HORIZON NUCLEAR POWER

WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project

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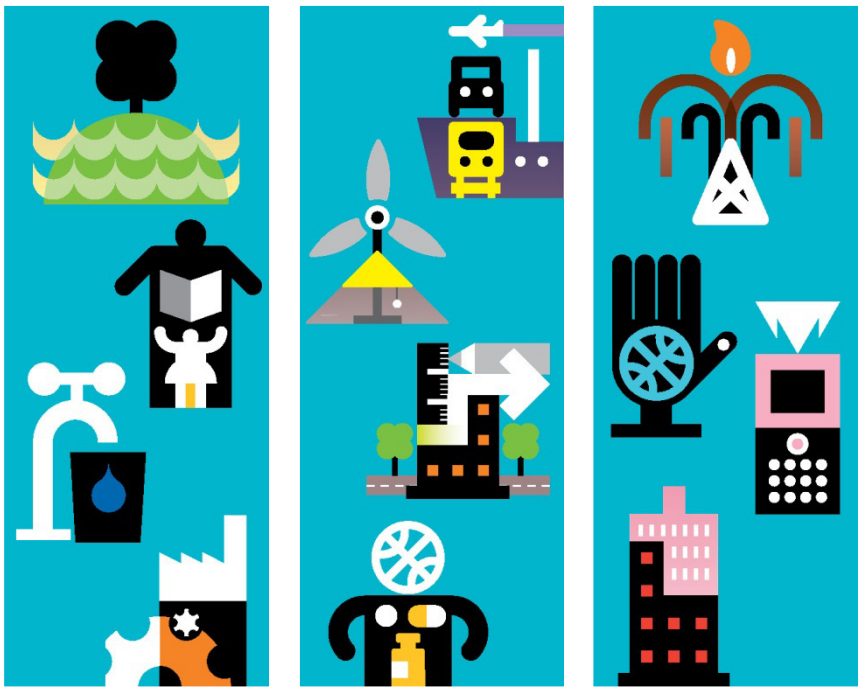

A5025 Route Improvement Contract EIA

Otter & Water Vole Survey Results

May 2014

Horizon Nuclear Power

Mott MacDonald

A5025 Route Improvement Contract EIA

Otter & Water Vole Survey Results

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Horizon Nuclear Power

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Issue and revision record

Revision	Date	Originator	Checker	Approver	Description	Standard
A	15 May 2014	L. Hill	T. Crabb	C. Probert	First Issue	

Contents

1 Introduction

1.1 A5025 Background

Horizon Nuclear Power Ltd (a subsidiary of Hitachi Ltd) is proposing to build a new nuclear power station on land beside the existing operational Magnox nuclear power station on Wylfa Peninsula, Anglesey, North Wales. Horizon Nuclear Power (HNP) are currently preparing a Development Consent Order (DCO) application for the proposed power station, which will include nuclear reactors with a minimum generating capacity of up to 2,700 Mega Watts (MW) of electricity which will be submitted to The Planning Inspectorate for review.

In order to facilitate the construction and operation of the new power station, the project will require a number of additional components (which fall outside the DCO application) and these are termed 'associated developments'. One of which relates to the upgrade of the existing transport infrastructure and is termed the A5025 Route Improvement Contract (RIC). The purpose of the upgrade is to facilitate the movement of the workforce materials, and minimise the impact of the movements on local communities.

Mott MacDonald (MM) has been commissioned by HNP to undertake a Preliminary Ecological Appraisal (PEA) to identify any potential ecological impacts and constraints associated with the proposed development.

The proposed route, hereby referred to as the 'scheme', follows a 22 km length of the A5025 between National Grid references: SH4171093260; and SH3004078890. A plan showing the extent of the scheme is provided in Appendix A. The route starts at the junction of the A5 trunk road at the village of Valley, and runs in a north easterly direction towards the existing power station at Wylfa Head to the east of the Village of Cemaes. The scheme includes a small section of the un-graded road Pen-yr-Orsedd. This is located to the west of the A5025 and is situated approximately 2 km to the north of the village of Llanrhyddlad. The A5025 runs through a number of villages and small rural communities.

The scheme design is yet to be defined and a number of options are currently being considered in consultation with the Isle of Anglesey County Council (IoACC), the Highways Authority (North and Mid Wales Trunk Road Agency) and other stakeholders. It is anticipated that the majority of the works will be undertaken within the existing highway boundary (known as on-line works); however at a number of locations, works outside of the highway boundary (off-line works) may be required, which may include minor road straightening, by-passes, roundabouts and junction improvements as detailed below.

The following areas for possible offline route improvements are:

- The Valley crossroads which may require bypassing;
- Llanfachraeth where a bypass to the east of the village is being considered;
- Llanfaethlu where bends at the Black Lion Inn and Llanfaethlu may need to be straightened;
- Cefn Coch where the existing route between Bod-Hedd and Cefn Coch may need to be straightened;
- Tregele where modifications to the site access are being considered. Alternatively, a by-pass as well as potential changes to the access to Cemlyn may be required; and
- Improvements along the A5025, between the construction site and Amlwch, to the proposed new workers village.

A map is provided in Appendix A highlighting both the online and offline works proposed along the A5025.

1.2 Water Vole and Otter Ecology Background

Extended Phase 1 Habitat Surveys were carried out by Mott MacDonald between August 2011 and March 2014. To fully utilise land access, protected species data was gathered simultaneously during the initial habitat surveys. This included recording when habitat that was deemed suitable for both otter (*Lutra lutra)* and water vole (*Arvicola amphibious)*. Where feasible, further surveys along ditches and water courses were also carried out on water courses/ditches up to 500 m from the existing road.

1.3 Scope of the Report

A new framework was set up in running from the 1st of April 2014 and Jacobs Engineering Group Inc. were commissioned to continue with the ecological surveys for the A5025 RIC. This report aims to summarise the information pertaining to reptiles that has been collated by Mott MacDonald to date, and provide a seamless mechanism to transfer the data in order for any further recommendations and/or surveys to be undertaken.

The objectives of this report are as follows:

- To present the methodology used for all reptile work;
- To present the results of the desk study & field survey work; and
- To provide brief recommendations for further survey work.

1.4 Survey Limitations

It was not possible to survey some areas within the survey extent; this was largely due to limited and/or irregular land access. This had implications for timing and duration of the surveys, whereby the Extended Phase 1 surveys were conducted over a longer period of time and subsequently covered a spectrum of optimal and non-optimal time for assessment. Adverse weather conditions also had a negative effect on the survey timings in 2013; this, along with severe wet conditions experienced during the late winter subsequently resulted in a number of otter and water vole surveys not being completed in 2013 on health and safety grounds.

2 Methodology

All ecological works followed up to date best practice guidelines provided by the Chartered Institute of Ecology and Environmental Management (CIEEM). In addition, further specific highway guidance was also followed. This is provided by The Design Manual for Roads and Bridges (DMRB), specifically Volume 10 (Environmental Design and Management) and Volume 11 (Environmental Assessment), along with relevant Interim Advice Notes (IANs), such as IAN 130/10 Ecology and Nature Conservation: Criteria for Impact Assessment which supplements DMRB Volume 11, SECTION 3 Part 4 'Ecology and Nature Conservation'.

2.1 Desk Study

The aims of the desk study with specific regards to otter and water vole was to review the presence of statutory and non-statutory designated sites within a 2 km buffer – these may be designated for the presence of otter (and some cases water vole) or may provide habitat suitable for these species within the surrounding area. In addition the desk study allowed a review of any otter and/or water vole records within 2 km of the road and was also used to identify water bodies and/or ditches within a 500 m buffer of the proposed route corridor by consulting OS mapping and aerial photography.

The following databases were used to extract the required information outlined above:

- Cofnod – North Wales Environmental Information Service;
- Isle of Anglesey County Council;
- Anglesey Nature website: (http://angleseynature.co.uk/);
- Natural Resources Wales (NRW)/Countryside Council for Wales (CCW) websites: (http://naturalresourceswales.gov.uk/splash?orig=/ and http://www.ccw.gov.uk/landscape--wildlife/protecting-our-landscape/protected-sites-map.aspx?lang=en);
- Joint Nature Conservation Committee (JNCC) website: (http://jncc.defra.gov.uk/); and
- Multi-Agency Geographic Information for the Countryside (MAGIC) website: (http://magic.defra.gov.uk/).

A review and summary of the desk study findings (including maps) was then carried out and presented within the A5025 Route Improvement Contract Preliminary Ecological Appraisal Report (Mott MacDonald, 2014). Results of both species record findings are also discussed further with this report (Section 3).

2.2 Field Surveys

Watercourses within 250 m of the road scheme (online), or 500 m from the proposed new road section (offline), were identified from Ordnance Survey (OS) maps which included the existing river crossings along the route. The Extended Phase 1 Surveys also assisted in identifying any areas commonly used by otters and water voles. When possible, further surveys for both species were carried out in conjunction with the Extended Phase 1 Habitat Surveys. Re-visits to sites were carried out if this was not possible and when it was required to extend surveys; for example when water courses/ditches ranged across more than one site under different landownership. The further survey method used for each species is outlined below.

2.2.1 Otter

As otter resting places are not always located on the water course corridor, areas of suitable habitat such as dense scrub were also identified for survey. In addition to other water courses identified from the OS maps, all existing river crossing locations along the existing road were targeted for surveying.

The otter survey followed the method outlined in National Rivers Authority Otters and River Habitat Management, Conservation Technical Handbook No. 3. 1993. Surveys can be undertaken throughout the year, however optimal conditions are where there is minimal vegetation and the banks and mud are more exposed.

During the surveys a starting point was identified (such as where the road crossed the water course or a branch of the stream started) and a stretch of the watercourse was walked for a minimum of 250 m in both directions.

The following field signs of otter were searched for:
- Footprints;
- Otter spraint (blackish, contains visible fish bones and scales and smells faintly of jasmine tea, often found on elevated places such as stones, fallen trees and where water courses converge);
- Otter couches (above ground/covered resting places);
- Otter holts (below ground/covered resting places);
- Feeding remains – such as fish carcasses; and
- Slides (where otters access water from the bank side).

The survey involved the following steps:
- The water course corridors identified from the desk study were surveyed from both banks using close focussing binoculars where necessary;
- Where it was considered safe to do so (as assessed according to the otter and water vole health and safety risk assessment and following strict health and safety measures), the banks were surveyed from within the water course;
- All survey details and findings were recorded on the survey form and the location of any field signs as listed above were detailed on a map; and
- Areas within the survey area which were not within the water course corridor but deemed as potential habitat for holts and couches, were searched where possible. It should be noted that the efficiency of searches for holts and couches can be low, as they are often constructed in impenetrable habitats.

Note. It is important to re-survey the area immediately prior to construction to update the original surveys and adjust the proposed mitigation if necessary.

2.2.2 Water Vole

Surveys can be undertaken throughout the active period (March to November) with optimum survey times between March and June. However, when there is less vegetation and the banks are exposed in the late summer early autumn, it is still possible to survey the habitats.

The water vole survey followed the methods outlined within Strachan et al. (2011) guidance.

The banks were examined for the following characteristic field signs:

- Faeces - Droppings are the most distinctive field signs, they are 8-12 mm long and 4-5 mm wide, cylindrical with blunt ends;
- Latrine - The majority of droppings are deposited at latrine sites, and used to mark range boundaries or favoured spots close to burrows;
- Feeding stations - Water voles often bring pieces of cut vegetation to favoured feeding stations close to the water's edge, creating neat piles of chewed lengths of vegetation;
- Burrows;
- Nests - Where vegetation cover is dense and the water table is high nests are made out of finely shredded grass or reed;
- Footprints; and
- Runways in vegetation and on watercourse banks.

The survey will involve the following steps:

- The water course corridors identified from the desk study were surveyed from both banks using close focussing binoculars where necessary;
- The suitability of the water course corridor features for water vole, such as the steepness of the bank, the water depth, the width of the water course, were noted;
- Where it was considered safe to do so (as assessed according to the otter and water vole health and safety risk assessment), the banks were surveyed from within the water course, for burrows etc.;
- All survey details and findings were recorded on the survey form and the location of any field signs as listed above were detailed on a map; and
- The top of the banks on each side of the water course were surveyed for land nests, burrows, feeding signs and any other field signs of water vole.

3 Results

The Extended Phase 1 Habitat Survey recorded a multitude of habitats that were deemed suitable for use by otters. This included rivers, streams, ditches, ponds, lakes, estuaries and coastal areas, some of which lie within close proximity to the road scheme. These features were recorded to be well connected to habitats used by otters for breeding such as woodland, reed beds and extensive areas of scrub. Numerous ditches and streams were assessed as also being suitable for water vole.

3.1 Species Records

Within the last ten years, 2 records from Cofnod data of otter and 3 records of water vole have been identified. Of these, four were located over 2.5 km west of the A5025 within the north region close to the village of Cemlyn, and the fifth record (water vole) recorded 1.1 km west of the A5025, mid-way between the village of Lon Y Felin and the coast.

In addition to the supplied records, an unpublished report from the 2010 Otter Survey of Wales was obtained from NRW. This further highlighted Anglesey as having an expanding otter population. The report shows otter records increasing from 18% positive in 2002 to 67.5% positive in 2009 with new sites recorded to the west and north of the island (Environment Agency Wales, 2010).

3.2 Further Surveys

Due to the extensive network of water courses, ditches and associated suitable habitat, otter and water vole surveys were conducted in all areas deemed suitable for both species for up to 500 m from the A5025. Priority was initially given to all features within 250 m and to all watercourses and ditches that currently intersect the A5025 or were likely to be directly impacted by works (i.e. at 2 locations where the proposed route goes offline and crosses the river Alaw to the east of the village of Llanfachraeth).

Table B.1 provided in Appendix B outlines results of the otter and water vole surveys to date. Maps to present this data can also be found in Appendix C.

Results show that evidence of both otter and water vole has been found in watercourses, ditches and associated suitable habitat immediately adjacent and surrounding the A5025.

4 Recommendations

Evidence of both otter and water vole has been found within the diverse array of water courses that are present immediately adjacent and surrounding the A5025.

Where access has not yet been gained and re-surveys recommended (namely where poor weather and further access requirements have prevented full assessment), it is advised that these further surveys are carried out.

A confirmed plan of the proposed works should be made available in order to establish where direct and indirect impacts are expected to any water bodies present. This will assist in providing the appropriate working methods and if required, will assist with any further investigations required in order to apply for an otter derogation licence from NRW.

It is expected that as a minimum, a working method statement shall be required for areas where works occur at water crossing points and where water courses are present within close proximity to the road scheme.

5 References

Anglesey Nature website: http://angleseynature.co.uk/;

CIEEM (2013). Competencies for Species Survey: Eurasian Otter. Chartered Institute of Ecology and Environmental Management, Winchester;

CIEEM (2013). Competencies for Species Survey: Water Vole. Chartered Institute of Ecology and Environmental Management, Winchester;

Cofnod - North Wales Environmental Information Service;

Environment Agency Wales (2010). Otter Survey of Wales 2009-10, unpublished report;

Highways Agency's Design Manual for Roads and Bridges (DMRB) (1993), Volume 10;

Highways Agency's Design Manual for Roads and Bridges (DMRB) (1993), Volume 11, Section 3, Part 4 Ecology and Nature Conservation;

Highways Agency's Design Manual for Roads and Bridges (DMRB) (1993), Volume 11, Section 3, Part 10, HD 45/09 Road Drainage and the Water Environment;

Highways Agency Interim Advice Note 130/10 (2011), Ecology and Nature Conservation: Criteria for Impact Assessment;

Isle of Anglesey County Council website: http://www.anglesey.gov.uk/planning-and-waste/countryside/;

Joint Nature Conservation Council (JNCC) website: http://jncc.defra.gov.uk/;

Mott MacDonald (2014) A5025 Upgrade Wylfa, Preliminary Ecological Appraisal;

Multi-Agency Geographic Information for the Countryside (MAGIC) website: http://magic.defra.gov.uk/;

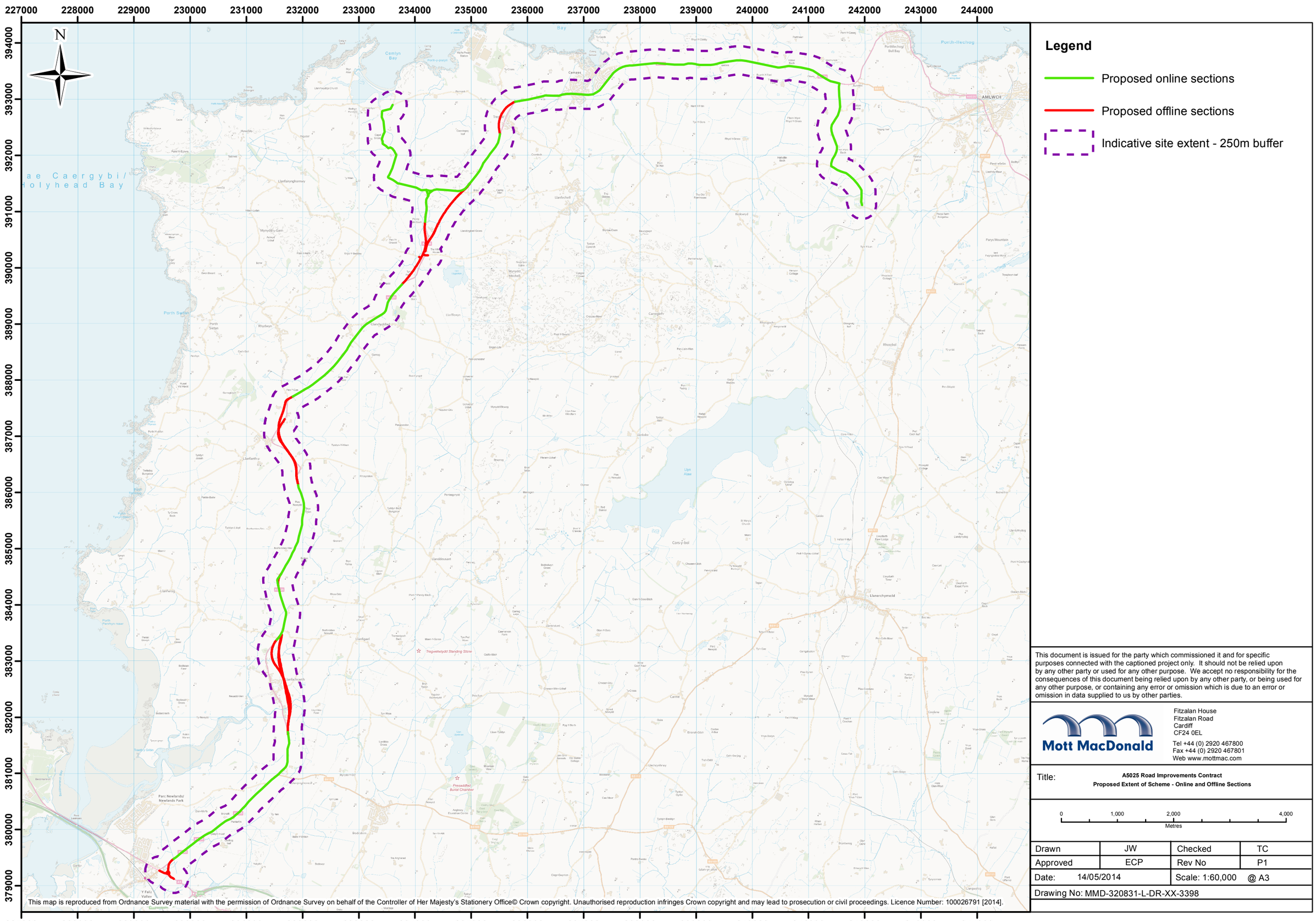
National Rivers Authority. (1993). Otters and River Habitat Management. Conservation Technical Handbook No. 3. National Rivers Authority, Bristol;

Natural Resources Wales (NRW)/Countryside Council for Wales (CCW) websites: (http://naturalresourceswales.gov.uk/splash?orig=/ and http://www.ccw.gov.uk/landscape--wildlife/protecting-our-landscape/protected-sites-map.aspx?lang=en; and

Strachan, R., Moorhouse, T. and Geling, Meryl. (2011). Water Vole Conservation Handbook, 3rd Edition. WildCRU, Oxford.

Appendices

Appendix A. A5025 Online and Offline Works



Legend

- Proposed online sections
- Proposed offline sections
- Indicative site extent - 250m buffer

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Title: **A5025 Road Improvements Contract**
Proposed Extent of Scheme - Online and Offline Sections

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Metres

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Approved	ECP	Rev No	P1
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Drawing No: MMD-320831-L-DR-XX-3398

Appendix B. Otter and Water Vole Survey Findings

Table B.1: Otter and Water Vole Survey Data

Water body Reference	Results	Details
72	Confirmed water vole evidence.	Shallow, fast flowing stream culverted under the A5025. Water vole evidence: latrines, burrows & pathways SH3757893718. Otter potential (water vole evidence on map shows on Ditch 71).
73	Low water vole potential, possible otter.	Small stream culverted under the A5025. Low potential for water vole, possible otter.
74	Low potential.	Very shallow drainage ditch. Very low potential for otter & water vole.
30	No evidence.	Otter commuting potential & suitable water vole habitat within ditch.
63	No suitability.	
Tidal river	Otter commuting potential along River Alaw (Afon Alaw). Low water vole potential.	Permission to be arranged to access woodland if watercourse is impacted due to potential otter holt area.
57	Otter evidence confirmed along stream.	Some areas suitable for water vole. Otter spraint found. Potential otter resting place.
59	No evidence.	Unsuitable for water vole. Potential otter commuting. Poor water quality.
56	Low water vole potential.	Severe cattle poaching along banks of ditch. Blocked drain.
18	Evidence confirmed along ditch to the north west section. Potential in other sections.	Water vole evidence - latrines, burrows, pathways. Otter evidence – spraint.
26	Evidence confirmed along river.	Water vole evidence - latrines, burrows, pathways. Otter evidence – spraint & potential lay-up along river: SH3121183491.
28-30	Evidence confirmed along river and ditch.	Two otter spraint's under bridge. Ideal habitat for water vole also but no evidence seen.
4	No suitability within ditch.	
20	No evidence.	Potential within river, no evidence found.
21	Unconfirmed.	Limited land access & poor weather conditions (overflowing culverted area) – re-survey required.
26	Low potential.	Heavily grazed & poached ground with little vegetation cover around & in ditch. Some fenced, shaded areas. Low potential for commuting otter only.
32	No suitability.	
142	No suitability.	
35	No evidence.	Low potential for both species along ditch. Possible otter commuting.
35B	No evidence.	Numerous small mammal evidence – not water vole. Commuting potential for otter, low potential for water vole.
43	No suitability.	
44	No suitability.	
15	No evidence.	Wet ditch with pond – low water vole potential only.
14	No suitability.	
20	Unconfirmed.	Fast flowing river-unlikely to be suitable for water vole. Heavy rain caused river flooding & prevented full assessment for otters – re-survey required.

Water body Reference	Results	Details
80	No suitability.	
70	Evidence confirmed along river.	Fast flowing water – no suitability for water vole. Evidence of otter footprints/runs & possible lay-up
77	No evidence.	Low suitability for both species within ditch.
42	No evidence. Report of presence.	No evidence within ditches/streams-potential habitat for otter & water vole. Report of eel, trout & water vole known to be present within small stream.
43	No evidence. Report of presence.	No evidence-potential habitat for water vole. Report of eel, trout & water vole known within small stream
44	No evidence. Report of presence.	No evidence-potential habitat for water vole. Report of eel, trout & water vole known within small stream.
146	No suitability.	
21	No evidence.	Potential within ditches, no evidence observed.
33	No evidence.	No definitive evidence along ditch – possible otter pathways and likely otter foraging habitat.
132	No evidence.	Water vole unlikely within ditches. Some potential for commuting otter and lay-up areas within scrub.
133	No evidence.	Water vole unlikely within ditches. Some potential for commuting otter and lay-up areas within scrub.
135	No evidence.	Water vole unlikely within ditches. Low potential for otter.
71	Low potential.	Culverted ditch – no real access for otters & low suitability for water vole (water vole evidence on map refers to Ditch 72).
84	Evidence confirmed along ditch / river.	Numerous water vole latrines & burrows with pathways & feeding remains. Possible otter commuting.
46	No evidence.	Potential for commuting otter along river. Not suitable for holts. Unsuitable for water vole due to heavy cattle poaching.
65	Unconfirmed.	Drain unsuitable for otter & water vole. Ditch requires further survey from other surrounding land parcels. Fast flowing stream – potential for commuting otter. No water vole sign.
87	No evidence.	Running water.
45	No evidence.	No signs of either species. Very low potential.

Source: Mott MacDonald 2013/2014

Appendix C. Map of Otter and Water Vole Survey Results

229000 230000 231000 232000

381000 380000 379000 378000

N

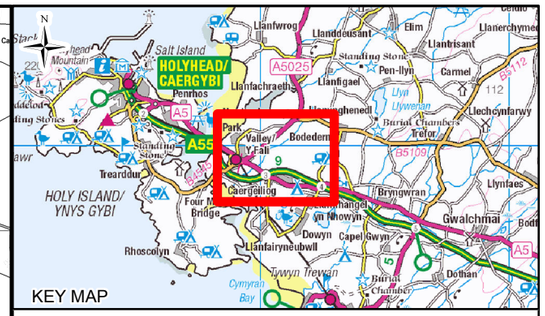
Traeth y Gribin

D146 D14 D14 D15 D4

VALLEY C VALLEY C

Llanynghenedl Caergeiliog Y Fali / Valley

Afon Alaw



Legend

- Otter field signs recorded
- Water vole field signs recorded
- D1 — Surveyed ditches
- Jacobs survey area
- Indicative site extent - 500m buffer

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Title: **A5025 Road Improvements Contract**
Otter and Water Vole Survey Results

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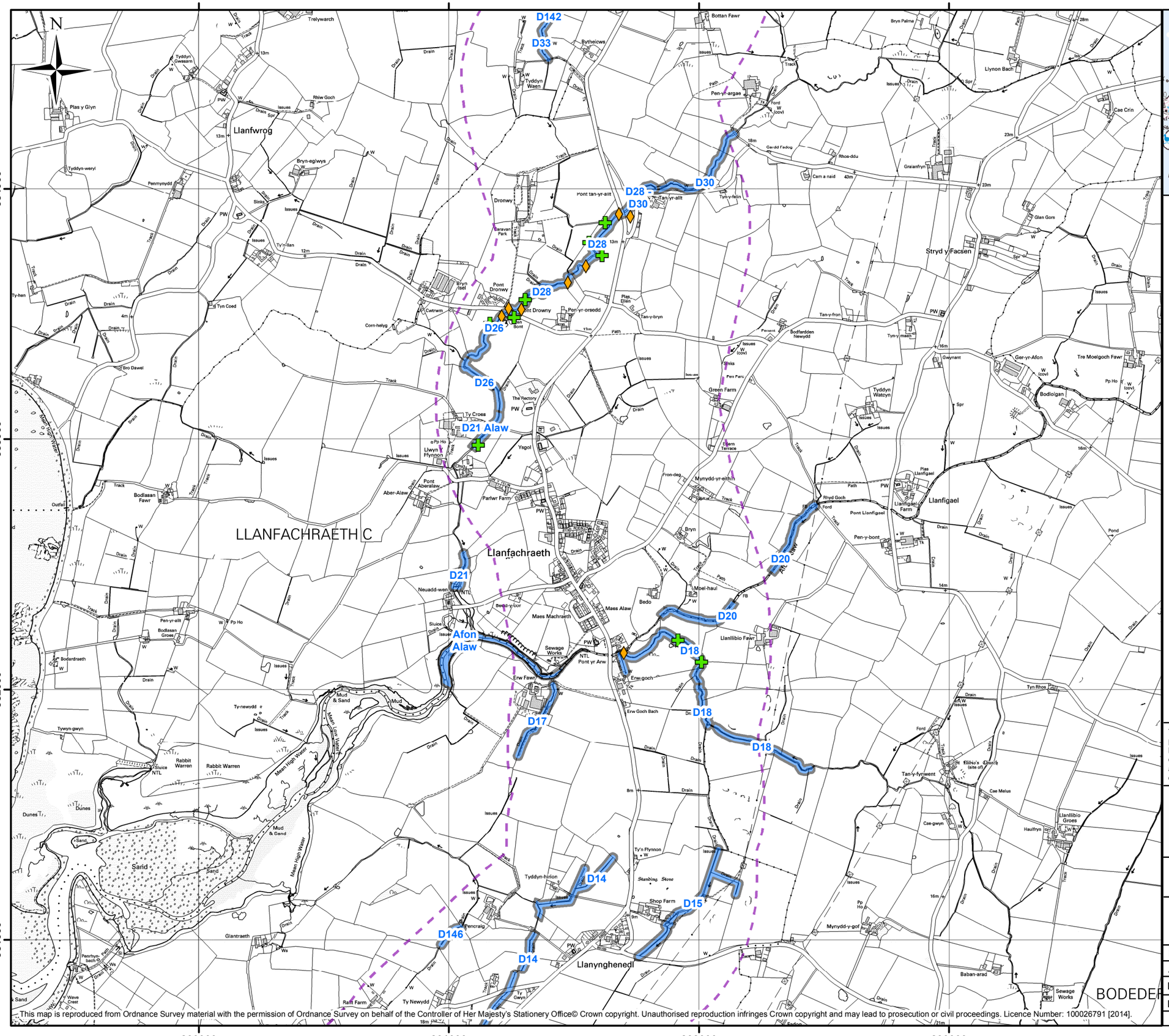

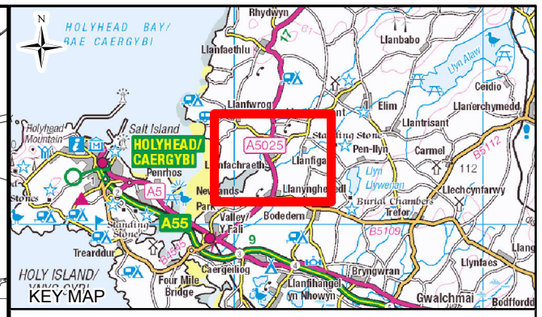

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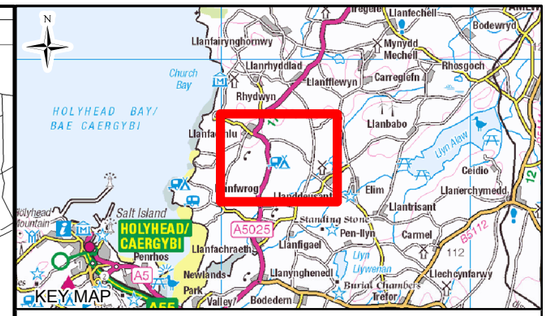

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Rhydwyn

Llanrhyddlad

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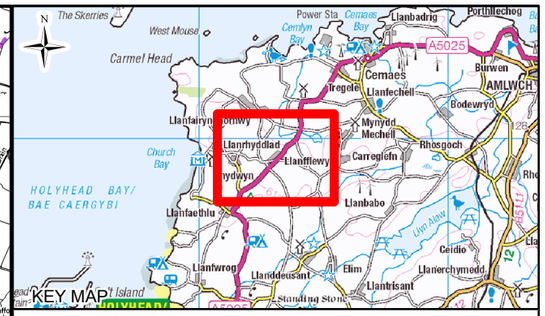
Llyn Llygeirian

Llyn Garreg-lwyd



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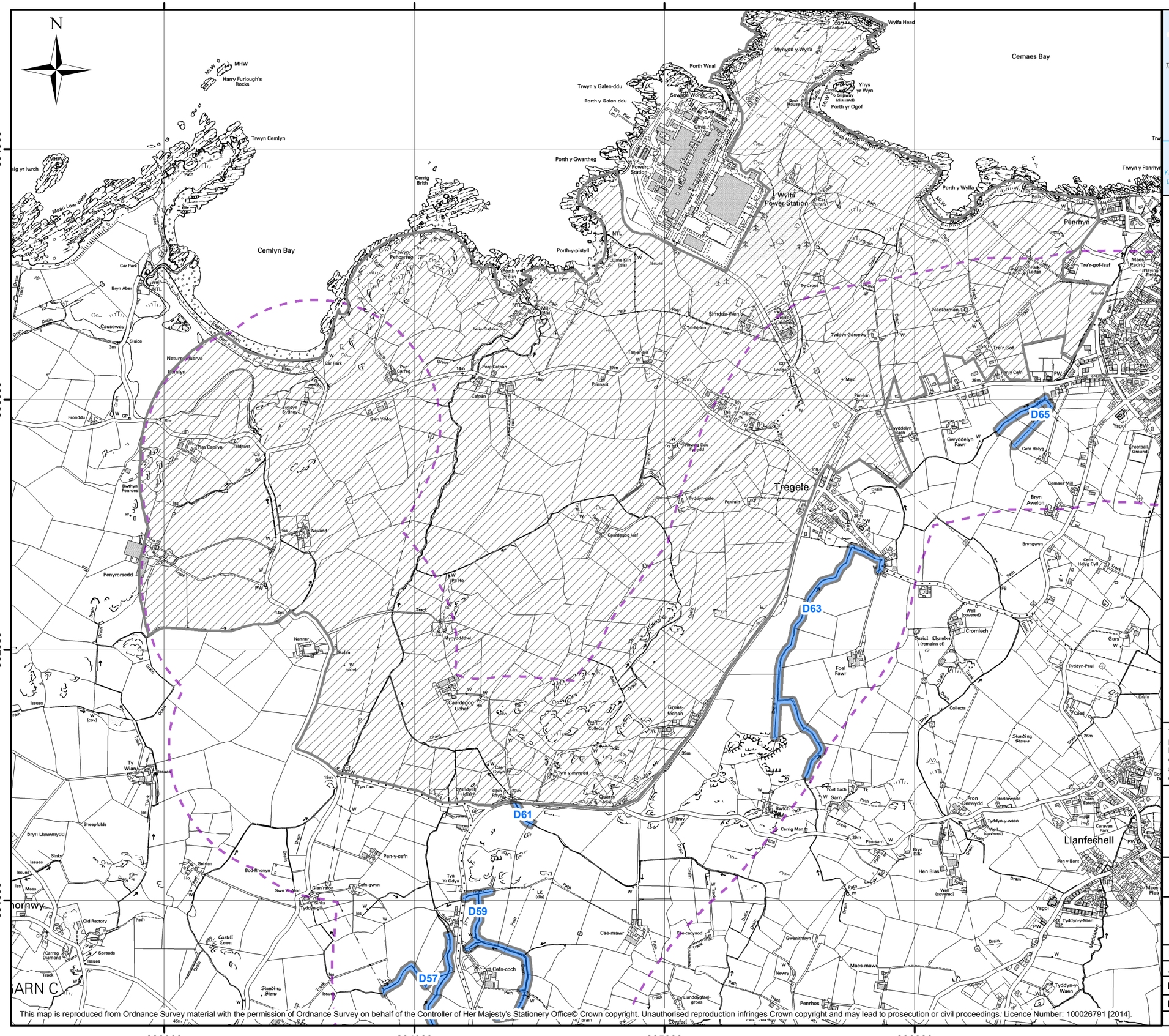

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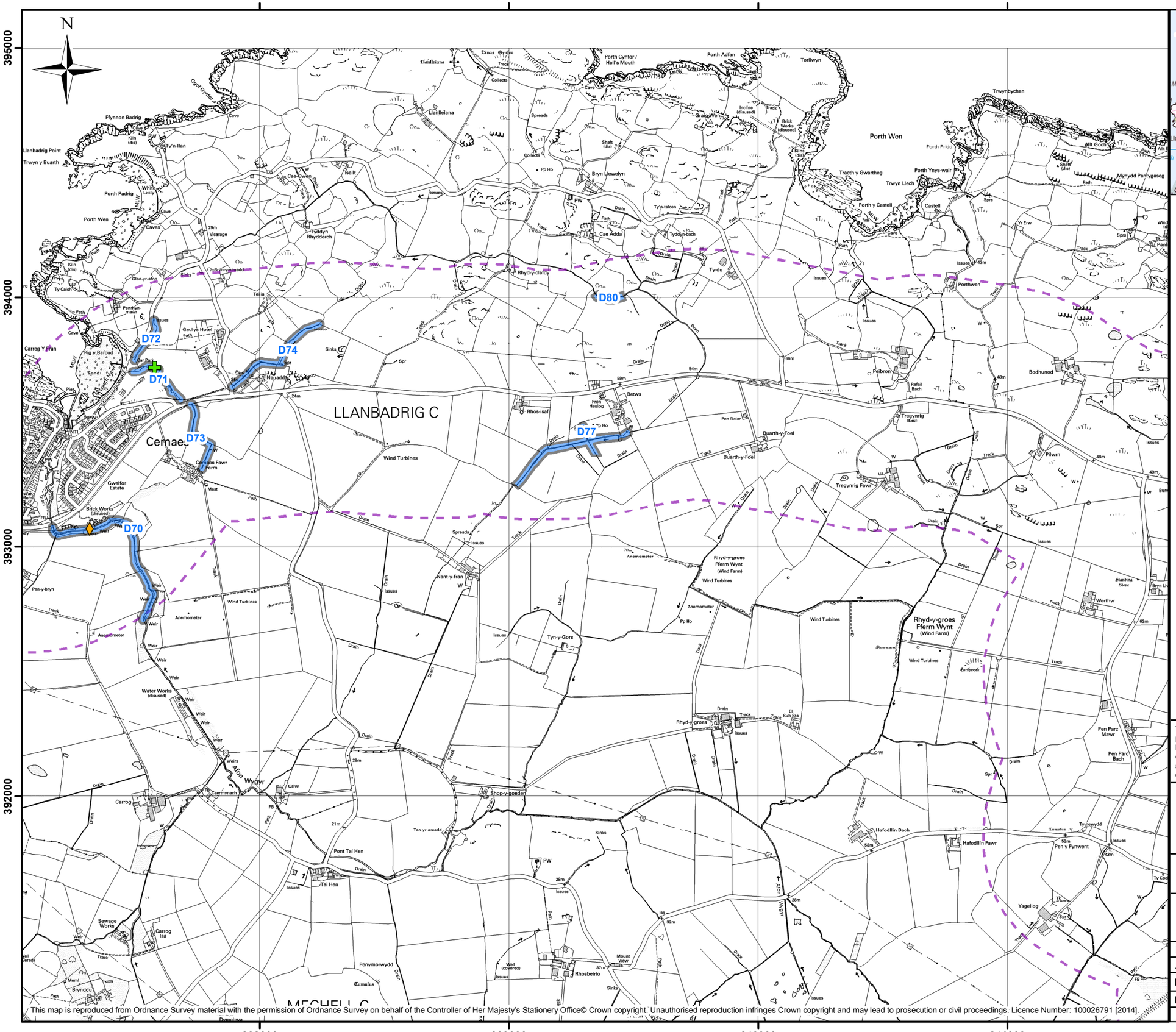

Legend

- Otter field signs recorded
- Water vole field signs recorded
- D1 — Surveyed ditches
- Jacobs survey area
- Indicative site extent - 500m buffer

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Title: **A5025 Road Improvements Contract**
Otter and Water Vole Survey Results

0 250 500 1,000
Metres

Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date: 24/04/2014		Scale: 1:15,000 @ A3	
Drawing No: MMD-320831-L-DR-XX-3420			

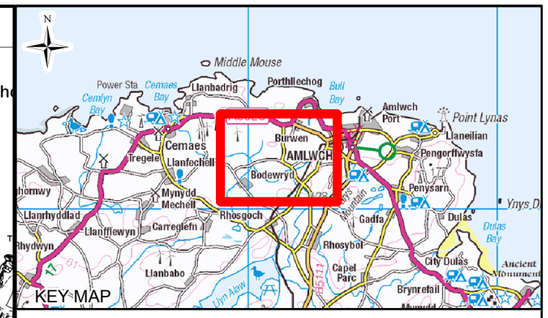
239000 240000 241000 242000 243000

394000 393000 392000 391000

D80 D77 D84 D84 D87

Rhyd-y-groes Fferm Wynt (Wind Farm)

AMLWCH



Legend

- Otter field signs recorded
- Water vole field signs recorded
- D1 — Surveyed ditches
- Jacobs survey area
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Title: **A5025 Road Improvements Contract**
Otter and Water Vole Survey Results

0 250 500 1,000
Metres

Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date: 24/04/2014		Scale: 1:15,000 @ A3	
Drawing No: MMD-320831-L-DR-XX-3421			