner access has been agreed.

Habitat data collected during the field survey has been collected in a manner that ensures it can be used to inform a Biodiversity Net Gain assessment, i.e. the data collected has been collected so as to be compatible with the Defra Biodiversity Metric 3.0 (Panks et al., 2021)[2] and Biodiversity Net Gain: Good practice principles for development (CIEEM, IEMA and CIRIA, 2016). To this end, all habitats have been subject to a habitat condition assessment using UK Habitat Classification System Version 1.1 (Butcher et al., 2020) during the field survey, to identify their condition. In order for the correct conditions assessment to be used, the field surveyors first converted each JNCC habitat to the corresponding UK Habitat Classification using the UK Habitat Classification System conversion tool (Butcher et al., 2020). The habitat conditions assessments and UK Habitats Classification System habitats data have been used to inform a biodiversity net gain baseline, as presented in **Appendix G - Biodiversity Net Gain Baseline Report**).

An assessment of hedgerows within the survey area was also undertaken following the methodology outlined in the Hedgerow Survey Handbook (Defra, 2007) which is in line with The Hedgerow Regulations 1997. All hedgerows were recorded in line with the JNCC habitat classifications (JNCC, 2010). The full hedgerow results are presented in **Appendix C – Hedgerow Results**.

In accordance with the Guidelines for Baseline Ecological Assessment (CIEEM, 2017), the Extended Phase 1 Habitat Survey was 'extended' to make preliminary investigations in respect to the following legally protected and/or notable species:

3.3.1 Birds

As part of the Extended Phase 1 Habitat Survey, a search of all habitats with suitability to support breeding and/or over-wintering birds was undertaken. There was a focus on those habitats with the suitability to support:

- Birds listed in Annex I of the EU Birds Directive;
- Birds listed in Schedule 1 of the Wildlife & Countryside Act 1981 (as amended);
- Birds which are listed as qualifying features in all nearby SPAs and SSSIs; and/or

[2] *At the time of the surveys, the Defra Biodiversity Metric 3.1 had not yet been released, therefore this stage of the assessment was based on Version 3.0.*

- Rare, 'Red-listed' species in the Birds of Conservation Concern (BoCC) (Eaton et al., 2015).

Such habitats include trees, hedgerows, waterbodies, grazing marsh and agricultural land.

Specific over-wintering and breeding bird surveys have been undertaken, the findings from which are reported separately and not repeated in this document.

3.3.2 Badgers

A search for signs of badgers *Meles meles* within the survey area was undertaken concurrently with the Extended Phase 1 Habitat Survey. Signs such as setts, tracks, hairs, bedding and spoil heaps, snuffle holes and latrines were checked for. The results of the badger survey are included within **Appendix D – Badger Survey Results (Confidential)**.

Where active setts were noted, they were classified using the following categories which follows the Scottish National Heritage (SNH) guidance on badger surveys (SNH, 2004):

- **Main sett** – several holes with large spoil heaps and obvious paths leading from and between sett entrances.
- **Annex sett** – normally less than 150m from a main sett, comprising several holes. These setts may not be in use all the time, even if main setts are very active.
- **Subsidiary sett** – these are usually at least 50m from a main sett with no obvious paths connecting them to other setts. These may only be used intermittently.
- **Outlier sett** – little spoil present outside holes, with no obvious paths connecting to other setts. These are only used sporadically and may also be used by foxes and/or rabbits.

3.3.3 Bats

All trees, buildings and structures (e.g. bridges and farm buildings) were assessed from the ground, using binoculars, for their potential to support roosting bats. Each feature was assigned a classification of either 'negligible', 'low', 'moderate' or 'high' suitability for supporting roosting bats in accordance with the guidelines set out in Table 4.1 of the Bat Conservation Trust's (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT, 2016).

All linear features (e.g. tree lines, waterbodies and hedgerows) were also assessed for their potential to provide commuting and foraging habitat for bats, in accordance with Table 4.1 the BCT guidelines (BCT, 2016).

3.3.4 Water vole and otter

All standing and running waterbodies within the survey area were assessed for their suitability to support water voles and otters. Assessments of a waterbody's suitability to support water voles and/or otters was made in line with the Mammal Society guidance (Dean et al., 2016) and standing advice from Natural England (Natural England, 2015).

3.3.5 Great crested newts

All standing water bodies (i.e. ponds and ditches) within the survey area have been mapped and were subject to a Habitat Suitability Index (HSI) assessment for their suitability to support breeding populations for great crested newts (following Oldham et al., 2000).

3.3.6 Reptiles

Areas of potential reptile habitat were recorded during the Extended Phase 1 Habitat Survey. These include habitat transitions (ecotones), rank grassland, piles of debris or bare ground which form part of a habitat mosaic providing suitable reptile hibernation, basking and/or foraging habitat (Edgar et al., 2010).

3.3.7 Invertebrates

High quality, diverse habitats that are considered to provide suitable opportunities for terrestrial invertebrates were recorded during the Extended Phase 1 Habitat Survey. These habitats include:

- Areas of previously developed or 'brownfield' land;
- Areas of flower rich grassland,
- Suitable ponds and damp areas;
- Areas of scrub and woodland or hedgerows; and
- Mature/veteran trees.

Areas where these habitats exist as a mosaic with the ability to support significant invertebrate populations throughout their lifecycle (Buglife, 2019) are of particular importance.

3.3.8 Hazel dormice

Areas of habitat suitable for hazel dormice *Muscardinus avellanarius* were recorded during the Extended Phase 1 Habitat Survey. These include woody habitats such as hedgerows, areas of species rich scrub and grassland areas that are connected to woodland areas which have a high degree of species diversity within the tree and shrub species (English Nature, 2006).

3.3.9 Invasive non-native species

Where present, the location and extent of invasive non-native species was recorded within the survey area. The Extended Phase 1 Habitat Survey focused on those species listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

3.4 Surveyors

The Extended Phase 1 Habitat surveys carried out in 2021 were conducted by a team of four Royal HaskoningDHV ecologists. The surveys were led by Charlotte Clements, BSc (Hons) who is an Associate Member of CIEEM with six years' of Extended Phase 1 Habitat surveying experience, and Claire Smith, MSc, BSc (Hons) who is a Full Member of CIEEM and has 12 years of experience. The survey team included:

- Ashleigh Holmes MSc, BSc (Hons).
- Lewis Ashton MSc, BSc (Hons).

In 2022, the lead surveyor was Gordon Campbell, MSc, BSc (Hons) who is an Associate of CIEEM and a Full Member of IEMA with 11 years of experience. He was supported by Kitty Taylor, BSc (Hons).

3.5 Weather conditions

Table 3.1 summarises the weather conditions encountered during the Extended Phase 1 Habitat Survey.

Table 3.1 – Weather conditions during the Extended Phase 1 Habitat Survey

Survey Date	Weather conditions
20th April 2021	Dry, fine and moderate breeze. Approximately 15º Celsius
22nd April 2021	Dry, fine and moderate breeze. Approximately 18 º Celsius
27th April 2021	Dry, fine and moderate breeze. Approximately 16 º Celsius
28th April 2021	Dry, fine and moderate breeze. Approximately 15 º Celsius
30th April 2021	Dry, fine and moderate breeze. Approximately 16 º Celsius
10th July 2021	Dry, fine and moderate breeze. Approximately 22 º Celsius
11th July 2021	Dry, fine and moderate breeze. Approximately 24 º Celsius
20th September 2021	Dry, fine and moderate breeze. Approximately 16 º Celsius
21st September 2021	Dry, fine and moderate breeze. Approximately 18 º Celsius
22nd September 2021	Dry, fine and moderate breeze. Approximately 17 º Celsius
23rd September 2021	Dry, fine and moderate breeze. Approximately 20 º Celsius
24th September 2021	Dry, fine and moderate breeze. Approximately 21 º Celsius
27th September 2021	Dry, mild. clear, moderate wind (gusts). Approximately 16 º Celsius
28th September 2021	Dry, mild. clear, moderate wind (gusts). Approximately 14 º Celsius
1st October 2021	Intermittent rain, mild. moderate wind (gusts). Approximately 13 º Celsius
8th October 2021	Dry, overcast, mild and moderate breeze. Approximately 14 º Celsius
12th October 2021	Intermittent rain, overcast, mild and moderate breeze. Approximately 14 º Celsius
13th October 2021	Dry, overcast, mild and moderate breeze. Approximately 13 º Celsius
14th October 2021	Dry, overcast, mild and moderate breeze. Approximately 11 º Celsius
15th October 2021	Dry, overcast, mild and moderate breeze. Approximately 13 º Celsius
7th March 2022	Dry, overcast, cold with a strong breeze. Approximately 5º Celsius
8th March 2022	Dry, overcast, cold with a strong breeze. Approximately 6 º Celsius
9th March 2022	Dry, sunny, mild with a moderate breeze. Approximately 10 º Celsius
10th March 2022	Dry, sunny, mild with a moderate breeze. Approximately 12 º Celsius
11th March 2022	Overcast, turning to showers with a moderate breeze. Approximately 9º Celsius

3.6 Survey limitations

The 2021 and 2022 Extended Phase 1 Habitat Surveys covered approximately 95.6% of the onshore project area (as defined the time of writing). The remaining 4.4% equates to an area that is currently unsurveyed due to no landowner access being granted at the time of the 2022 survey. In the absence of field survey data, the habitats present within the unsurveyed areas have been digitised using aerial mapping, and are these habitats are also shown on **Figure 3a** to **Figure 3s** in **Appendix A** using a separate colour scheme to those habitats which have been identified in the field.

Some areas of habitats could not be fully accessed during the 2021 survey due to the presence of physical barriers, such as (but not limited to) dense scrub, which prevented safe entry for the surveyors. However, such areas were small and discrete and were encountered infrequently. In the few locations where they

were encountered, they were noted as potentially providing field signs which could not be confirmed during the 2021 survey.

The 2021 survey was undertaken in April, July, September and early-October and the 2022 survey in March. These months are considered to be within the optimal surveying window for identifying ground flora species and habitat communities. Therefore, sufficient evidence of key indicator species was found which in turn has enabled the successful identification of habitat communities present within the survey area. Additionally, the majority of habitats encountered within the survey area is consistent with those expected of agricultural landscapes and colonised by identifiable species, for example scrub dominated by bramble and hawthorn. Therefore, it is considered that the survey (and its findings) are robust in being used to characterise the existing site conditions and in turn be used to inform and support the ecological impact assessment that will be presented in the PEIR.

Although the survey team made the utmost effort to cover every habitat and pick up all field signs present during the 2021 survey, on occasion some field signs can be missed. Despite this, the data presented in this report is considered to provide an accurate description of the habitats within the survey area.

4 Results

4.1 Desk study results

4.1.1 Designated sites

The following designated sites are located within a 2km buffer of the onshore project area:

- Statutory designated sites:
  - Hamford Water (Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar and National Nature Reserve (NNR);
  - Stour and Orwell Estuaries SPA and Ramsar;
  - Stour Estuary SSSI;
  - Holland Haven Marshes SSSI;
  - Holland On-Sea Cliff SSSI;
  - Holland Haven Local Nature Reserve (LNR); and
  - Pickers Ditch Meadow LNR.
- Non-statutory designated sites:
  - Great Holland Pits Local Wildlife Site (LWS).

The location of these designated sites are shown on **Figure 1** in **Appendix A** and

Table 4.1 summarises the qualifying features/reasons for their notification. Note that Holland On-Sea Cliff is a geological SSSI and is therefore not considered further within this report. At the time of writing this report, we are yet to receive confirmation on any additional non-statutory sites from the Essex Field Club, the report will be updated once this data is received.

Table 4.1 – Designated sites for nature conservation of relevance to the onshore project area

Site Name	Designation	Distance from onshore project area	Qualifying features/reasons for notification
Holland Haven Marshes	SSSI	Within onshore project area	An area of reclaimed estuarine saltmarsh and freshwater marsh situated between Holland-on-Sea and Frinton-on-Sea. The site is bisected by Holland Brook and its tributaries, from which an extensive ditch system radiates. The ditch network represents an outstanding example of a freshwater to brackish water transition intimated by the aquatic plant communities, which include a number of nationally and locally scarce species. The adjoining grasslands are of botanical importance in their own right as well as acting as a buffer zone to the ditch system. Further interest is provided by the aquatic and terrestrial invertebrates and the birds which frequent the area, especially in winter.
Holland Haven	LNR	Within onshore project area	This site comprises mown amenity grassland, hawthorn scrub, rough grassland, wet grazing marsh, scrape area and ponds. This site is known to support invertebrates such as the ruddy darter dragonfly *Sympetrum sanguineum*, larger carder bee *Bombus muscorum*, Roesel's bush cricket *Metrioptera roeselii*. Plants include birds foot trefoil *Lotus corniculatus*, birds foot fenugreek *Trigonella foenum-graecum* and soft hornwort *Ceratophyllum submersum*. A large number of bird species have also been recorded on site including purple sandpiper *Calidris maritima*, avocet *Recurvirostra avosetta* and short eared owl *Asio flammeus*.
Hamford Water	SPA	50m	Qualifies under Article 4.1 of the EU Birds Directive by supporting: *During the breeding season:* *Sterna albifrons* – breeding (Eastern Atlantic) - 2.3% of the UK breeding population. *Over winter:* *Recurvirostra avosetta* – breeding (Western Europe/Western Mediterranean) - 25% of the UK population. Qualifies under Article 4.2 of the EU Birds Directive by supporting over winter: *Anas crecca* (North-western Europe) - 2.7% of the population in UK 5 year peak mean 1991/92-1995/96; *Branta bernicla bernicla* (Western Siberia/Western Europe) - 2.3% of the population 5 year peak mean 1991/92-1995/96; *Charadrius hiaticula* (Europe/Northern Africa - wintering) - 1.1% of the population 5 year peak mean 1991/92-1995/96; *Limosa limosa islandica* (Iceland - breeding) - 1.7% of the population 5 year peak mean 1991/92-1995/96; *Pluvialis squatarola* (Eastern Atlantic - wintering) - 7.5% of the population in UK 5 year peak mean 1991/92-1995/96; *Tadorna tadorna* (North-western Europe) - 2.2% of the population in UK 5 year peak mean 1991/92-1995/96; and *Tringa totanus* (Eastern Atlantic - wintering) - 0.8% of the population 5 year peak mean 1991/92-1995/96.
	Ramsar	50m	Qualifies under Criterion 6 (A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird): *Species with peak counts in spring/autumn:* Ringed plover, *Charadrius hiaticula* (Europe/Northwest Africa)

Site Name	Designation	Distance from onshore project area	Qualifying features/reasons for notification
			Common redshank, *Tringa totanus totanus* *Species with peak counts in winter:* Dark-bellied brent goose, *Branta bernicla bernicla,* Black-tailed godwit, *Limosa limosa islandica* (Iceland/W Europe) Grey plover, *Pluvialis squatarola* (E Atlantic/W Africa -wintering)[3]
	SAC	50m	Annex II species that are a primary reason for selection of the site: 4035 Fisher's estuarine moth *Gortyna borelii lunata*
	NNR	50m	Unlike many of the other Essex NNRs, Hamford Water is not an estuary as it does not have a major river running into it. Instead it is classified as a coastal embayment that has been formed due to a natural dip in the underlying geology of the area. The bird life that this variety of habitats attracts is outstanding, especially the waders and waterfowl that can be seen in winter. Main habitats: salt marsh, intertidal mud flats, coastal, grazing marsh, sands, shingle, small freshwater ponds and ditches
	SSSI	50m	Hamford Water is a tidal inlet whose mouth is about three miles south of Harwich. It is a large and shallow estuarine basin comprising tidal creeks, intertidal mud and sand flats, saltmarshes, islands, beaches and marsh grasslands. The site is of international importance for breeding Little Terns and wintering Dark-bellied Brent Geese, wildfowl and waders, and of national importance for many other bird species. It also supports communities of coastal plants which are rare or extremely local in Britain, including Hog's Fennel *Peucedanum officinale* which is found elsewhere only in Kent.
Holland on Sea Cliff	SSSI	300m	Geological SSSI.
Pickers Ditch Meadow	LNR	500m	Meadow surrounding Pickers Ditch tributary, representing a valuable green space in the Great Clacton area. Hedge planting along the border helps screen the site, whilst tree planting in the adjacent area provides a copse area surrounding the existing footpath.
Great Holland Pits	LWS	Within onshore project area	Old gravel pit that now supports many flowering plants, open grassland and pasture with remnants of old woodland with ponds and wet depressions.
Stour Estuary	SSSI	1.75km	Nationally important site for 13 species of wintering waterfowl and three species on autumn passage including grey plover, knot *Calidris canutus islandica*, black-tailed godwit, great crested grebe *Podiceps cristatus*, cormorant *Phalacrocorax carbo*, mute swan *Cygnus olor*, dark-bellied brent goose, shelduck *Tadorna tadorna*, pintail *Anas acuta*, curlew *Numenius arquata*, ringed plover, redshank and dunlin *Caldris alpina alpina*. The final three are those which are on autumn passage. The saltmarshes of the Stour Estuary form an integral part of the estuarine system and are an essential feeding and roosting habitat. It is also home to scarce marine invertebrates – the starlet sea anemone *Nematostella vectensis*

[3] *Species/populations identified subsequent to designation for possible future consideration under criterion 6.*

Site Name	Designation	Distance from onshore project area	Qualifying features/reasons for notification
			and tentacled lagoon worm *Alkmaria romijni* – and a scarce vascular plant assemblage.
Stour and Orwell Estuaries	SPA	1.75km	Qualifies under Article 4.1 of the EU Birds Directive as the site is used regularly by 1% or more of the Great Britain populations of the following Annex 1 species in any season: Avocet – 3.6% of GB breeding population - 5 year peak mean 1996-2000. Qualifies under Article 4.2 of the EU Birds Directive as it is regularly used by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex 1) in any season: Redshank – 2.0% of GB population during autumn passage for five year peak mean 1995/96 – 1999/2000; Dark-bellied brent goose – 1.2% Western Siberia (breeding) 5 year peak mean 1995/96 – 1999/2000; Pintail – 1.2% Northwestern Europe (non-breeding) 5 year peak mean 1995/96 – 1999/2000; Grey plover – 1.3% Eastern Atlantic (non-breeding) 5 year peak mean 1995/96 – 1999/2000; Knot – 1.3% *islandica* 5 year peak mean 1995/96- 1999/2000; Dunlin – 1.4% *alpina* Western Europe (non-breeding) 5 year peak mean 1995/95 – 1999/2000; Black-tailed godwit – 7.3% *islandica* 5 year peak mean 1995/96 – 1999/2000; and Redshank – 2.8% *brittanica* 5 year peak mean 1995/96 – 1999/2000.
	Ramsar	1.75km	The estuary is a wetland of international importance, comprising extensive mudflats, low cliffs, saltmarsh and small areas of vegetated shingle on the lower reaches. It provides wintering habitats for important assemblages of wetland birds and supports internationally and nationally important numbers of wintering wildfowl and waders. Qualified under Criteria 2, 5 and 6 Ramsar Criterion 2 (Contains nationally scarce plants and British Red Data Book invertebrates): V*ascular plants considered vulnerable and endangered:* *Zostera noltei* *Spartina maritima*. Ramsar Criterion 5 (Assemblages of international importance): *Species with peak counts in winter:* 51,285 waterfowl (5 year peak mean 1998/99-2002/2003) Ramsar criterion 6 (species / populations occurring at levels of international importance. *Species with peak counts in winter:* Black-tailed godwit (Iceland/W Europe)

Site Name	Designation	Distance from onshore project area	Qualifying features/reasons for notification
			Common redshank Dark-bellied brent goose Dunlin (W Siberia/W Europe) Grey plover (E Atlantic/W Africa – wintering)

4.1.2 UK Habitats of Principal Importance

The following UK Habitats of Principal Importance are present within the survey area and are shown on **Figure 2**, **Appendix A**:

- Coastal and floodplain grazing marsh.
- Ancient woodland.
- Deciduous woodland.
- Semi-improved grassland.
- Hedgerows.
- Arable field margins.
- Lowland meadows.
- Reedbeds.
- Rivers.
- Ponds.

4.1.3 Protected species

This section summarises the records of all legally protected and notable species which have been obtained from the biological records search from the Essex Wildlife Trust and the Essex Field Club. Details of those species which are also Essex BAP species are all provided (whether or not they have been recorded locally).

4.1.3.1 Birds

The Essex Field Club hold records of 240 notable or protected bird species within 5km of the onshore project area, of which 41 are listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). Two of the bird records are dated from 1985 with the remaining records are within the last 10 years (i.e. from 2011).

The following species are subject to the Essex Species BAP:

- Sky lark *Alauda arvensis*,
- Bittern *Botaurus stellaris*,
- Grey partridge *Perdix perdix*,
- Stone curlew *Burhinus oedicnemus*, and
- Song thrush *Turdus philomelos*.

4.1.3.2 Badgers

Records provided in relation to badgers are provided in **Appendix D**.

4.1.3.3 Bats

The Essex Field Club hold records of 15 species of bat within 5km of the onshore project area. Namely the western barbastelle *Barbastella barbastellus*, serotine *Eptesicus serotinus*, natterer's bat *Myotis nattereri*, lesser noctule *Nyctalus leisleri*, Nathusius's pipistrelle *Pipistrellus nathusii*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bat *Plecotus auritus*.

The following species are subject to the Essex Species BAP:

- Common pipistrelle *Pipistrellus pipistrellus*.

4.1.3.4 Water Vole

The Essex Field Club holds 57 records for water vole within 2km of the survey area. Of the 57 records, three are within the last 10 years. These three records were shown within the Harwich Gateway retail park, the Dovercourt Dock river and the River Colne, which are all outside of the onshore project area.

Consultation with Natural England through the project's Evidence Plan Process (Andrew Hartley, pers. comm., 13 January 2022) indicated that Holland Haven Marshes has historically supported populations of water voles.

Water voles are subject to the Essex Species BAP.

4.1.3.5 Otter

The Essex Field Club holds 14 records for otter within 2km of the survey area. Of the 14 records, five are within the last 10 years. These five records were shown within Holland Haven, Ardleigh reservoir, Alresford Creek, and Tenpenny Brook.

Otters are subject to the Essex Species BAP.

4.1.3.6 Great crested newts

The Essex Field Club holds 10 records of great-crested newt within 2km of the survey area. Of the 10 records, four are within the last 10 years. These records are shown within Weeley, Kirby Cross, and Ardleigh.

4.1.3.7 Reptiles

The Essex Field Club holds records of 24 adders *Vipera berus*, 68 common lizards *Zootoca vivipara*, 33 grass snakes *Natrix natrix* and 49 slow-worms *Anguis fragilis* throughout (and up to 2km from) the survey area.

4.1.3.8 White-clawed crayfish

The Essex Field Club holds no records for white-clawed crayfish within 2km of the survey area.

White-clawed crayfish are subject to the Essex Species BAP.

4.1.3.9 Invertebrates

The Essex Field Club holds 329 records of invertebrates within 2km of the survey area, including notable bee, dragonfly, butterfly, moth, cricket and beetle species.

The following invertebrate species are subject to the Essex Species BAP:

- Bright wave moth *Idaea ochrat*,
- Desmoulin's whorl snail *Vertigo moulinsiana*,

- Fisher's estuarine moth *Gortyna borelii lunata*,
- Heath fritillary *Melitaea athalia*,
- Hornet's robber fly A*silus crabroniformis*,
- Shining ramshorn snail *Segmentina nitida*,
- Shrill carder bee *Bombus sylvarum*, and
- Stag beetle *Lucanus cervus*.

4.1.3.10 Invasive non-native species

The Essex Field Club holds 712 records of different invasive non-native species within 2km of the survey area.

Japanese knotweed has been recorded at 21 locations, including Clacton-Holland cliffs, Frating Green area, Frinton and Walton cliffs, Great Clacton, Stour Estuary, and Wivenhoe Marshes. In addition, American mink *Neovison vison* and butterfly bush *Buddleja davidii* have also been recorded.

4.1.3.11 Other species

The Essex Field Club holds 29 records of hazel dormouse *Muscardinus avellanarius* and 64 records of brown hare *Lepus europaeus* within 2km of the survey area.

Both the hazel dormouse and brown hare are subject to the Essex Species BAP.

Notable plant species, primarily associated with the Holland Haven Marshes SSSI and Holland Haven LNR, have also been recorded within the onshore survey area.

4.2 Field survey results

4.2.1 Habitats

Table 4.2 presents the key habitats that were recorded within the survey area during the field survey (as shown on **Figure 3a** to **Figure 3s** in **Appendix A**.

Table 4.2 – JNCC Phase 1 habitat areas recorded during the Extended Phase 1 Habitat Survey

JNCC Phase 1 Habitat Code	JNCC Phase 1 Habitat Survey Description	Area (ha)
A1.1.1	Broadleaved woodland - semi-natural	24.01
A1.1.2	Broadleaved woodland - plantation	4.58
A1.2.2	Coniferous woodland – plantation	0.74
A1.3.1	Mixed woodland – semi-natural	4.83
A1.3.2	Mixed woodland - plantation	6.95
A2.1	Scrub - dense/continuous	29.32
A2.2	Scrub - scattered	1.31
A3.1	Broadleaved Parkland/scattered trees	6.13
A3.3	Mixed Parkland/scattered trees	2.21
B2.2	Neutral grassland - semi-improved	3.19
B4	Improved grassland	127.58

JNCC Phase 1 Habitat Code	JNCC Phase 1 Habitat Survey Description	Area (ha)
B5	Marsh/marshy grassland	5.21
B6	Poor semi-improved grassland	163.97
C3.1	Other tall herb and fern - ruderal	22.17
G1	Standing water	21.10
G2	Running water	6.90
H4	Boulders/rocks above high tide mark	0.47
H8.2	Soft cliff	0.74
J1.1	Cultivated/disturbed land - arable	2191.66
J1.2	Cultivated/disturbed land – amenity grassland	65.76
J1.3	Cultivated/disturbed land - ephemeral/short perennial	0.31
J3.4	Caravan site	0.56
J3.6	Buildings	21.65
J4	Bare ground	7.64
J5	Other habitat	0.72
JNCC Phase 1 Habitat Code	**JNCC Phase 1 Habitat Survey Description**	**Length (m)**
G1	Standing water	6,784.84
G2	Running water	6,953.83
J2.1.1	Intact hedge - native species-rich	4,342.74
J2.1.2	Intact hedge - species-poor	27,570.89
J2.2.1	Defunct hedge - native species-rich	7,541.90
J2.2.2	Defunct hedge - species-poor	11,383.80
J2.3.1	Hedge with trees - native species-rich	11,650.94
J2.3.2	Hedge with trees - species-poor	16,004.89
J2.5	Wall	40.49
J2.6	Dry ditch	18,316.64
J2.8	Earth bank	190.64
J3.5	Artificial sea wall	1,922.10

In addition, the areas where no landowner access was agreed at the time of the Extended Phase 1 Habitat Survey have assigned habitats using a review of available aerial imagery, and the key habitats identified are summarised in **Table 4.3** below.

Table 4.3 – Habitats digitised using aerial mapping

JNCC Phase 1 Habitat Code	JNCC Phase 1 Habitat Survey Description	Area (ha)
A1	Woodland	4.59
A2	Scrub	5.98

JNCC Phase 1 Habitat Code	JNCC Phase 1 Habitat Survey Description	Area (ha)
B	Grassland	27.33
G1/G2	Standing water/Running water	0.06
J1.1	Cultivated/disturbed land - arable	53.89
J3.6	Buildings	26.15
J4	Bare ground	2.48
JNCC Phase 1 Habitat Code	**JNCC Phase 1 Habitat Survey Description**	**Length (m)**
J2	Hedge	1,620.19

4.2.1.1 Arable land

The largest habitat by area within the survey area is arable land (JNCC Phase 1 Habitat code J1.1). At the time of both the 2021 and 2022 surveys, some of these fields were in crop and some were ploughed. In 2022, some of these were showing young crops.

4.2.1.2 Boundary features

Field boundaries within the survey area comprised predominately of hedgerows, with some field margin drainage ditches (both dry and wet), scattered scrub and trees. The predominant type of hedgerow recorded was species-poor intact (J2.1.2) (total of 119 features), alongside species-poor defunct hedges (J2.2.2) (total of 58), species-poor hedges with trees (J2.3.2) (total of 56), native species-rich hedges with trees (J2.3.1) (total of 36), species-rich defunct hedges (J2.2.1) (total of 27) and native species-rich intact hedges (J2.1.1) (total of 15).

Key species recorded in hedgerows throughout the survey area included hawthorn *Craetagus monogyna* and blackthorn *Prunus spinosa*, with bramble *Rubus fruticosus*, dog rose *Rosa Canina*, oak *Quercus robur*, ash *Fraxinus excelsior,* elm *Ulmus spp.* and hazel *Corylus avellana.*

An additional 10 hedgerows have been identified using aerial imagery, with specific details to be ground-truthed to identify species present and what hedgerow classification they are (e.g. species-rich/species-poor etc.)

4.2.1.3 Woodland

A total of 59 areas of woodland were recorded throughout the survey area and included semi-natural and plantation broad-leaved woodland, semi-natural and mixed plantation woodland and a small area of coniferous plantation woodland. These areas ranged from larger areas of woodland to smaller roadside and field margin copses. A high number of woodland areas recorded contained game bird pens and feeding apparatus. Key species recorded included oak, ash, elm, white poplar *Populus alba,* sweet chestnut *Castanea sativa*, hazel, holly *Ilex aquifolium*, sycamore *Acer pseudoplatanus*, birch *Betula spp.,* and pines.

An additional 13 areas of woodland have been identified using aerial imagery, with specific details to be ground-truthed to identify individual habitats and species present.

4.2.1.4 Scrub

A total of 67 areas of dense and scattered scrub were recorded within the survey area and key species comprised bramble, nettle, cow parsley, hawthorn, bracken *Pteridium aquilinum*, hornbeam *Carpinus*

betulus and cleavers. These areas represented a range of habitat sub-types including transitional habitat associated with boundary features, field margins, woodland successional habitats and watercourse margins.

An additional 14 areas of scrub in unsurveyed areas have been identified using aerial imagery, with specific details to be ground-truthed to identify individual habitats and species present.

4.2.1.5 Parkland/Scattered trees

A total of 12 areas of parkland and scattered trees were recorded within the survey area, eight of which were recorded as broadleaved parkland and four of which were recorded as mixed.

4.2.1.6 Improved grassland

A total of 62 areas of improved grassland were recorded across the survey area, mainly consisting of grazing pasture for sheep, cattle and horses. These grasslands were characterised by short sward perennial rye grass *Lolium perenne* with limited herbs consisting of ragwort *Jacobea vulgaris*, clover *Trifolium spp.,* and dandelion *Taraxacum officinale* with areas of scattered/dense shrubs and/or scrub.

4.2.1.7 Semi-improved grassland and Poor semi-improved grassland

83 areas of semi-improved and poor semi-improved grassland were recorded throughout the onshore project area. These areas comprised coarse ruderal grass and herb species such as cock's foot *Dactylis glomerata* and broadleaf dock *Rumex obtusifolius*.

4.2.1.8 Marshy grassland

A total of four areas of marshy grassland were recorded throughout the survey area, generally consisting of a mix of wet and dry areas with species such as hard rush *Juncus inflexus*, water forget-me-not *Myosotis scorpiodes*, lady's thumb *Persicaria maculosa*, creeping buttercup *Ranunculus repens* and bittercress *Cardamine hirsuta*.

4.2.1.9 Amenity grassland

46 areas of amenity grassland were recorded within the survey area, generally consisting of short sward perennial rye grass subject to frequent mowing.

In addition, a further 70 areas of grassland have been identified using aerial imagery, with specific details to be ground-truthed with regard to species present and habitat type.

4.2.1.10 Other tall herb and fern – ruderal

23 areas of ruderal herbs were recorded within the survey area, ranging from large areas through to field margins and set-aside areas within arable crops. Key species noted included, bristly ox-tongue *Helminthotheca echioides*, common and ribwort plantain *Plantago spp.*, fleabane *Pulicaria dysenterica*, common hogweed *Heracleum sphondylium*, nettle *Urtica dioica*, ox-eye daisy *Leucanthemum vulgare* and teasel *Dipsacus fullonum*.

4.2.1.11 Standing and running water

There are 168 watercourses (i.e. ditches and rivers, excluding ponds) within the survey area and these include both field margin/boundary ditches (wet or dry), standing water and running water such as rivers.

In addition, ponds were recorded within the survey area plus a 250m buffer in order to carry out Habitat Suitability Index (HSI) assessments for great crested newts. Seventy-four ponds were recorded.

4.2.1.12 Other habitats

The following habitats were also recorded within the survey area (number of areas recorded in brackets):

- Caravan site (2);
- Buildings (264);
- Bare ground (54);
- Wall (1);
- Artificial sea wall (2); and
- Earth bank (1).

4.2.2 Protected species

This section should be read in conjunction with **Figure 3a** to **Figure 3s** in **Appendix A**.

4.2.2.1 Birds

All hedgerows, trees, grassland, scrub and woodland habitats that were recorded potentially provide suitable nesting habitat for protected, notable and common species of birds.

The following birds were also recorded utilising habitats within the survey area (all figures can be found in **Appendix A**):

- Oystercatcher *Haematopus ostralegus* (TN002, **Figure 3a**);
- Skylark *Alauda arvensis* (TN005, **Figure 3a**);
- Dunnock *Prunella modularis* (TN407, **Figure 3e**);
- Buzzard *Buteo buteo Falco tinnunculus* (TN472, **Figure 3j**);
- Kestrel (TN411, **Figure 3f**);
- Lapwing *Vanellus vanellus* were recorded adjacent to PO104, but no target note was made.

In addition, several barn owl boxes (TN089 and TN110, **Figure 3b**; TN333, **Figure 3c**) and relic nests (e.g. old nests from previous breeding season(s)) (TN027 and TN102, **Figure 3b**; TN415, **Figure 3f** and TN478, **Figure 3q**) were also present within the survey area.

Additional findings from the separate over-wintering and breeding bird surveys are reported separately and have not been repeated in this document.

4.2.2.2 Badger

Field survey results relating to badger are provided separately in **Appendix D – Badger Survey Results (Confidential)**.

4.2.2.3 Bats

All features (e.g. trees and structures) recorded within the survey area were assessed from the ground level and using binoculars for cracks, crevices, splits, herein referred to as Potential Roost Features (PRFs). The presence of PRFs, or lack of, allows each feature to be categorised for their suitability to support roosting bats, in accordance with the BCT guidelines (BCT, 2016).

In total 494 features were assessed for their suitability to support roosting bats. Of these 91 were assessed as providing negligible suitability for roosting bats, five were assessed as providing negligible/low suitability, 200 were assessed as providing low suitability, 20 were assessed as providing low/moderate, 166 as providing moderate suitability, eight as providing moderate/high and four as having high suitability. The full

details for each bat roost assessment is in **Appendix E – Bat Roost Assessment Results**, including a feature description, photograph and reference.

All linear features (e.g. watercourses, hedgerows) were also assessed for their potential suitability to support commuting and/or foraging bats, in accordance with the BCT guidelines (BCT, 2016).

In total, 238 features were assessed for their suitability for commuting and foraging bats. Of these, 55 were assessed as providing negligible suitability, 51 features as providing low suitability, 130 as providing moderate suitability and two as having high suitability. Details regarding features assessed for their suitability for commuting and foraging bats are presented in **Appendix C** – **Hedgerow Results**

4.2.2.4 Water vole and otter

A total of 168 watercourses were recorded within the survey area which comprised of standing water, running water (e.g. rivers or ditches) and dry ditches. Of these 168 watercourses, 14 were assessed as being suitable to support water voles and one as being suitable to support otters.

The remaining 154 watercourses were assessed as sub-optimal for water voles and/or otters, primarily as they were field drains of insufficient size and depth to support either of these species, or were dry at the time of the survey. In addition, these watercourses were not functionally linked to the wider river/ditch network and were therefore considered to be unfavourable to these species.

4.2.2.5 Great crested newt

A total of 74 waterbodies (i.e. ponds and ditches) were subject to a HSI assessment during the 2021 and 2022 surveys, for which the full results are in **Appendix F** – **Full HSI Results**. All pond references are also included on **Figure 3a** to **Figure 3s** in **Appendix A**. A numerical score is derived from the ten suitability indices described in the Amphibian and Reptile Groups (ARG) of the United Kingdom Advice Note 5 (Oldham et al., 2000), which broadly considers habitat attributes (i.e. pond size, water quality, presence of fish or fowl etc.), that are considered to influence the suitability of a waterbody for breeding great crested newts. The approximate indication of habitat suitability is as follows:

- < 0.5 (poor quality habitat);
- 0.5 – 0.59 (below average quality habitat);
- 0.6 – 0.69 (average quality habitat);
- 0.7 – 0.79 (good quality habitat); and
- ≥ 0.8 (excellent quality habitat).

A summary of the HSI results undertaken during the Extended Phase 1 Habitat Survey is presented in **Table 4.4**.

Table 4.4 – Summary of HSI results of ponds assessed during the Extended Phase 1 Habitat Survey

HSI score	Number of waterbodies
< 0.5	12
0.5 – 0.59	19
0.6 – 0.69	16
0.7 – 0.79	22
≥ 0.8	5

4.2.2.6 Reptiles

A total of 24 areas of habitat potentially suitable for common reptile species was recorded within the survey area. These includes areas of rank grassland, debris piles, scrub, woodland edges and other ecotones. Of these 24 areas, a total of 12 have been identified as suitable habitat mosaics that could support large populations of common reptile species.

In addition, nine locations that could potentially be used by hibernating reptile species was also recorded, consisting of log piles and deadwood/fallen logs.

4.2.2.7 Hazel dormice

A total of 30 areas of suitable habitat for dormice was recorded within the survey area primarily consisting of hazel rich hedgerows or scrub land connected to woodland. These hedgerows, or areas of scrub, were identified as suitable for dormice due to a rich species diversity as well as the presence of hazel and connectivity to a wider woodland habitat. The locations of these habitats are as follows:

- TN401, H075, H076, H077, H078, H079, H085, H087 and H089 (**Figure 3e**);
- TN410 (**Figure 3f**);
- H127 and H136 (**Figure 3h**);
- H149, H154, H155, H156, H219, H221 and TN503 (**Figure 3i**);
- TN513, TN521, TN522, TN525, TN528, TN533, H231 and H228 (**Figure 3j**);
- TN535 (**Figure 3k**);
- TN552 (**Figure 3n**) and
- H176 (Tendring Brook).

A significant proportion of these are associated with the Great Holland Pits LWS.

There was also an area of scrub adjacent to Simon's Wood which contained hazel dormouse nest boxes at TN509, TN510 and TN512 (**Figure 3j**).

4.2.2.8 Invasive non-native species

One area of giant hogweed was recorded within the survey area (TN437, **Figure 3g**) and one ditch contained water fern *Azolla filiculoides* over approximately a five-metre length (TN566, **Figure 3r**).

5 Recommendations

Section 4.2 identifies those habitats within the survey area that have been noted as having the potential to support legally protected or notable species. It also records sightings/field signs for selected legally protected species. In light of these findings, and in order to characterise the ecological baseline, further Phase 2 species-specific surveys have been identified as required to characterise the ecological baseline. Details relating to these Phase 2 species-specific surveys are provided in the following sections.

5.1 Phase 2 species specific surveys

5.1.1 Birds (over-wintering and breeding)

Over-wintering and breeding bird surveys are ongoing. The methodology and findings are reported separately and have therefore not been repeated here.

5.1.2 Bat roost emergence/re-entry surveys

In accordance with the BCT guidance (BCT, 2016), all trees assessed as providing moderate or high suitability for supporting roosting bats will require additional surveys to confirm the likely presence and/or absence of a bat roost. In addition, any structures (i.e. buildings) that have been assessed as providing low, moderate or high suitability for roosting bats will also require a further survey effort.

Guidelines set out by the BCT state that all trees assessed as providing low suitability for supporting roosting bats should still be considered as potentially supporting opportunistic roosts in the future. Further surveys are not required to confirm presence or absence but mitigation measures for trees assessed as providing low suitability for roosting bats will be required (BCT, 2016).

The Extended Phase 1 Habitat Survey identified the following numbers of features that will require a further survey effort:

- Low (structures only) – seven;
- Low/moderate and moderate – 186; and
- Moderate/high and high – 12.

Each emergence / re-entry survey will be undertaken in accordance with the methodology outlined in the BCT guidelines (BCT 2016). For each building offering low suitability, one survey visit (i.e. one dusk emergence or one dawn re-entry) will be undertaken. For each building and/or tree offering moderate suitability, two survey visits (i.e. one dusk emergence survey and one dawn re-entry survey) will be undertaken. Each dusk emergence survey will commence 15 minutes before sunset and will stop 1.5-2 hours after sunset. The dawn re-entry surveys will commence 1.5-2 hours before sunrise and will stop 15 minutes after sunrise. All surveys will be undertaken at least two weeks apart and between May and September with one survey visit between May and August. For each building and/or tree offering high suitability, an additional dusk emergence or dawn re-entry survey will be undertaken, in line with the BCT guidelines.

Hand-held bat detectors (any type) and recording equipment to record any echolocation calls will be used for each survey. Laboratory sound-analysis will be used to identify the calls of any bat species picked up using the bat detectors. Species, timing and activity will be noted for each bat picked up during the survey.

Weather conditions including temperature, wind speed and precipitation, will be recorded at the start and end of each survey visit. Surveys will not be carried out when the temperatures are below 10°C at sunset, or during heavy rain or strong wind unless justified by the surveying ecologist.

5.1.3 Bat activity transects and static detector surveys

Those linear habitats (i.e. hedgerows and watercourses) with the potential to support commuting and foraging bats will be subject to further survey effort to confirm the species assemblage utilising these habitats. In accordance with the BCT guidelines (BCT 2016), all habitats assessed as providing moderate or high suitability for supporting commuting and/or foraging bats will require further bat activity surveys in order to confirm the number of bats, whether they are used by foraging and/or commuting bats, and to identify the species which might be present.

All features assessed as providing low suitability for supporting commuting and/or foraging bats will still be considered as potentially supporting small numbers of commuting/foraging bats, but further surveys are not necessary to confirm presence or absence, as set out by the BCT guidelines (BCT 2016). Mitigation

measures for features assessed as providing low suitability for commuting and/or foraging bats will be required.

The Extended Phase 1 Habitat Survey identified the following numbers of features that will require a further survey effort:

- Moderate – 130; and
- High – two.

Each monthly bat activity transect surveys will be undertaken in accordance with the guidelines (BCT 2016). Transect surveys will involve walking at a constant speed along each linear bat habitat recording observations such as number of bats, flight direction, flight height, behaviour, appearance and relative speed.

Static detector surveys will comprise the placement of a static detector at locations identified as suitable, such as within hedgerows or along woodland edges. Data from these surveys will be recorded and subject to laboratory sound-analysis to identify species and numbers of passes following each survey.

Each habitat scoped into the survey, and assessed as providing moderate or high suitability for commuting or foraging bats, will be subject to one transect survey visit per month between April and October (a total of seven visits), including one dusk and pre-dawn survey within a 24-hour period, and static bat detector surveys at up to three locations within each habitat collected on five consecutive nights per month, including one dusk and pre-dawn survey within a 24 hour period. Each transect survey will commence at sunset and stop 2-3 hours after sunset. The static detector surveys will commence 30 minutes before sunset and stop 15 minutes after sunrise.

The surveyors will use hand-held bat detectors (any type) and recording equipment to record any echolocation calls picked up during each survey. The same model of detector will be used for all surveys. Laboratory sound analysis will be used to identify the calls of any bat species picked up using the bat detectors.

Weather conditions including temperature, wind speed and precipitation, will be recorded at the start and end of each survey visit. Surveys will not be undertaken when the temperature is below 10°C at sunset, or during heavy rain or strong wind, unless justified by the surveying ecologist.

5.1.4 Water vole and otter

All 14 waterbodies identified as providing optimal habitat for water vole and/or otter during the Extended Phase 1 Habitat Survey, plus all watercourse located within Holland Haven Marshes SSSI, will be subject to two separate survey visits.

The water vole surveys will be undertaken in accordance with the protocol for Environmental Assessment Surveys set out in the Water Vole Conservation Handbook (Strachan et al. 2011) and the Water Vole Mitigation Handbook (Dean et al., 2016). Surveys will be undertaken from the banks. Surveyors will search for field signs of water voles primarily within the marginal vegetation along the bank toe and along the length of the watercourse, including a buffer of 50m upstream and downstream, and up to 1m either side of this vegetation along one bank of the watercourse. All field signs of water vole will be recorded, including sightings, burrows, latrines, feeding stations, lawns, nests, footprints and runways. Field signs, habitat information, and weather conditions at the time of the survey will also be recorded alongside their location.

Otter surveys (comprising two separate visits) will be undertaken in accordance with the protocol set out by SNH (SNH, 2019). Surveys will be conducted on one bank for the full length of each optimal watercourse, plus an additional 250m upstream and 250m downstream. Each watercourse will be walked by an ecologist, and all field signs of otter will be recorded. This will include spraints, holts, couches, prints, feeding remains, anal jelly and sightings, as well as signs of mink. The field sign and its location will be recorded.

The water vole and/or otter survey will consist of two separate survey visits, one undertaken during the first half of the water vole breeding season (e.g. between April and June (inclusive)) and the second visit will be undertaken during the second half of the water vole breeding season (e.g. between July and September (inclusive)). Surveys for water vole and/or otter will not be undertaken following heavy rain.

Due to the potential overlap in survey methodology and in habitats, the otter survey may be undertaken concurrently with the water vole survey.

5.1.5 Great crested newt

All standing waterbodies (i.e. ponds and ditches) within and up to 250m of the onshore project area will be subject to an environmental DNA (eDNA) survey in accordance with the field sampling protocol set out in Biggs et al. (2014). The eDNA survey will be undertaken by licenced surveyors (Licence: CL08) at the appropriate time of year (e.g. between mid-March and the end of June (inclusive)). Water samples from each pond will be collected from around the accessible parts of each waterbody perimeter by a great crested newt licenced ecologist, including open water areas and areas with vegetation present. Each water body sampling will be completed with a fresh sampling pack to avoid cross contamination.

Each sample will then be sent to an approved laboratory for analysis for eDNA in accordance with approved field and laboratory protocols (Biggs et al., 2014). The presence or absence of great crested newts from each of the surveyed ponds will be determined based on the results of the eDNA analysis.

5.1.6 Reptiles

Areas of habitats suitable to support large numbers of common reptile species was recorded within the onshore project area. These habitat mosaics provide all the suitable habitat elements required by reptiles including hibernacula, basking and foraging areas.

Reptile presence/likely absence surveys will be undertaken in accordance with the protocol set out in the JNCC's Herpetofauna Worker's Manual (2003). The survey will involve the placement of artificial refugia (tiles/tins) within each suitable location and within area of optimal habitat. A total of seven separate visits will be undertaken and during each visit all refugia will be checked for the presence of reptiles. These visits will be undertaken during April, May and September. A minimum of 48hrs will be left between each survey visit.

Weather conditions will be recorded during each visit. Each survey visit will be undertaken during the morning and/or late afternoon, with the intention to coincide with the optimal temperature window (10-17 degrees Celsius).

5.1.7 Hazel dormice

Areas of suitable habitat for hazel dormice within the onshore project area will be subject to a dormouse presence/absence survey, using a combination of nest tubes and/or nest boxes. The survey will be undertaken in accordance with the methodology presented in the Dormouse Conservation Handbook (2nd

Ed.) (English Nature, 2006). Nest tubes/nest boxes will be placed 15-20m apart within suitable habitat and checked every two months between April and October.

Weather conditions will be recorded during each visit and all surveys will be undertaken by an ecologist who holds a dormice survey and handling licence (Licence: CL10a).

5.1.8 Invertebrates

An invertebrate survey effort has been undertaken within the Holland Haven Marshes SSSI. The methodology and findings are reported separately and have therefore not been repeated here.

5.1.9 National Vegetation Classification

A National Vegetation Classification (NVC) survey effort has been undertaken within the Holland Haven Marshes SSSI. The methodology and findings are reported separately and have therefore not been repeated here.

5.2 Survey programme

Based on the results obtained from the 2021 and 2022 survey, the provisional onshore ecology survey programme for 2022 is presented in **Table 5.1**.

Table 5.1 – Proposed onshore ecology survey programme

Survey	Proposed survey date
Over-wintering bird surveys	October 2020 – March 2021 (completed at cable landfall search area) October 2021 – March 2022 (completed throughout the survey area)
Functionally-linked land survey of ex situ SPA habitats	October 2021 – March 2022 (completed throughout the survey area)
On-passage bird surveys	August – September 2021 (completed at cable landfall search area) August – September 2022 (to be completed at cable landfall search area)
Breeding bird surveys	April – July 2021 (completed at cable landfall search area) April – July 2022 (in progress at cable landfall search area)
Bat emergence/re-entry surveys	May – September 2022
Bat activity surveys	April – October 2022
Water vole surveys	Mid-April – June 2022 (1st survey visit) July – September 2022 (2nd survey visit)
Otter surveys	March – September 2022
Great crested newt surveys	Mid-April – June 2022
Reptile surveys	April – June, September 2022
Hazel dormice surveys	April – October 2022

5.3 Summary of Phase 2 survey requirements

Table 5.2Error! Reference source not found. provides a summary of the Phase 2 species-specific surveys that have been identified based on the findings of the Extended Phase 1 Habitat Survey. Further information on the suite of Phase 2 surveys is provided in **Section 5.1** and an indicative survey programme is provided in **Section 5.2**.

Table 5.2 – Summary of Phase 2 survey requirements

Species	Phase 2 survey required (yes/no)
Birds	**Yes** – a suite of over-wintering and breeding bird surveys have been undertaken in 2020/2021 and 2022, no further surveys beyond these are proposed.
Badgers	Information relating to badger is reported in **Appendix D**.
Bats	**Yes** – further surveys to confirm the presence of roosting bats (dusk/dawn emergence/re-entry survey) and commuting/foraging bats (monthly activity and static detector surveys) will be undertaken within all suitable habitat within the onshore project area.
Water vole and otter	**Yes** – presence/absence surveys will be undertaken of all waterbodies within the onshore project area.
Great crested newt	**Yes** – an eDNA survey to establish the presence or likely absence of great crested newts in ponds and ditches within and up to 250m of the onshore project area will be undertaken.
Reptiles	**Yes** – presence/absence surveys will be undertaken within all areas of suitable habitat that may support significant populations of common reptile species within the onshore project area.
Hazel dormice	**Yes** – presence/absence surveys will be undertaken within all areas of suitable habitat within the onshore project area.

6 Conclusion

An Extended Phase 1 Habitat Survey was undertaken in April, July, September and October 2021, and March 2022 to record the habitats within the onshore project area plus a 50m buffer and to identify suitability for these habitats to support legally protected and notable species.

The following designated sites are located within a 2km buffer of the onshore project area:

- Statutory designated sites:
  - Hamford Water (SSSI, SPA, SAC, Ramsar and NNR);
  - Stour and Orwell Estuaries (SPA and Ramsar);
  - Stour Estuary SSSI;
  - Holland Haven Marshes SSSI;
  - Holland On-Sea Cliff SSSI;
  - Holland Haven LNR; and
  - Pickers Ditch Meadow LNR.
- Non-statutory designated sites:
  - Great Holland Pits LWS.

At the time of writing this report, we are yet to receive confirmation on any additional non-statutory sites from the Essex Field Club, the report will be updated once this data is received.

The following UK Habitats of Principal Importance are present within the onshore project area:

- Coastal and floodplain grazing marsh;

- Ancient woodland;
- Deciduous woodland;
- Semi-improved grassland;
- Hedgerows;
- Arable field margins;
- Lowland meadows;
- Reedbeds;
- Rivers; and
- Ponds.

The onshore project area is dominated by arable fields interspersed with field margin drains, rivers and areas of scattered and dense scrub. Field boundaries are typically hedgerows (species-poor intact and/or defunct) and dominated by hawthorn and/or blackthorn. Other habitats are present which are considered to be of a higher ecological value such as semi-improved grassland, improved grassland, marshy grassland, woodland (broadleaved and mixed semi-natural and plantation), waterbodies, trees, tall ruderal, woodland/scrub successional habitats and areas of scrub.

Key features for protected and notable species have been recorded within the onshore project area and further surveys to the confirm their presence and/or likely absence have been identified. A summary of the features recorded during the Extended Phase 1 Habitat Survey is provided in **Table 6.1**.

Table 6.1 – Summary of features recorded during the Extended Phase 1 Habitat Survey

Species	Summary of key findings
Bat (roosting)	In total 494 features were assessed for their suitability to support roosting bats. Of these 91 were assessed as providing negligible suitability for roosting bats, five were assessed as providing negligible/low suitability for roosting bats, 200 were assessed as providing low suitability, 20 as providing low/moderate suitability, 166 as providing moderate suitability, eight as providing moderate/high and four as having high suitability.
Bats (commuting/foraging)	In total, 238 features were assessed as for their suitability for commuting and foraging bats. Of these, 55 were assessed as providing negligible suitability, 51 features as providing low suitability, 130 as providing moderate suitability and two as having high suitability.
Water vole and otter	A total of 168 watercourses were recorded within the survey area which comprised of standing water, running water (e.g. rivers or ditches) and dry ditches. Of these 168 watercourses, 14 were assessed as being suitable to support water voles and one as being suitable to support otters.
Great crested newt	A total of 74 waterbodies (i.e. ponds and ditches) were subject to a HSI assessment during the Extended Phase 1 Habitat Survey.
Reptiles	A total of 24 areas of suitable reptile habitat was recorded within the survey area, of which 12 are potentially suitable for supporting large numbers of common reptiles.
Hazel dormice	A total of 30 areas of suitable habitat for dormice was recorded within the survey area primarily consisting of hazel rich hedgerows connected to woodland, or areas of hazel rich woodland.
Invasive non-native species	One area of giant hogweed was recorded within the survey area and one area of water fern.

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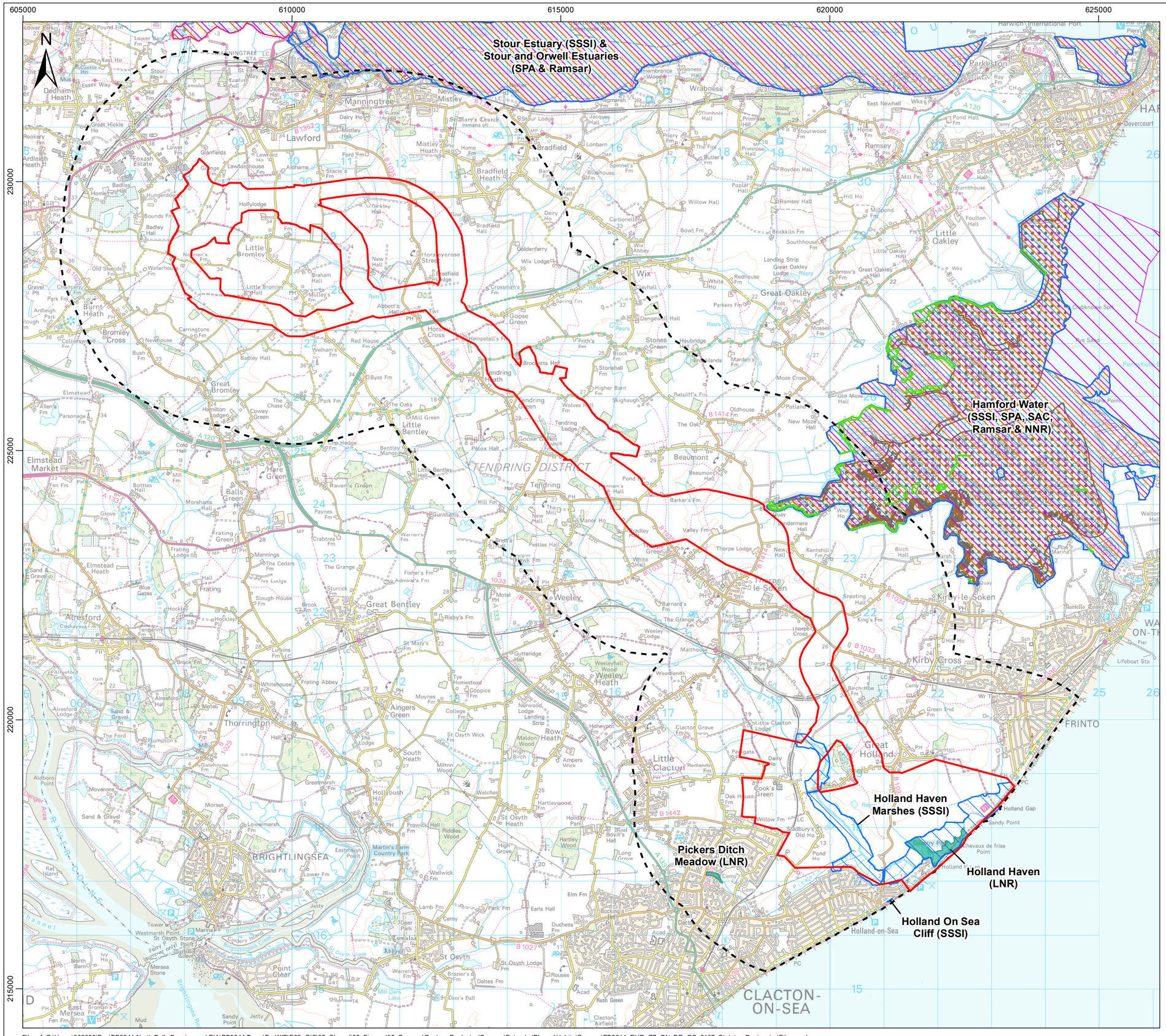
Appendix A – Figures



Legend

- Onshore Project Area
- Onshore Project Area 2km Buffer
- Site of Special Scientific Interest (SSSI)
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Ramsar
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)

0 1 2 4 km

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Drawing Title

Statutory Designated Sites

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01	26/11/2021	First issue	FC	CC

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Offshore Wind Farm

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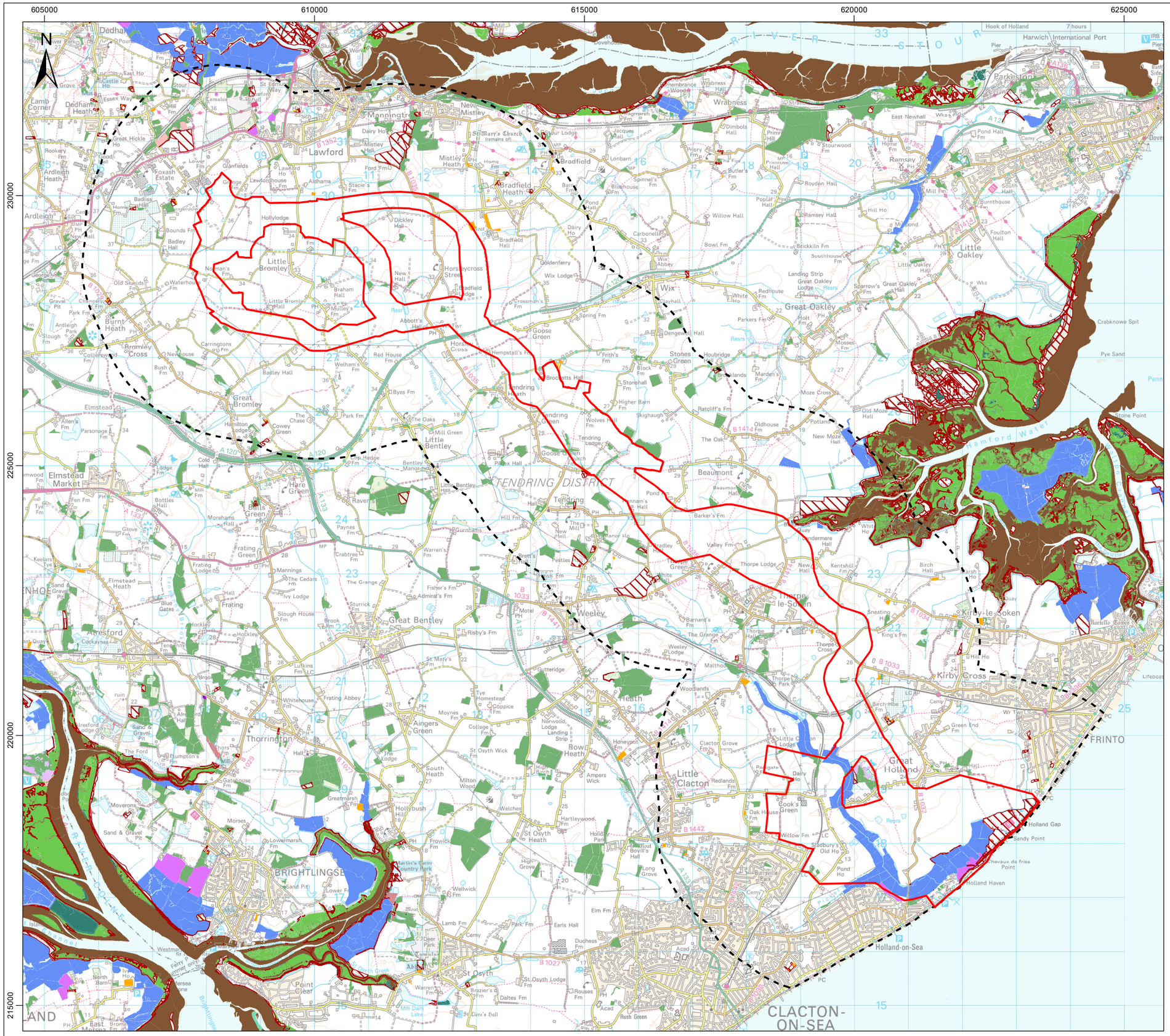

Legend

- Onshore Project Area
- Onshore Project Area 2km Buffer

Priority Habitat Type

- Coastal and Floodplain Grazing Marsh
- Coastal Saltmarsh
- Coastal Vegetated Shingle
- Deciduous Woodland
- Good Quality Semi-Improved Grassland
- Lowland Dry Acid Grassland
- Lowland Fens
- Lowland Heathland
- Lowland Meadows
- Mudflats
- No Main Habitat but Additional Habitats Present
- Purple Moor Grass and Rush Pastures
- Reedbeds
- Traditional Orchard

0 1 2 4 km

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Drawing Title

UK Habitats of Principal Importance

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01	26/11/2021	First issue	FC	CC

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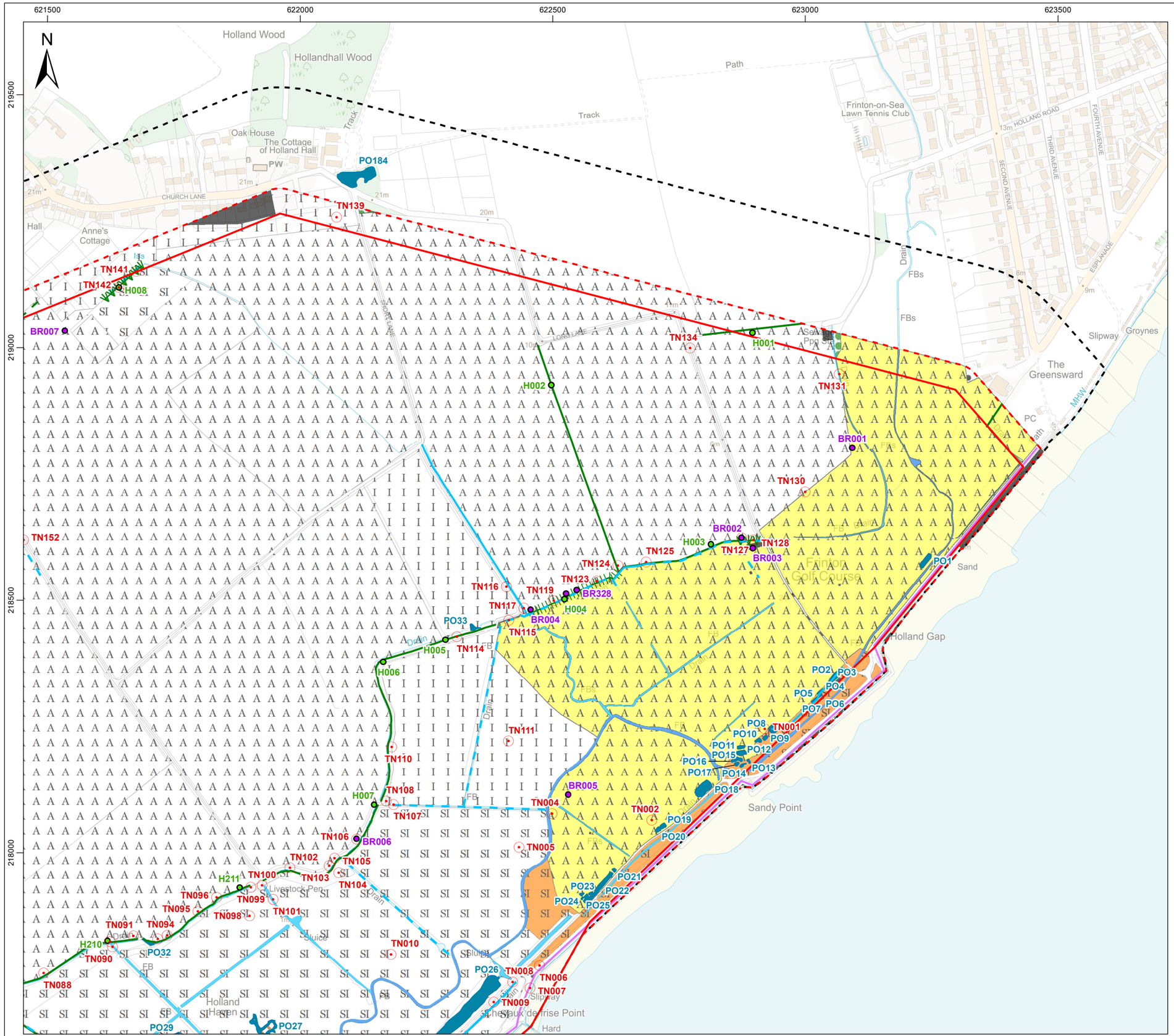

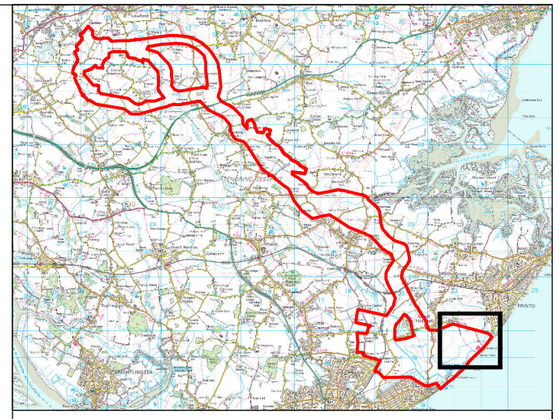

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Intact Hedge - Species-Poor
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Artificial Sea Wall
- Scrub - Dense/Continuous
- Broadleaved Parkland/Scattered Trees
- Neutral Grassland - Semi-Improved
- Improved Grassland
- Poor Semi-Improved Grassland
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Running Water
- Boulders/Rocks above High Tide Mark
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Buildings
- Bare Ground
- Pond

0 100 200 400 Metres

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Drawing Title

Extended Phase 1 Habitat Survey

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02	19/11/2021	Second issue	FC	CC
01	19/07/2021	First issue	FC	CS

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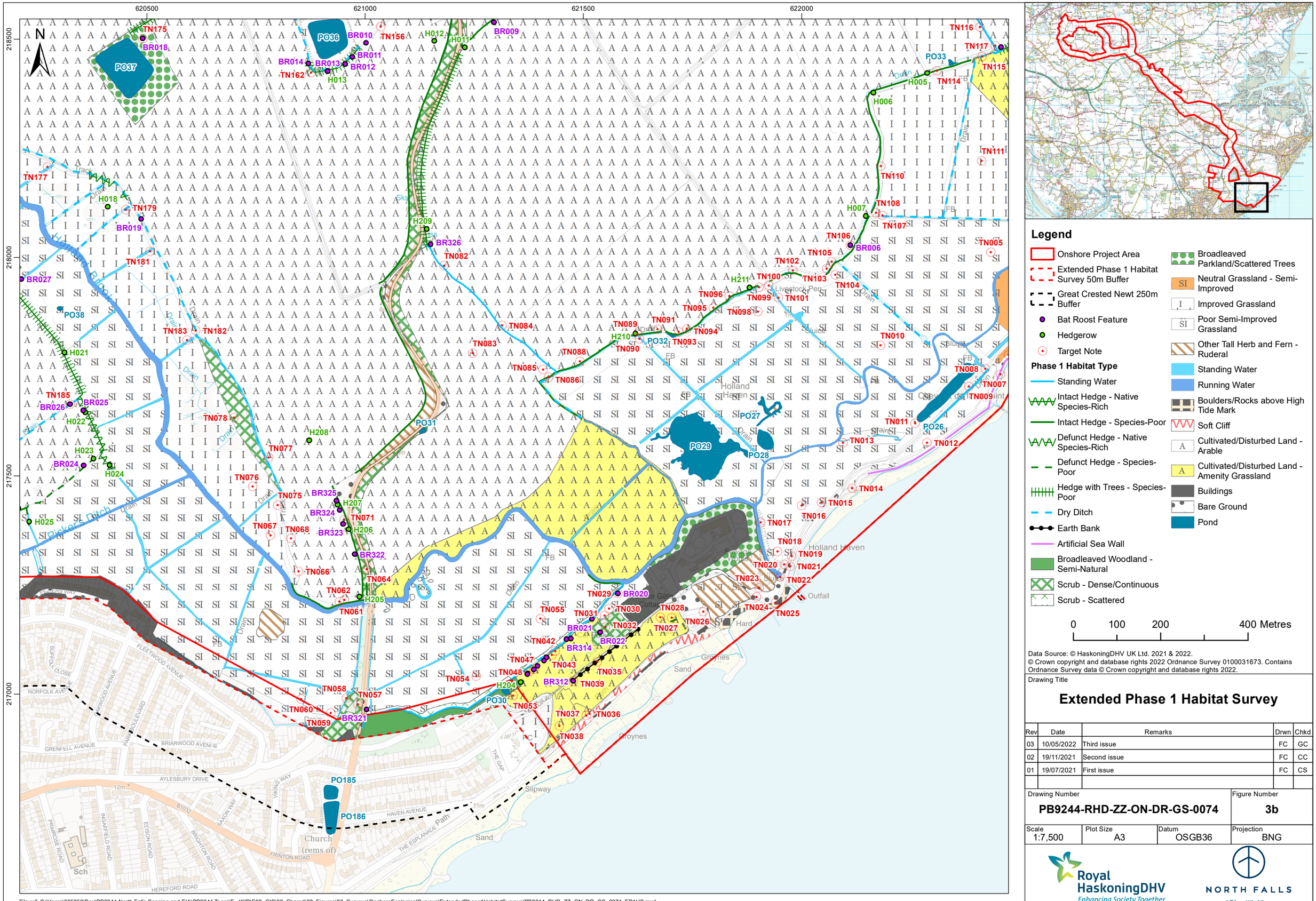

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Species-Poor
- Dry Ditch
- Earth Bank
- Artificial Sea Wall
- Broadleaved Woodland - Semi-Natural
- Scrub - Dense/Continuous
- Scrub - Scattered
- Broadleaved Parkland/Scattered Trees
- Neutral Grassland - Semi-Improved
- Improved Grassland
- Poor Semi-Improved Grassland
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Running Water
- Boulders/Rocks above High Tide Mark
- Soft Cliff
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Buildings
- Bare Ground
- Pond

0 100 200 400 Metres

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01	19/07/2021	First issue	FC	CS

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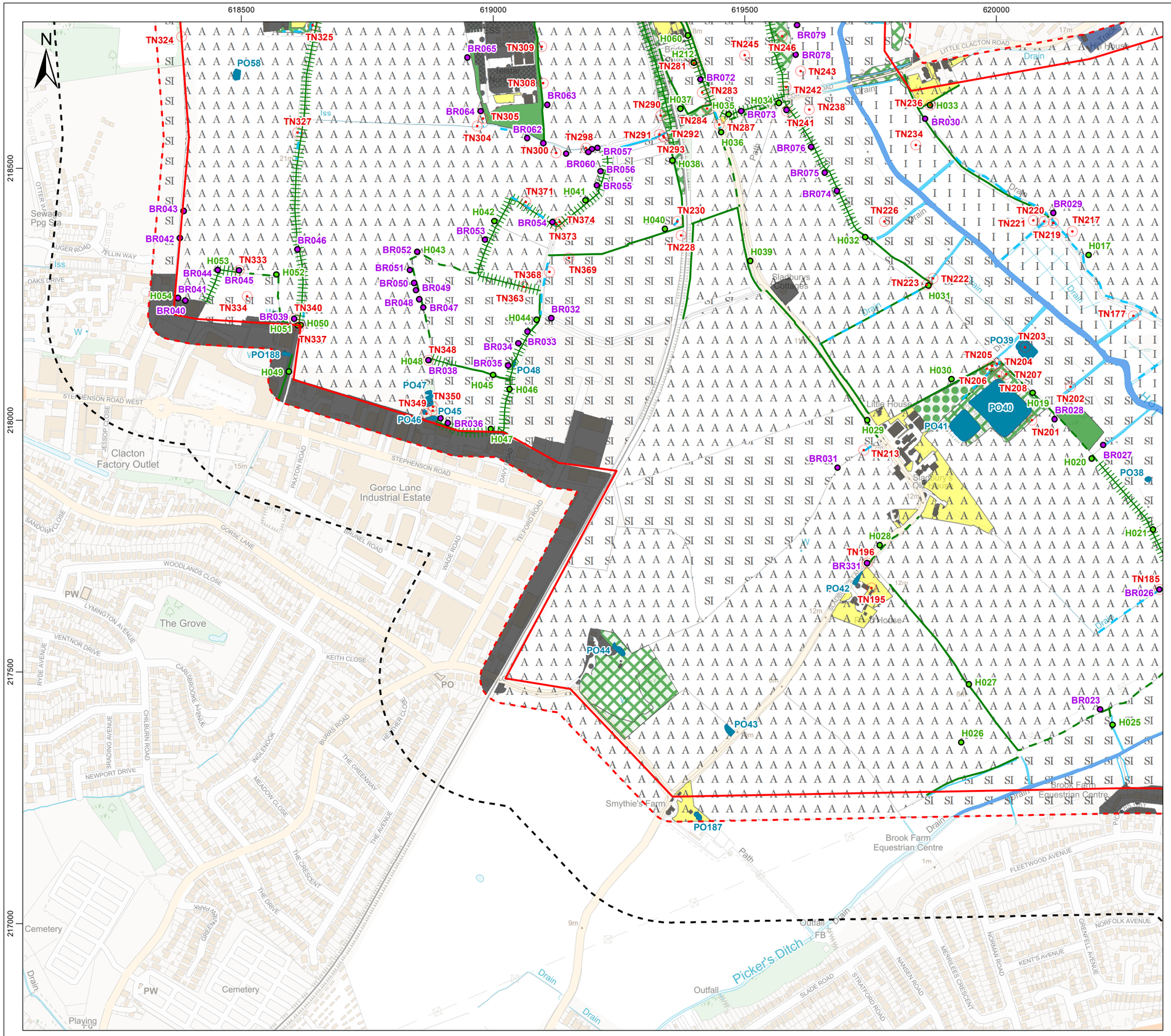

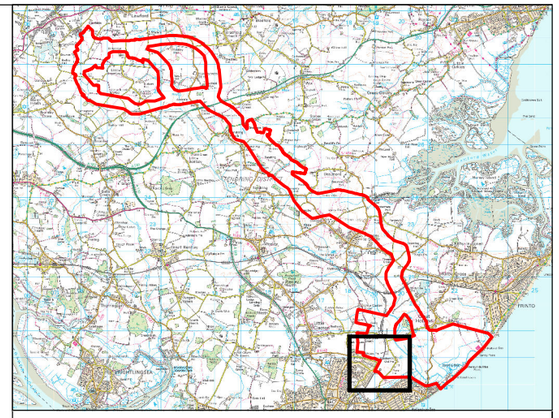

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Intact Hedge - Species-Poor
- Defunct Hedge - Species-Poor
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Scrub - Dense/Continuous
- Broadleaved Parkland/Scattered Trees
- Improved Grassland
- Poor Semi-Improved Grassland
- Standing Water
- Running Water
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Buildings
- Bare Ground
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Buildings

0 100 200 400 Metres

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Drawing Title

Extended Phase 1 Habitat Survey

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01	19/07/2021	First issue	FC	CS

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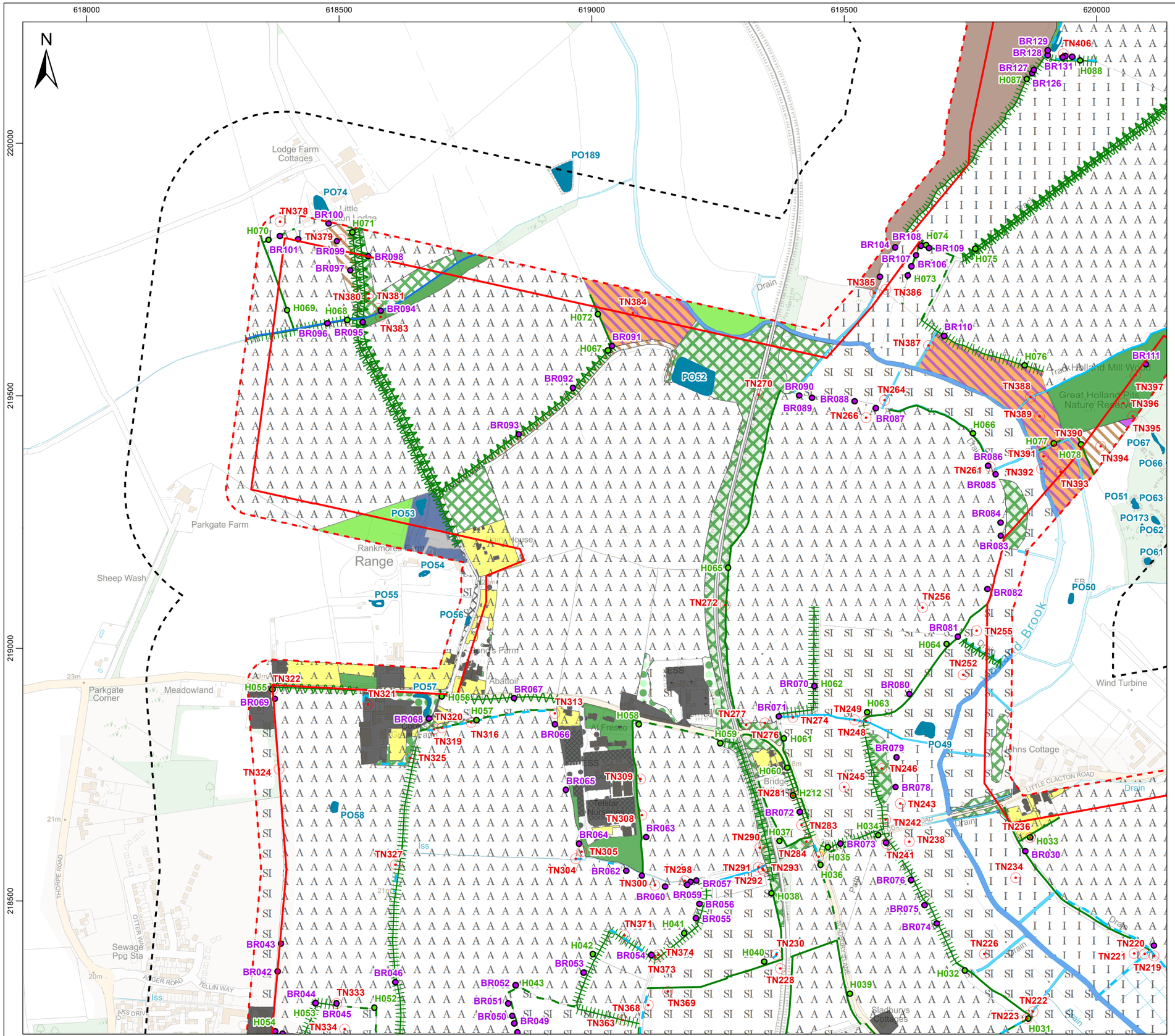

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
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- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
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- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Scrub - Dense/Continuous
- Broadleaved Parkland/Scattered Trees
- Mixed Parkland/Scattered Trees
- Improved Grassland
- Marsh/Marshy Grassland
- Poor Semi-Improved Grassland
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Running Water
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Caravan Site
- Buildings
- Bare Ground
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Arable
- Bare Ground
- Buildings
- Grassland
- Woodland

0 100 200 400 Metres

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Drawing Title

Extended Phase 1 Habitat Survey

Rev	Date	Remarks	Drwn	Chkd
03	10/05/2022	Third issue	FC	GC
02	19/11/2021	Second issue	FC	CC
01	19/07/2021	First issue	FC	CS

Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3d

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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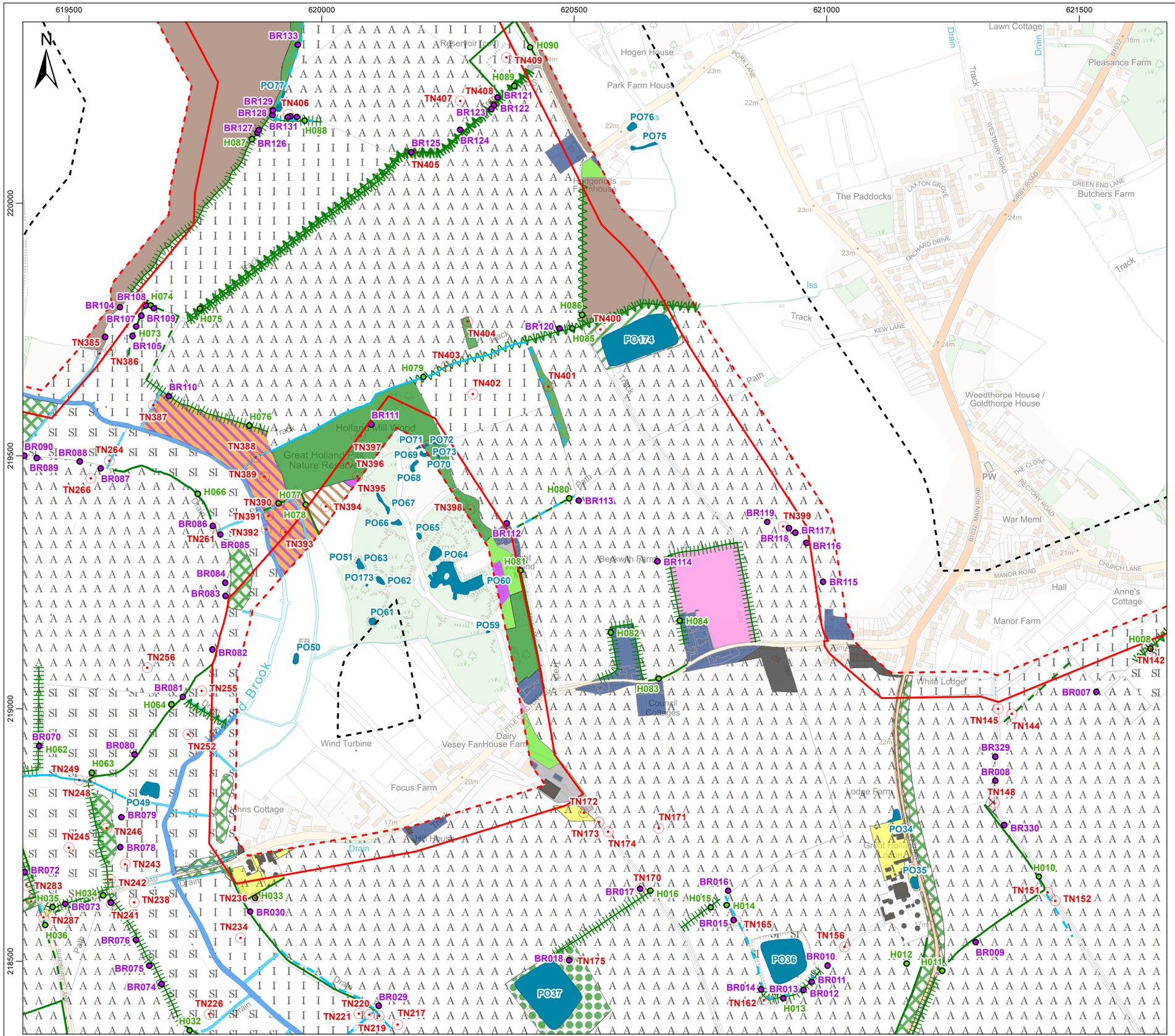

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Drawing Title

Extended Phase 1 Habitat Survey

Rev	Date	Remarks	Drwn	Chkd
03	10/05/2022	Third issue	FC	GC
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01	19/07/2021	First issue	FC	CS

Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3e

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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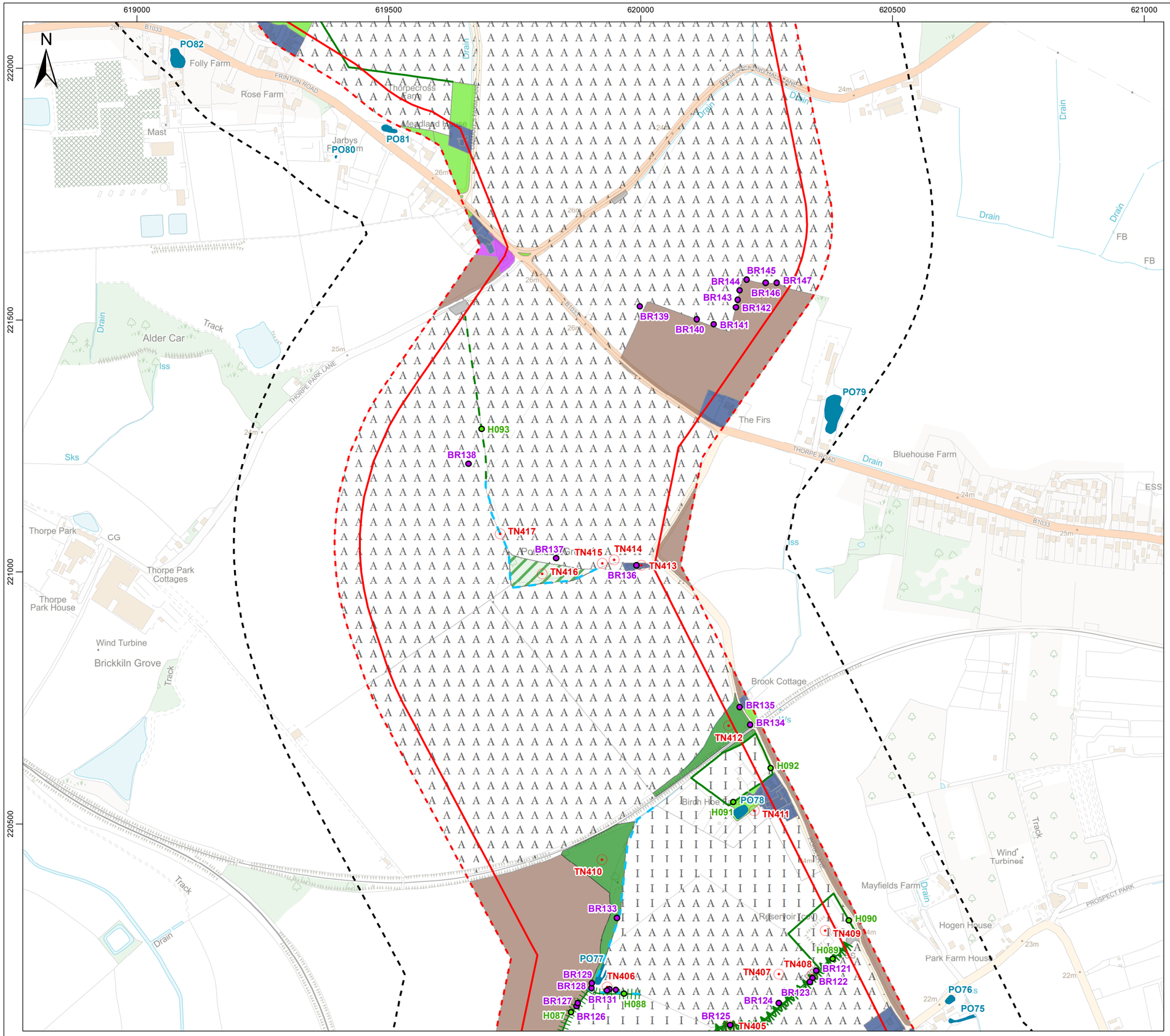

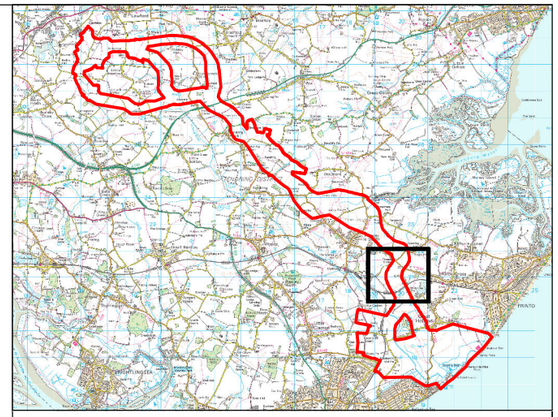

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Intact Hedge - Species-Poor
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Broadleaved Woodland - Plantation
- Improved Grassland
- Standing Water
- Cultivated/Disturbed Land - Arable
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Arable
- Bare Ground
- Buildings
- Grassland
- Woodland

0 100 200 400 Metres

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Drawing Title

Extended Phase 1 Habitat Survey

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Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3f

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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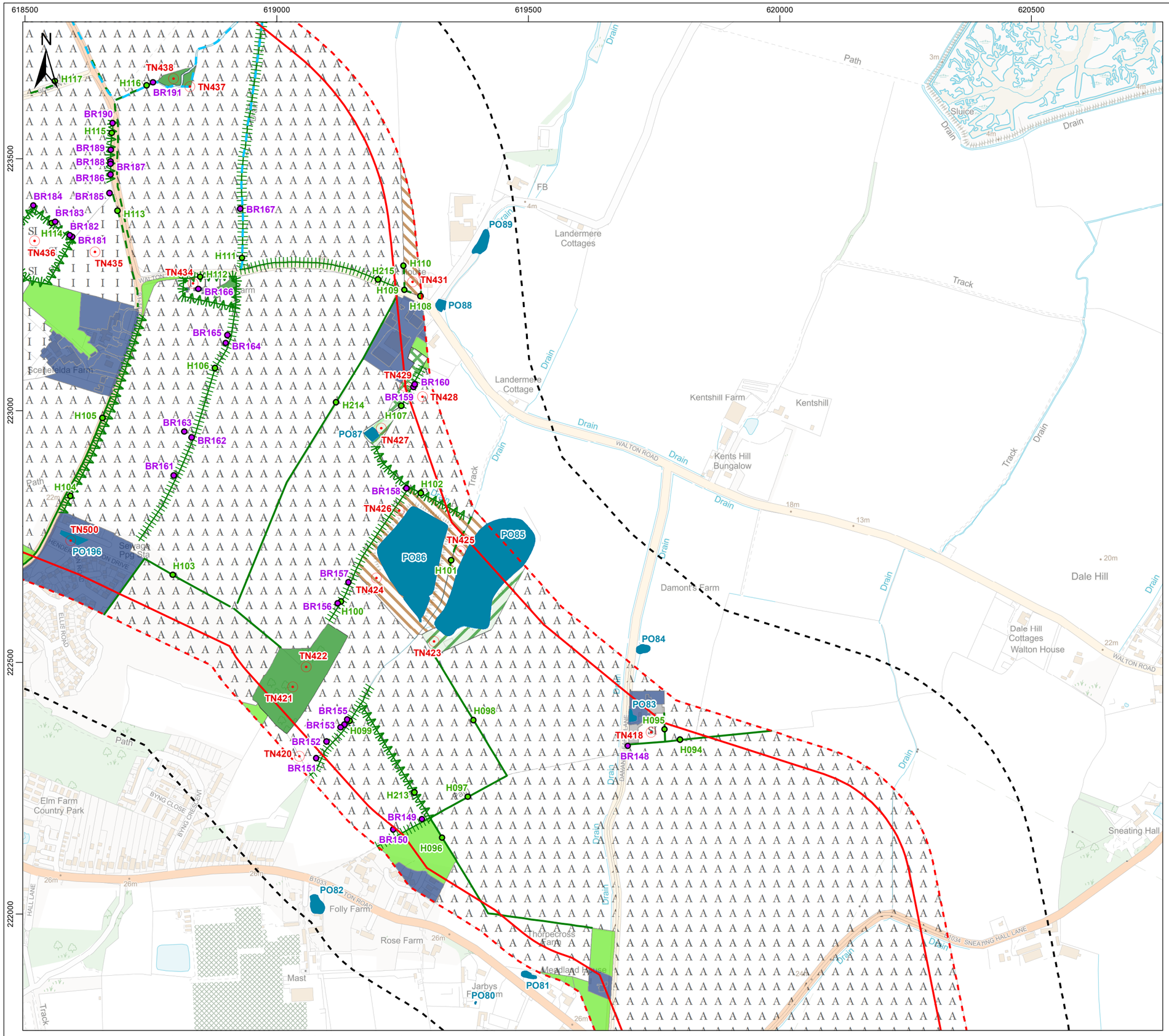

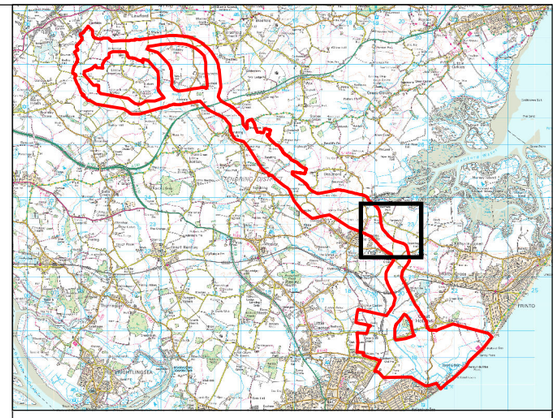

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Intact Hedge - Species-Poor
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Broadleaved Woodland - Plantation
- Mixed Woodland - Plantation
- Scrub - Dense/Continuous
- Improved Grassland
- Poor Semi-Improved Grassland
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Cultivated/Disturbed Land - Arable
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Bare Ground
- Buildings
- Grassland

0 100 200 400 Metres

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Extended Phase 1 Habitat Survey

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Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3g

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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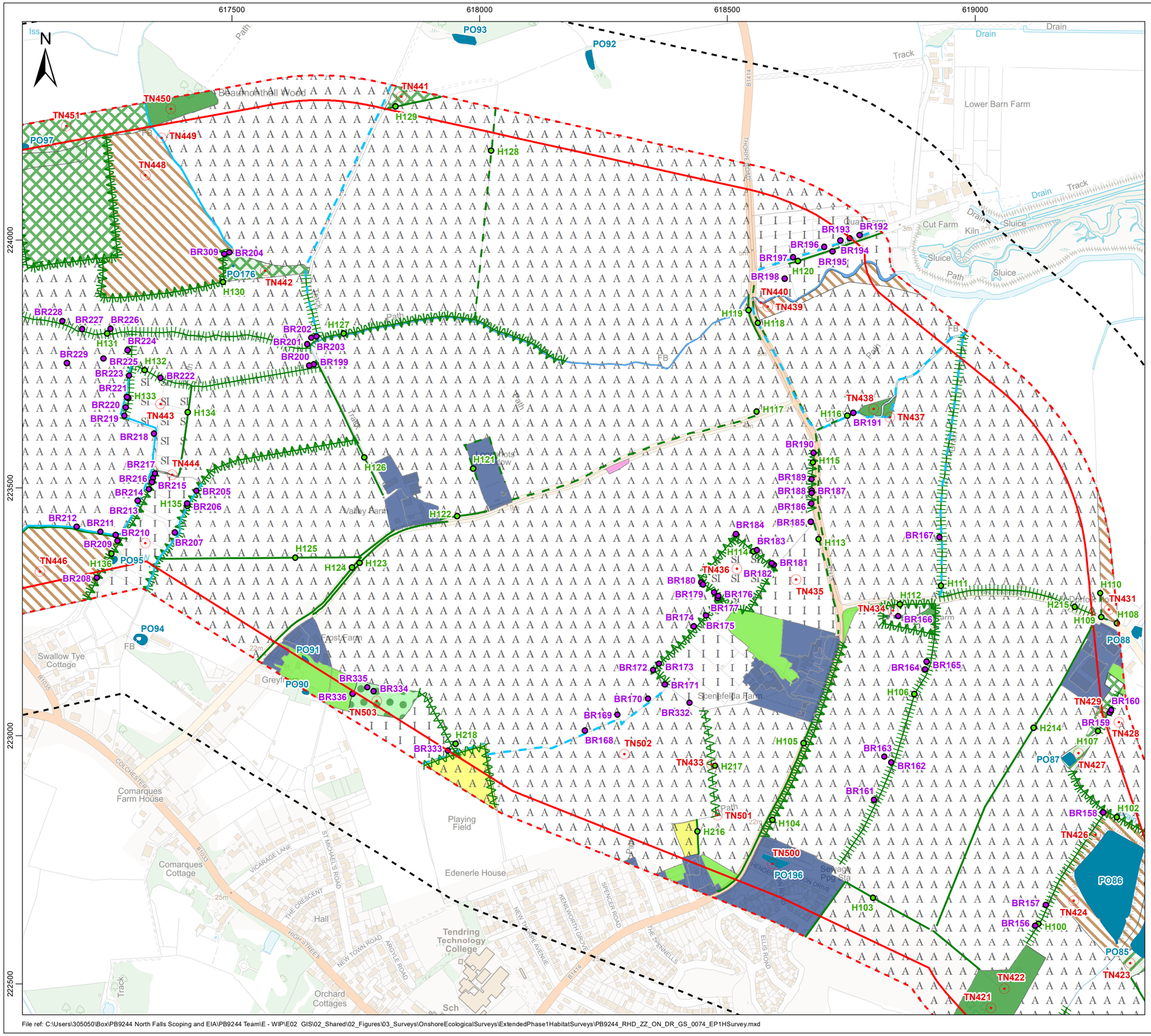

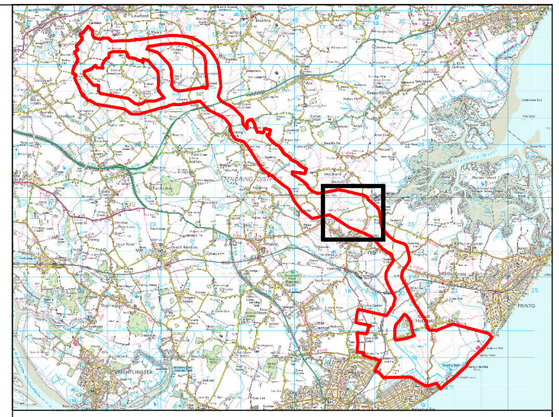

Legend

- Onshore Project Area
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- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Broadleaved Woodland - Plantation
- Mixed Woodland - Semi-Natural
- Mixed Woodland - Plantation
- Scrub - Dense/Continuous
- Improved Grassland (I)
- Poor Semi-Improved Grassland (SI)
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Running Water
- Cultivated/Disturbed Land - Arable (A)
- Cultivated/Disturbed Land - Amenity Grassland (A)
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Buildings
- Grassland
- Scrub

0 100 200 400 Metres

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Drawing Title

Extended Phase 1 Habitat Survey

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Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3h

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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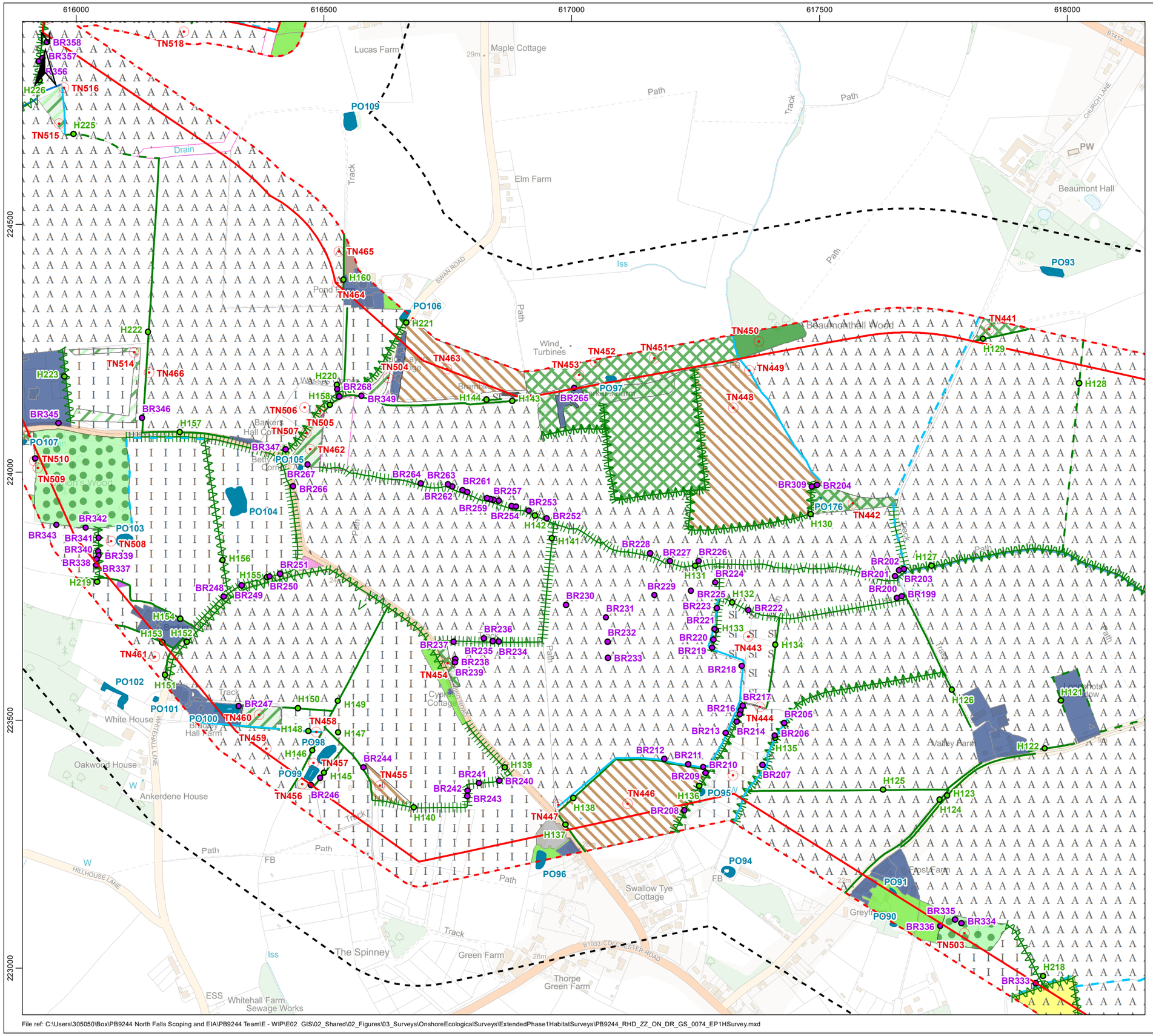

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Running Water
- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Broadleaved Woodland - Plantation
- Mixed Woodland - Semi-Natural
- Mixed Woodland - Plantation
- Scrub - Dense/Continuous
- Arable Field Margin
- Improved Grassland
- Poor Semi-Improved Grassland
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Running Water
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Buildings
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Arable
- Bare Ground
- Buildings
- Grassland
- Scrub
- Woodland

0 100 200 400 Metres

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Drawing Title

Extended Phase 1 Habitat Survey

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Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3i

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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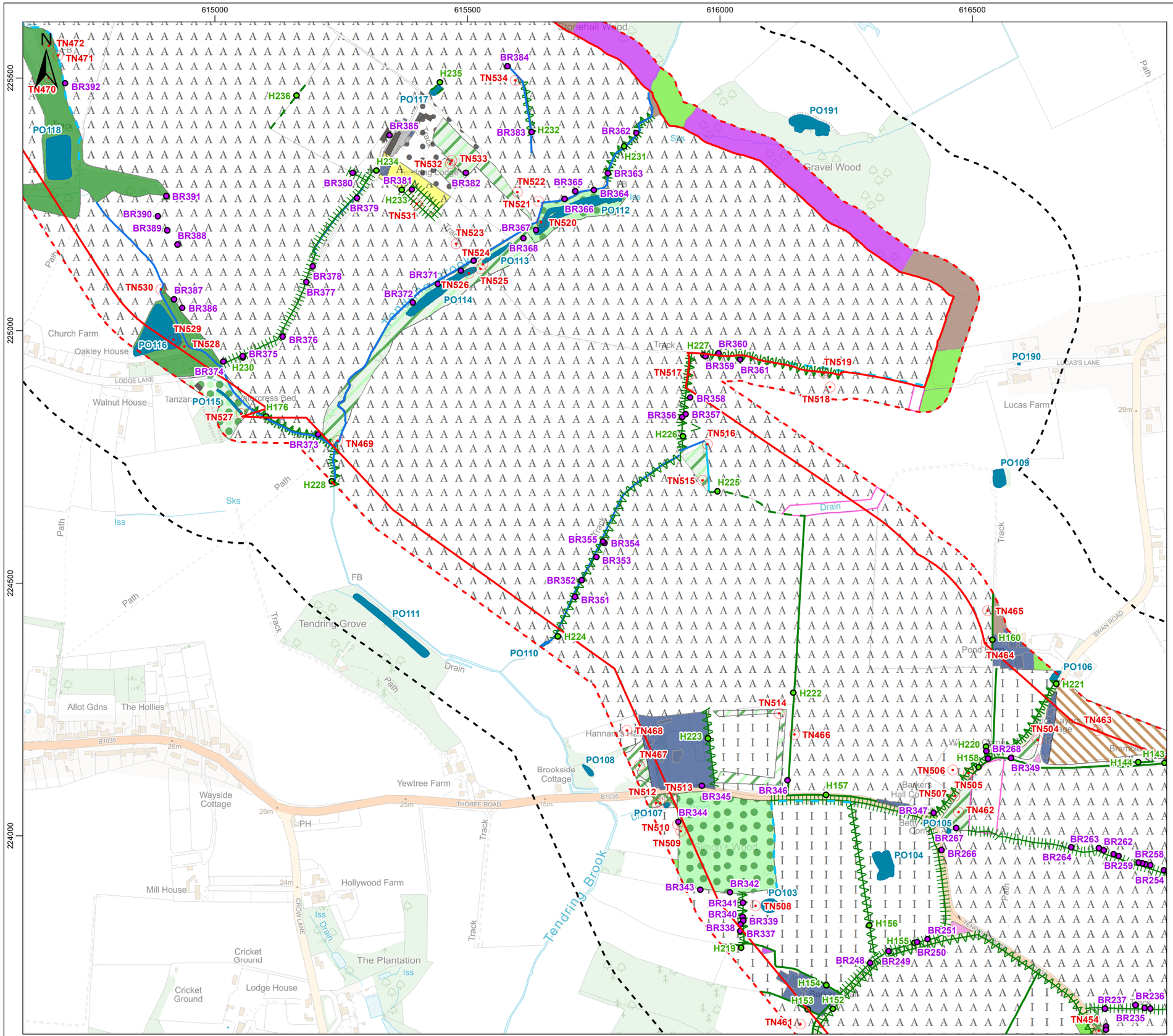

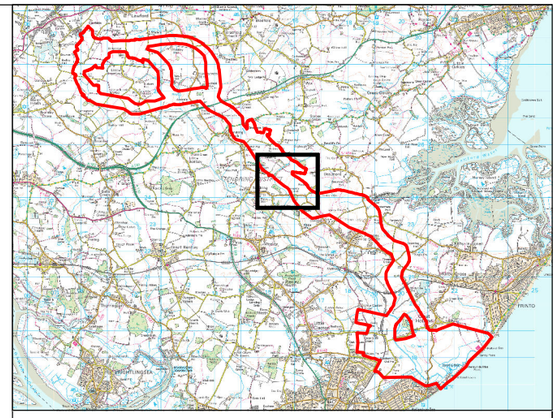

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Running Water
- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Broadleaved Woodland - Plantation
- Mixed Woodland - Semi-Natural
- Mixed Woodland - Plantation
- Scrub - Dense/Continuous
- Mixed Parkland/Scattered Trees
- Arable Field Margin
- Improved Grassland
- Poor Semi-Improved Grassland
- Bracken - Scattered
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Running Water
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Buildings
- Bare Ground
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Hedgerow
- Arable
- Bare Ground
- Buildings
- Grassland
- Scrub
- Woodland

0 100 200 400 Metres

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Drawing Title

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03	10/05/2022	Third issue	FC	GC
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Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3j

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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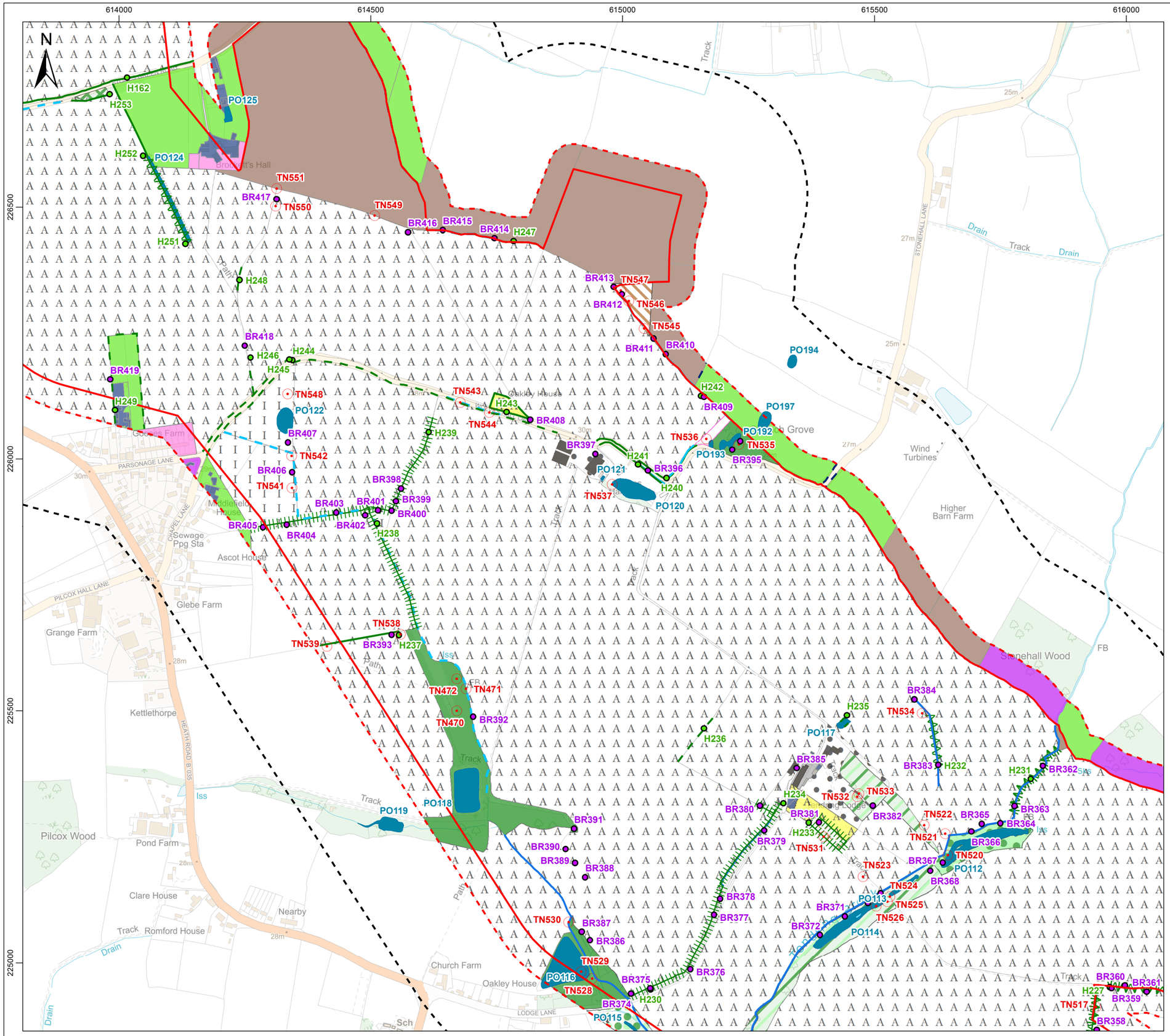

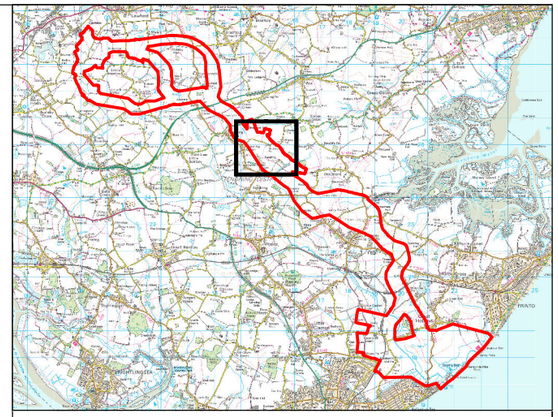

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Running Water
- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Mixed Woodland - Semi-Natural
- Mixed Woodland - Plantation
- Scrub - Dense/Continuous
- Mixed Parkland/Scattered Trees
- Arable Field Margin
- Improved Grassland
- Bracken - Scattered
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Running Water
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Buildings
- Bare Ground
- Other Habitat
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Hedgerow
- Arable
- Bare Ground
- Buildings
- Grassland
- Scrub
- Standing Water
- Woodland

0 100 200 400 Metres

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PB9244-RHD-ZZ-ON-DR-GS-0074	3k

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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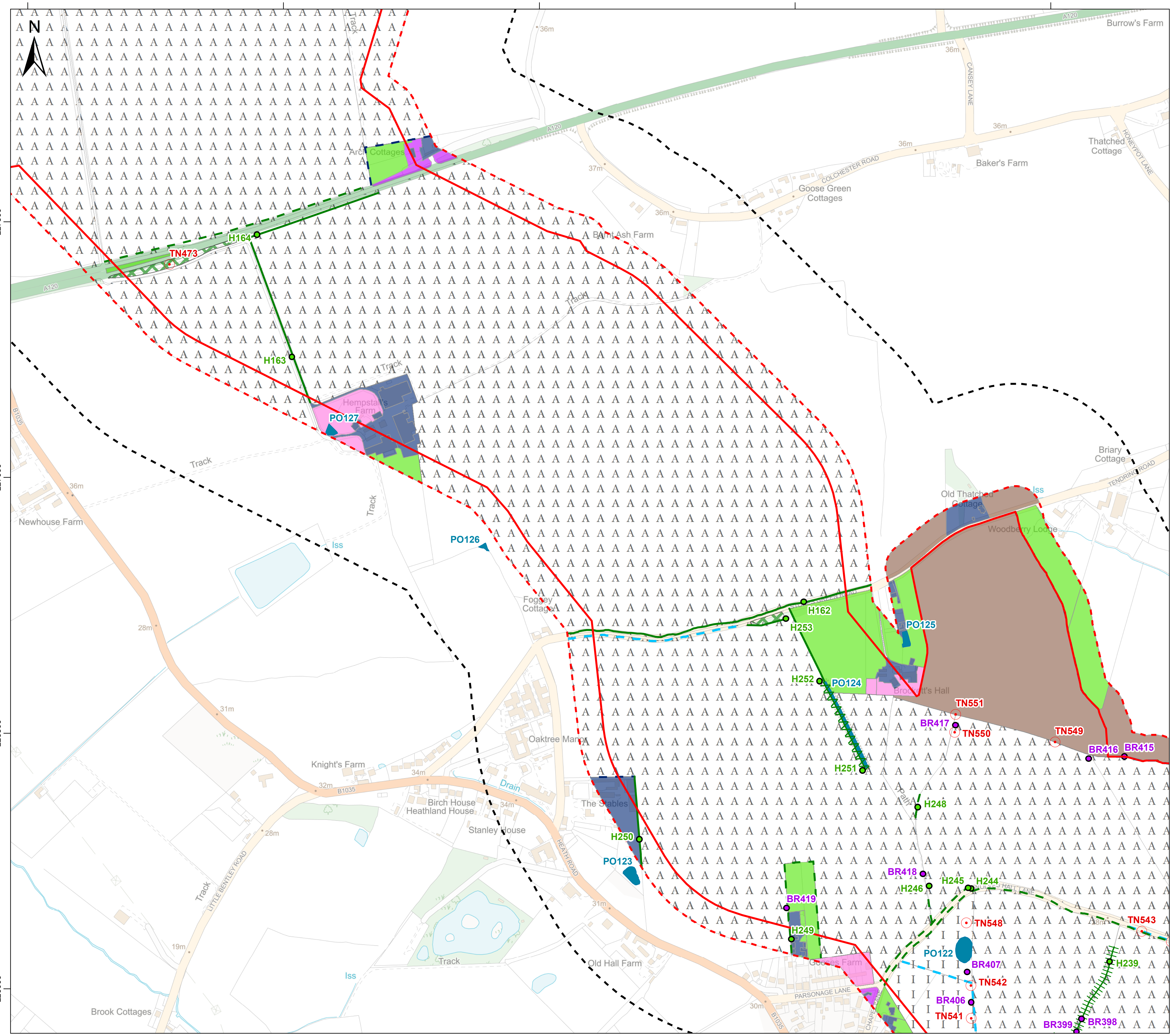

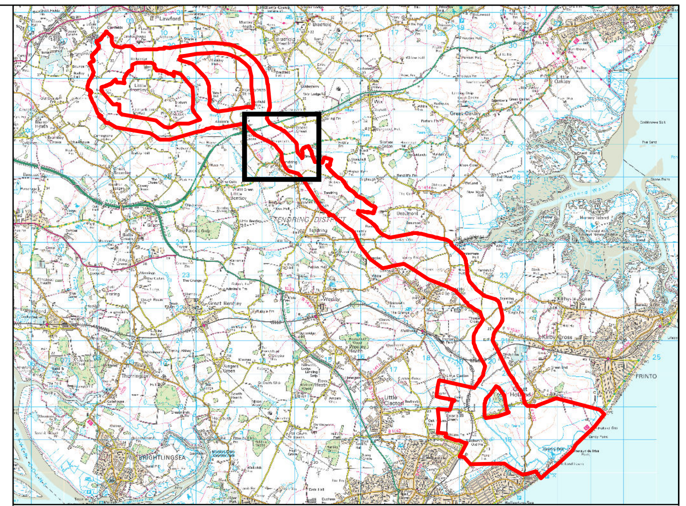

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
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- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Species-Poor
- Hedge with Trees - Species-Poor
- Dry Ditch
- Scrub - Dense/Continuous
- Improved Grassland
- Standing Water
- Cultivated/Disturbed Land - Arable
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Hedgerow
- Arable
- Buildings
- Grassland
- Scrub
- Woodland

0 100 200 400 Metres

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Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3I

Scale	Plot Size	Datum	Projection
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NORTH FALLS
Offshore Wind Farm

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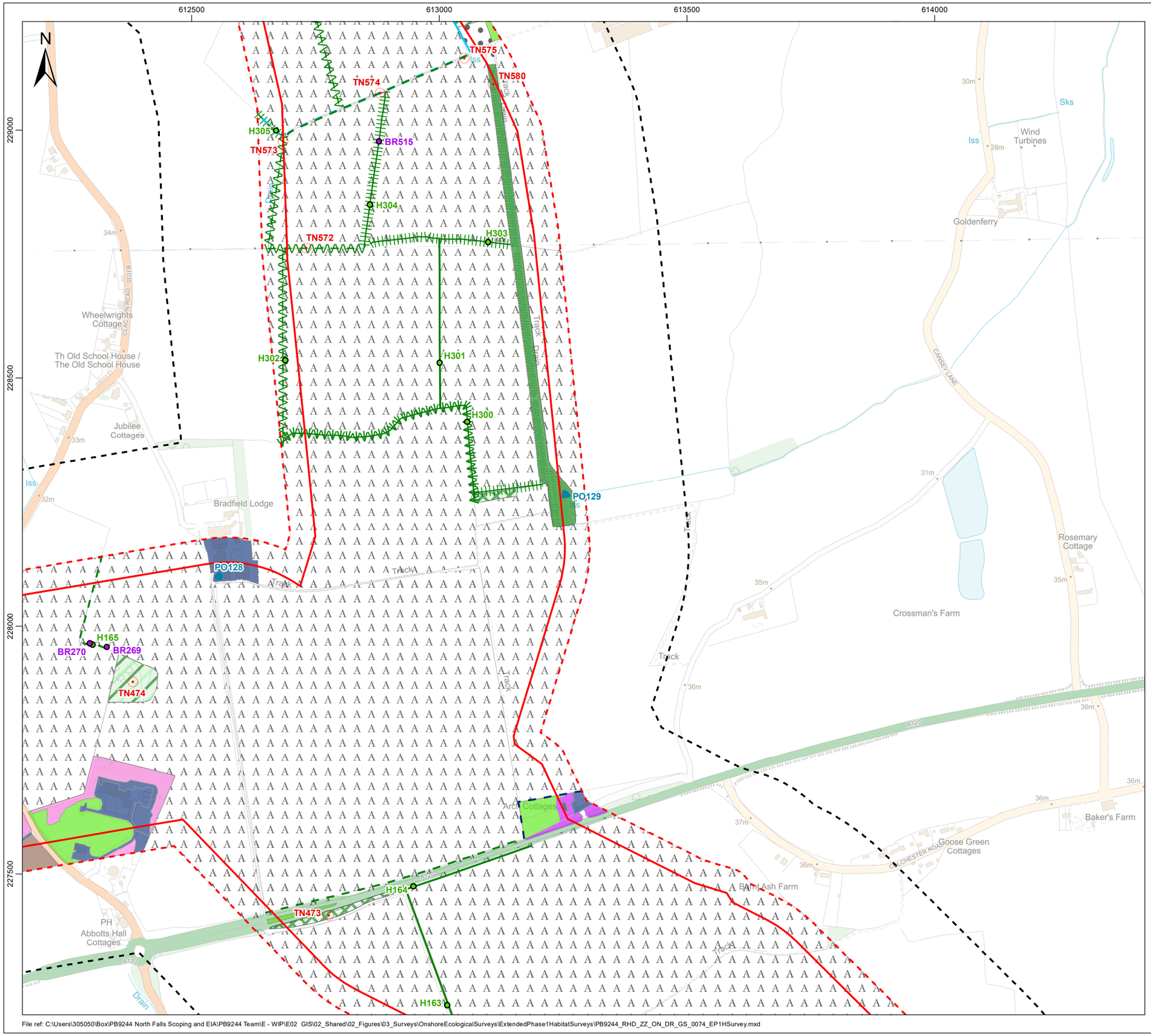

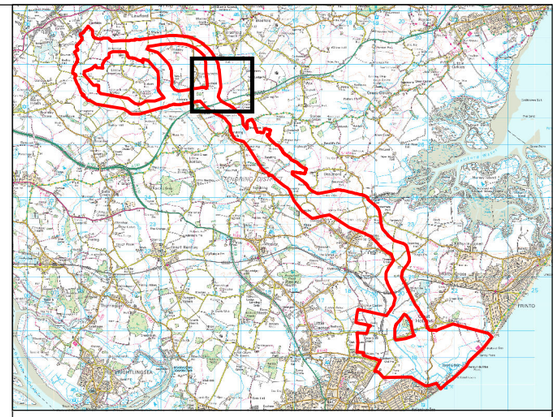

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Broadleaved Woodland - Plantation
- Mixed Woodland - Plantation
- Scrub - Dense/Continuous
- Standing Water
- Cultivated/Disturbed Land - Arable
- Bare Ground
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Hedgerow
- Arable
- Buildings
- Grassland
- Scrub
- Woodland

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NORTH FALLS
Offshore Wind Farm

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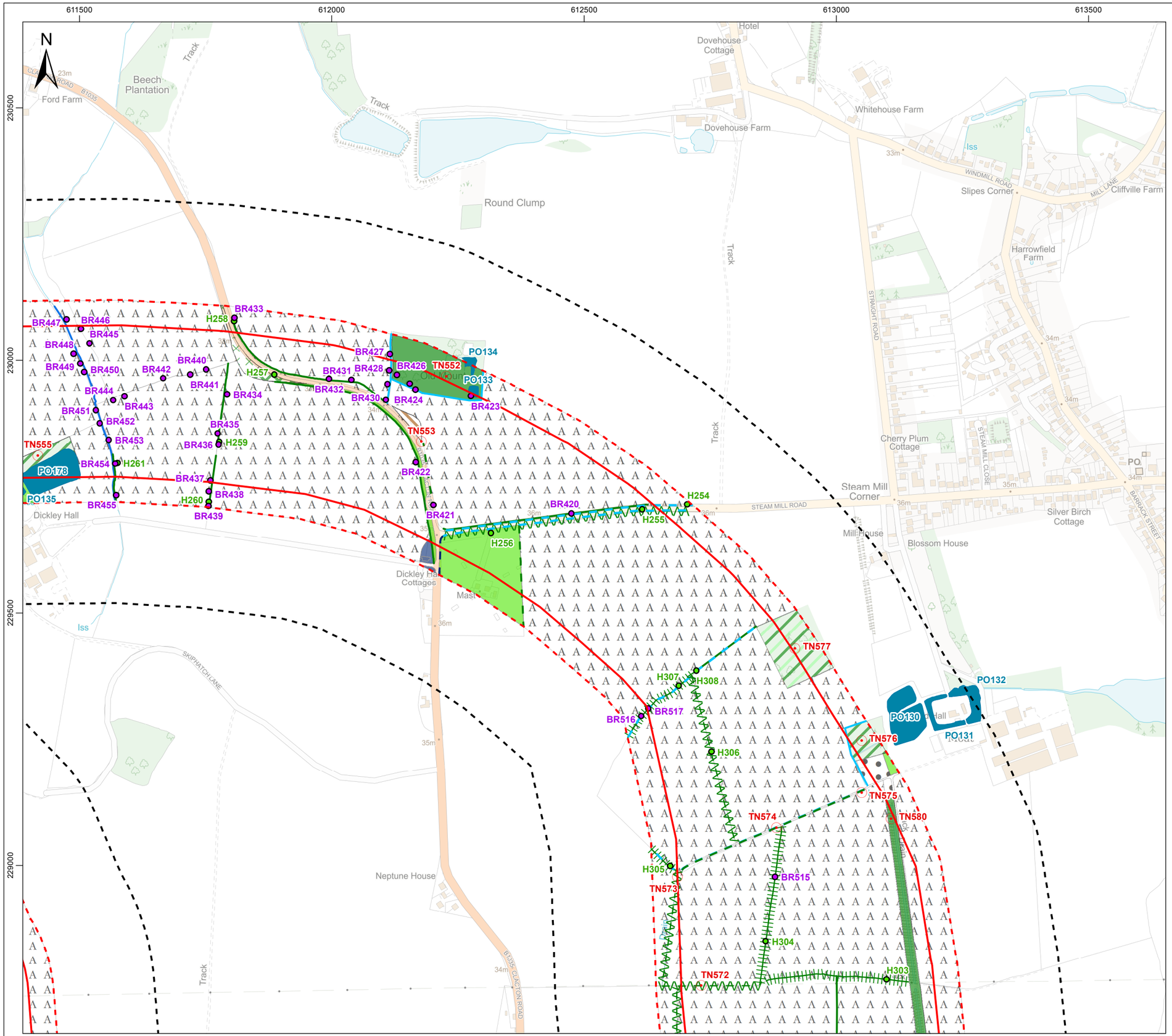

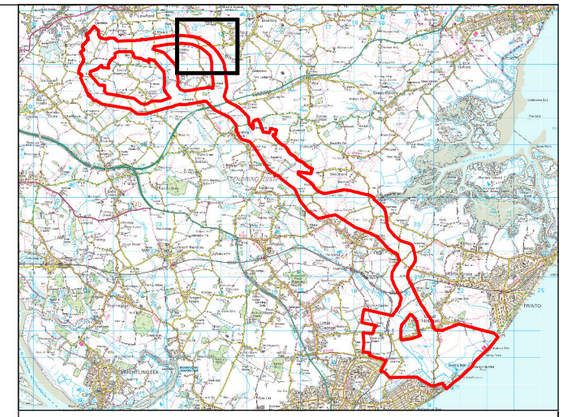

Legend

- Onshore Project Area
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- Mixed Woodland - Plantation
- Scrub - Dense/Continuous
- Scrub - Scattered
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Cultivated/Disturbed Land - Arable
- Bare Ground
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Hedgerow
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- Grassland

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PB9244-RHD-ZZ-ON-DR-GS-0074	3n

Scale	Plot Size	Datum	Projection
1:7,500	A3	OSGB36	BNG

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NORTH FALLS
Offshore Wind Farm

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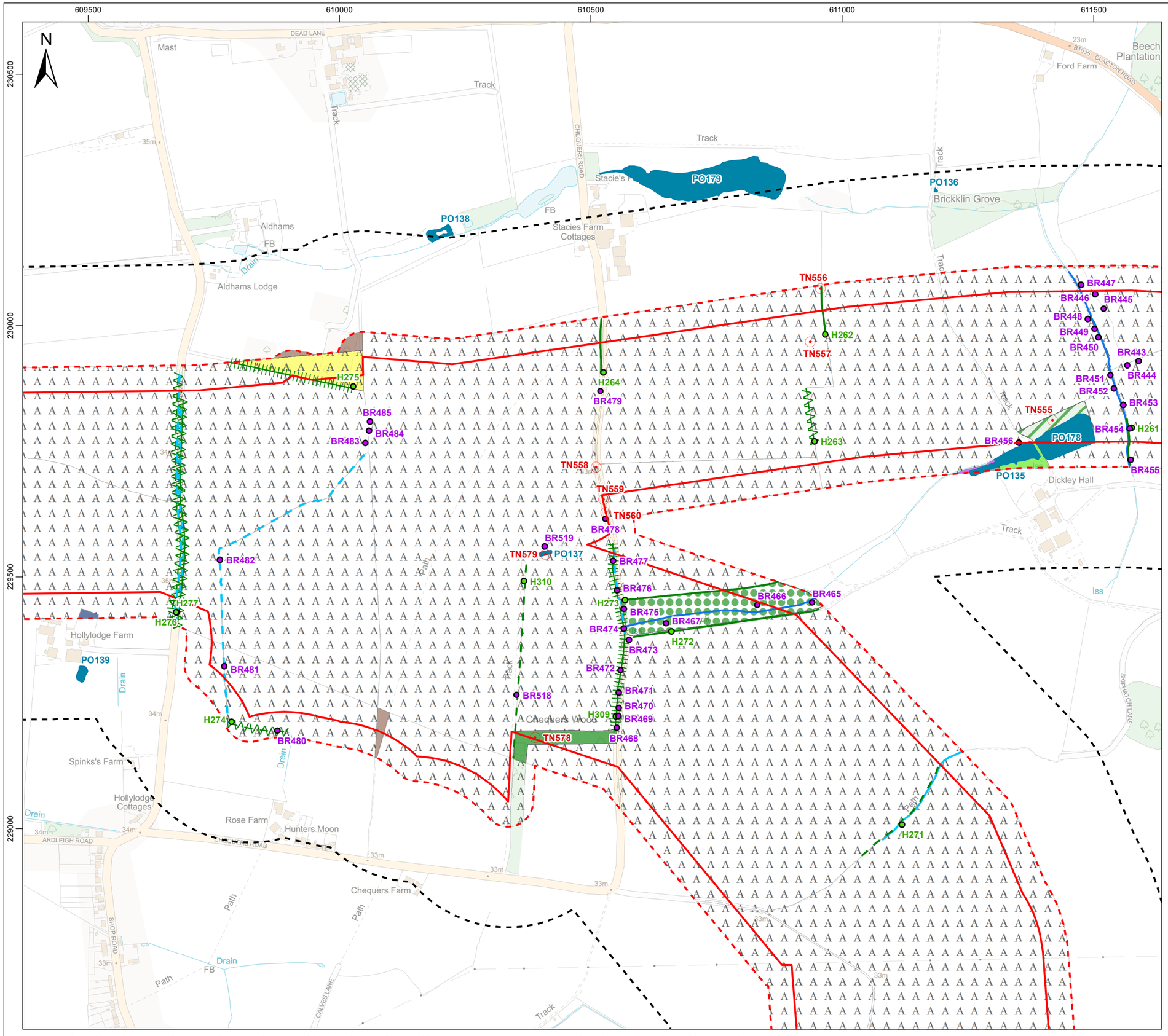

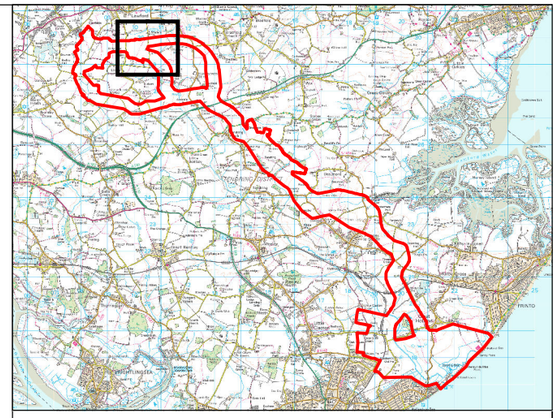

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Running Water
- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Broadleaved Woodland - Plantation
- Broadleaved Parkland/Scattered Trees
- Standing Water
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Amenity Grassland
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Arable
- Buildings
- Grassland
- Woodland

0 100 200 400 Metres

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Drawing Title

Extended Phase 1 Habitat Survey

Rev	Date	Remarks	Drwn	Chkd
03	10/05/2022	Third issue	FC	GC
02	19/11/2021	Second issue	FC	CC
01	19/07/2021	First issue	FC	CS

Drawing Number	Figure Number
PB9244-RHD-ZZ-ON-DR-GS-0074	3o

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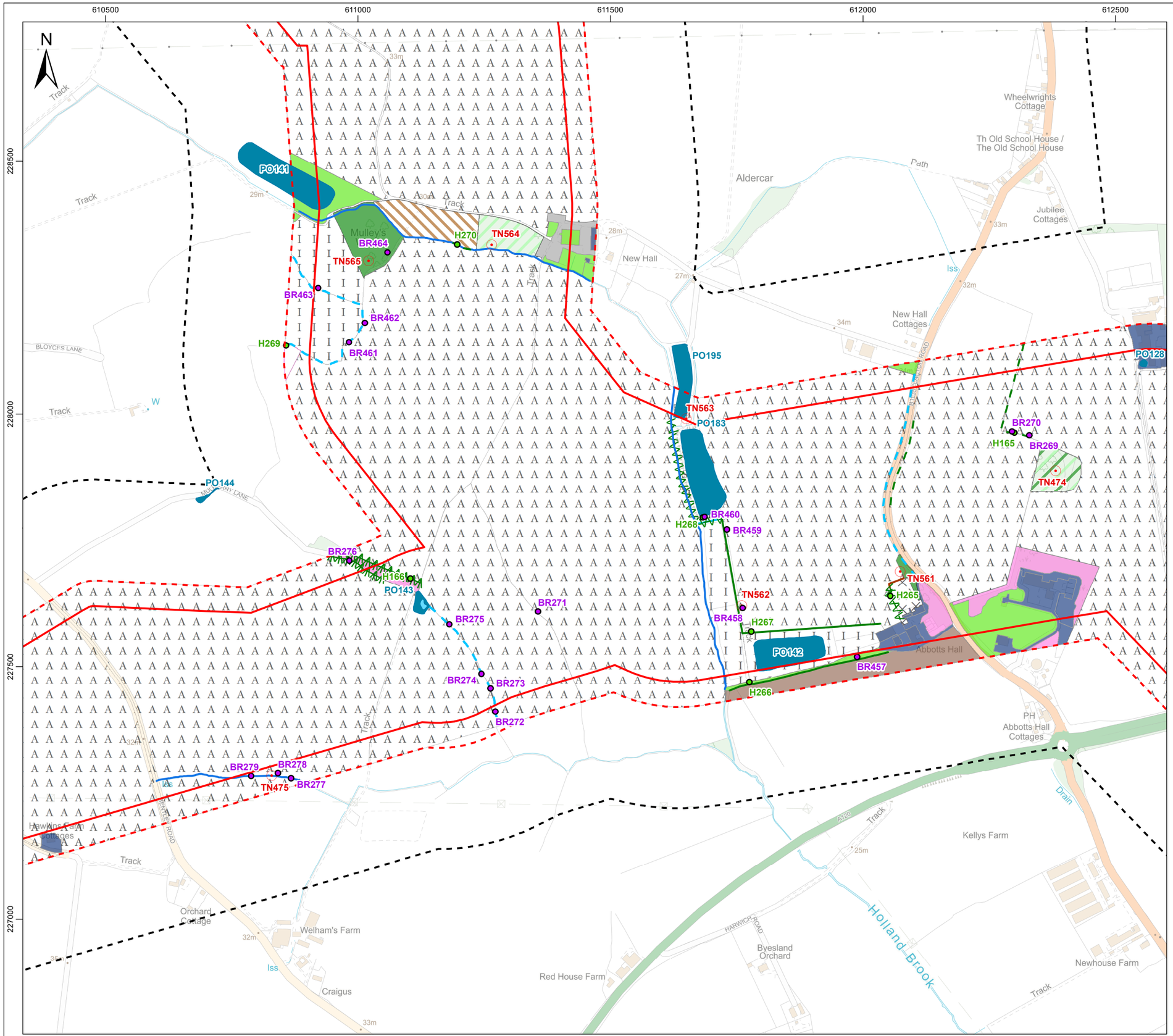

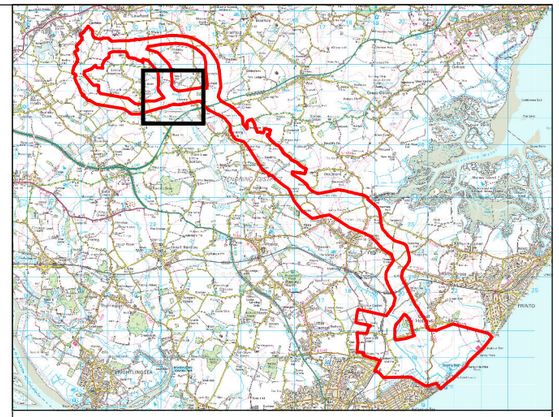

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Running Water
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Wall
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Coniferous Woodland - Plantation
- Mixed Woodland - Plantation
- Arable Field Margin
- Improved Grassland
- Poor Semi-Improved Grassland
- Other Tall Herb and Fern - Ruderal
- Standing Water
- Cultivated/Disturbed Land - Arable
- Cultivated/Disturbed Land - Ephemeral/Short Perennial
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Arable
- Bare Ground
- Buildings
- Grassland
- Scrub

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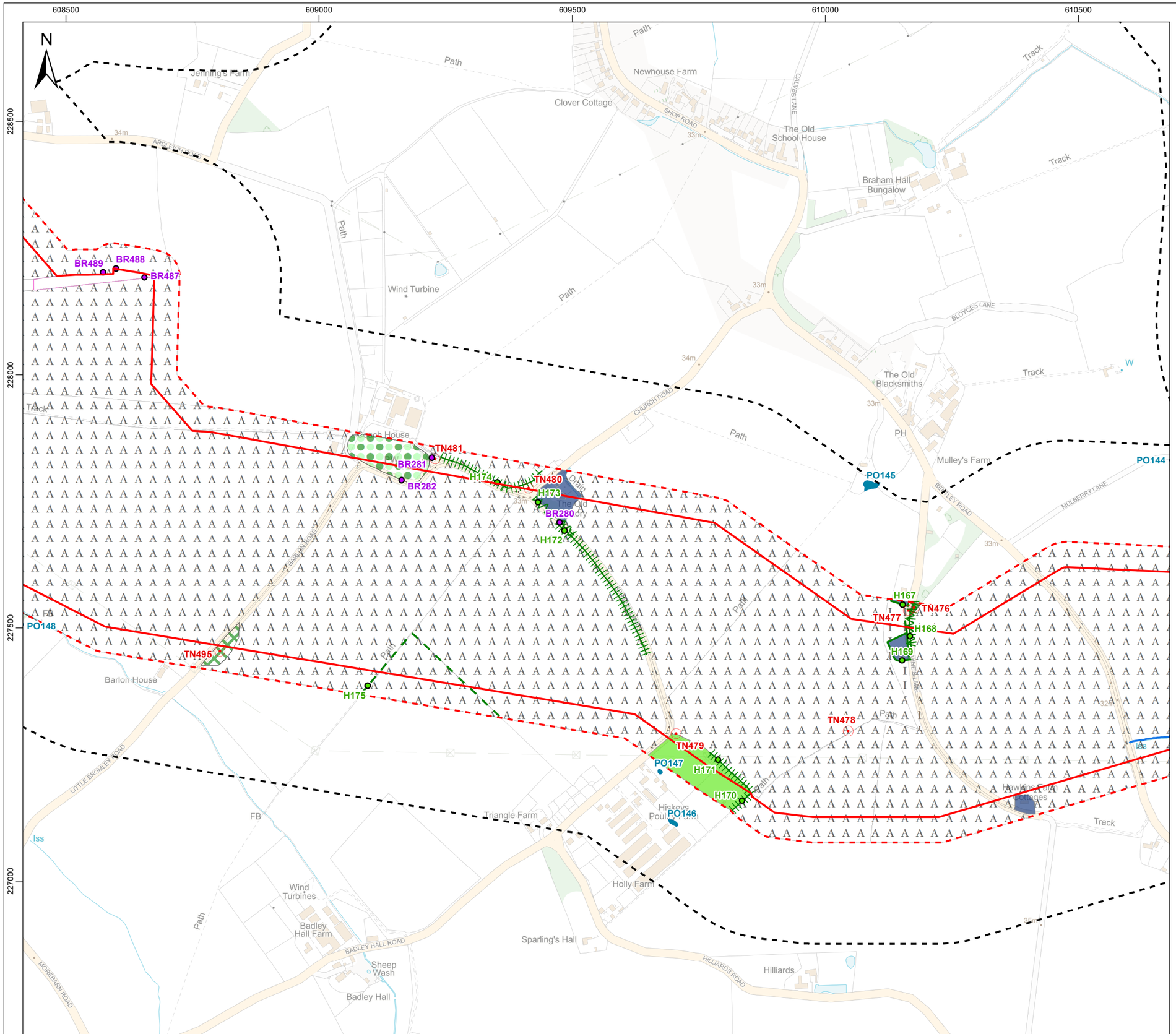

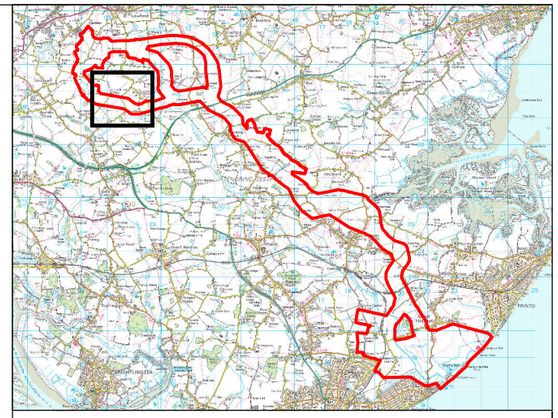

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Running Water
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Broadleaved Woodland - Semi-Natural
- Scrub - Dense/Continuous
- Mixed Parkland/Scattered Trees
- Arable Field Margin
- Improved Grassland
- Poor Semi-Improved Grassland
- Cultivated/Disturbed Land - Arable
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Buildings
- Grassland

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PB9244-RHD-ZZ-ON-DR-GS-0074	3q

Scale	Plot Size	Datum	Projection
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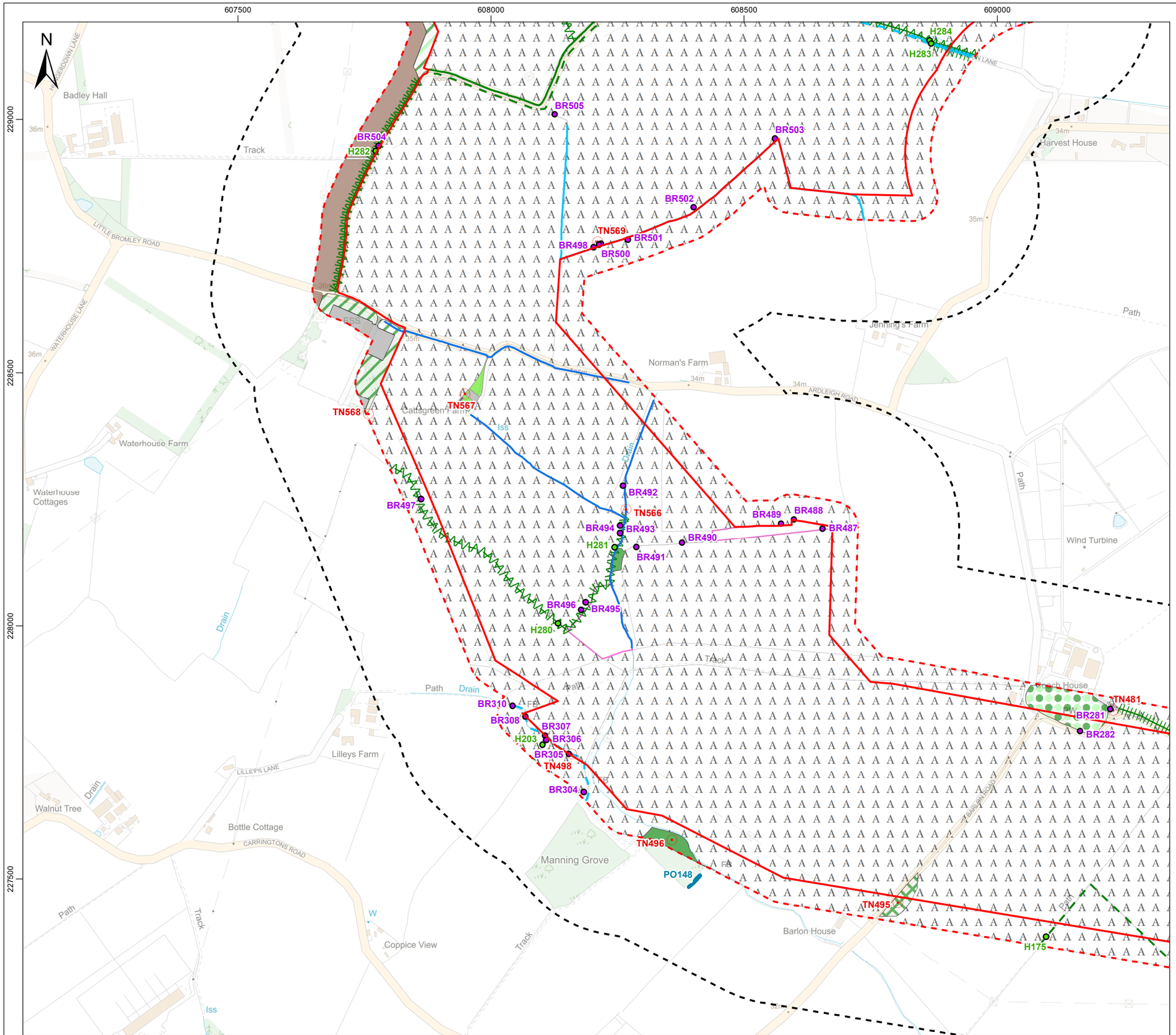

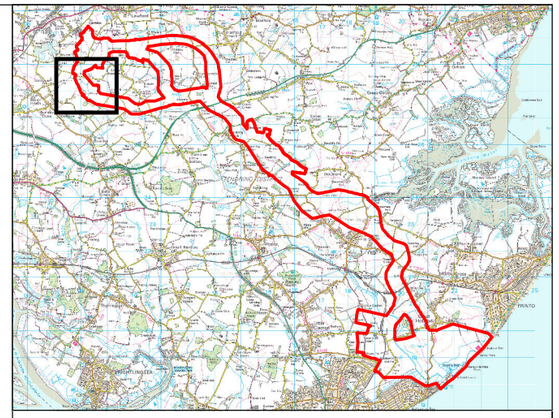

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Running Water
- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Broadleaved Woodland - Semi-Natural
- Broadleaved Woodland - Plantation
- Mixed Woodland - Plantation
- Scrub - Dense/Continuous
- Mixed Parkland/Scattered Trees
- Arable Field Margin
- Poor Semi-Improved Grassland
- Cultivated/Disturbed Land - Arable
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Arable
- Bare Ground
- Buildings
- Grassland

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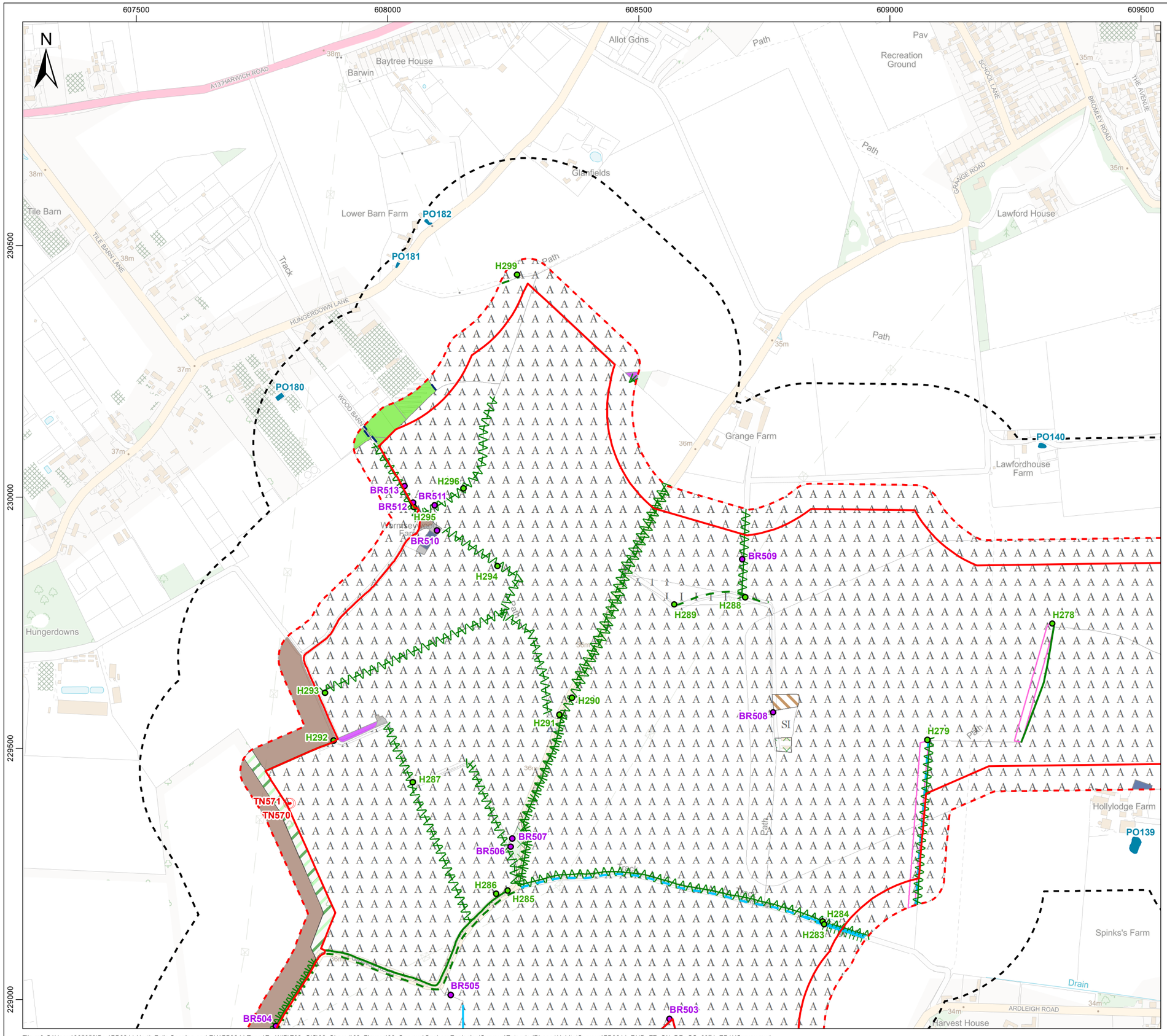

Legend

- Onshore Project Area
- Extended Phase 1 Habitat Survey 50m Buffer
- Great Crested Newt 250m Buffer
- Bat Roost Feature
- Hedgerow
- Target Note

Phase 1 Habitat Type

- Standing Water
- Intact Hedge - Native Species-Rich
- Intact Hedge - Species-Poor
- Defunct Hedge - Native Species-Rich
- Defunct Hedge - Species-Poor
- Hedge with Trees - Native Species-Rich
- Hedge with Trees - Species-Poor
- Dry Ditch
- Mixed Woodland - Plantation
- Scrub - Scattered
- Arable Field Margin
- Improved Grassland
- Poor Semi-Improved Grassland
- Other Tall Herb and Fern - Ruderal
- Cultivated/Disturbed Land - Arable
- Pond

Habitat Type (Digitised Based on Aerial Imagery)

- Hedgerow
- Arable
- Bare Ground
- Buildings
- Grassland
- Woodland

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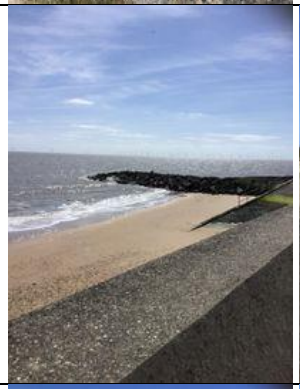
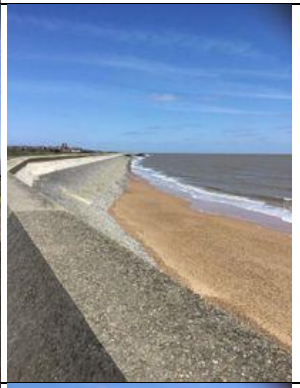
Appendix B – Target Notes

Target note reference	Notes	Photographs
TN001	Wider section of ditch forming a pond, common reed throughout,	
TN002	Oystercatcher x2 on golf course	
TN004	Four scattered willow trees adjacent to ditch. Area of tall ruderals with key species including chervil, red dead nettle, common reed, burdock, chickweed and mallow.	 
TN005	Skylark in song flight	No photograph

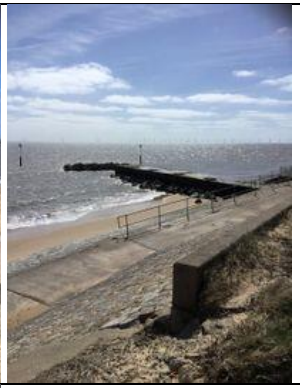
Target note reference	Notes	Photographs
TN006	Vegetated concrete revetment	
TN007	Rock revetment, shingle sand beach, rock groyne	 
TN008	Section of wet drain/depression, 10m at widest, 20cm deep, dominated by rush and grass species, adjacent blackthorn. Seems to be fed by pipe under footpath and connecting drain	 

Target note reference	Notes	Photographs
TN009	Wet drain approximately 6m wide and 30cm deep. Slow stagnant flow, with no bank and dominated by rushes	
TN010	Semi improved grassland fringed by rushes	
TN011	Wooden bird hide within Haven country park adjacent to wet ditch surrounded by rushes and reeds	 

Target note reference	Notes	Photographs
TN012	Area of grassland between promenade and adjacent fields	
TN013	Stands of dense bramble scrub lining channel	
TN014	Concrete revetments along coastline with rock gabions and exposed shingle/sand beach	

Target note reference	Notes	Photographs
TN015	Patches of dense bramble scrub within area of semi improved grassland	
TN016	As per TN015 with noticeboard	 
TN017	Holland River circa 10-15m wide. Dense vegetation fringing banks. Areas of blackthorn and bramble scrub with willow trees also present. Wet channel which is slow moving and reeds present along channel. Berm is limited. Suitable habitat for water vole	

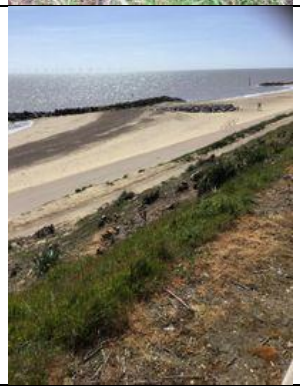
Target note reference	Notes	Photographs
TN018	Holland Nature Park. Patches of dense blackthorn scrub also present, interspersed with hawthorn and bramble. Habitat assessed as suitable to provide opportunities for ground nesting birds and invertebrates.	
TN019	Bare ground footpath along seafront with adjacent areas of amenity grassland	
TN020	Holland Sluice. Wet channel, sheet piles circa 20m in length with marginal vegetation present. Key species including rush and reed. Areas of teasel and bramble are present and fringe the channel banks.	

Target note reference	Notes	Photographs
TN021	Sand beach, rock walkway, exposed cliff face with veg and sand and pebbles.	 
TN022	Holland sluice and Environment Agency building and associated areas of hardstanding present.	
TN023	Area of tall ruderals, herbs and scrub. Suitable habitat for nesting birds.	

Target note reference	Notes	Photographs
TN024	Area of open hardstanding and bare ground.	
TN025	Hardstanding associated with seafront. Rocky substrate with sparse coastal vegetation present.	
TN026	Storage area and associated hardstanding fringed by earth (sand) banks	

Target note reference	Notes	Photographs
TN027	Occasional stands of scrub, predominately hawthorn. Relic nesting bird nest present.	
TN028	Area of shrubs, scrub and trees. Key species include hawthorn, blackthorn, elder, bramble with a ground flora of nettle, grass and common dock.	 
TN029	Ditch noted as having slow stagnant flow, vegetation and debris in channel. Densely vegetated bank.	 

Target note reference	Notes	Photographs
TN030	Area of grassland adjacent to an area of bramble scrub.	
TN031	Area of dense bramble and hawthorn scrub. Evidence of rabbits present.	
TN032	Area of dense scrub unable to be accessed.	 

Target note reference	Notes	Photographs
TN035	Stand of blackthorn scrub.	
TN036	>10 holes/excavations within embankment. Likely rabbit and no evidence of badger or other species noted.	
TN037	Area of cleared vegetation along cliff face	

Target note reference	Notes	Photographs
TN038	Area of amenity grassland associated with footpath and public access	
TN039	Earth bund adjacent to car park road and adjacent area of amenity grassland.	 
TN042	Dry channel with an area of flattened dense scrub.	 

Target note reference	Notes	Photographs
TN043	Area of dense area of blackthorn, hawthorn and bramble scrub with relic bird nest noted.	 
TN047	Areas of dense bramble scrub and willow trees.	
TN048	Wet ditch, approximately 1.5m wide with earth banks and limited to no berm present. A slow stagnant flow noted with leaf litter and debris present within the channel. Algae also present. Channel assessed as not suitable for water voles	 

Target note reference	Notes	Photographs
TN053	Area of amenity grassland.	
TN054	Grass field with wet ditch circa 6m wide and fringed by soft rush.	
TN055	Grass field which is fringed by scattered scrub, nettles, bramble and ground ivy.	

Target note reference	Notes	Photographs
TN057	Area of grassland surrounded by dense blackthorn, hawthorn and bramble scrub.	 
TN058	Ditch 4m wide, stagnant/slow flow. Shaded, limited to no berm.	
TN059	Open tussock grassland	

Target note reference	Notes	Photographs
TN060	Area of dense reed bulrush	
TN061	Farm track with bramble scrub present.	
TN062	Flowing river, approximately 10m wide with exposed banks, glyceria, rush present along river margins. Floating aquatic vegetation and occasional patches of hawthorn scrub along banks. River suitable for otter and water vole as well as for invertebrates	 

Target note reference	Notes	Photographs
TN064	Grass roadside verge approximately 7m wide with cow parsley, dog rose, grass spp. present, Dry road drain present which is approximately 1.5m wide.	
TN066	Areas of dense bramble and blackthorn scrub	
TN067	Grassland with areas of dense bramble scrub, hawthorn and blackthorn scrub	 

Target note reference	Notes	Photographs
TN068	Strip of grassland and patches of dense bramble scrub fringing adjacent arable field.	 
TN071	Damp mound and area of standing water. No flow observed and algae bloom present, approximately 1.5m wide	
TN075	Patch of Hawthorn scrub	

Target note reference	Notes	Photographs
TN076	Grassland with drainage ditch (dry at the time of the survey)	
TN077	Dry drainage channel approximately 4m wide with reeds and rushes present. Bramble and hawthorn scrub present within adjacent area.	 
TN078	Area of dense bramble scrub and tall ruderals.	 
	TN079-TN081 not used.	

Target note reference	Notes	Photographs
TN082	Line of hawthorn shrubs	
TN083	Arable field with pockets of dense scrub and tall ruderals	
TN084	Drainage ditch circa 4m wide with a slow flow. Approximately 5-10cm water depth with exposed earth banks - evidence of being managed and maintained	

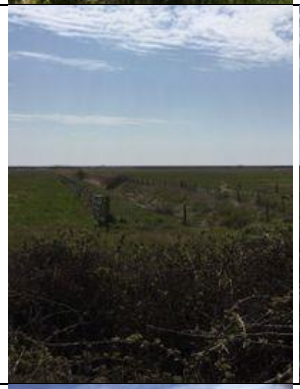
Target note reference	Notes	Photographs
TN085	Area of vegetated earth mound	 
TN086	Drainage ditch approximately 4-5m wide and a water depth of approximately 5-10cm. Slow to no flow with exposed banks and no in channel vegetation.	 
	TN087 not used	
TN088	Area of dense hawthorn and blackthorn scrub	

Target note reference	Notes	Photographs
TN089	Barn owl box (ID reference 1669)	
TN090	Ditch approximately 7-8m wide and 20-30cm water depth. Species present include bramble, bullrush, soft rush, blackthorn and hawthorn scrub	
TN091	Dry drainage ditch circa 3m wide and adjacent to an area of dense blackthorn scrub. Possibly used for shooting.	 

Target note reference	Notes	Photographs
TN093	Dry drainage channel.	
TN094	Continuation of drainage ditch now with water. Heavily shaded by blackthorn and hawthorn scrub	 
TN095	Ditch circa 5m wide and a water depth of 10cm. Hawthorn and blackthorn overgrown scrub present that overshadows drainage ditch	

Target note reference	Notes	Photographs
TN096	Ditch circa 5m wide and a water depth of 10cm. Slow stagnant water with reed and algae present as well as being bounded by bramble along left bank. No berm present.	
TN098	Semi improved grassland with areas of drainage ditch containing soft rush and bramble scrub	 
TN099	Dry drainage ditch circa 5m wide. Debris within channel.	

Target note reference	Notes	Photographs
TN100	Dense bramble	
TN101	Drain circa 6m wide with dense bramble scrub	 
TN102	Dry ditch with hawthorn (relic nesting site), blackthorn and bramble scrub present. 5m wide exposed bank wet in places, mammal pathways across and up and down banks	 

Target note reference	Notes	Photographs
TN103	Area of dense bramble - unable to be accessed	
TN104	Semi improved grassland with field drain approximately 6-7m wide with soft rush present. Dry at the time of the survey.	 
TN105	Area of dense blackthorn scrub - unable to be accessed	

Target note reference	Notes	Photographs
TN106	Dry ditch/depression circa 6m wide with no bank no berm. Blackthorn scrub assoc. with hedgerow also present.	 
TN107	Dry ditch approximately 4m wide, vegetation and bramble scrub on bank	
TN108	Area of dense bramble scrub	

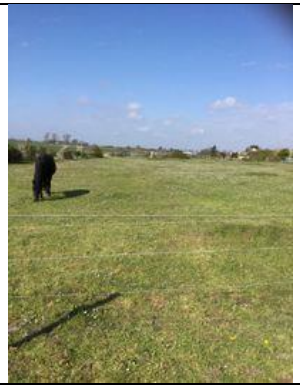
Target note reference	Notes	Photographs
TN110	Barn owl box	
TN111	Improved grassland with pockets of hawthorn and blackthorn shrubs present	 
TN114	Mammal pathway into dense blackthorn	

Target note reference	Notes	Photographs
TN115	Grass PRoW with hawthorn and blackthorn shrubs lining drainage ditch	
TN116	Grass PRoW fringed by hawthorn blackthorn shrubs and ash occasional trees	
TN117	Wet drainage ditch approximately 4m wide and 1.5m deep with algae present. Stagnant flow and ditch appears to be fed by culvert pipe.	

Target note reference	Notes	Photographs
TN119	Damp ditch circa 3m wide and 1m wide. Hawthorn shrub on bank and willow tree within adjacent golf course. Soft rush also present.	 
TN123	Dry ditch approximately 4m wide	
TN124	Field drain approximately 3m wide and 1m deep. Stagnant flow and no channel vegetation present. Managed exposed earth banks.	 

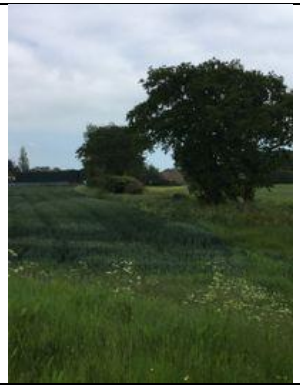
Target note reference	Notes	Photographs
TN125	Shallow ditch approximately 3m wide and 1m deep. Stagnant flow and approximately 5-10cm water depth. Managed channel and cut vegetation arisings present along bank.	 
	TN126 not used	
TN127	Ditch dry adjacent to golf course and arable field.	 
TN128	Hawthorn and blackthorn tree line between golf course and arable field	 
	TN129 not used	

Target note reference	Notes	Photographs
TN130	Line of trees and blackthorn shrub	 
TN131	Anglia water treatment facility	   
	TN132 and 133 not used	

Target note reference	Notes	Photographs
TN134	Track adjacent to arable fields	
	TN134-138 not used	
TN139	Horse paddock	
	TN140 not used	
TN141	Area of dense bramble scrub	 

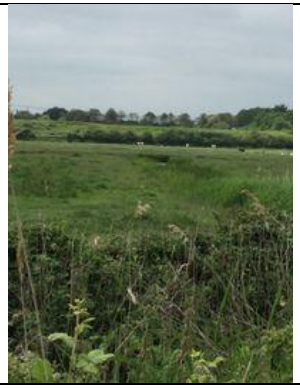
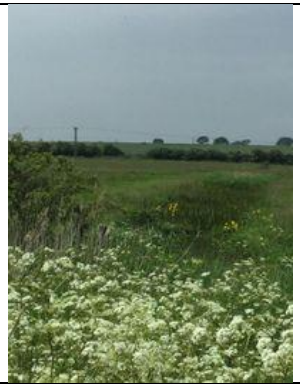
Target note reference	Notes	Photographs
TN142	Dry ditch which is circa 4-5m wide with earth banks.	 
TN144	Area of defunct bramble which may have once formed or been part of a hedgerow	
TN145	Improved grassland with patches of bramble scrub	
	TN146 and 147 not used	

Target note reference	Notes	Photographs
TN148	Area of debris and earth. Dead wood to rear, surrounded by bramble and hawthorn scrub	 
	TN149 and 150 not used	
TN151	Continuation of drainage ditch which is circa 6m wide and dry at the time of the survey. Area of bramble also present.	
TN152	Area of bramble and dry drainage ditch approximately 6m wide. Channel noted to be full of bramble.	 
	TN153-155 not used	

Target note reference	Notes	Photographs
TN156	Tree line with patches of hawthorn and blackthorn scrub	
	TN157-161 not used	
TN162	Continued drainage ditch, approximately 2m wide with exposed earth banks. Dry at time of survey and assessed as sub optimal for water voles.	
	TN163 and 164 not used	
TN165	Drainage ditch (dry) and approximately 1-2m wide. Exposed earth banks and overgrown with vegetation (tall ruderals and scrub). Sub optimal habitat for water voles.	 
	TN166-169 not used	

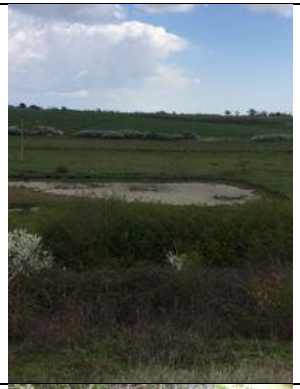
Target note reference	Notes	Photographs
TN170	Stand of dead wood - potentially suitable for invertebrates.	
TN171	Area of turf fields - no ecological value due to short sward and heavy management.	
TN172	Area of solar panels	

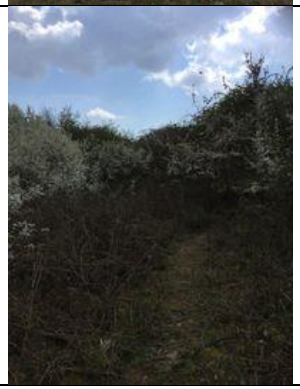
Target note reference	Notes	Photographs
TN173	Access track (hardstanding) approximately 4m wide.	
TN174	Vegetated earth mound with poppies, cow parsley and ragwort present. Suitable basking and foraging habitat for reptiles.	
TN175	Area of planted tree whips and deadwood. Assessed as suitable habitat for invertebrates within deadwood stand.	
	TN176 not used	

Target note reference	Notes	Photographs
TN177	Drainage ditch approximately 6m wide with reed and rush present. Low water level at the time of the survey.	
	TN178 not used	
TN179	Drainage ditch 6m wide, choked with reed and rush, wet patches but mostly dry. Sub optimal habitat for water voles.	
	TN180 not used	
TN181	Drainage ditch approximately 6m wide with reeds and rushes present. Approximate water depth of 20cm.	

Target note reference	Notes	Photographs
TN182	Drainage ditch approximately 3m wide, dry with bramble, hawthorn, cleavers and cow parsley present.	
TN183	Drainage ditch approximately 4m wide with soft rush dominate. Ditch contained water but appeared to have a slow to stagnant flow.	
	TN184 not used	
TN185	Drainage ditch 3m wide and dry at the time of the survey.	
	TN186-194 not used	

Target note reference	Notes	Photographs
TN195	Blackthorn and bramble scrub in and around farmhouse and associated outbuildings. Area of open amenity grass and bare ground associated with access track.	 
TN196	Drain ditch approximately 6m wide and wet in places. Wet places are circa 20cm deep. Bramble and nettle in ditch with hawthorn and ivy scrub also present	No photograph
	TN197-200 not used	
TN201	Area of scattered hawthorn and bramble scrub	
TN202	Drainage ditch approximately 5m wide and 1m deep. Vegetated channel.	

Target note reference	Notes	Photographs
TN203	Dry waterbody approximately 20m by 30m.	
TN204	Dry ditch	
TN205	Grass access track and stand of dead wood.	

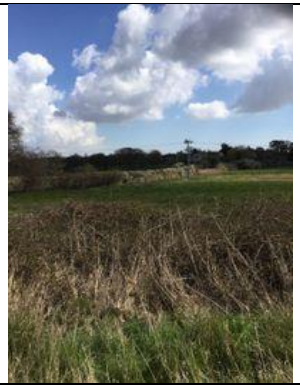
Target note reference	Notes	Photographs
TN206	Area of grassland with tree planting (species include pine and willow).	
TN207	Area of dense bramble scrub to the rear of hawthorn and blackthorn hedgerow	
TN208	Dense hawthorn, blackthorn and bramble scrub with rabbits present.	
	TN209-212 not used	

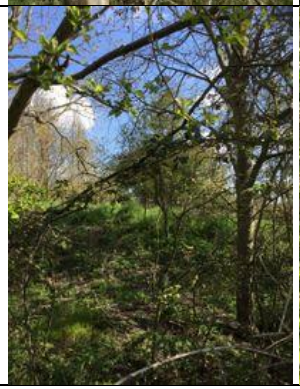
Target note reference	Notes	Photographs
TN213	Tree line boundary. Drainage ditch approximately 4m wide (dry at the time of the survey) with bramble, nettle and cow parsley present.	 
	TN214-216 not used	
TN217	Stand of dead wood	
	TN218 not used	
TN219	Ditch, heavily vegetated and dry at the time of the survey. Species present include nettle bramble, reed and hawthorn scrub.	

Target note reference	Notes	Photographs
TN220	Field drain approximately 6m wide and choked with reed, rush and iris. Low water level and potentially a slow/stagnant flow.	
TN221	Grass field with livestock (cows) grazing.	
TN222	Drainage ditch approximately 7m wide and stagnant flow of circa 1m water depth.	

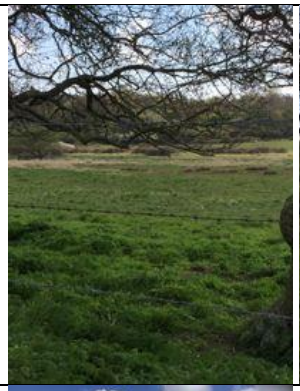
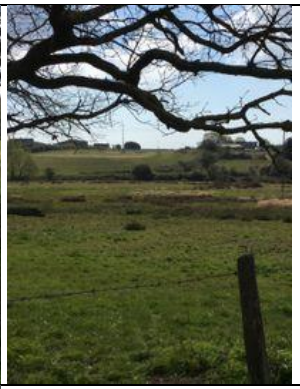
Target note reference	Notes	Photographs
TN223	Vegetated drainage ditch (dry) and approximately 3m wide.	
	TN224 and 225 not used	
TN226	Semi improved grassland with stands of bramble scrub and area of deadwood present.	 
	TN227 not used	
TN228	Scattered hawthorn scrub	
	TN229 not used	

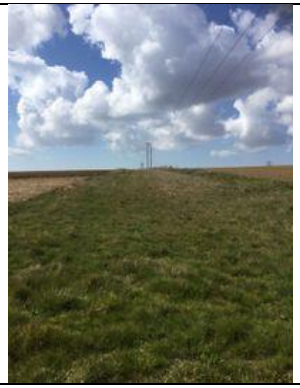
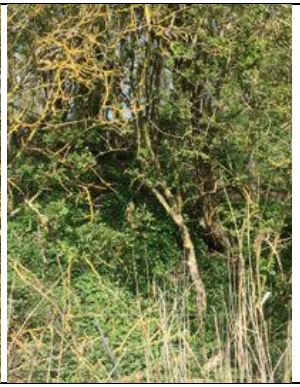
Target note reference	Notes	Photographs
TN230	Dense bramble scrub. Dry drainage ditch, 2.5m wide vegetated	 
	TN231-233 not used	
TN234	Grassland grazed by livestock at the time of the survey.	
	TN235 not used	
TN236	Strip of cropped arable field which was considered to have been left to set aside.	
	TN237 not used	

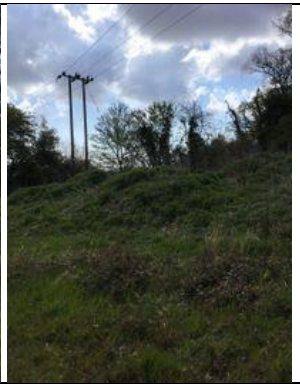
Target note reference	Notes	Photographs
TN238	Semi improved grassland fringed by blackthorn and hawthorn hedgerow	
	TN239 and 240 not used	
TN241	Mammal pathway	
TN242	Area of dense bramble	

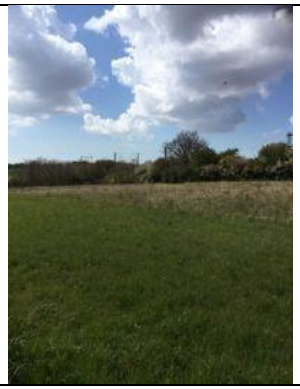
Target note reference	Notes	Photographs
TN243	Improved grassland grazed with tussocks of hard rush	
	TN244 not used	
TN245	Arable ranged by grass and tall ruderals in field margin	 
TN246	Area of bramble and nettle scrub with hawthorn and occasional trees and earth mound.	 
	TN247 not used	

Target note reference	Notes	Photographs
TN248	Field drain 2m wide, 20-30cm deep, fed by pipe, slow flow, heavily vegetated and shaded with bramble and rush. Earth banks exposed.	
TN249	Ditch 5m wide and 10cm deep with a stagnant flow. Heavily vegetated channel with rush, nettle and bramble.	
	TN250 and 251 not used	
TN252	Semi improved grassland with areas of bramble scrub, hard rush tussocks, evidence of livestock poaching	 
	TN253 and 254 not used	

Target note reference	Notes	Photographs
TN255	Semi improved grassland with patches of hard rush tussocks and bramble scrub.	 
TN256	Arable field with grass field margin	
	TN257 to 260 not used	
TN261	Line of bramble scrub	
	TN262 and 263 not used	

Target note reference	Notes	Photographs
TN264	10m wide >30cm deep	
	TN265 not used	
TN266	Strip of grass between arable areas of main field	
	TN267-269 not used	
TN270	Area of trees and shrubs between arable and railway	 
	TN271 not used	

Target note reference	Notes	Photographs
TN272	Fallen limb	
	TN273 not used	
TN274	Ditch approximately 5m wide with a slow flow, steep earth banks and heavily vegetated.	
	TN275 not used	
TN276	Area of vegetated earth mound	 

Target note reference	Notes	Photographs
TN277	Area not surveyed but occasional oak trees, hawthorn and blackthorn scrub, bramble ground flora	
	TN278-280 not used	
TN281	Semi improved grassland bounded by hawthorn and blackthorn hedgerow with trees	
	TN282 not used	
TN283	Area of native bluebells.	

Target note reference	Notes	Photographs
TN284	Area of planted young planted semi mature trees, blackthorn hawthorn bramble	 
	TN285 and 286 not used	
TN287	Drainage ditch approximately 3m wide and 10cm deep.	
	TN288 and 289 not used	
TN290	Area of dense scrub between field and railway. Unable to be surveyed due to proximity to railway	 

Target note reference	Notes	Photographs
TN291	Ditch slow flow, approximately 6m wide and 1m channel width. Channel is shaded and leaf litter present with earth banks	 
TN292	Beehives	
TN293	Area of set aside grassland bounded by blackthorn and hawthorn boundary planting and an area of wildflower meadow	
	TN294 – 297 not used	

Target note reference	Notes	Photographs
TN298	Ditch with limited bank structure, 3m wide, dry ditch, 10-15cm deep	
	TN299 not used	
TN300	Area of planting	 
	TN301-303 not used	
TN304	Ditch circa 4m wide and with a water depth of 2cm. Sub optimal for water voles.	

Target note reference	Notes	Photographs
TN305	Area of dense bramble scrub and trees - unable to be surveyed.	 
	TN306 and 307 not used	
TN308	Ditch approximately 3m wide and circa 5cm water depth and a slow stagnant flow. Leaf litter and algae present.	
TN309	Area of hawthorn, bramble and blackthorn scrub (possibly once a hedgerow but has since overgrown due to lack of management)	
	TN310-312 not used	

Target note reference	Notes	Photographs
TN313	Area of ivy and bramble scrub associated with dry ditch approximately 3m wide	
	TN314 and 315 not used	
TN316	Continuation of previous ditch (earth banks) - approximately 5m wide and a water depth of 5-10cm. Shaded channel and no berm present.	
	TN317 and 318 not used	
TN319	Dry ditch circa 6m wide	 

Target note reference	Notes	Photographs
TN320	Dense bramble scrub within ditch	 
TN321	Buildings associated with farm. Dry drain circa 3.5m wide around perimeter of residential house.	  
TN322	Ditch present which is circa 2m wide and has a 2cm water depth and is heavily vegetated.	
	TN323 not used	

Target note reference	Notes	Photographs
TN324	Area of rabbit warrens	
TN325	Ditch approximately 5m wide and stagnant flow. Algae bloom present and heavily vegetation channel. Circa 10cm water depth in places	
	TN326 not used	
TN327	Dry ditch approximately 3m wide and vegetated.	
	TN328-332 not used	

Target note reference	Notes	Photographs
TN333	Barn owl box on tree (ID reference 1740). Dry ditch also present which is circa 2m wide	 
TN334	Area of semi improved grassland associated with farm building	 
	TN335 and 336 not used	
TN337	Dry ditch circa 2m wide. Nettle, cleavers, ground ivy, dock and bramble present	 
	TN338 and 339 not used	

Target note reference	Notes	Photographs
TN340	Rabbit burrows	
	TN341 – 347 not used	
TN348	Ditch is wet in places 3m wide damp spots, 2cm deep choked with vegetation including nettle, bramble and cow parsley.	
TN349	Standing water which appears to dry out, leaf litter, algae present. Approximately 25x15m and stagnant.	

Target note reference	Notes	Photographs
TN350	Large area of standing water which shows evidence of sometimes drying out, leaf litter 10cm deep, 40x80m shaded	
TN351	Native bluebells	 
	TN352 – 360 not used	
TN361	Dry ditch 3m wide with bramble present.	
	TN362 not used	

Target note reference	Notes	Photographs
TN363	Area of trees hawthorn blackthorn bramble scrub	
	TN364 – 367 not used	
TN368	Dry drainage ditch 3m wide choked with vegetation bramble and nettle.	 
TN369	Area of bare ground	
	TN370 not used	

Target note reference	Notes	Photographs
TN371	Hawthorn scrub with fallen tree along field margin	 
	TN372 not used	
TN373	Drainage ditch 3m wide, dry and vegetated with nettle and grass spp.	
TN374	Hawthorn scrub and occasional trees	
	TN375-377 not used	

Target note reference	Notes	Photographs
TN378	Looks to be the garden or paddocks of nearby farm houses. Short sward perennial rye grass with limited presence of other fauna.	
TN379	Area of short sward, mown grass with tall ruderal, scrub and scattered trees. Good quality mosaic habitat for reptiles. Common plantain, cow parsley, bristly oxtongue, oxeye daisy, fleabane, oak, bramble, common hogweed, nettle	
TN380	Section of scrub area adjacent to small woodland, with successional habitat between consisting of semi mature and sapling silver birch. Open area of tall and short sward grassland with sections of bramble and nettle.	 
TN381	Good mosaic habitat for reptiles, including areas of deadwood for hibernation.	No photograph as related to TN380 habitat