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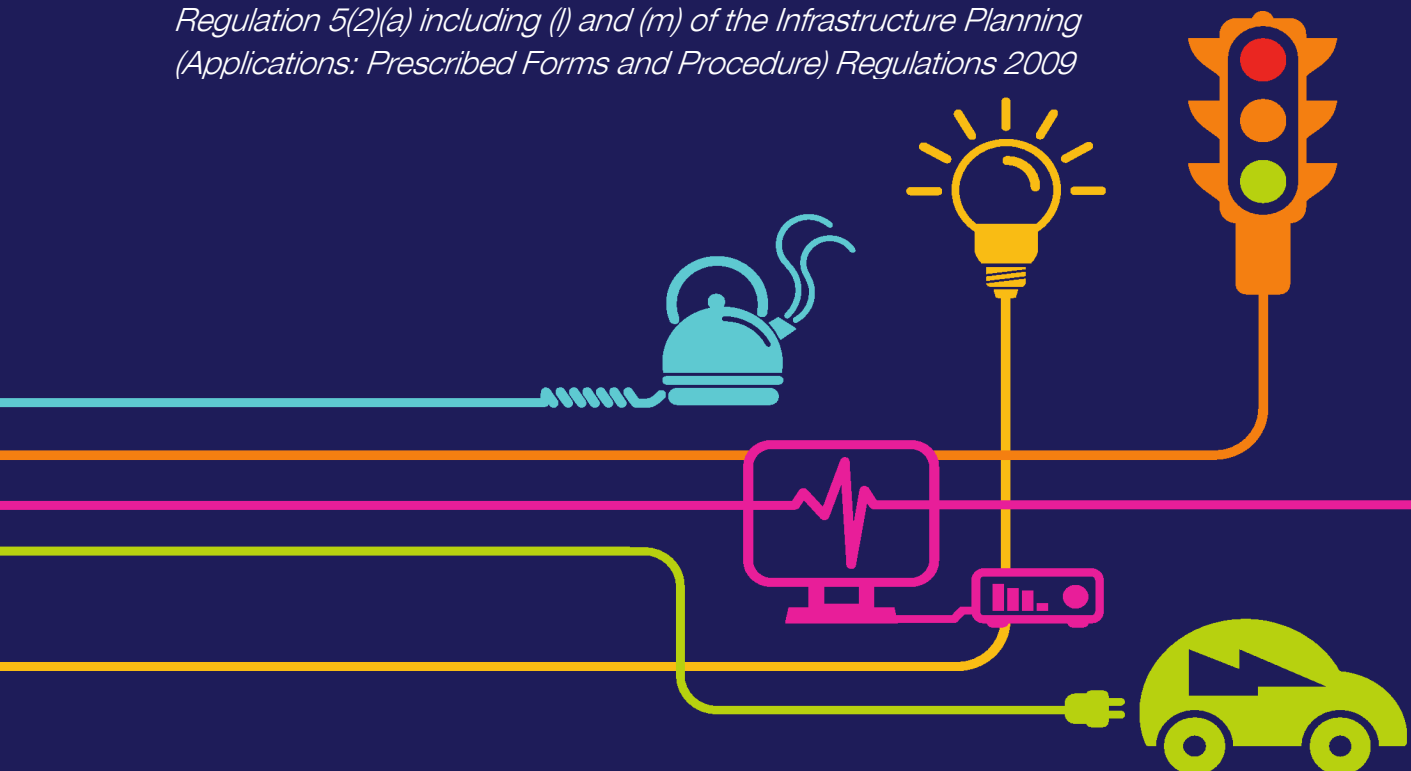
# Otter and Water Vole Report

(Confidential Information Removed)

## Chapter 9 – Appendix 8

National Grid (North Wales Connection Project)

*Regulation 5(2)(a) including (l) and (m) of the Infrastructure Planning  
(Applications: Prescribed Forms and Procedure) Regulations 2009*





# **North Wales Connection Project**

## **Volume 5**

### **Document 5.9.2.8 Otter and Water Vole Report**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

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Author		Rob Pilcher, Lyndsey Spawforth	
Approved by		Nicola Lewis	
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## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Introduction	1
<b>2</b>	<b>Legislation and Planning Policy</b>	<b>3</b>
2.1	Legislation	3
2.2	Planning Policy	5
<b>3</b>	<b>Methodology</b>	<b>8</b>
3.1	Desk Study	8
3.2	Field Survey	9
3.3	Assumptions and Limitations	11
<b>4</b>	<b>Results</b>	<b>14</b>
4.1	Desk Study	14
4.2	Field Survey	19
4.3	Summary	21
<b>5</b>	<b>Conclusion</b>	<b>23</b>
5.1	Introduction	23
5.2	Otter	23
5.3	Water vole	26
<b>6</b>	<b>References</b>	<b>28</b>
	<b>Figures</b>	<b>30</b>
	<b>Appendix A: Desk Study Results</b>	<b>34</b>
	<b>Appendix B: Otter and Water Vole Results</b>	<b>36</b>
	<b>Appendix C: Photographs</b>	<b>52</b>

FIGURES	
Figure 1	Otter and Water Vole Data Search <b>CONTAINS SENSITIVE INFORMATION - NOT FOR PUBLIC DISTRIBUTION</b>
Figure 2	Otter and Water Vole Survey Locations and Results Summary
Figure 3	Otter and Water Vole Survey Results Detailed

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# 1 Introduction

## 1.1 INTRODUCTION

### *Description of the Proposed Development*

1.1.1 The Proposed Development would provide a new 400 kilovolt (kV) connection between the existing substations at Wylfa and Pentir and includes the following principal components:

- extension to the existing substation at Wylfa;
- sections of new 400 kV overhead line between Wylfa Substation and Braint Tunnel Head House (THH) and Cable Sealing End Compound (CSEC) on Anglesey including modifications to parts of the existing 400 kV overhead line between Wylfa and Pentir;
- Braint THH and CSEC on Anglesey;
- tunnel between Braint and Tŷ Fodol THHs;
- Tŷ Fodol THH and CSEC in Gwynedd;
- new section of 400 kV overhead line between Tŷ Fodol THH and CSEC and Pentir Substation;
- extension to the existing substation at Pentir; and
- temporary construction compounds, access tracks, construction working areas, localised widening of the public highway and third party works that are required to construct the infrastructure listed above.

1.1.2 The Proposed Development has been split into six sections (A – F), see Figure 1.

1.1.3 A full description of the Proposed Development is provided in Chapter 3, Description of the Proposed Development (**Document 5.3**) and Chapter 4, Construction, Operation, Maintenance and Decommissioning of the Proposed Development (**Document 5.4**).

### *Introduction to the Report*

- 1.1.4 This report identifies where otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) have been recorded in the vicinity of watercourse crossing locations through a combination of desk-based assessment and field surveys, within a distance of up to 250 m of watercourse crossing points within the Order Limits, carried out in 2016 and 2017. The watercourse crossing locations are identified in the Indicative Watercourse Crossing Schedule (**Document 5.3.2.2**).
- 1.1.5 This report also identifies relevant legislation and planning policy relating to otter and water vole, which are outlined in section 2.

### *Objectives*

- 1.1.6 The objectives of the otter and water vole surveys and report are to:
- review existing ecological data to identify any records for otter and water vole within and up to 2 km from the Order Limits, referred to as the study area in this report;
  - provide baseline information about the presence of otter and water vole at the watercourse crossing locations and up to 250 m either side where access was available and suitable habitat was present, referred to as the survey area in this report. This survey area allows for the flexibility to work within the Order Limits afforded by the draft Development Consent Order (DCO) (**Document 2.1**);
  - evaluate the status of these species within the survey area;
  - use the above information to inform the Ecological Impact Assessment (EcIA) set out in Chapter 9, Ecology and Nature Conservation (**Document 5.9**) to determine whether otter and water vole populations could be affected by the Proposed Development; and
  - inform the Biodiversity Mitigation Strategy (**Document 7.7**) for the Proposed Development.

## 2 Legislation and Planning Policy

### 2.1 LEGISLATION

- 2.1.1 Several different acts of legislation and regulations refer to the protection of wildlife. Legislation relevant to otter and water vole is outlined below.

#### *The Conservation of Habitats and Species Regulations 2017*

- 2.1.2 The Conservation of Habitats and Species Regulations 2017 (referred to as the 'Habitats Regulations') consolidates all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law and came into force on 30 October 1994.
- 2.1.3 The Habitats Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European sites.
- 2.1.4 In summary the Habitats Regulations protect against:
- deliberate capture, injury or killing;
  - deliberate disturbance, where this is likely to impair the species ability to survive, breed, reproduce, rear young, hibernate or migrate, or significantly affect the local distribution or abundance of the species;
  - deliberate destruction of eggs where applicable; and
  - damage or destruction of a breeding or resting place.
- 2.1.5 It is also an offence to be in possession or control, transport, sell or exchange any live or dead (or part of an) wild animal listed on Schedule 2.
- 2.1.6 Otter is listed on Schedule 2 making them a European protected species, protected under the Habitats Regulations. Water vole is not protected under European legislation.

### *The Countryside and Rights of Way Act 2000*

- 2.1.7 The Countryside and Rights of Way Act 2000 applies to England and Wales only. Part III of the Act deals specifically with wildlife protection and nature conservation.
- 2.1.8 The Act places a duty on Government Departments and the Welsh Government to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.
- 2.1.9 Schedule 12 of the Act amends the species provisions of the Wildlife and Countryside Act 1981 (as amended), strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', include an offence of reckless disturbance, confer greater powers to police and wildlife inspectors for entering premises and enable heavier penalties on conviction of wildlife offences.

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

- 2.1.10 Otter and water vole are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This affords the following protections:
- Section 9(1) of the Act makes it an offence to intentionally capture, injure or kill a wild otter or water vole;
  - Section 9(2) makes it an offence to possess or control a wild otter or water vole either alive or dead, or any part or thing derived from them;
  - Section 9(4) makes it an offence to intentionally or recklessly damage, destroy or obstruct access to any structure or place which a wild otter or water vole use for shelter or protection, or intentionally or recklessly disturb them while occupying a structure or place used for that purpose; and
  - Section 9(5) makes it an offence to sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead wild otter or water vole, or any part or thing derived from them. It is also an offence to publish or cause to be published any advertisement likely to be understood as conveying that otters, or parts or derived things of them are bought, sold or are intended to be. Section 9 applies to all stages in their life cycle.

- 2.1.11 Through inclusion on Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) otters receive additional legal protection under Section 11(2) against certain specified methods of being caught, stunned or killed.

#### *Environment (Wales) Act 2016*

- 2.1.12 Section 6 of the Environment (Wales) Act 2016 places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty (Ref 1).
- 2.1.13 To assist in complying with this duty, public authorities must have regard to relevant evidence provided in the State of Natural Resources Report and any relevant area statement for an area in which the authority exercises functions, as well as having regard to the list of living organisms and habitats published under Section 7 of the Act (which replaces the section 42 list for Wales provided in the NERC Act 2006) (Ref 1).
- 2.1.14 Otter and water vole are listed under Section 7 of the Act. Section 7 is a list of species and habitats of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. This list is currently under review by the Welsh Government in consultation with National Resources Wales (NRW).

## **2.2 PLANNING POLICY**

### *National Policy*

- 2.2.1 Government planning policy guidance throughout the UK requires local planning authorities to take account of the conservation of protected species when determining planning or development consent applications. This makes the presence of a protected species a material consideration when assessing a development proposal. In the case of a European Protected Species, such as the otter, planning policy emphasises the strict statutory provisions to which a planning authority must have due regard.
- 2.2.2 In Wales this is implemented through Planning Policy Wales - Edition 9, November 2016, supplemented by a series of Technical Advice Notes (TANs) (Ref 2) which sets out the land use planning policies of the Welsh Government. Consultation is currently being held on the draft Planning Policy Wales – Edition 10 which was issued in February 2018; the consultation period ends in May 2018.



2.2.3 Chapter 5 of PPW (9) sets out the Welsh Government's objectives for the natural heritage of Wales which includes the safeguarding of protected species. It states that *'the presence of a species protected under European or UK legislation is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat'*. It also states that *'an ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the planning decision'*.

2.2.4 Further information on the detail of Planning Policy Wales is provided in Chapter 9, Ecology and Nature Conservation (**Document 5.9**).

#### *Local Policy*

2.2.5 There are a number of local planning policies set out in the Anglesey and Gwynedd Joint Local Development Plan 2017 (Ref 3) that relate to ecology and nature conservation which in combination with other planning policies will guide local authority expectations in relation to the Proposed Development:

- Strategic Policy PS 19 relates to conserving and enhancing the natural environment;
- Policy AMG 4 relates to coastal protection;
- Policy AMG 5 relates to the protection and enhancement of local biodiversity; and
- Policy AMG 6 relates to protecting sites of regional or local significance.

#### *Biodiversity Policy*

2.2.6 As a result of devolution, and new country-level and international drivers and requirements, much of the work previously carried out by the UK Biodiversity Action Plan (BAP) is now focussed at a country-level rather than a UK-level. The UK BAP was succeeded in July 2012 by the 'UK Post-2010 Biodiversity Framework'. The UK list of priority species and habitats, however, remains an important reference source and has been used to help draw up statutory lists of priorities in England, Scotland, Wales and Northern Ireland. In Wales the current lists are those under Section 7 of the Environment (Wales) Act 2016 which includes otter and water vole as priority species requiring conservation.

- 2.2.7 The national strategy for biodiversity is delivered at local level via Local Biodiversity Action Plans (LBAPs). Species and habitats of local conservation concern or value are included in the LBAP and an action plan has been created for each species and certain habitat types. The LBAPs relevant to the study area for the Proposed Development are the Anglesey LBAP published by Isle of Anglesey County Council (IACC) and the Natur Gwynedd LBAP for Gwynedd developed by a partnership of organisations and individuals.
- 2.2.8 Otter is included on the Anglesey LBAP as a recently naturally re-established species on Anglesey. Water vole is also included on the Anglesey LBAP, this species is considered likely to be widespread in suitable habitat, including ditches, with Anglesey as a whole likely to be a stronghold for water voles, especially the wetlands in the south and east of the island.
- 2.2.9 Otter is included in the Natur Gwynedd LBAP as, despite the otter survey of Wales showing an increase in range, it is evident numbers are still relatively low. Water vole is also included in the Natur Gwynedd LBAP, as this species is considered widespread throughout Gwynedd.
- 2.2.10 The Wales Biodiversity Partnership (WBP) brings together key members from the public, private and voluntary sectors to promote and monitor biodiversity and ecosystem action in Wales. WBP provides a leadership role and an expert steer on priorities for action on biodiversity and ecosystems in Wales. The WBP Steering Group has now formally disbanded and the biodiversity action work programme taken on by the Wales Biodiversity Strategy Board (WBSB) and the WBP working groups such as the Wales Mammal Biodiversity Action Forum. The latter provides a link for the flow of information between local, regional, Wales and UK biodiversity action processes and has produced mammal action plans, including for both otter and water vole.

## 3 Methodology

### 3.1 DESK STUDY

3.1.1 A desk study was carried out to identify existing information concerning the presence of otter and water vole within the study area. This included a review of the ecological survey report produced in 2016 for the 'Former Shell Tank Farm' at Rhosgoch (Ref 4) and the following baseline ecological surveys of the strategic search area completed by Horizon Nuclear Power for the Wylfa Newydd Power Station Project on Anglesey:

- Horizon Nuclear Power Wylfa Ltd Wylfa New Nuclear Power Station Otter Survey Report 2012 (Ref 5);
- Horizon Nuclear Power Wylfa Ltd Wylfa New Nuclear Power Station Water Vole Survey Report 2012 (Ref 6);
- Horizon Nuclear Power (Wylfa) Ltd., Consultancy Report: Otter (*Lutra lutra*) Baseline Surveys 2013 (Ref 7); and
- Horizon Nuclear Power (Wylfa) Ltd., Consultancy Report: Water Vole (*Arvicola terrestris*)<sup>1</sup> Baseline Surveys 2013 (Ref 8);

3.1.2 Protected species record data (including otter and water vole records) was requested from Cofnod, the local environmental record centre, in February 2018. This provided an update to data obtained in November 2016 and May 2015.

3.1.3 Relevant publicly available reports of recent surveys and records of evidence of otter and water vole activity were also reviewed (Ref 9 and Ref 10).

3.1.4 As otter and water vole populations may fluctuate as a result of natural and human-made changes, only records dated since 2007 were considered in the baseline; older records were considered to offer limited value in determining current presence and distribution.

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<sup>1</sup> The Latin for water vole was formerly *Arvicola terrestris*, however it has now changed to *Arvicola amphibius*.

- 3.1.5 Watercourses highlighted for otter and water vole surveys were identified from the Indicative Watercourse Crossing Schedule (**Document 5.3.2.2**). Watercourses proposed for access track crossings were selected to be surveyed as these are the ones where an impact could potentially occur through the installation of a culvert/bridge.

## 3.2 FIELD SURVEY

### *Otter Survey*

- 3.2.1 Otter surveys were carried out between July and October 2016 and June and November 2017.
- 3.2.2 The banks and margins of suitable watercourses were surveyed for up to 250 m either side of the watercourse crossing location i.e. a 500 m section, with both banks being surveyed where habitat was suitable and access available to ensure a comprehensive survey was conducted.
- 3.2.3 The surveys were conducted in general accordance with Chanin (2003) '*Monitoring the Otter*' (Ref 11) and with reference to Macdonald *et al* (1998) (Ref 12) and Cresswell *et al* (2012) (Ref 13). The surveys were specifically aimed at searching for any evidence of otter activity, including:
- holts: underground tunnels within the bank of watercourses, within or underneath tree root-plates or boulder piles used by otters either temporarily or permanently or to rest up during the day, and are the usual location of natal or breeding sites;
  - couches: above ground resting-up sites which may be hidden, partially sheltered or fully exposed that may also be used as natal and breeding sites;
  - slides: typically worn areas on steep slopes, often near holts or couches;
  - prints: characteristic footprints that can be found in soft ground and muddy areas;
  - spraints: with their characteristic smell and as often left in noticeable locations such as in-stream boulders, these are the most reliable evidence for recent presence of otters;
  - feeding signs: remains of prey items notably fish, crabs or skinned amphibians at preferred feeding stations can indicate the presence of otter; and

- paths: terrestrial passageways used by otters when moving between resting-up sites and watercourses, or during high flow conditions when they will travel along the banks of watercourses.

3.2.4 All signs of otter were mapped, photographed and given a Global Positioning System (GPS) reference; signs were noted as confirmed or possible.

#### *Water Vole Survey*

3.2.5 Water vole surveys were carried out between July and October 2016 and June and November 2017.

3.2.6 The surveys were undertaken in general accordance with guidance provided in the 2011 Water Vole Conservation Handbook 3rd edition (Ref 14) and the 2016 Water Vole Mitigation Handbook (Ref 15), as both are currently relevant.

3.2.7 The 2016 Water Vole Mitigation Handbook relates to development projects and supersedes the Water Vole Conservation Handbook (2011 edition) in all aspects relating to development. The handbook set out specific protocols for establishing the baseline needed to support applications for planning permission or other permits. It is expected this will typically comprise a combination of desk study, habitat assessment and specific survey effort for signs of water vole both of the footprint of the works and a distance upstream and downstream which varies with the type of works being proposed. Also of note is the expectation that surveys should ideally be undertaken on at least two separate visits, conducted at least two months apart to allow for variations in habitat suitability and hence utilisation across the season. One survey should be in the first half of the survey season (between mid-April and June) and one in the second (between July and September) as this is when water voles are most active. There are though circumstances in which reduced survey effort through a single visit may be all that is necessary if the habitat is of low suitability for water voles and there is a low likelihood of them being present in the surrounding area.

3.2.8 For the Proposed Development, two visits were conducted on watercourses where potential water vole habitat was recorded. The banks and margins of suitable watercourses were surveyed for up to 250 m either side of the watercourse crossing location i.e. a 500 m section, with both banks and in-channel habitat being surveyed where habitat was suitable and access available to ensure a comprehensive survey was conducted.

3.2.9 The field signs searched for were:

- sightings of water vole;
- latrines: recognisable by faeces size, shape, and content. If not too dried-out these are also distinguishable from rat droppings by their smell;
- feeding stations: food items are often brought to feeding stations along pathways and hauled onto platforms. Recognisable as neat piles of chewed vegetation up to 10 cm long;
- burrows: appear as a series of holes along the water's edge distinguishable from rat burrows by size and position;
- lawns: may appear as grazed areas around land holes;
- footprints: tracks may occur at the water's edge and lead into bank side vegetation. May be distinguishable from rat footprints by size; and
- runways in vegetation: low tunnels pushed through vegetation near the water's edge; these are less obvious than rat runs.

3.2.10 Any field signs observed were recorded, mapped, photographed, given a GPS reference and classified as confirmed or possible.

3.2.11 During the otter and water vole surveys, evidence of other riparian mammals such as American mink (*Neovison vison*), water shrew (*Neomys fodiens*), bank voles (*Myodes glareolus*) and brown rat (*Rattus norvegicus*) was recorded when observed.

### 3.3 ASSUMPTIONS AND LIMITATIONS

3.3.1 The aims of a desk study are to help characterise the baseline context of a proposed development and provide valuable background information that would not be captured by site surveys alone. Information obtained during a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular species does not necessarily mean that the species do not occur in a study area. Likewise, the presence of records for particular species does not automatically mean that these still occur within the area of interest or are relevant in the context of a proposed development.

3.3.2 The detail and accuracy of the desk study records rely on those provided to Cofnod from a variety of sources. The results of the updated desk study undertaken in February 2018 have been considered for the baseline assessment. The latest desk study search was conducted on the Proposed Development layout which now covers a smaller area resulting in some

records being excluded that had previously been considered. The search also uses the latest priority and conservation lists which has also resulted in some further additions and exclusions of certain species.

- 3.3.3 It should be noted that professional experience and judgement is important when carrying out assessments of habitat suitability for species such as otter and water vole. Professional judgement is particularly important when assessing linear watercourses, such as drainage ditches. For example, some sections of drainage ditches may be more suitable for otters or water vole than others, and as drainage ditches can form part of a complex of connected ditches, determining overall suitability can be difficult.
- 3.3.4 Due to the presence of extensive vegetation both in the channel and along the banks of some of the watercourses, it was not always possible to safely access all sections of the survey area. In areas that could not be fully accessed, spot checks were made and the surrounding habitat was checked thoroughly and any entry/exit points, mammal paths into the vegetation were looked for, which could indicate that an animal is using it for commuting or shelter. This 'spot check' method is considered an efficient way to gather data for otter (Ref 11) and it is considered that the survey method applied would be sufficient to provide a conclusion regarding the presence or potential presence of otter and/or water vole in the less accessible areas.
- 3.3.5 The watercourse crossing locations detailed in the Indicative Watercourse Crossing Schedule (**Document 5.3.2.2**) were used to focus the surveys. Due to the flexibility afforded by the draft DCO (**Document 2.1**), it is possible that the watercourse crossing location could be positioned at any point along the watercourse within the Order Limits. Therefore at each crossing location, a distance of approximately 250 m either side was surveyed (500 m total) to allow for the flexibility. Surveying this distance provided comprehensive information on the watercourse features and habitats to determine suitability for otter and water vole. Other suitable watercourses present in the survey area that do not have crossing locations have also been surveyed to provide further evidence of the usage of watercourses within the Order Limits by these two species.
- 3.3.6 Otter couches can be very difficult to identify, and may consist of an area of flattened grass or earth. Where rocks or rock armour are used as couches, these can be almost impossible to identify without observing the otter in-situ.
- 3.3.7 Whilst spraint surveys are the recognised method of establishing the presence of otters, it is not possible to assess the number of animals present (Ref 16).

- 3.3.8 The optimum time to survey for water voles is generally considered to be between May and the end of September. The majority of surveys were conducted within this seasonal window however nine survey visits were conducted in October/early November; as weather conditions remained suitable for water vole surveys this is not considered to have affected the results and the results obtained are robust.
- 3.3.9 The size and distribution of water vole populations naturally fluctuate, notably in response to seasonal changes and the weather, especially cold winters. It is therefore possible for some populations of water voles to be absent from some watercourses at certain times of the year and for these watercourses to be subsequently re-colonised by dispersing young animals. These natural fluctuations have been taken into account when assessing the results of the surveys undertaken and development of the Biodiversity Mitigation Strategy (**Document 7.7**).



## 4 Results

### 4.1 DESK STUDY

#### *Statutory Designations*

- 4.1.1 No internationally or nationally designated sites identified within the study area have been designated for the conservation of otter or water vole. However, otter are recognised as a species present on the Anglesey Fens Special Area of Conservation (SAC) and the Anglesey and Llyn Fens Ramsar (further details are provided below). The Cors Erddreiniog Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR) is recognised as a national key site for water vole. The Order Limits overlap in very small places along the western boundary of the SAC/Ramsar/SSSI and NNR (Figure 9.1, **Document 5.9.1.1**).
- 4.1.2 Consideration has been given to the Afon Gwyrfaï a Llyn Cwellyn SAC (Figure 9.2, **Document 5.9.1.2**), despite the site being over 8.5 km from the Order Limits, an element of this site incorporates the River Gwyrfaï, which feeds into the Menai Strait. Otter is listed as a qualifying feature of the SAC which is recognised as a transient species.
- 4.1.3 The Core Management Plan (including Conservation Objectives) for the Anglesey Fens SAC (location shown on Figure 9.1, **Document 5.9.1.1**) lists otter as one of the 'other Annex II species present on the site' (Ref 9).
- 4.1.4 The vision for this feature in the Core Management Plan is for it to be in a favourable conservation status, where all of the following conditions are satisfied:
- the population of otters using the SAC is stable or increasing over the long term and reflects the natural carrying capacity of the habitat within and adjacent to the SAC;
  - the SAC will have habitat, including riparian trees and vegetation and wetlands, to help support the otter population in the long term;
  - the site contributes food (including eels, other fish, amphibians etc.) to help support a resident otter population; and

- all factors affecting the achievement of the foregoing conditions are under control.
- 4.1.5 The Anglesey and Llyn Fens Ramsar (Figure 9.1, **Document 5.9.1.1**) site citation lists otter as a nationally important species occurring on the site.
- 4.1.6 The Glannau Porthaethwy SSSI (Figure 9.1, **Document 5.9.1.1**) extends along 4 km of the shore of the Menai Strait from Britannia Bridge to Craig y Don. The citation for this SSSI notes that that otters have been recorded in and around the River Cadnant a small river on Anglesey which drains to the Menai Strait about 1 km north-east of the Menai Suspension Bridge.

#### *Non Statutory Designated Sites*

- 4.1.7 No non-statutory designated sites identified within the study area have been designated for the conservation of water vole or otter.

#### *Otter Report Review Summary*

- 4.1.8 After experiencing a dramatic, country-wide population crash in the second half of the twentieth century, otters were presumed absent from Anglesey during the 1980s and early 1990s. Since then, the otter survey of Wales, which has taken place every seven years since 1978, has shown that otters have become re-established across Wales. The most recent otter survey of Wales (Ref 10) conducted in 2009 and 2010, concluded that across North Wales as a whole, the otter had continued to consolidate its range and was considered widespread in the hydrometric area of Glaslyn to the east of the Menai Strait. However, the largest expansion was reported to have been on Anglesey with a leap from seven (18%) of the 40 survey sites positive in 2002 to 27 (67.5%) of these survey sites positive in 2009, with new sites to the west and north of the island. The otter was considered to most likely now be a breeding species and potentially present on most of the river catchments on the island.
- 4.1.9 A search for signs of otter activity was undertaken of all water features within the site of the former Shell Tank Farm to the east of Rhosgoch (Ref 4) undertaken in October 2015. This site is approximately 600 m north-east of the Proposed Development at its closest point with no direct aquatic connectivity.
- 4.1.10 The results indicated that the stream bordering the site to the north, dry ditch bordering the western boundary and minor tributaries and ponds on site were considered to offer limited foraging opportunities for otter. Whilst the ponds on site provided a potential fish and amphibian resource, no evidence of otter was observed. The wetland habitats within the site were considered

to potentially be used by otter as part of a wider territory, especially as the stream bordering the site to the north is a tributary of the River Wygyr on which this species is known to be present. An otter spraint record from Cofnod dated 2012 was provided adjacent to this site (Record 18 on Figure 1).

- 4.1.11 Otter surveys and incidental sightings since 2010 in relation to Wylfa Newydd Power Station Project have indicated the presence of otter on various watercourses within their survey area. Habitat assessments concluded that there was the potential for breeding to take place within their survey area. Desk study records provided by Horizon Nuclear Power are shown on Figure 1.
- 4.1.12 An otter survey conducted in 2013 for the Wylfa Newydd Power Station Project (Ref 7) concluded that there was the potential for otters to breed within the dense, undisturbed wetland habitats of the Cae Gwyn SSSI which is located approximately 1 km west of the Order Limits and potentially forage within the Tre'r Gof SSSI located approximately 30 m east of the Order Limits (Figure 9.1, **Document 5.9.1.1**). Numerous spraint records and footprint records were recorded to the west of the Order Limits associated with the River Cafnan (Figure 1).
- 4.1.13 The results of otter surveys undertaken in 2012 in relation to the Wylfa Newydd Power Station Project (Ref 5) reported field signs of otter in the form of spraints and potential pathways; these fall within the study area (Figure 1).
- 4.1.14 These findings were similar to the results of previous surveys conducted for the Wylfa Newydd Power Station Project in 2010 and 2011 where spraints were found at Porth y Wylfa, Felin Cafnan, and within the Cestyll Gardens (Ref 5). Whilst no other signs of otter activity were identified, it was noted there was the potential for otters to use other watercourses within their survey area as otter territories tend to be quite large, with male otters in particular having territories extending for tens of kilometres along rivers.
- 4.1.15 In 2012, a survey of the Cefni catchment undertaken by Menter Môn (Ref 17) found 16 spraints along the Cefni River within the Dingle Local Nature Reserve (LNR) (Figure 9.1, **Document 5.9.1.1**), located approximately 1.8 km from the Order Limits.
- 4.1.16 In March 2007, an otter survey was carried out on behalf on the Menter Môn and the Anglesey Otter Project on the River Wygyr and its tributary River Meddanen (Ref 18). The survey comprised searching for spraints at all likely spots (such as prominent rocks) along the river boundaries, and signs

of activity such as footprints and potential holts on the River Wygyr (approximately 1 km north of the Proposed Development) and its tributary River Meddanen (which runs through Lllanfechell and would be crossed by the Proposed Development) and which joins the River Wygyr near Carrog Farm. The results found 16 spraint sites comprising 29 spraints. The habitat was considered excellent for otters and it was concluded that otters were active along both the River Wygyr and River Meddanen and very likely to be using this area to lie up and potentially for holts.

#### *Otter Data Search Records*

- 4.1.17 Cofnod provided 62 records (dated since 2007) for otter within the study area, these are shown on Figure 1 and are detailed in Appendix A. This comprised 48 records of spraints: 13 sighting records (six of these were dead otters on roads) and one record of otter footprints. Three of the records are within the Order Limits and five are within 250 m of the Order Limits.
- 4.1.18 Due to the precision of some of the grid references provided by Cofnod e.g. 1 km<sup>2</sup> grid reference which then places the record at the centre of the square, four otter records show slightly outside the 2 km study area (Records 54, 58, 59 and 77 on Figure 1) and two records (one for otter and one for American mink) fall within Cemlyn Bay (Records 1 and 2 on Figure 1); however these have been included for completeness.

#### *Otter Incidental Sightings*

- 4.1.19 Incidental evidence of otter obtained during the course of ecology surveys for the Proposed Development include:
- during a vegetation survey conducted in July 2016, anecdotal evidence was received through a landowner of an otter survey conducted within the last three years finding spraints and a couch alongside a stream (continuation of watercourse Ref 1991-D024, Figure ID W11, Figure 2) in woodland approximately 350 m south of proposed crossing location NG-RVX A/70 in Section A;
  - an otter spraint was recorded during Phase 1 Habitat surveys in 2016 along watercourse Ref 2039-W005 (Figure ID W05, Figure 2), approximately 150 m from proposed crossing location NG-RVX A/48 in Section A;
  - anecdotal evidence from a landowner of otter present along the River Goch which is located to the east of watercourse Ref 4010-W028 (Figure ID W18, Figure 2) in Section B; and

- anecdotal evidence from a landowner provided during the Phase 1 Habitat surveys in 2015 of otter along a watercourse located approximately 880 m from the Order Limits in Section E (closest crossing location NG-DRX E/236, Figure 2).

#### *Water Vole Report Review Summary*

- 4.1.20 A search for signs of water vole activity was undertaken of all water features within the site of the former Shell Tank Farm at Rhosgoch (Ref 4) in October 2015. This site is approximately 600 m north-east of the Proposed Development at its closest point with no direct aquatic connectivity. The results indicated that whilst the stream bordering the site to the north, dry ditch bordering the western boundary and the minor tributaries and ponds on site were considered to offer moderate foraging opportunities for water vole, the ditches were overgrown, mostly dry and offered limited opportunity for water vole burrow creation. No burrows, feeding lawns or latrines of water voles were found.
- 4.1.21 Surveys since 2010 in relation to the proposed Wylfa Newydd Project have shown water vole to be present on various watercourses within their survey area. The results of surveys carried out in the spring and autumn 2013 (Ref 8), the most recent survey for which data has been made available, indicate there was positive evidence for water voles in the form of latrines on watercourses in the western side of their survey area (Figure 1). It was therefore considered that the habitats in the western side of the site represented the most likely areas for a viable population of water vole to persist in the survey area.
- 4.1.22 The results of water vole surveys undertaken in 2012 in relation to Wylfa Newydd Project Power Station (Ref 6) reported that signs of water vole activity (feeding stations) were only recorded on one watercourse (River Cafnan) approximately 1.2 km to the west of the Order Limits (Figure 1). A previous survey undertaken in 2011 also found evidence of water vole activity on a watercourse approximately 1 km to the south-west of the Order Limits, this was a large drainage ditch located south of Rhwng Dau Fynydd. However the survey in 2012 reported this watercourse as having reduced potential for water vole due to increased poaching by livestock (Ref 6).
- 4.1.23 During 2010, water vole surveys in relation to the Wylfa Newydd Power Station Project also recorded activity on watercourses in the north-east of their survey area, including on a watercourse located within the Tre'r Gof SSSI which lies within 50 m of the Order Limits (Figure 9.1, **Document 5.9.1.1**). At the time of the 2012 survey this watercourse was found to have the water table at or near the bank crest. The results of the 2013 survey

suggest that this watercourse in the Tre'r Gof SSSI no longer supported water vole. This may be due to a localised extinction event. It should be noted that no signs of mink were recorded during that survey.

- 4.1.24 In 2007, a water vole survey was carried out on behalf of Menter Môn on the River Wygyr and its tributary River Meddanen (Ref 18). The results indicated water voles were present along the River Wygyr wherever the habitat was suitable.

#### *Water Vole Data Search Records*

- 4.1.25 Cofnod provided 14 records (dated since 2007) for water vole within the study area, these are shown on Figure 1 and are detailed in Appendix A. These comprised records for droppings, runs, burrows and sightings of water vole. None of the records were within the Order Limits however three were within 250 m of the Order Limits.
- 4.1.26 Due to the precision of some of the grid references provided by Cofnod e.g. 1 km<sup>2</sup> grid reference which then places the record at the centre of the square, one water vole record shows slightly outside the 2 km study area (Record 57 on Figure 1); however this has been included for completeness.

#### *Other Mammal Data Search Records*

- 4.1.27 Cofnod also provided two records for American mink, one was a sighting of an animal (Record 2 on Figure 1) and the other was a mink spraint under a bridge (Record 27 on Figure 1).

## **4.2 FIELD SURVEY**

- 4.2.1 The desk study identified 63 watercourse crossing locations. These are where access tracks will cross over rivers, streams or drains (Figure 2); the crossings are located on 46 watercourses (some watercourses have more than one crossing). Sixty-two of these locations were surveyed in 2016 and 2017; one of them (crossing location NG-DRX C/165, W57 Figure 2) will be surveyed in 2018. Additional stretches of two watercourses will also be surveyed in 2018 to extend the survey area to ensure that the location of the crossing is covered (crossing locations NG-DRX E/225 (W44), NG-DRX F/262 and NG-DRX F/282 (W54) on Figure 2).
- 4.2.2 Further details on the watercourses and results of the surveys are presented in Appendix B. Photographs are provided in Appendix C.

#### *Otter Surveys*

- 4.2.3 Two of the watercourses surveyed had positive signs of otter presence:

- Ref 2039-W005 (Figure ID W05, Figure 2 – Sheet 1 and Figure 3 – Sheet 1) - spraint and a mammal run recorded. The watercourse is the Meddanen tributary of the River Wygyr to the north-east of Llanfechell (Section A). The location of the field signs were outside the Order Limits approximately 180 m west of the proposed crossing location (NG-RVX A/48).
- Ref 684-WC01 (Figure ID W49, Figure 2 – Sheet 9 and Figure 3 – Sheet 4) - two spraint and otter footprints recorded. The watercourse is the Braint Bifurcation tributary of the River Braint to the west of the Menai Strait (Section F). The location of the field signs were on the edge of the Order Limits approximately 140 m east of the proposed crossing location (NG-RVX F/243) and within a drainage mitigation area.

4.2.4 Four further watercourses were identified as having potential to support otter due to the suitability of the habitat present and/or their connectivity with potentially suitable watercourses in the adjacent area; no confirmed or potential field signs were recorded on these watercourses. The four watercourses were:

- Ref 1751-W001/1751-A (Figure ID W21, Figure 2 – Sheet 4) - associated with watercourse crossing locations: NG-DRX B/120 and NG-DRX B/121;
- Ref 1744-W041/B1-B4 (Figure ID W22, Figure 2 – Sheet 4) – associated with watercourse crossing locations: NG-RVX B/124 and NG-RVX B/135;
- Ref 4074-F2/4074-W057 (Figure ID W28, Figure 2 – Sheet 6) - associated with watercourse crossing locations: NG-RVX C/156; and
- Ref 4074-D148 (Figure ID W29, Figure 2 – Sheet 6) – no crossing location associated with this watercourse.

4.2.5 No holts or resting places were found during the surveys.

#### *Water Vole Surveys*

4.2.6 One of the watercourses surveyed had positive signs of water vole presence and another had potential signs of water vole presence:

- Ref 4010-W028 (Figure ID W18 Figure 2 – Sheet 4 and Figure 3 – Sheet 2) - two burrows and three latrines recorded. This watercourse is the Rhosybol tributary of the River Goch near Capel Parc (Section



B). The location of the field signs were within the Order Limits between proposed pylons 4AP033 and 4AP034, however not within the area of works as shown on the Construction Plans (**Document 5.4.1.1 and 5.4.1.2**). There is no proposed access crossing location on this watercourse.

- Ref 12033-WC01 (Figure ID W44 Figure 2 – Sheet 9 and Figure 3 – Sheet 3) – five burrows and a feeding station were recorded which had potential to be water vole field signs, however as no droppings/latrines were noted they could not be confirmed as water vole. The watercourse is a ditch within the River Braint catchment area to the north of the A55 (Section E). The location of the field signs were outside the Order Limits approximately 300 m east of the proposed crossing location (NG-DRX E/225).

4.2.7 One further watercourse was identified as having potential to support water vole due to the suitability of the habitat present for water vole; however no confirmed or potential field signs were recorded on this watercourse. The watercourse was:

- Ref 4074-D148 (Figure ID W29, Figure 2 – Sheet 6) - no crossing location associated with this watercourse

### 4.3 SUMMARY

4.3.1 Table 4.1 below summarises where otter and water vole presence has been confirmed.

Table 4.1 Confirmed Otter and Water Vole Presence						
Section	Water-course Ref No.	Water-course Type	Date of Survey	Otter Evidence	Water Vole Evidence	Distance to Nearest Crossing Location
A	2039-W005 (Figure ID W05)	Stream	31/08/2016	Spraint and mammal run	Suspected absent	180 m



**Table 4.1 Confirmed Otter and Water Vole Presence**

Section	Water-course Ref No.	Water-course Type	Date of Survey	Otter Evidence	Water Vole Evidence	Distance to Nearest Crossing Location
B	4010-W028 (Figure ID W18)	Stream	01/09/2016	Suspected absent	Two burrows and three latrines	No access crossing on water-course
E	12033-WC01 (Figure ID W44)	Drain	01/11/2017	Suspected absent	Five burrows and feeding station (potential water vole but not confirmed)	300 m
F	684-WC01 (Figure ID W49)	River	01/11/2017	Two spraint and footprints	Suspected absent	140 m

## 5 Conclusion

### 5.1 INTRODUCTION

- 5.1.1 The desk study and surveys have shown continued presence of otter and water vole within the study area. Confirmed evidence for otter presence was limited to two watercourses and confirmed evidence of water vole presence was limited to one watercourse (and potential presence on one watercourse) located within the survey area. Whilst burrows for water vole were identified on one watercourse, no confirmed resting or breeding places were confirmed for otter.
- 5.1.2 The populations of both water vole and otter in the survey area cannot be accurately estimated due to the low numbers recorded although it is likely that breeding of both species occurs on Anglesey and in north Gwynedd.
- 5.1.3 It is considered that otter numbers are increasing. This is likely to result in greater competition between individuals and therefore greater use made of watercourses where signs of their presence have not been previously recorded. The trend in the water vole population is less certain, with local extinctions reported in the desk study.
- 5.1.4 Effects as a result of the Proposed Development and mitigation measures are detailed in Chapter 9, Ecology and Nature Conservation (**Document 5.9**). Further details on the mitigation measures are provided in the Biodiversity Mitigation Strategy (**Document 7.7**). Potential enhancement opportunities are detailed within the Enhancement Strategy (**Document 7.13**) which includes opportunities for enhancement of habitats that could benefit otter and water vole.

### 5.2 OTTER

- 5.2.1 The recent increase in evidence for the presence of otters on Anglesey would suggest this species is now breeding on the island. Otter breeding can occur at any season of the year, so breeding activity at holts needs to be determined on a case by case basis.
- 5.2.2 The recent increase in evidence for the presence of otters on Anglesey is also likely to reflect increased numbers of otters in rivers such as the Gwyrfai, Seiont and Ogwen located in the Glaslyn hydrometric area close to the Menai Strait and the recognised use being made of coastal areas by this

species. Otters present along the northern coastal fridge of Anglesey may make use of the Tre'r Gof SSSI for foraging which is 30 m at its closest point to the Order Limits.

- 5.2.3 There is also evidence to suggest otters are using inland watercourses. The location of the positive field signs on watercourse Ref 2039-W005 (Figure ID W05 Figures 2 and 3), comprising a spraint and a mammal run, was consistent with the results of the otter survey carried out in 2007 on behalf of Menter Môn and the Anglesey Otter Project on the River Wygyr and its tributary River Meddanen (Ref 18). This area along the River Meddanen provides one of the better areas of potential resting habitat for otters within the survey area, although no confirmed resting places have been identified.
- 5.2.4 The positive evidence recorded along the Braint Bifurcation tributary Ref 684-WC01 (Figure ID W49 Figures 2 and 3), comprising spraint and footprints, supports the findings of the 2009 and 2010 otter survey of Wales which concluded that otter populations are widespread around the Menai Strait area (Ref 10).
- 5.2.5 The section of stream (continuation of watercourse Ref 1991-D024, Figure ID W11, Figure 2) through the woodland where anecdotal evidence was received for the presence of otters is approximately 350 m south of the nearest proposed crossing location (NG-RVX A/70, Section A). The Order Limits at its closest point is approximately 190 m from the evidence location.
- 5.2.6 Anecdotal evidence was also received of otter being present on the River Goch, this is approximately 120 m from a proposed access track which is currently used as an access road to the farm therefore no additional watercourse crossings will be created.
- 5.2.7 Otters are known to often occupy extensive territories with Green *et al* (1984) (Ref 19) reporting that for male otters this could include up to 30 to 40 km of watercourses in which they move from one lying up place or holt to another to exploit available food sources when they are present in sufficient biomass for hunting to be efficient. It is therefore possible that any given watercourse would only be used by otters on an occasional basis and potentially not used for some considerable time. Lack of field signs during a survey may therefore lead to the false conclusion of the watercourse not being used by otter caused by absence of passage for some time.
- 5.2.8 None of the river systems on Anglesey exceed 25 km in length. This, together with the majority of watercourse being generally narrow and of low gradient and low energy, is considered likely to impose limitations on the carrying capacity of the watercourses for otters in terms of prey availability,

particularly away from the coast. The majority of watercourses crossed by the Proposed Development are therefore considered largely unsuitable for supporting otters, providing little in the way of foraging habitat or suitable lying up or breeding places.

5.2.9 As a result, it is considered likely that the watercourses identified as having suitability for otter that are present within the Order Limits or within 250 m are most likely to provide commuting corridors between more favourable areas such as coastal areas and inland wetlands. With its network of ditches, pools and extensive reed beds, Malltraeth Marsh SSSI in the very south of the Island and over 2.5 km from the Proposed Development is considered a focal area for otters on the island as a likely breeding area. Sightings of otter families were also reported in the most recent otter survey of Wales (Ref 10) from the Cefni catchment with a probable centre for breeding at Llyn Cefni (Cefni Reservoir).

5.2.10 None of the watercourses on Anglesey shown in the most recent results of the otter survey of Wales lie within 2 km of the Order Limits. The nearest was Llyn Cefni (Cefni Reservoir) approximately 2.3 km to the west of the Order Limits, though connected to it by watercourses, including the River Erddreiniog, which are crossed by temporary access tracks for the Proposed Development.

5.2.11 The successful return of the otter to Anglesey and the north of Gwynedd can be attributed to a variety of factors, including an improvement in the water quality of streams and rivers and the removal of certain pesticides from use. It has also been aided by the extensive habitat restoration work carried out as part of the Anglesey Otter Project. The aims of this project have been to aid the return and subsequently increase the number of otters on the island through:

- regular surveys for otters;
- construction of artificial otter holts to encourage breeding; and
- riparian habitat creation and management for otters to create cover and, in the long term, sites for natural otter holts.

5.2.12 Natural Resources Wales (NRW) issue licences under Regulation 53 of the Habitats Regulations that allow activities that would otherwise be unlawful. Based on the results to date it is unlikely that an NRW licence would be required for otter.

5.2.13 NRW licences must meet three tests before they can be issued, namely:

- the purpose of the work meets one of those listed in the Habitats Regulations, namely: preserving public health or public safety or there are imperative reasons of over-riding public interest; scientific and educational purposes; ringing or marking or conserving wild otter;
- there is no satisfactory alternative; and
- that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

### 5.3 WATER VOLE

5.3.1 Anglesey is considered an important area for water vole due to the large number of small streams and lakes that it contains, and until recently, low numbers of mink. The first mink was caught on the island in 2005, and in 2006 Menter Môn, in partnership with Environment Agency Wales, British Association for Shooting and Conservation (BASC) and the North West Wales Riparian Mammals group set up the Anglesey Water Vole Project to:

- survey for water voles on Anglesey;
- advise on development projects having an impact on water voles;
- implement water vole habitat improvement projects; and
- introduce a programme of monitoring for the presence of mink around the island using mink rafts and to take appropriate control action when they were detected.

5.3.2 As a result of the surveys undertaken, priority areas by unitary authority for this species include Anglesey and Gwynedd.

5.3.3 Anglesey contains two national key sites for water voles: Cors Erddreining SSSI/NNR (which overlaps the Order Limits in several very small places along the western boundary) and Malltraeth Marsh SSSI (which is outside the study area), as well as nine water vole local key areas and eight water vole alert areas.

5.3.4 The majority of surveyed watercourses offered sub-optimal habitat for water voles due to issues such as heavy grazing of bankside vegetation, poaching, drying out of ditches and scrub encroachment. The surveys only confirmed water vole presence on one watercourse within the Order Limits (Ref 4010-W028, Figure ID 18, Figure 2 and 3) and potential presence on one watercourse adjacent to the Order Limits (Ref 12033-WC01, Figure ID 44, Figures 2 and 3).

- 5.3.5 Water voles appear to have a localised distribution on Anglesey and populations are transient in nature. This is illustrated by the 2013 Water Vole Baseline Survey Report produced for the Wylfa Newydd Project by Horizon Nuclear Power (Ref 8) which noted that the Tre'r Gof SSSI was an example where localised extinction had taken place. This site was considered to provide optimal water vole habitat and water voles were present in 2010, but this species had not been recorded since. The absence of habitat connectivity was considered the most likely cause of the species not having recolonised the site.
- 5.3.6 Under Section 16(3) of the Wildlife and Countryside Act 1981 (as amended) NRW are able to issue licences to permit acts that would otherwise be unlawful for the following purposes in relation to water voles:
- scientific or educational;
  - ringing or marking;
  - conservation;
  - protecting any zoological or botanical collection;
  - photography;
  - preserving public health or public safety; and
  - preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber or any other form of property or to fisheries.
- 5.3.7 It is not possible to issue a licence for a “development” under the Wildlife and Countryside Act 1981 (as amended) in a similar way to some of the licences issued under the Habitats Regulations. Based on the results to date it is unlikely that an NRW licence would be required for water vole.

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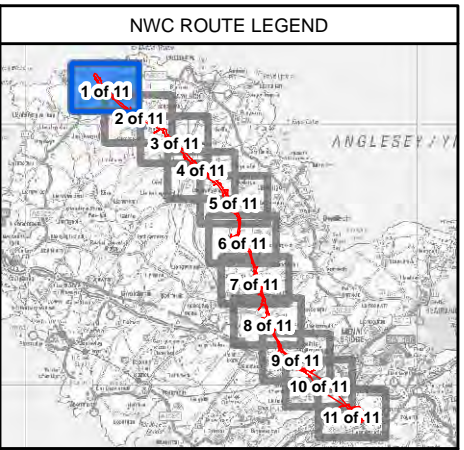
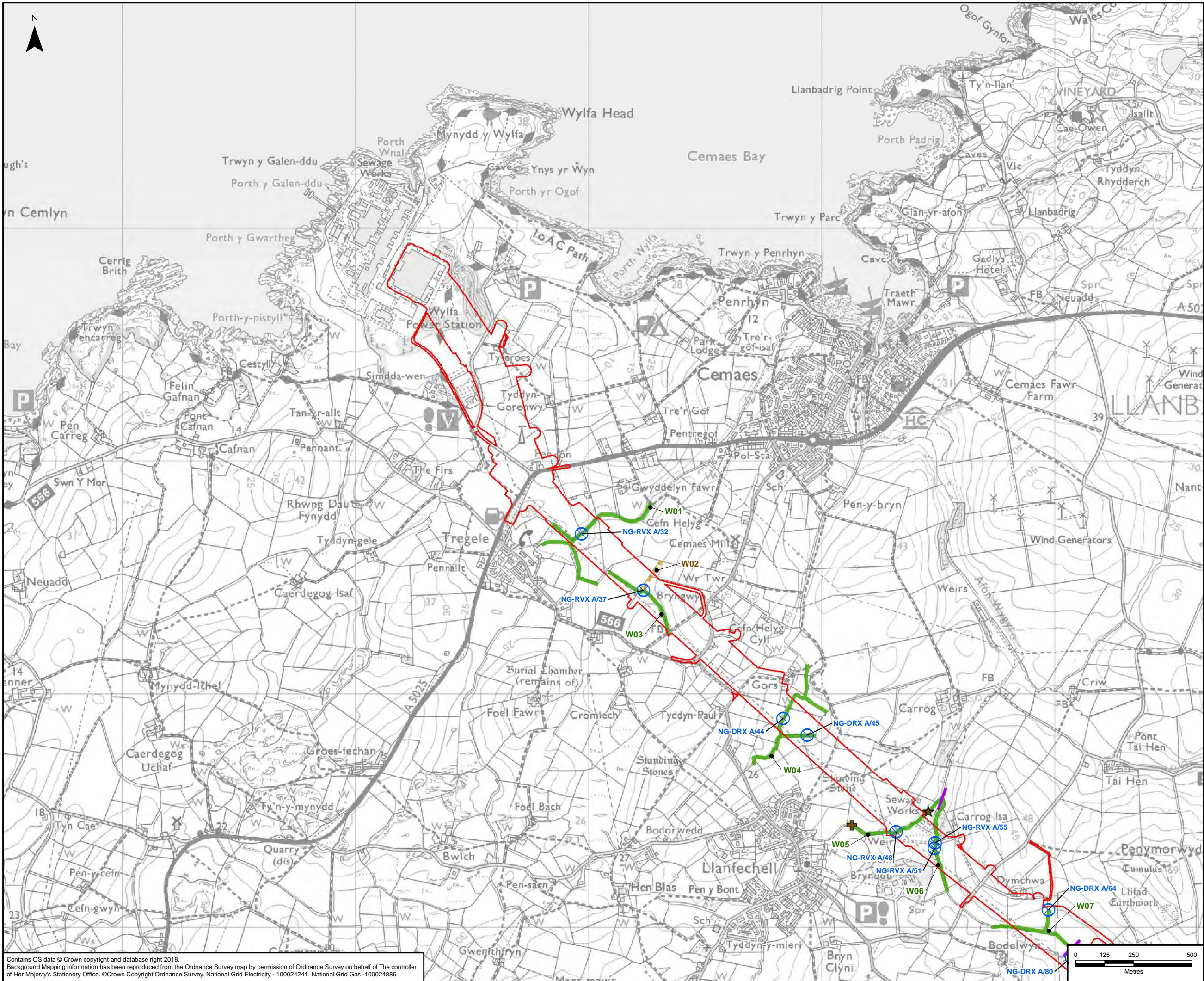
# Figures

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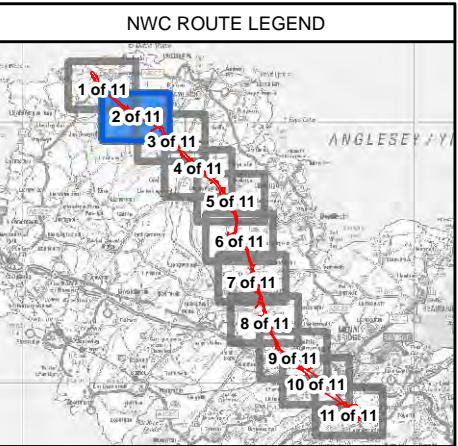
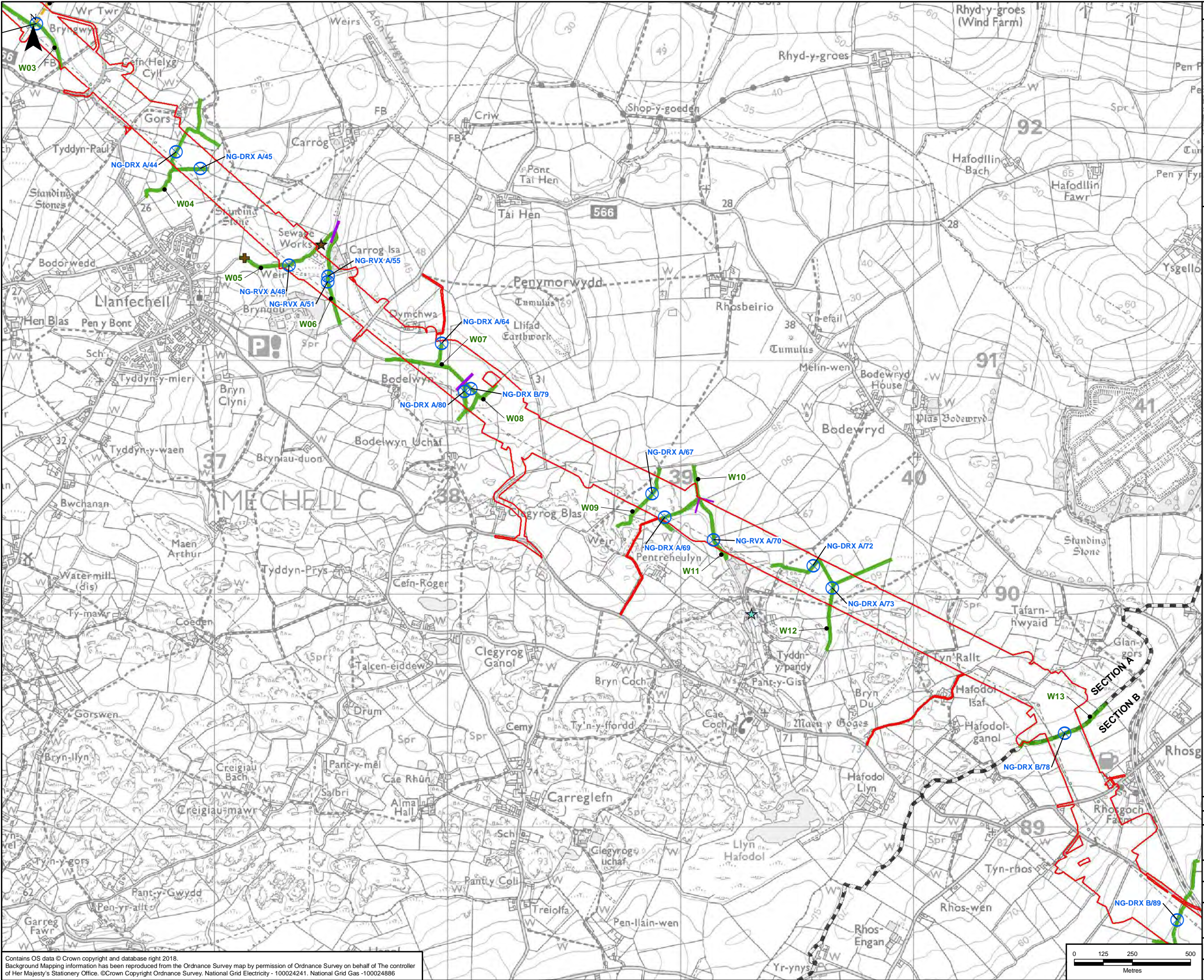
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- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- NO WATERCOURSE PRESENT
- NO ACCESS
- WATERCOURSE TO BE SURVEYED IN 2018
- SURVEYED WATERCOURSE BREAK LINE
- OTTER AND WATER VOLE SURVEY RESULTS
- MINK SCAT
- OTTER FOOTPRINT AND SPRINT
- OTTER SPRINT AND RUN
- WATER VOLE BURROW
- POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
- INCIDENTAL SIGHTINGS
- OTTER SPRINT
- ANECDOTAL EVIDENCE OF OTTER ALONG THE WATERCOURSE

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Document Number: 5.9.2.8					
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- ORDER LIMITS
- SECTION OUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- NO WATERCOURSE PRESENT
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- MINK SCAT
- OTTER FOOTPRINT AND SPRINT
- OTTER SPRINT AND RUN
- WATER VOLE BURROW
- POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
- INCIDENTAL SIGHTINGS
- OTTER SPRINT
- ANECDOTAL EVIDENCE OF OTTER ALONG THE WATERCOURSE

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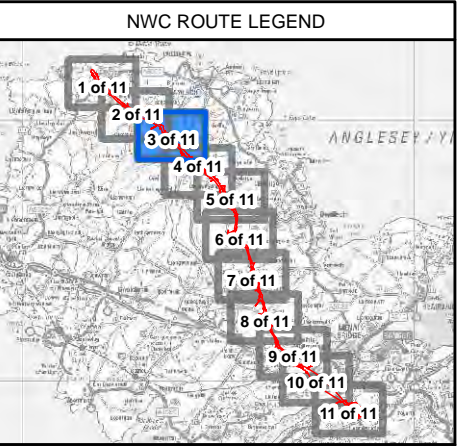
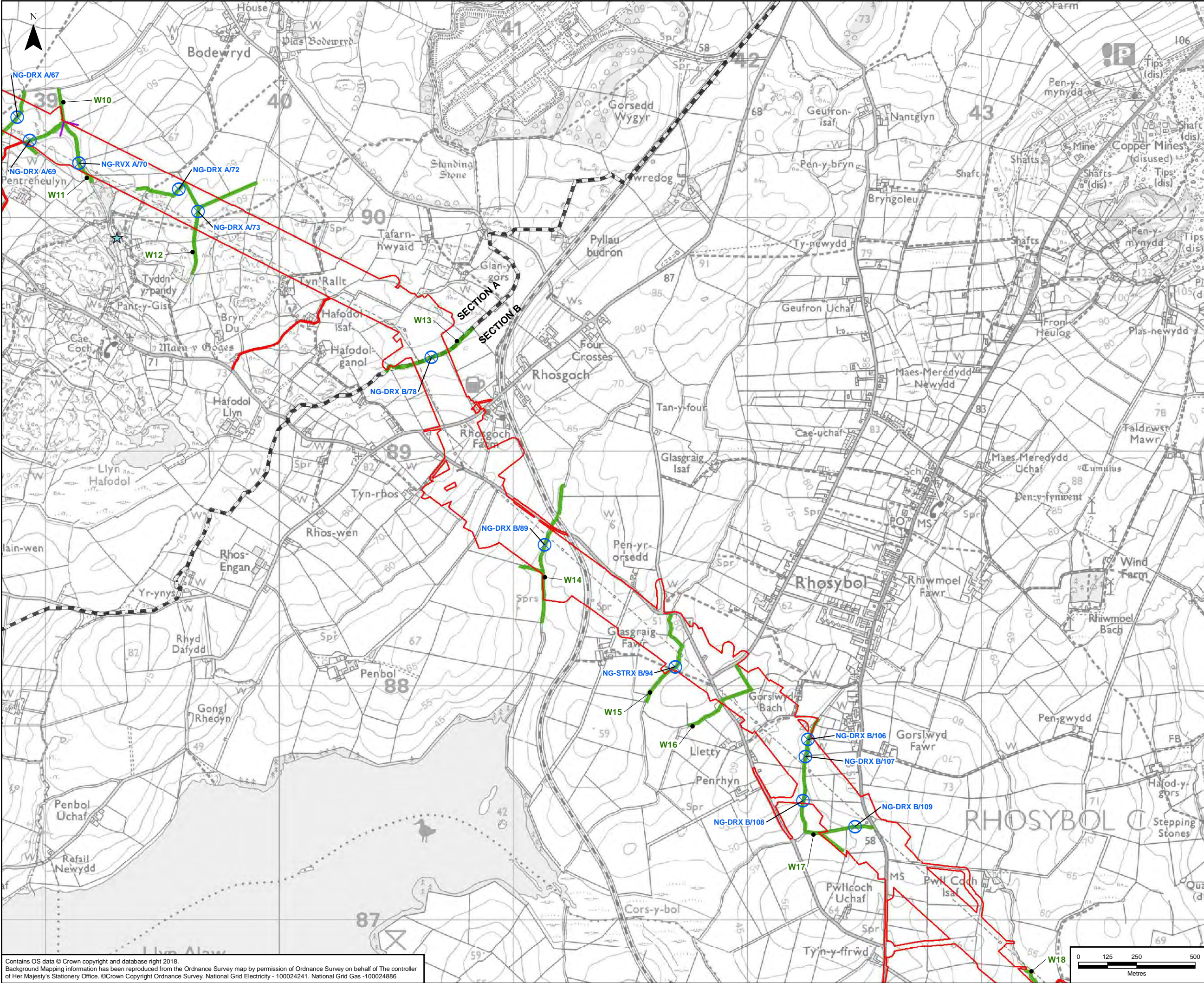
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OTTER AND WATER VOLE  
SURVEY LOCATIONS & RESULTS SUMMARY  
SECTION A

Creator: AB	Date: 12/07/2018	Checker: LS	Date: 12/07/2018	Approver: NL	Date: 12/07/2018
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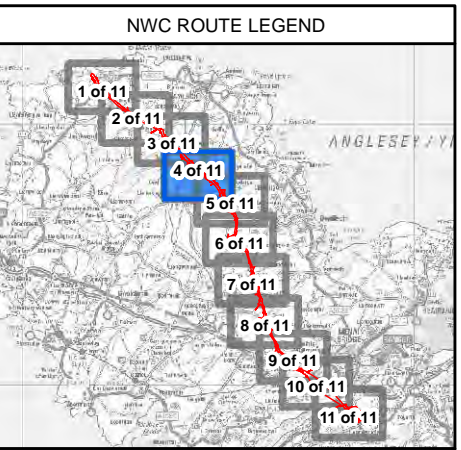
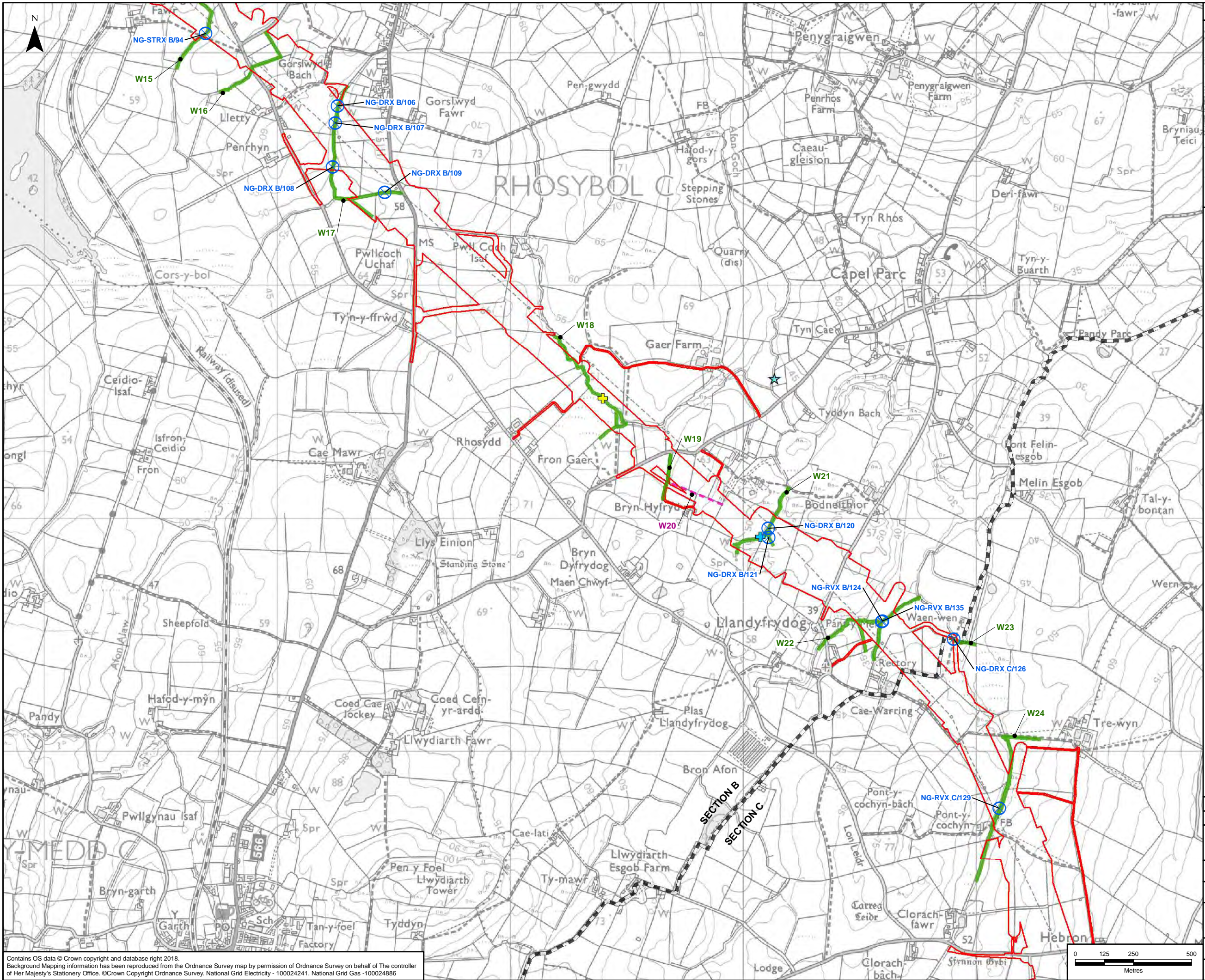
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- ORDER LIMITS
- SECTION COUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- NO WATERCOURSE PRESENT
- NO ACCESS
- WATERCOURSE TO BE SURVEYED IN 2018
- SURVEYED WATERCOURSE BREAK LINE
- OTTER AND WATER VOLE SURVEY RESULTS
- MINK SCAT
- OTTER FOOTPRINT AND SPRINT
- OTTER SPRINT AND RUN
- WATER VOLE BURROW
- POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
- INCIDENTAL SIGHTINGS
- OTTER SPRINT
- ANECDOTAL EVIDENCE OF OTTER ALONG THE WATERCOURSE

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Document Number: 5.9.2.8					
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Creator:	Date:	Checker:	Date:	Approver:	Date:
AB	12/07/2018	LS	12/07/2018	NL	12/07/2018
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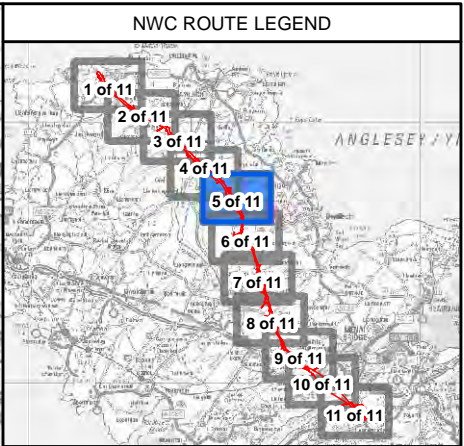
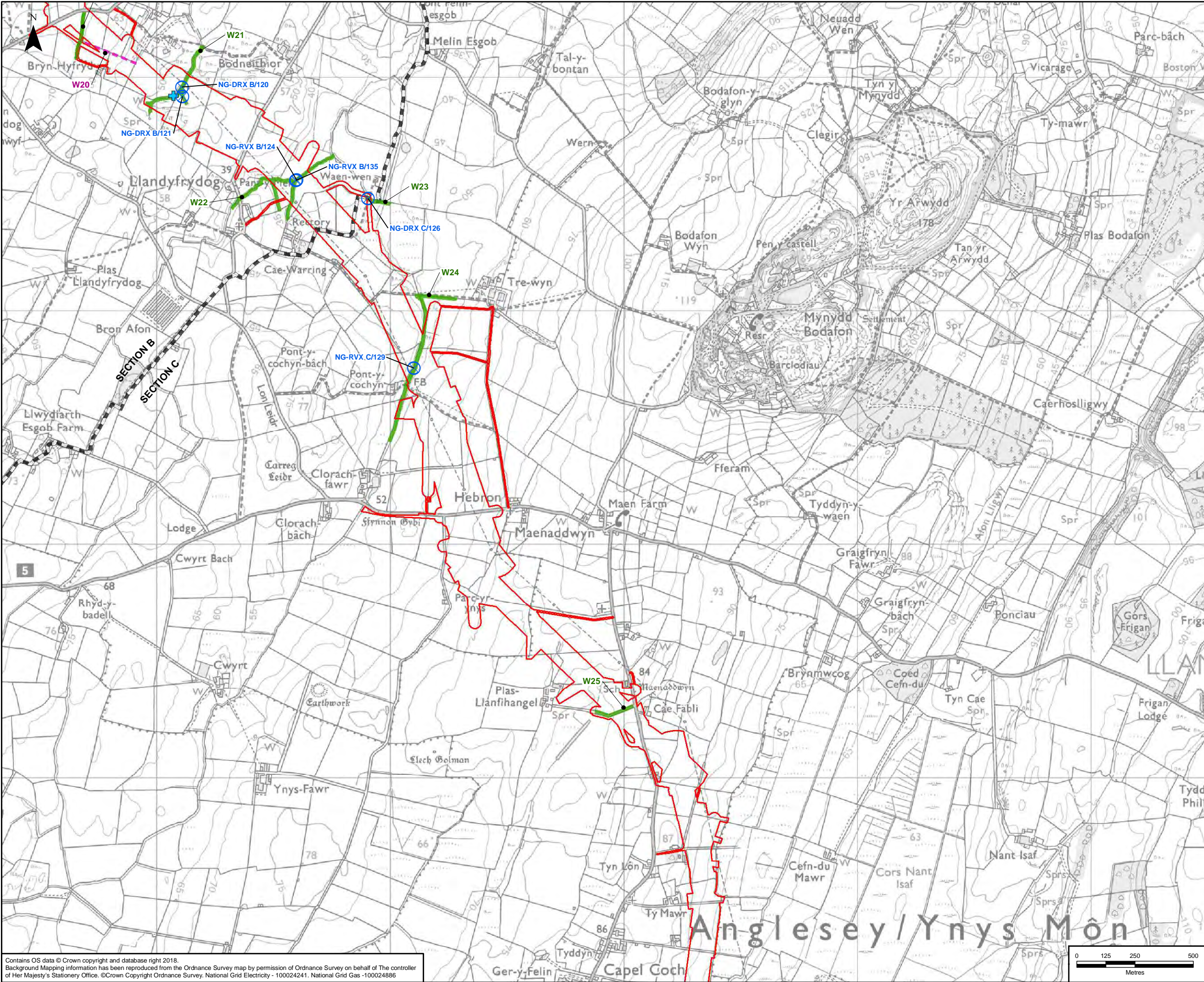


- LEGEND**
- ORDER LIMITS
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  - OTTER AND WATER VOLE SURVEY LOCATIONS
  - SURVEYED WATERCOURSE
  - NO WATERCOURSE PRESENT
  - NO ACCESS
  - WATERCOURSE TO BE SURVEYED IN 2018
  - SURVEYED WATERCOURSE BREAK LINE
  - OTTER AND WATER VOLE SURVEY RESULTS
  - MINK SCAT
  - OTTER FOOTPRINT AND SPRINT
  - OTTER SPRINT AND RUN
  - WATER VOLE BURROW
  - POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
  - INCIDENTAL SIGHTINGS
  - OTTER SPRINT
  - ANECDOTAL EVIDENCE OF OTTER ALONG THE WATERCOURSE

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AB	12/07/2018	LS	12/07/2018	NL	12/07/2018
Document Type:	Scale:	Format:	Sheets:	Rev:	
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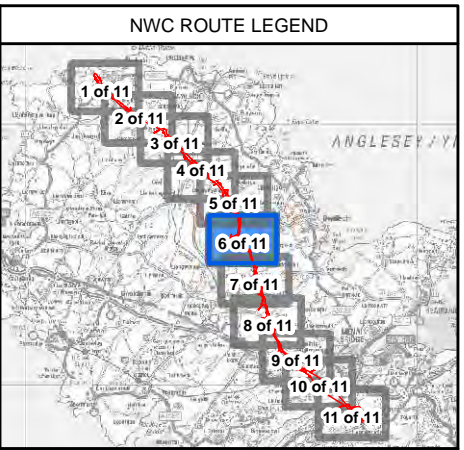
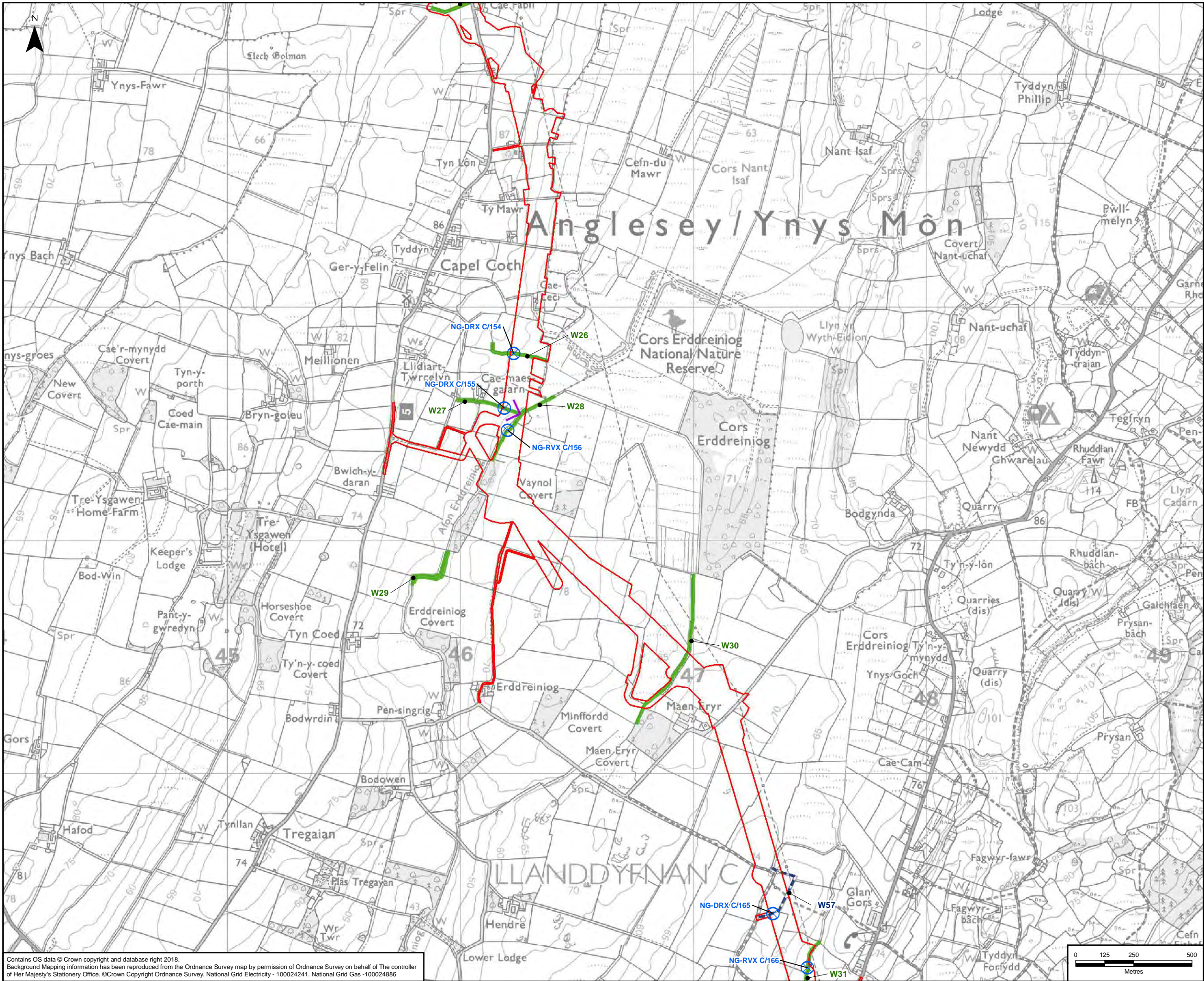
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- ORDER LIMITS
- SECTION OUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- NO WATERCOURSE PRESENT
- NO ACCESS
- WATERCOURSE TO BE SURVEYED IN 2018
- SURVEYED WATERCOURSE BREAK LINE
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- MINK SCAT
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Document Type: FIGURE	Scale: 1:15,000	Format: A3	Sheets: 5 of 11	Rev: A	





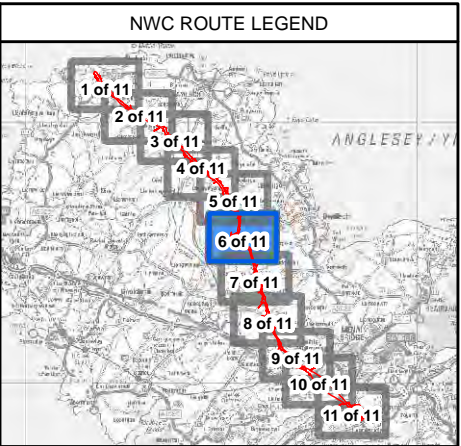
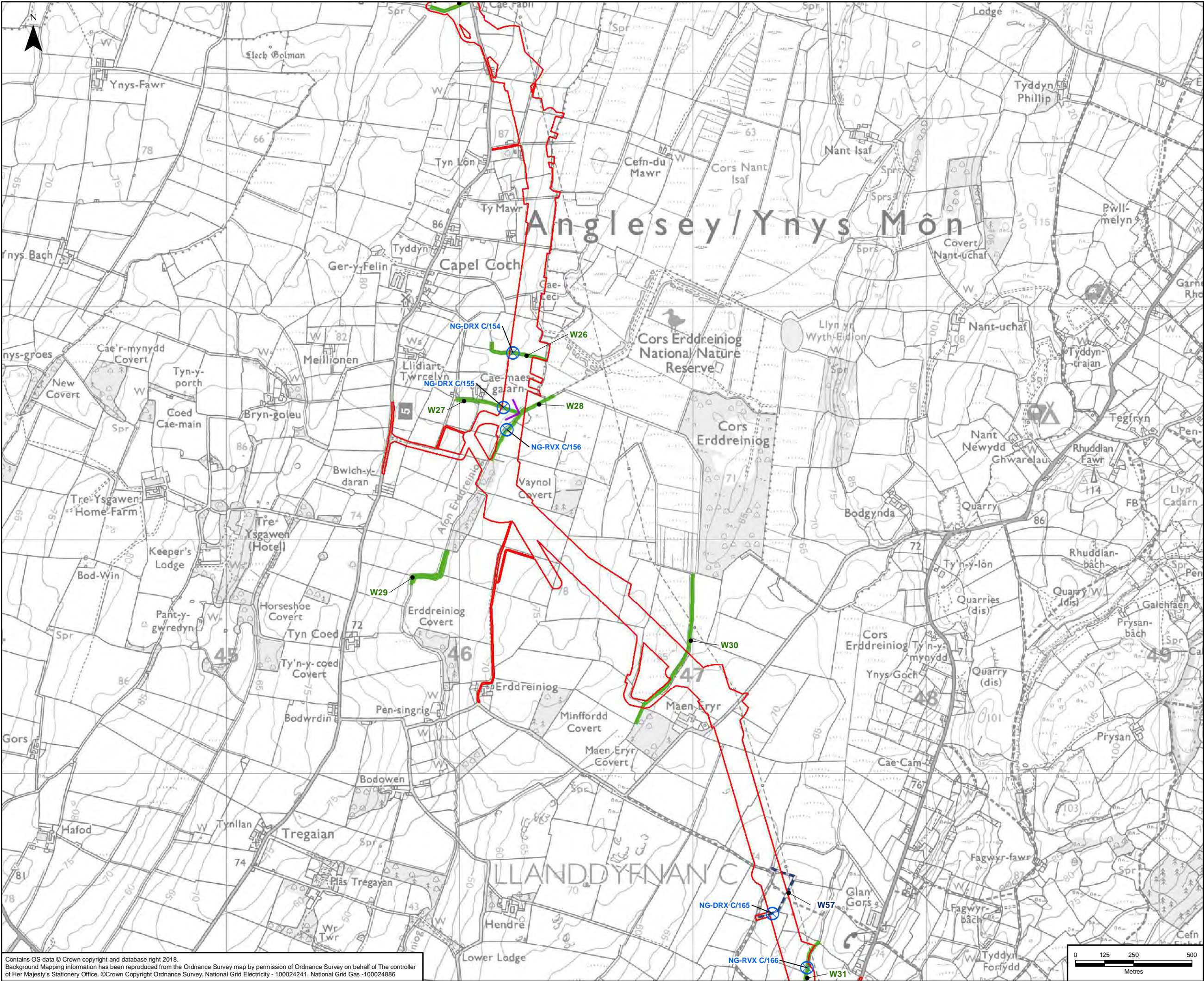
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- SECTION OUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- NO WATERCOURSE PRESENT
- NO ACCESS
- WATERCOURSE TO BE SURVEYED IN 2018
- SURVEYED WATERCOURSE BREAK LINE
- OTTER AND WATER VOLE SURVEY RESULTS
- MINK SCAT
- OTTER FOOTPRINT AND SPRINT
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- POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
- INCIDENTAL SIGHTINGS
- OTTER SPRINT
- ANECDOTAL EVIDENCE OF OTTER ALONG THE WATERCOURSE

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AB	12/07/2018	LS	12/07/2018	NL	12/07/2018
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- LEGEND**
- ORDER LIMITS - OPTION B
  - SECTION OUTLINES
  - PROPOSED WATERCOURSE CROSSINGS
  - OTTER AND WATER VOLE SURVEY LOCATIONS
  - SURVEYED WATERCOURSE
  - NO WATERCOURSE PRESENT
  - NO ACCESS
  - WATERCOURSE TO BE SURVEYED IN 2018
  - SURVEYED WATERCOURSE BREAK LINE
  - OTTER AND WATER VOLE SURVEY RESULTS
  - MINK SCAT
  - OTTER FOOTPRINT AND SPRINT
  - OTTER SPRINT AND RUN
  - WATER VOLE BURROW
  - POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
  - INCIDENTAL SIGHTINGS
  - OTTER SPRINT
  - ANECDOTAL EVIDENCE OF OTTER ALONG THE WATERCOURSE

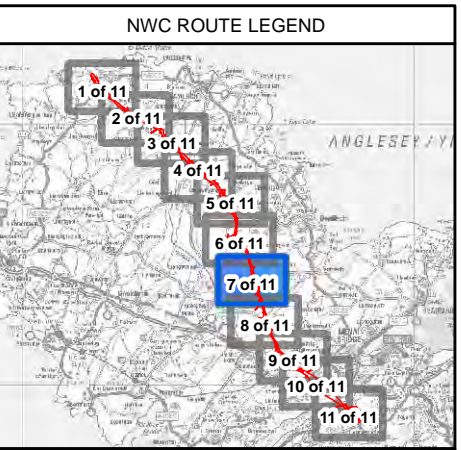
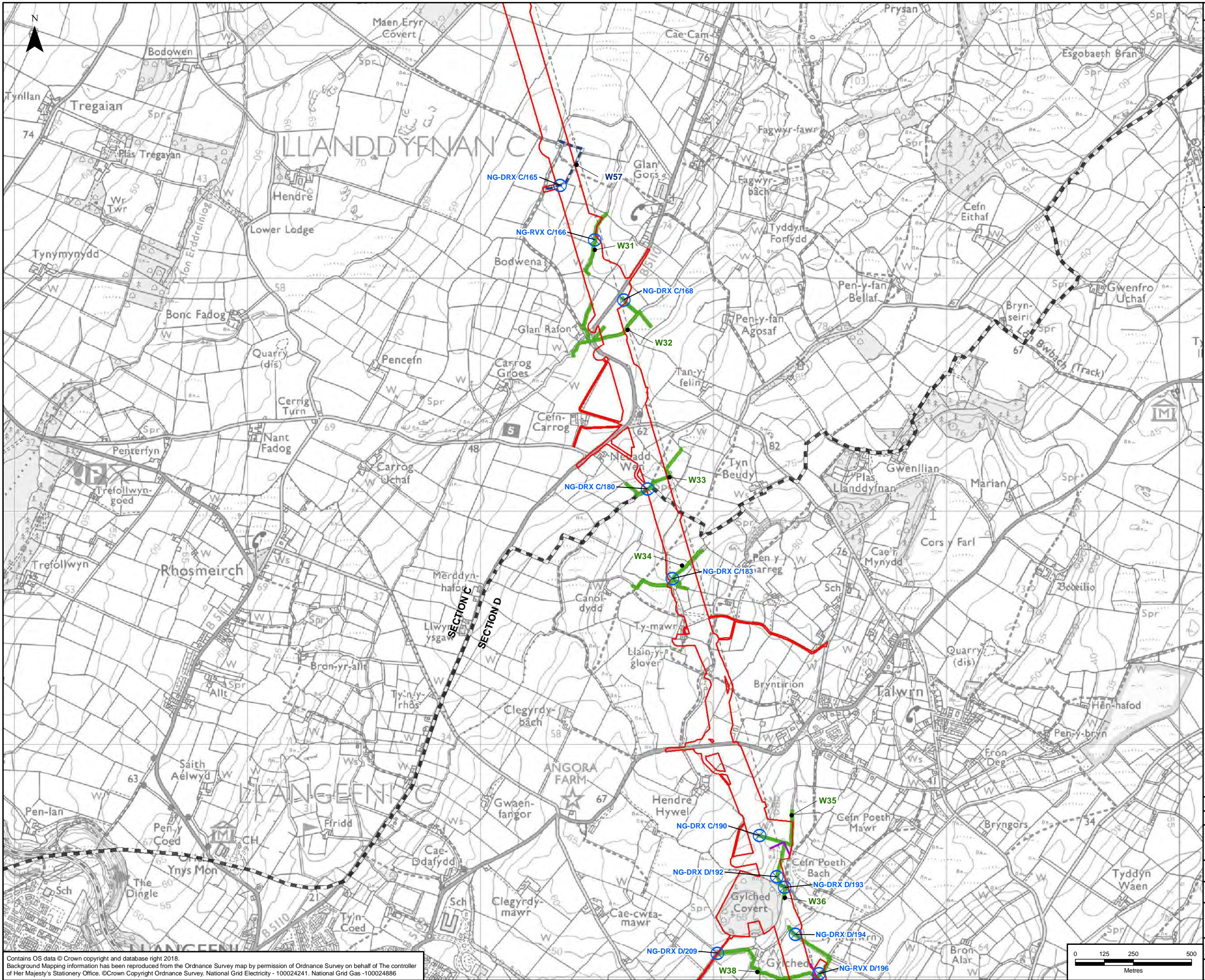
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FIGURE	1:15,000	A3	6 of 11 Option B	A	

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**LEGEND**

ORDER LIMITS - OPTION B

SECTION OUTLINES

PROPOSED WATERCOURSE CROSSINGS

OTTER AND WATER VOLE SURVEY LOCATIONS

SURVEYED WATERCOURSE

NO WATERCOURSE PRESENT

NO ACCESS

WATERCOURSE TO BE SURVEYED IN 2018

SURVEYED WATERCOURSE BREAK LINE

OTTER AND WATER VOLE SURVEY RESULTS

MINK SCAT

OTTER FOOTPRINT AND SPRAINT

OTTER SPRAINT AND RUN

WATER VOLE BURROW

POTENTIAL WATER VOLE BURROWS AND FEEDING STATION

INCIDENTAL SIGHTINGS

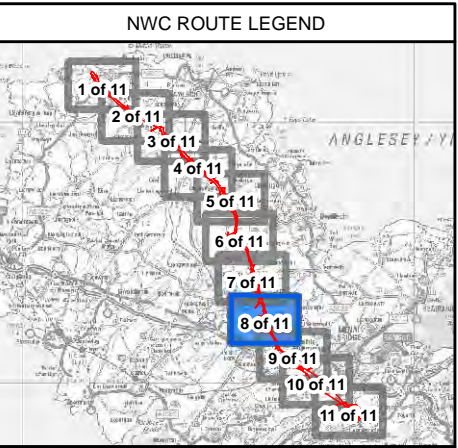
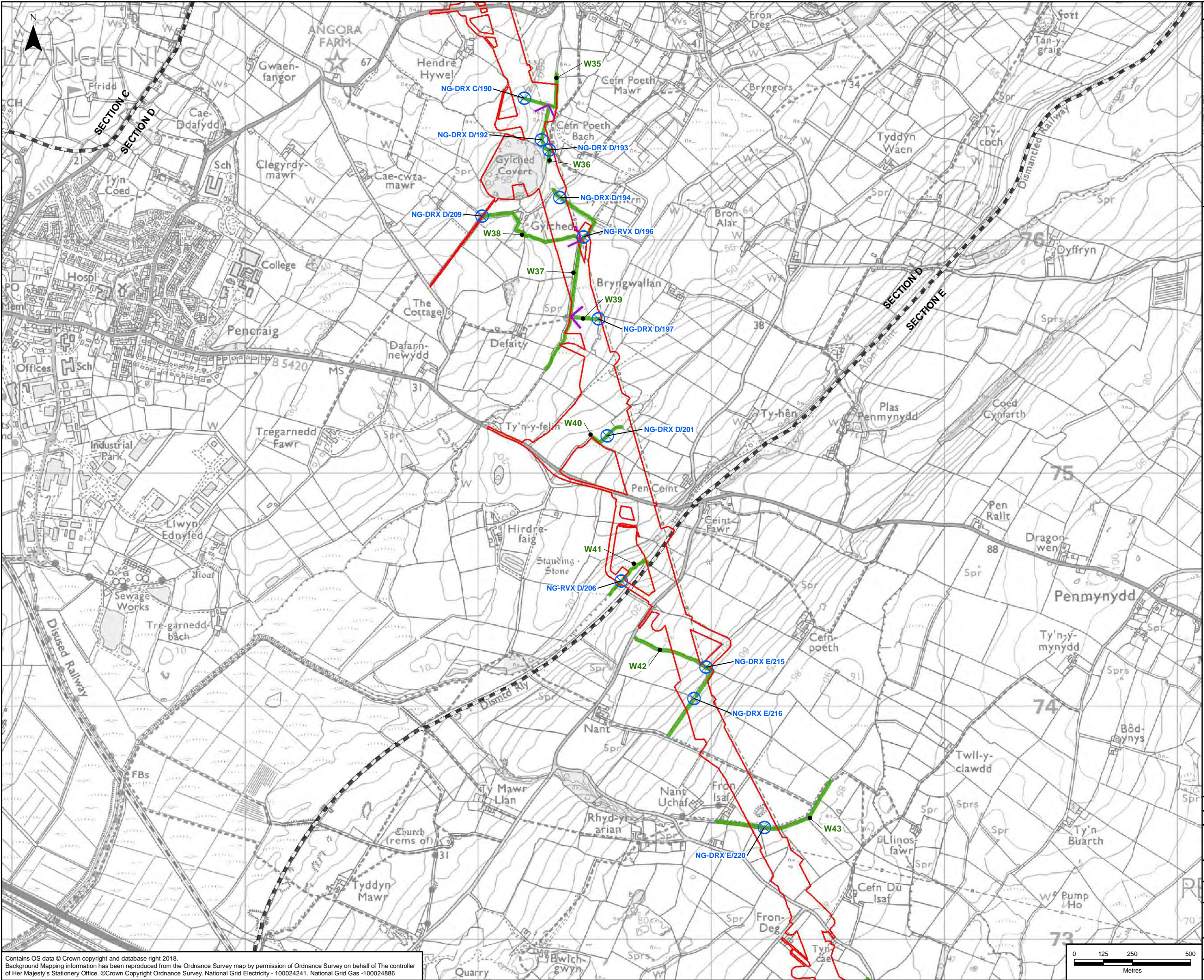
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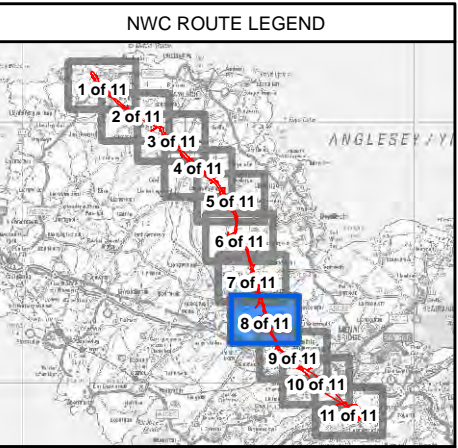
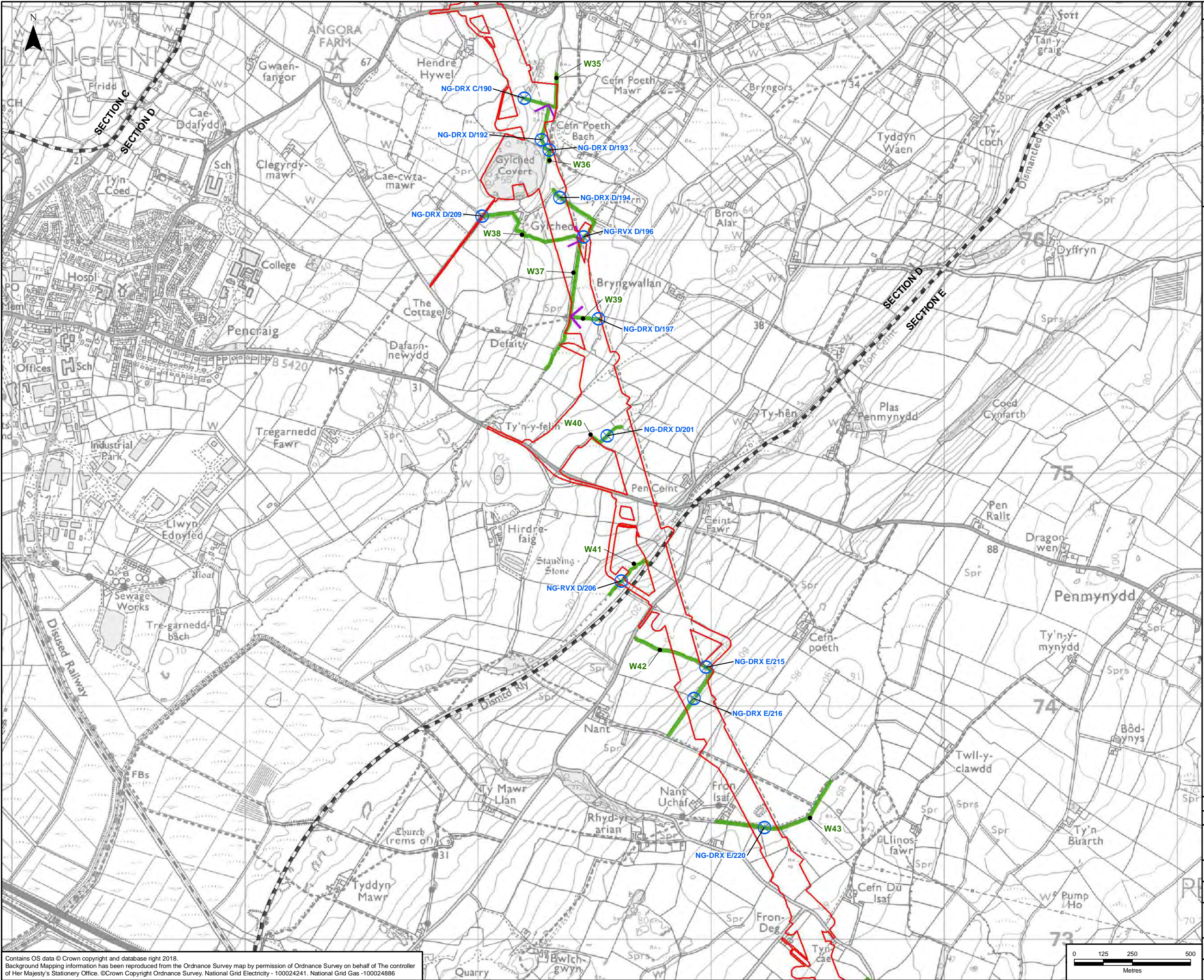
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- SECTION CUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- NO WATERCOURSE PRESENT
- NO ACCESS
- WATERCOURSE TO BE SURVEYED IN 2018
- SURVEYED WATERCOURSE BREAK LINE
- OTTER AND WATER VOLE SURVEY RESULTS
- MINK SCAT
- OTTER FOOTPRINT AND SPRINT
- OTTER SPRINT AND RUN
- WATER VOLE BURROW
- POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
- INCIDENTAL SIGHTINGS
- OTTER SPRINT
- ANECDOTAL EVIDENCE OF OTTER ALONG THE WATERCOURSE

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Document Type: FIGURE	Scale: 1:15,000	Format: A3	Sheets: 8 of 11 Option A	Rev: A	

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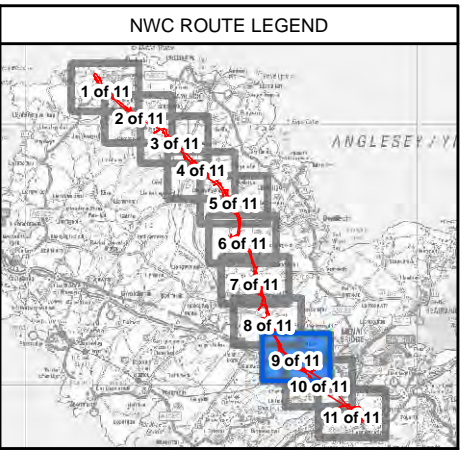
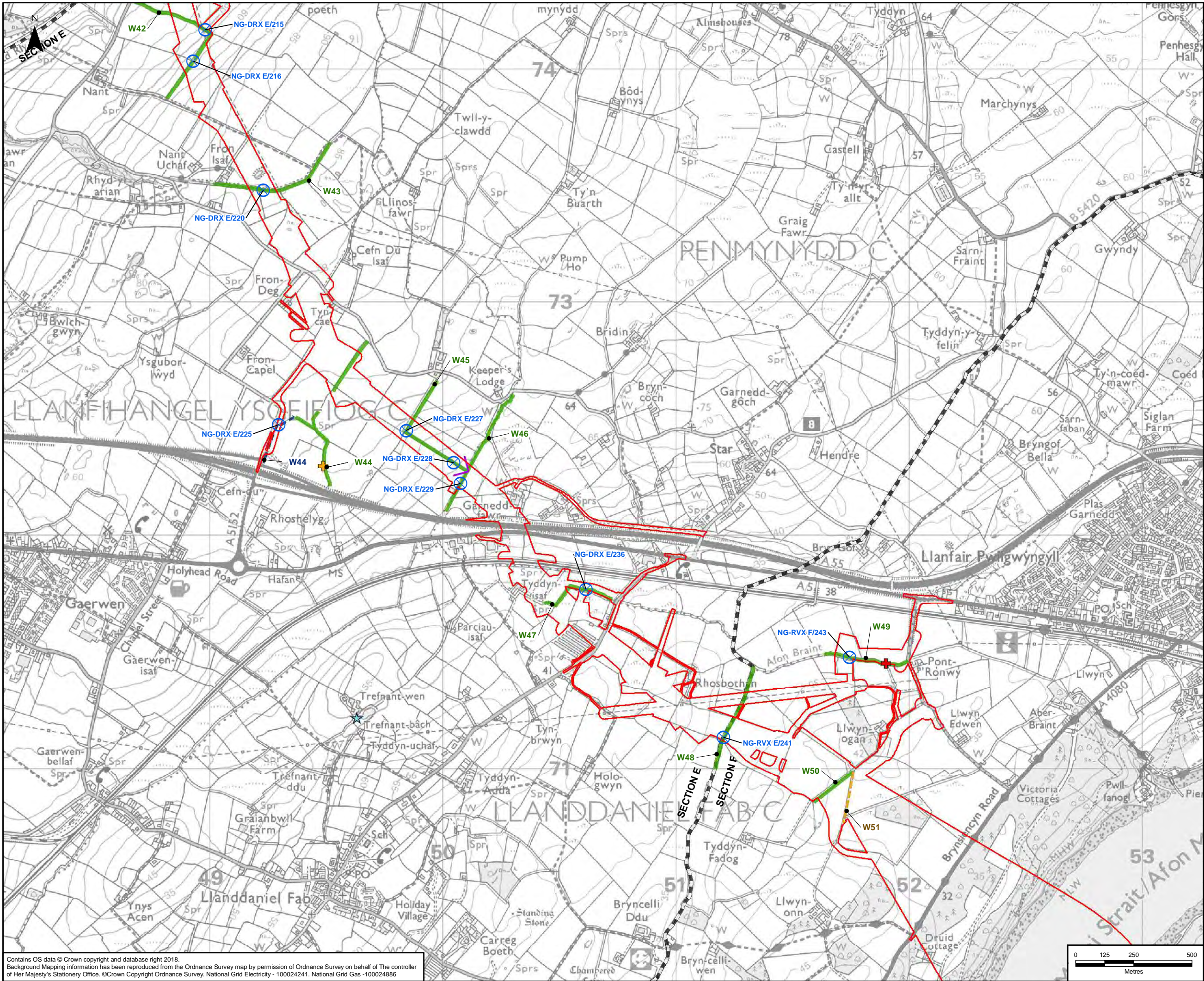
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- SECTION COUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- NO WATERCOURSE PRESENT
- NO ACCESS
- WATERCOURSE TO BE SURVEYED IN 2018
- SURVEYED WATERCOURSE BREAK LINE
- OTTER AND WATER VOLE SURVEY RESULTS
- MINK SCAT
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- OTTER SPRAINT AND RUN
- WATER VOLE BURROW
- POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
- INCIDENTAL SIGHTINGS
- OTTER SPRAINT
- ANECDOTAL EVIDENCE OF OTTER ALONG THE WATERCOURSE

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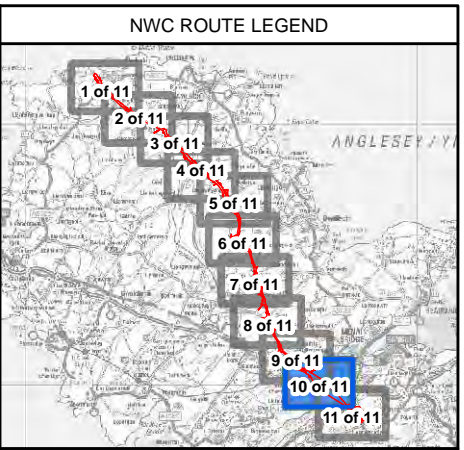
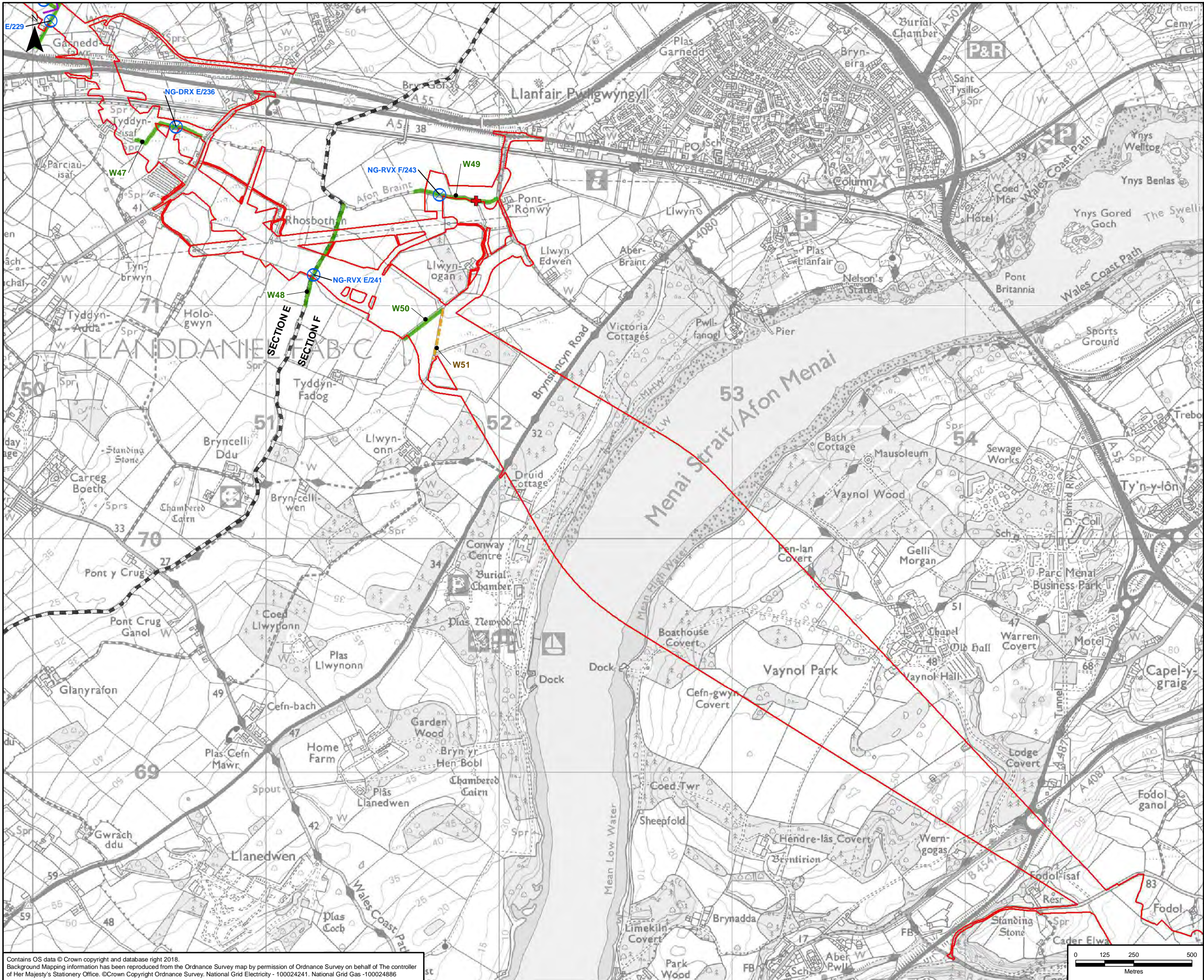
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- ORDER LIMITS
- SECTION OUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
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- OTTER SPRINT
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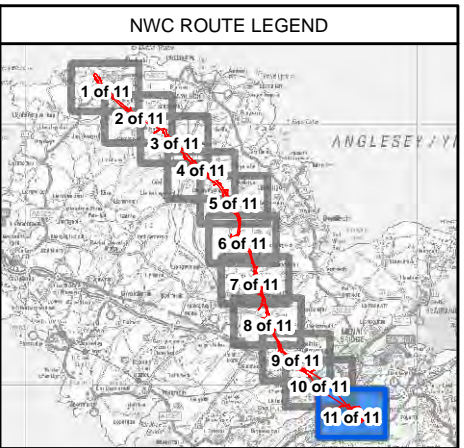
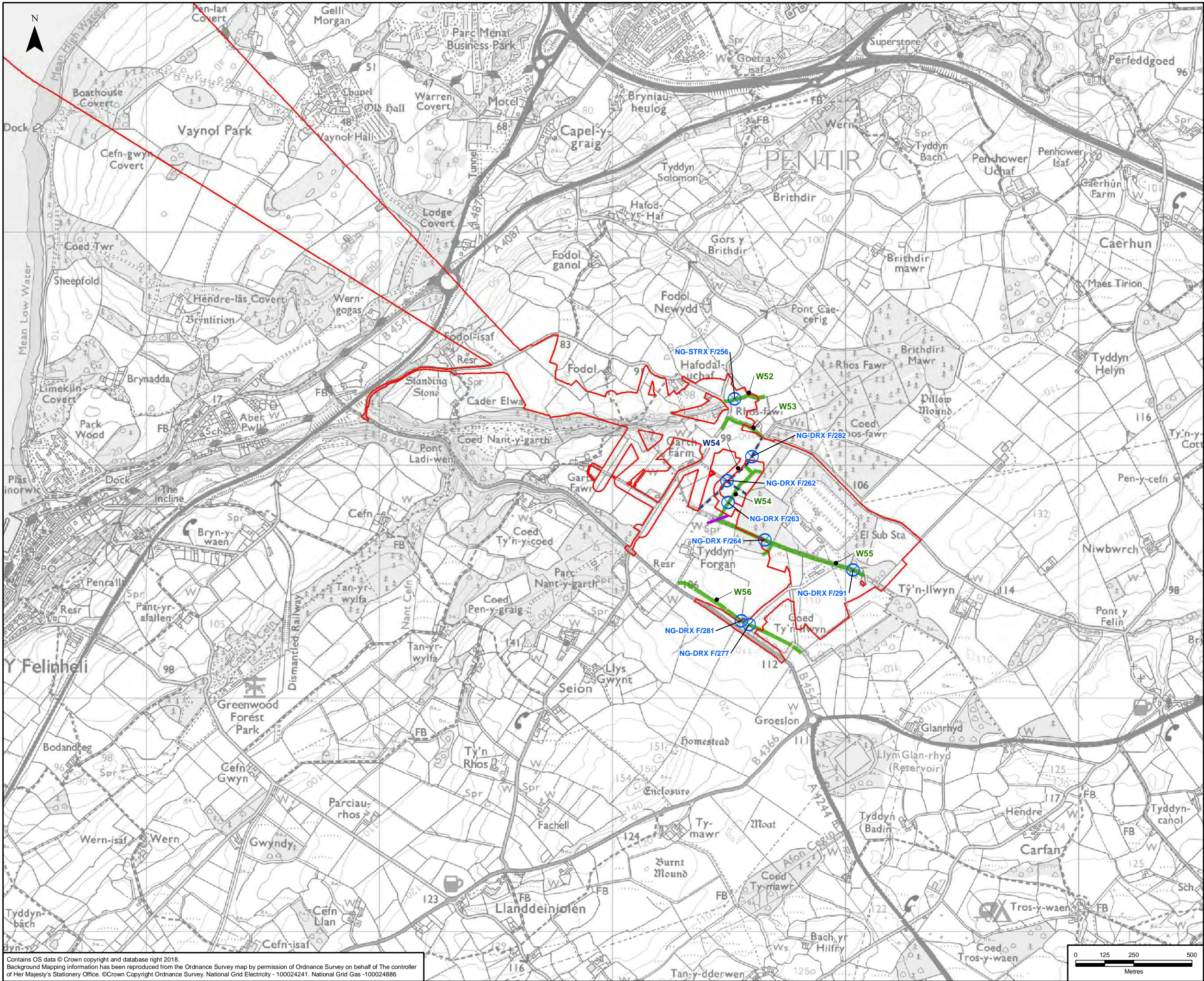
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- ORDER LIMITS
- SECTION OUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
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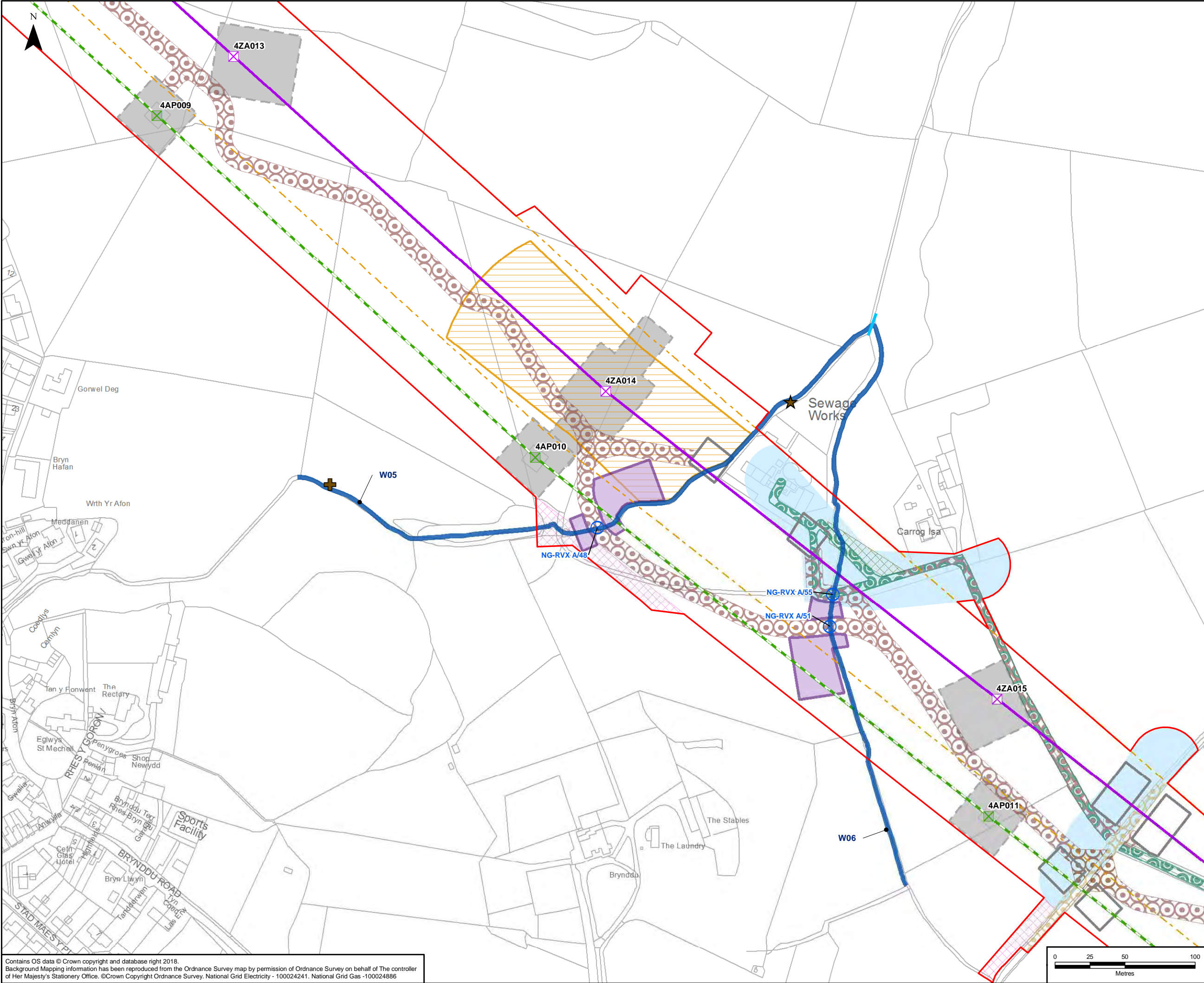
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- SECTION OUTLINES
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- NO WATERCOURSE PRESENT
- NO ACCESS
- WATERCOURSE TO BE SURVEYED IN 2018
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**LEGEND**

- ORDER LIMITS
- SECTION CUTLINES
- ABOVE GROUND LIMITS OF DEVIATION
- NEW LATTICE PYLON
- EXISTING LATTICE PYLON NOT AFFECTED
- NEW OVERHEAD LINE
- EXISTING OVERHEAD LINE TO BE MODIFIED
- EXISTING OVERHEAD LINE NOT AFFECTED
- CONDUCTOR PULLING POSITION
- PYLON WORKING AREA
- SCAFFOLD WORKING AREA
- AREA WITHIN WHICH MODIFIED THIRD PARTY ASSET IS TO BE LOCATED
- BRIDGE WORKING AREA
- ACCESS - NATIONAL GRID
- ACCESS - THIRD PARTY
- ACCESS - NATIONAL GRID AND THIRD PARTY
- HIGHWAY WORKS
- LANDSCAPE MITIGATION AREA
- DRAINAGE MITIGATION AREA
- CONSTRUCTION COMPOUND
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- WATERCOURSE TO BE SURVEYED IN 2018
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- OTTER AND WATER VOLE SURVEY RESULTS
- OTTER FOOTPRINT AND SPRINT
- OTTER SPRINT AND RUN
- WATER VOLE BURROW
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- INCIDENTAL SIGHTINGS
- OTTER SPRINT

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Rev	Date	Description	GIS	Chk	App

**nationalgrid**

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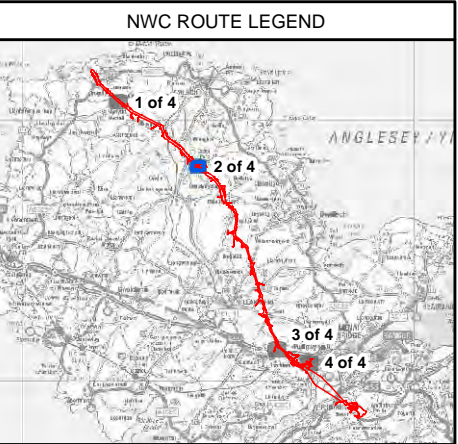
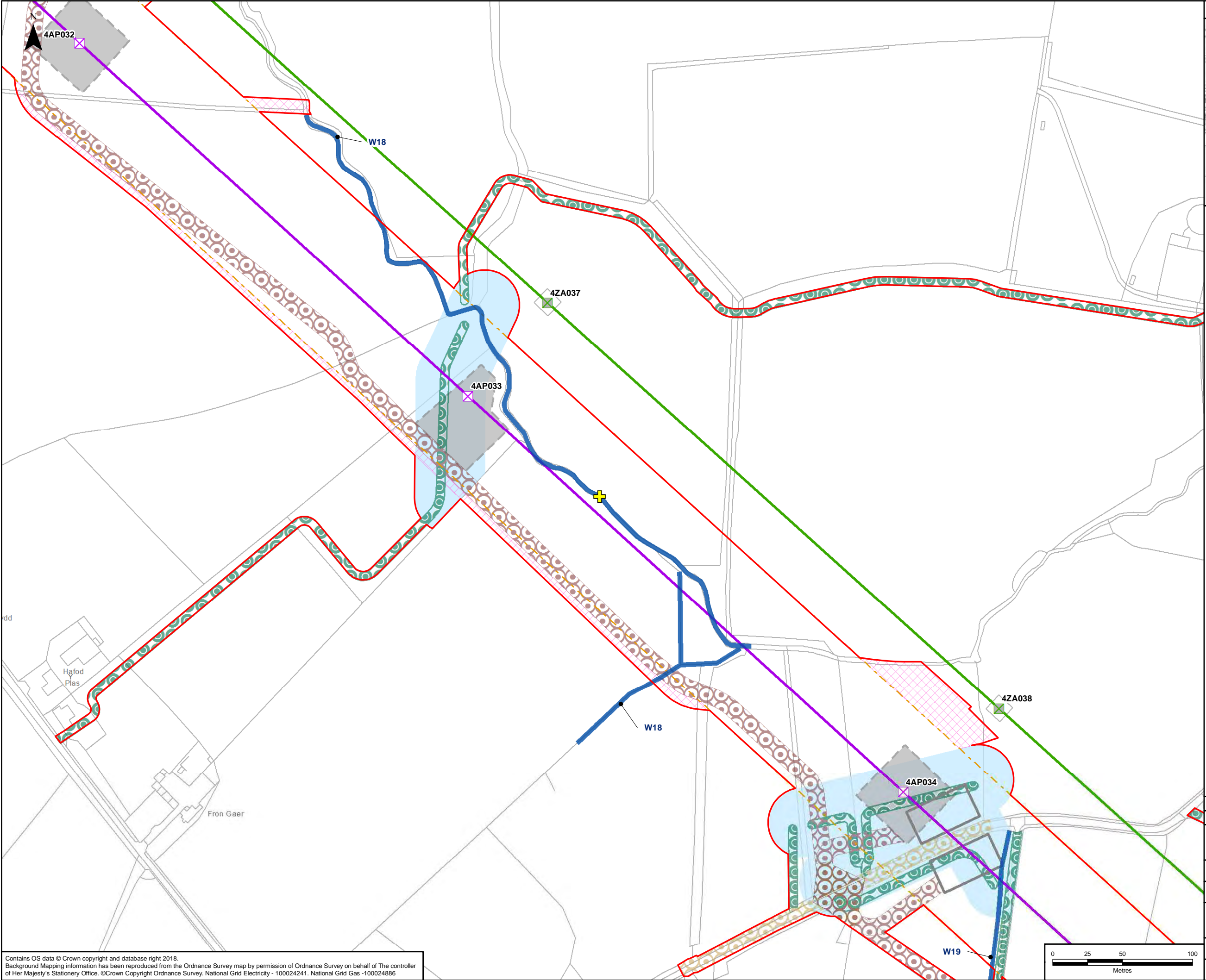
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OTTER AND WATER VOLE SURVEY RESULTS DETAILED SECTION A

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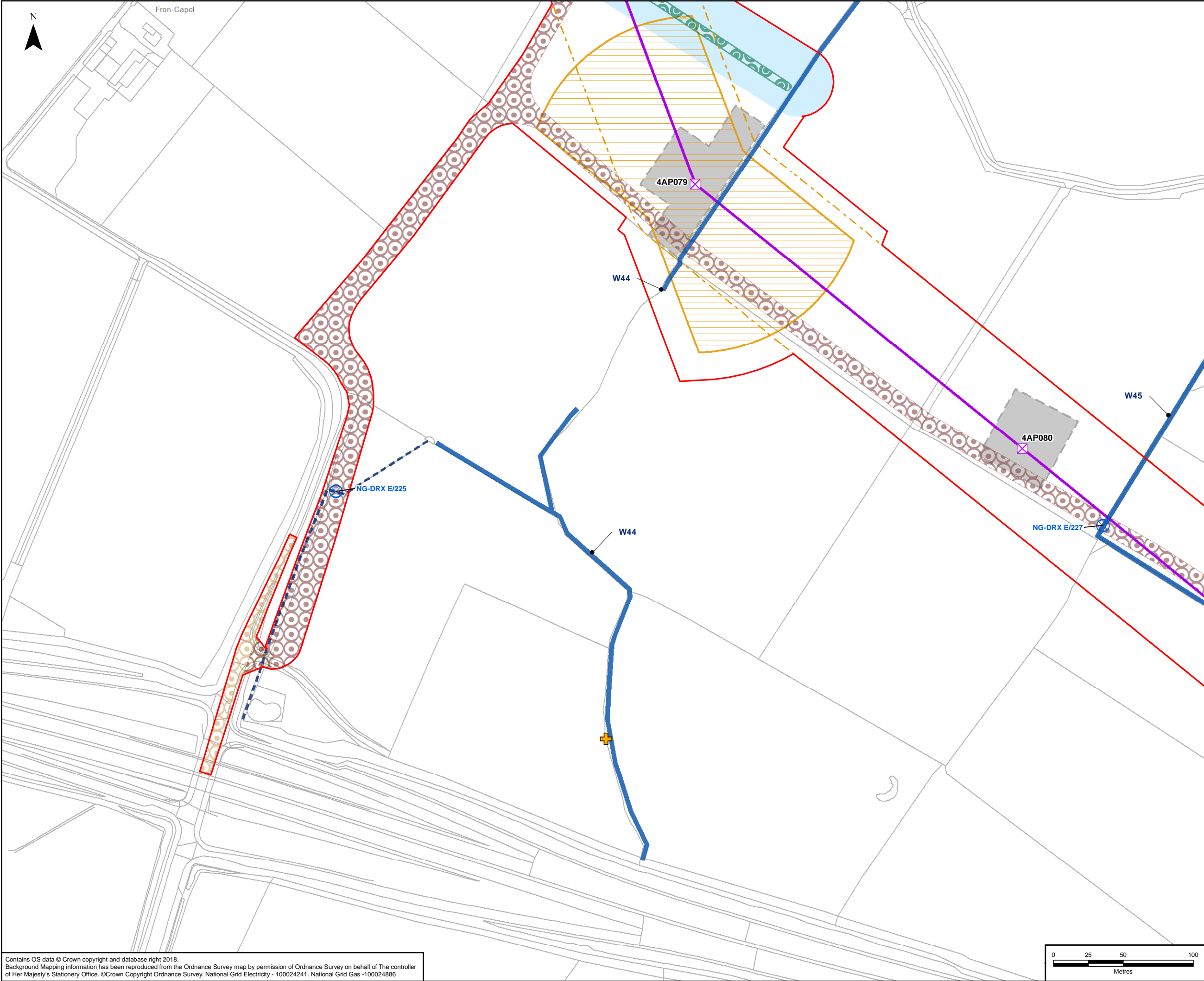


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- ORDER LIMITS
- SECTION CUTLINES
- ABOVE GROUND LIMITS OF DEVIATION
- NEW LATTICE PYLON
- EXISTING LATTICE PYLON NOT AFFECTED
- NEW OVERHEAD LINE
- EXISTING OVERHEAD LINE TO BE MODIFIED
- EXISTING OVERHEAD LINE NOT AFFECTED
- CONDUCTOR PULLING POSITION
- PYLON WORKING AREA
- SCAFFOLD WORKING AREA
- AREA WITHIN WHICH MODIFIED THIRD PARTY ASSET IS TO BE LOCATED
- BRIDGE WORKING AREA
- ACCESS - NATIONAL GRID
- ACCESS - THIRD PARTY
- ACCESS - NATIONAL GRID AND THIRD PARTY
- HIGHWAY WORKS
- LANDSCAPE MITIGATION AREA
- DRAINAGE MITIGATION AREA
- CONSTRUCTION COMPOUND
- PROPOSED WATERCOURSE CROSSINGS
- OTTER AND WATER VOLE SURVEY LOCATIONS
- SURVEYED WATERCOURSE
- WATERCOURSE TO BE SURVEYED IN 2018
- SURVEYED WATERCOURSE BREAK LINE
- OTTER AND WATER VOLE SURVEY RESULTS
- OTTER FOOTPRINT AND SPRINT
- OTTER SPRINT AND RUN
- WATER VOLE BURROW
- POTENTIAL WATER VOLE BURROWS AND FEEDING STATION
- INCIDENTAL SIGHTINGS
- OTTER SPRINT

A	12/07/2018	ENVIRONMENTAL STATEMENT	AB	LS	NL
Rev	Date	Description	GIS	Chk	App
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Scheme: NORTH WALES CONNECTION PROJECT					
Document Number: 5.9.2.8					
Document Title: FIGURE 3 OTTER AND WATER VOLE SURVEY RESULTS DETAILED SECTION B					
Creator: AB	Date: 12/07/2018	Checker: LS	Date: 12/07/2018	Approver: NL	Date: 12/07/2018
Document Type: FIGURE	Scale: 1:2,500	Format: A3	Sheets: 2 of 4	Rev: A	

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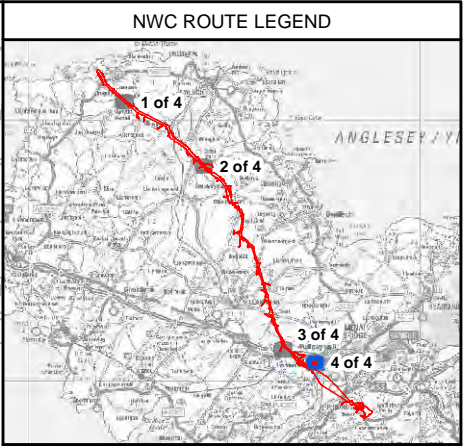
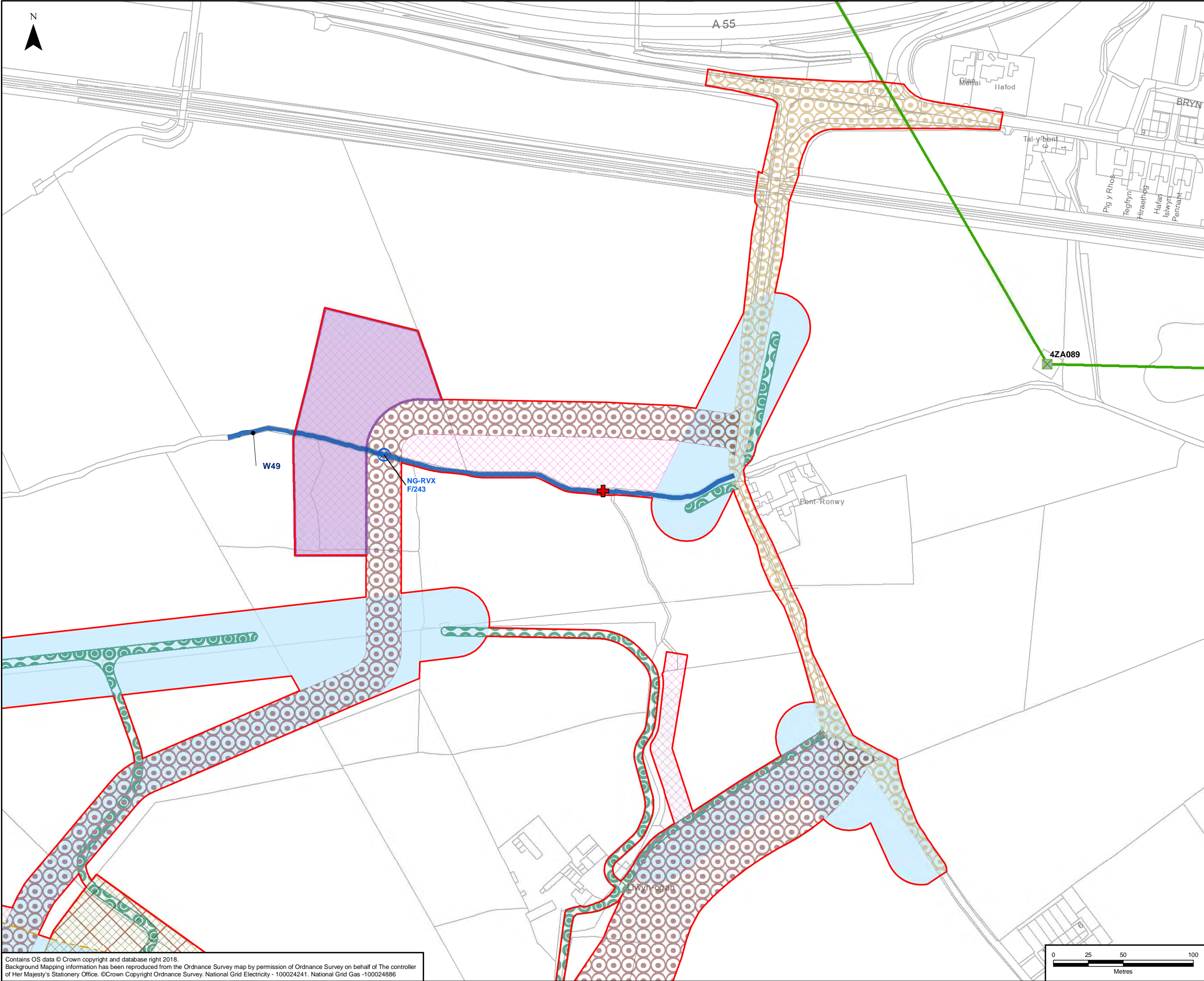
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  - SECTION CUTLINES
  - ABOVE GROUND LIMITS OF DEVIATION
  - NEW LATTICE PYLON
  - EXISTING LATTICE PYLON NOT AFFECTED
  - NEW OVERHEAD LINE
  - EXISTING OVERHEAD LINE TO BE MODIFIED
  - EXISTING OVERHEAD LINE NOT AFFECTED
  - CONDUCTOR PULLING POSITION
  - PYLON WORKING AREA
  - SCAFFOLD WORKING AREA
  - AREA WITHIN WHICH MODIFIED THIRD PARTY ASSET IS TO BE LOCATED
  - BRIDGE WORKING AREA
  - ACCESS - NATIONAL GRID
  - ACCESS - THIRD PARTY
  - ACCESS - NATIONAL GRID AND THIRD PARTY
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  - OTTER AND WATER VOLE SURVEY LOCATIONS
  - SURVEYED WATERCOURSE
  - WATERCOURSE TO BE SURVEYED IN 2018
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  - OTTER SPRINT AND RUN
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  - INCIDENTAL SIGHTINGS
  - OTTER SPRINT

A	12/07/2018	ENVIRONMENTAL STATEMENT	AB	LS	NL
Rev	Date	Description	GIS	Chk	App

nationalgrid					
Scheme: NORTH WALES CONNECTION PROJECT					
Document Number: 5.9.2.8					
Document Title: FIGURE 3 OTTER AND WATER VOLE SURVEY RESULTS DETAILED SECTION E					
Creator: AB	Date: 12/07/2018	Checker: LS	Date: 12/07/2018	Approver: NL	Date: 12/07/2018
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**LEGEND**

- ORDER LIMITS
- SECTION CUTLINES
- ABOVE GROUND LIMITS OF DEVIATION
- NEW LATTICE PYLON
- EXISTING LATTICE PYLON NOT AFFECTED
- NEW OVERHEAD LINE
- EXISTING OVERHEAD LINE TO BE MODIFIED
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- ACCESS - THIRD PARTY
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nationalgrid					
Scheme: NORTH WALES CONNECTION PROJECT					
Document Number: 5.9.2.8					
Document Title: FIGURE 3 OTTER AND WATER VOLE SURVEY RESULTS DETAILED SECTION F					
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## Appendix A: Desk Study Results

*Appendix contains confidential information. This Appendix is only available on request to those who have a legitimate need to view the Information*



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## Appendix B: Otter and Water Vole Results

The results of the otter and water vole surveys are summarised in the table below. See Figure 2 for watercourse locations.

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
W01	2.1	12025-W003	A	NG-RVX A/32	Stream	11/08/2016	Water vole Suspected Absent	Otter Suspected Absent	Dry ditch in most parts, choked with vegetation. Some very shallow water in one section. Dense scrub prevented access in parts.
W02	2.1	12002-WC01	A	No Crossing	Drain	01/11/2017	Water vole Suspected Absent	Otter Suspected Absent	No watercourse present.
W03	2.1	12002-W004	A	NG-RVX A/37	Stream	10/08/2016	Water vole Suspected Absent	Otter Suspected Absent	No field signs observed. No suitable foraging habitat for either species. Very low water level, approx. 1-2

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
									inches. Some dense scrub in places preventing access.
W04	2.1	2039-W002	A	NG-DRX A/44 NG-DRX A/45	Stream/ Drain	10/08/2016	Water vole Suspected Absent	Otter Suspected Absent	Very shallow water, overgrown in places, banks poached by cattle.
W05	2.1	2039-W005	A	NG-RVX A/48	Stream	31/08/2016	Water vole Suspected Absent	Otter Present	Stream with otter evidence; otter spraint and mammal run recorded. Abundant bankside bushes, marginal and grasses.
						22/06/2017	Water vole Suspected Absent	Otter Suspected Absent	Likely to constantly hold water but not deep. Some marginal poaching from cows. Signs of rat recorded.
W06	2.1	2039-W1	A	NG-RVX A/51 NG-RVX A/55	Stream	21/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Heavy poaching from sheep and cattle. Banks

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
									very shallow.
W07	2.2	W009-D019	A	NG-DRX A/64	Drain	19/07/2017	Water vole Suspected Absent	Otter Suspected Absent	Narrow drain with shallow water. Some marginal grasses present.
W08	2.2	W009-2021	A	NG-DRX A/79 NG-DRX A/80	Stream/ Drain	27/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Some mammal runs observed but inconclusive, no other field signs. Very shallow water and heavy poaching on margins.
W09	2.2	1991-W019	A	NG-DRX A/67	Stream	31/08/2016	Water vole Suspected Absent	Otter Suspected Absent	No evidence recorded. Narrow, shallow drain. Disturbance caused by cattle poaching.
W10	2.2	1991-D021	A	NG-DRX A/69	Drain	31/08/2016	Water vole Suspected Absent	Otter Suspected Absent	Dry

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
W11	2.2	1991-D024	A	NG-RVX A/70	Stream	31/08/2016	Water vole Suspected Absent	Otter Suspected Absent	Anecdotal evidence from owner of property south of this drain, recorded spraints and a couch approx. 350 m south of crossing point. No signs observed during survey.
						22/06/2017	Water vole Suspected Absent	Otter Suspected Absent	Likely to hold permanent water. Some parts were not accessible due to dense vegetation.
W12	2.2	1991-D027A/B	A	NG-DRX A/72 NG-DRX A/73	Stream	01/09/2016	Water vole Suspected Absent	Otter Suspected Absent	No evidence of either species. Narrow, shallow drain.
W13	2.2	1957-W006	B	NG-DRX B/78	Drain	11/08/2016	Water vole Suspected Absent	Otter Suspected Absent	Several dry sections, shallow water where present. Mostly dry and overgrown.

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
W14	2.3	1915-W018	B	NG-DRX B/89	Stream	01/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Stream is heavily overgrown with bushes making access difficult in places. Very overgrown and shallow ditch.
W15	2.3	4055-W019	B	NG-STRX B/94	Stream	01/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Drain with very shallow water and steep banks, cattle grazed fields adjacent.
W16	2.3	4071-W023	B	No Crossing	Stream	31/08/2016	Water vole Suspected Absent	Otter Suspected Absent	Narrow and shallow ditch, cattle grazing in adjacent fields.
W17	2.3	1832-D049	B	NG-DRX B/106 NG-DRX B/107 NG-DRX B/108 NG-DRX B/109	Stream	01/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Dense bankside vegetation. No evidence of either species recorded. Desk study record of a dead otter on the road approx. 290 m south of nearest crossing location (Point 22 on Figure 1).

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
W18	2.4	4010-W028	B	No Crossing	Drain	01/09/2016	Water vole Present	Otter Suspected Absent	Water vole burrow and latrine recorded.
						06/07/2017	Water vole Potentially Present	Otter Suspected Absent	No signs seen. Dense vegetation along some of the banks. Otter unlikely and water vole possible.
W19	2.4	1778-WC01	B	No Crossing	Drain	01/11/2017	Water vole Suspected Absent	Otter Suspected Absent	Limited water present, very patchy with overgrown bankside vegetation.
W20	2.4	1761-WC01	B	No Crossing	Drain	N/A	N/A	N/A	No access to survey
W21	2.4	1751-W001 / 1751-A	B	NG-DRX B/120 NG-DRX B/121	Drain	16/08/2016	Water vole Suspected Absent	Otter Potentially Present	Not suitable for water vole due to very shallow water depth and heavy marginal poaching. Dense vegetation on banks. Western bank undercut and sheer but

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
									limited for water vole shelter and foraging. Possible commuting route for otter.
						19/07/2017	Water vole Suspected Absent	Otter Suspected Absent	No evidence recorded.
W22	2.4	1744-W041 B1/B2/B3/ B4	B	NG-RVX B/124 NG-RVX B/135	Stream	16/08/2016	Water vole Suspected Absent	Otter Potentially Present	Possible suitable otter commuting route. Stream with 0.5 - 1m water depth. Some areas of suitable habitat but no evidence found.
						19/07/2017	Water vole Suspected Absent	Otter Suspected Absent	Bankside trees and bushes abundant and marginal tall grass vegetation.
W23	2.5	D114A	C	NG-DRX C/126	Stream	06/07/2017	Water vole Suspected Absent	Otter Suspected Absent	Dry



Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
W24	2.5	D122-4001	C	NG-RVX C/129	Stream	13/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Very overgrown, shaded and shallow water, limited value for water vole. Burrow seen on arable field edge, possibly bank vole or rat.
W25	2.5	5030-WC01	C	No Crossing	Drain	01/11/2017	Water vole Suspected Absent	Otter Suspected Absent	Very shallow ditch. No suitability.
W26	2.6	5000-W058	C	NG-DRX C/154	Drain	08/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Shallow water depth with relatively fast current. Cattle grazing in adjacent fields. Links to fen habitat.
W27	2.6	4074-F1/4074 - W057A	C	NG-DRX C/155	Drain	18/08/2016	Water vole Suspected Absent	Otter Suspected Absent	Vertical, undercut bank profiles with limited potential for burrowing. Bank side trees were dominant with occasional bushes and tall

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
									herbs.
W28	2.6	4074-F2 / 4074 - W057	C	NG-RVX C/156	River	18/08/2016	Water vole Suspected Absent	Otter Potentially Present	Watercourse had potential for otter commuting. Dense bankside vegetation made access difficult in parts. Low potential for water vole due to heavy shading.
						15/06/2017	Water vole Suspected Absent	Otter Suspected Absent	No evidence of otter or water vole recorded.
W29	2.6	4074-D148	C	No Crossing	River	28/09/2016	Water vole Potentially Present	Otter Potentially Present	Good potential for otter and water vole.
						15/06/2017	Water vole Suspected Absent	Otter Suspected Absent	No evidence of otter or water vole recorded.
W30	2.6	4074 G	C	No Crossing	Drain	18/08/2016	Water vole Suspected Absent	Otter Suspected Absent	No evidence recorded. Limited water present. Difficult to survey some areas due to dense blackthorn ( <i>Prunus spinosa</i> )

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
									along bank.
W31	2.7	5057-W064 / W065	C	NG-RVX C/166	Stream	26/10/2016	Water vole Suspected Absent	Otter Suspected Absent	Predominantly vertical/undercut with some areas of shallow bank on west side but heavily poached; shaded on east side bank.
W32	2.7	D233-5053	C	NG-DRX C/168	Drain	27/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Dry
W33	2.7	W063-1487	C	NG-DRX C/180	Drain	27/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Very overgrown and shallow water
W34	2.7	W066-5077	C	NG-DRX C/183	Drain	14/09/2016	Water vole Suspected Absent	Otter Suspected Absent	Chocked with vegetation, limited water depth.
W35	2.7	5032-A	D	NG-DRX C/190	Drain	02/08/2016	Water vole Suspected Absent	Otter Suspected Absent	Desk study record of otter found dead on road approx. 430 m north of nearest crossing location (Point 47

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
									on Figure 1). No evidence recorded.
W36	2.8	5032-WC01	D	NG-DRX D/192 NG-DRX D/193	Stream	26/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Dominate bankside trees and short grasses.
W37	2.8	1488-WC01	D	NG-DRX D/194	Drain	26/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Some grazing on bankside areas. Abundant emergent vegetation and short grasses, rare bankside trees.
W38	2.8	1488-WC02	D	NG-RVX D/196 NG-DRX D/209	Stream	26/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Abundant bankside trees and short grasses, frequent bushes and emergent vegetation, occasional herbs and rare submerged weed.
W39	2.8	D244	D	NG-STRX D/197	Stream	19/07/2017	Water vole Suspected Absent	Otter Suspected Absent	Dry

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
W40	2.8	1332-W074	D	NG-DRX D/201	Drain	13/06/2017	Water vole Suspected Absent	Otter Suspected Absent	Wet rush pasture with sedge and yellow flag. No flowing water present, waterlogged ground.
W41	2.8	5080-W077	D	NG-RVX D/206	River Cenfi	13/06/2017	Water vole Suspected Absent	Otter Suspected Absent	Desk study record of otter spraint found adjacent this drain, approximately 180 m from nearest crossing location (Point 56 on Figure 1). No evidence recorded.
W42	2.8	1324 - WC01	E	NG-DRX E/215 NG-DRX E/216	Drain	26/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Heavily shaded in some areas and heavily poached. Virtually dry.
W43	2.8	12022 - WC01	E	NG-DRX E/220	Stream	27/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Canalized brick bank on one side of the ditch, unsuitable for water vole.

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
W44	2.9	12033-WC01	E	NG-DRX E/225	Drain	01/11/2017	Water vole Potentially Present	Otter Suspected Absent	Ditch partially dry. Burrows and feeding station which could potentially be water vole field signs (not confirmed) were identified on ditch to the south therefore ditch to be affected could support water vole if presence was confirmed and conditions become suitable.
W45	2.9	12016-WC01	E	NG-DRX E/227 NG-DRX E/228	Drain	27/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Abundant tall and short grass and bushes, occasional bankside trees and herbs.
W46	2.9	12003-WC01	E	NG-DRX E/229	Drain	27/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Abundant bankside trees, tall and short grasses, occasional bushes and herbs

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
									and rare submerged weeds.
W47	2.9	1040-WC01	E	NG-DRX E/236	Stream	27/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Abundant herbs, emergent vegetation, tall grasses, frequent bushes and occasional bankside trees.
W48	2.10	668-W113	F	NG-RVX E/241	River	13/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Bankside trees, bushes, emergent vegetation, marginal vegetation.
						06/07/2017	Water vole Suspected Absent	Otter Suspected Absent	No signs seen, not considered likely to have otters or water vole present. Possible bank vole prints.
W49	2.10	684-WC01	F	NG-RVX F/243	River	01/11/2017	Water vole Suspected Absent	Otter Present	Two otter spraint identified on a rock in the stream channel. Footprints on northern bank.

Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
W50	2.10	668-WC01	F	No Crossing	Drain	01/11/2017	Water vole Suspected Absent	Otter Suspected Absent	Dry
W51	2.10	668-WC02	F	No Crossing	Drain	01/11/2017	Water vole Suspected Absent	Otter Suspected Absent	Dry
W52	2.11	5008-W206 / 88-W206	F	NG-STRX F/256	River	14/07/2016	Water vole Suspected Absent	Otter Suspected Absent	North side has flat <10 bank profile and was cattle grazed, the south side had a vertical/undercut bank profile and was fenced.
						13/06/2017	Water vole Suspected Absent	Otter Suspected Absent	Narrow and shallow stream.
W53	2.11	75-WC01	F	No Crossing	Drain	01/11/2017	Water vole Suspected Absent	Otter Suspected Absent	Ditch with limited water. No suitability.
W54	2.11	100-D319	F	NG-DRX F/262 NG-DRX F/263 NG-DRX F/282	Drain	13/06/2017	Water vole Suspected Absent	Otter Suspected Absent	Rush pasture grazed by horses. Water not present for whole length, only 1/3 length had standing water, the rest was damp



Fig ID	Fig / Sheet Ref	Water-course Ref	Order Limits Section	Crossing ID	Crossing Type	Date of Survey	Water vole Status	Otter Status	Details
									ground.
W55	2.11	D322	F	NG-DRX F/264 NG-DRX F/291	Drain	27/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Dry
W56	2.11	73-WC01	F	NG-DRX F/277 NG-DRX F/281	Drain	27/07/2016	Water vole Suspected Absent	Otter Suspected Absent	Partially dry ditch, existing access road over ditch.
W57	2.7	5057-W01	C	NG-DRX C/165	Drain	N/A	N/A	N/A	To be surveyed 2018

## Appendix C: Photographs

Plate 1 A & B: 4010-W028 Water Vole Presence Confirmed



Plate 2 A & B: 2039-W005 Otter Presence Confirmed





Plate 3: 4074-D148 Water Vole and Otter Potentially Present



Plate 4: 1744-W041/B2 Otter Potentially Present

