

Wylfa Newydd Project A5025 On-line Highway Improvements

Environmental Report – Volume 3A Appendices



APPLICATION November 2017

List of Appendices

- Appendix 2.1 A5025 Temporary Construction Compound Optioneering Exercise
- Appendix 3.1 Summary of Assessment Scope
- Appendix 3.2 Consultation summary
- Appendix 8.1 Baseline Noise Monitoring Plan
- Appendix 11.1 A5025 Freshwater Baseline Surveys 2014-2015
- Appendix 11.2 A5025 On-line and Off-line Highway Improvements Terrestrial Ecology Factual Report 2014-2015
- Appendix 11.3 Preliminary Ecological Appraisal May 2014

[This page is intentionally blank]

**A5025 On-line Highway Improvements
Environmental Report
Volume 3 – Appendix 11.3
Preliminary Ecological Appraisal
May 2014**

[This page is intentionally blank]



A5025 Route Improvement Contract

Preliminary Ecological Appraisal

May 2014

HORIZON NUCLEAR POWER

A5025 Route Improvement Contract

Preliminary Ecological Appraisal

May 2014

HORIZON NUCLEAR POWER

5210 Valiant Court
Gloucester Business Park
Delta Way
Gloucester
GL3 4FE

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description	Standard
A	May 2014	D Hatuqa	L Huckstep / EC Probert	AL Lawrance	First Issue	
						

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

Chapter	Title	Page
	Executive Summary	1
1	Introduction	4
1.1	Background _____	4
1.2	Scope of the Report _____	5
1.3	Consultations _____	5
1.4	Limitations _____	5
1.5	Legislative Context _____	6
2	Methodology	7
3	Results	9
3.1	Desk Study _____	9
3.2	Extended Phase 1 Habitat Survey Results _____	14
3.3	Protected and Notable Species _____	18
4	Assessment	23
4.1	Designated Sites _____	23
4.2	Habitats _____	25
4.3	Protected and Notable Species _____	27
5	Conclusions and Recommendations	29
5.1	Conclusions _____	29
5.2	Recommendations _____	29
6	References	35
7	Appendices	37
Appendix A.	Map of Proposed Extent of the Scheme _____	38
Appendix B.	Legislative Framework _____	39
Appendix C.	Map of Ecology Survey Buffers _____	45
Appendix D.	Map of Extended Phase 1 Habitat _____	46
Appendix E.	Target Notes _____	47
Appendix F.	Photographs _____	55
Appendix G.	Map of Designated Sites _____	62
Appendix H.	Protected Species Records _____	63
Appendix I.	Map of Protected Species Records _____	66
Appendix J.	Map of Rivers & Main Watercourses _____	67

Executive Summary

Mott MacDonald Ltd has been commissioned by Horizon Nuclear Power Ltd to undertake a Preliminary Ecological Appraisal to inform a feasibility study for the proposed Route Improvement Contract for the A5025 road relating to the proposed new nuclear build at Wylfa Head.

The purpose of this Preliminary Ecological Appraisal is to provide an initial assessment of the ecological importance of the habitats relevant to the development at the site and the potential for these areas to support protected ecological features and species.

This has been achieved by carrying out an Extended Phase 1 Habitat Survey within an appropriate buffer zone. This recorded habitats and identified baseline ecological data for protected species and statutory and non-statutory designated sites.

Results

Results show there are 14 statutory designated sites and 24 non-statutory designated sites within 2 km of the road scheme. Records also show a number of protected species within 2 km of the road scheme; these include otters, bats, great crested newts, water voles and breeding birds.

To date, results from the Extended Phase 1 Habitat Survey shows that protected and notable species would be expected within and surrounding the road scheme.

The land surrounding the survey corridor can be broadly categorised as agricultural with improved, semi-improved and arable fields. The existing road is bordered by hedgerows while the wider landscape is further divided by a series of 'clawdd walls', hedgerows, rivers, streams and ditches. A number of rivers transect and run adjacent to the scheme at multiple locations. Along the length of the scheme the A5025 runs through a number of sparsely populated villages and small rural settlements.

Recommendations

For European statutory designated sites, it is recommended that a (stage one) Habitat Regulation Assessment screening exercise is undertaken to determine whether the proposal is likely to have a significant effect alone or in combination with other plans or activities on the features of the sites. This should be done in consultation with Natural Resources Wales. Similarly, consultation with Natural Resources Wales is recommended to determine the scale of further assessments required for Sites of Special Scientific Interest which can potentially be impacted by the scheme.

It is recommended that further ecological surveys for protected species and habitats are carried out. This includes the following species/features and habitats in which they would be expected:

- Reptiles and amphibians, including great crested newts – ponds, marshy grassland, Clawdd walls, quarries, scrub and spoil;
- Water voles, otters, aquatic fauna - main rivers, river tributaries, streams and ditches;
- Badgers – dense scrub and woodland;
- Freshwater and terrestrial invertebrates; species rich grassland, aquatic vegetation, river corridors, ponds and ditches;
- Roosting bats - mature trees (within woodland, hedgerows or on their own), old barns, stone cottages, and other buildings;
- Foraging/commuting bats – running water bodies, hedgerows and walls;
- Breeding birds – scrub, grassland, hedgerows, trees and buildings;

- Overwintering birds- scrub, grassland, hedgerows, and trees;
- Hedgerows; and
- Freshwater aquatic flora.

The findings of the above recommended surveys would inform the scheme of any ecological licenses and/or method statements required for the proposed works. In addition, this information would feed into relevant environmental management plans that are recommended for preparation. Compensation and/or mitigation would be expected, and a general outline of the recommended mitigation measures is given.

1 Introduction

1.1 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;
- Treglele 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.

1.2 Scope of the Report

The proposed works are expected to affect the A5025 soft estate and the corridor of land either side. The purpose of this report therefore is to give an account of the baseline information relevant to these works. This shall include all of the ecological receptors/features such as designated sites, habitats and protected species of value by undertaking a rapid Extended Phase 1 Habitat survey. The outcomes of the initial surveys are to identify the requirement for any further Phase 2 surveys (such as European Protected Species (EPS)) or any requirement for a Habitats Regulations Assessments (HRA). The information gathered would identify key ecological constraints and inform further designs, options, Ecological Impact Assessments (EclA) and EPS licenses. An outline of generic mitigation measures is included.

The structure of the report is as follows:

- Section 1 – Introduction and background;
- Section 2 – Methodology and results; and
- Section 3 – Conclusions and recommendations.

1.3 Consultations

Initial discussions over the scope of the scheme were undertaken with Mr David Crawley County Ecologist for IoACC on the 4th of March 2013. A further meeting was conducted with Mr Bryn Griffiths on the 21st March 2013, who is the nominated Casework officer for the scheme for Natural Resources Wales (formally the Countryside Council for Wales) to identify survey requirements and likely protected sites and species within the scheme extents.

1.4 Limitations

It was not possible to survey some areas within the survey extent; this was largely due to limited and/or irregular land access. As some ecological surveys can only be undertaken at specific times of the year constrained by seasonality, the access restrictions had implications for survey programming, whereby the surveys were conducted over a longer period of time and subsequently covered a spectrum of optimal and non-optimal time for ecological assessment.

At the time of the writing of this report, approximately 75% of the land parcels had been released. The Extended Phase 1 Habitat Survey was still ongoing and survey results and descriptions presented within this report should be considered a proportion of the entirety of the works. Survey data acquired after the 28 February 2014 will not be incorporated into the report, and will be available as raw baseline data.

In addition, biological records obtained from third parties do not represent a full and complete species list for an area. Records are largely given by individuals on an *ad-hoc* basis, often resulting in areas deficient in data. Further surveys and recommendations specified within this report therefore, are provided on the basis of both biological records and data collected from, and during the Extended Phase 1 Habitat survey.

The nature of the Extended Phase 1 Habitat Survey as a rapid assessment tool for collecting baseline data limits the scope to predict with certainty specific direct or indirect impacts by the scheme. As such only outlines of generic mitigation measures are given. Following the completion of the recommended Phase 2 surveys and assessments, more information can be gathered for the purpose.

1.5 Legislative Context

For the purpose of this ecological report the proposals must comply with specific nature conservation policy and legislation relevant to the ecological assessment of this scheme. Nature conservation policy in the UK is implemented through designation of certain areas, habitats and species under legislation from local to international level. The legislative framework of relevance is outlined in detail in Appendix B.

2 Methodology

All ecological surveys follow up to date best practice guidelines provided by the Chartered Institute of Ecology and Environmental Management (CIEEM). In addition, further specific highway guidance is also followed through the use of 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 supplement DMRB Volume 11, SECTION 3 Part 4 'Ecology and Nature Conservation'.

2.1.1 Desk Study

A desk based assessment has been conducted to review the relevant and available information pertaining to the site.

The aims of the desk study were:

- To review the presence of statutory and non-statutory designated sites within a 2 km buffer and identify any Special Areas of Conservation (SAC) primarily designated for bats within 30 km of the route; and
- To review species records within 2 km of the road.

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/>).

2.1.2 Extended Phase 1 Habitat Survey

Between March 2013 and March 2014, an Extended Phase 1 Habitat Survey was undertaken to cover a 250 m wide corridor along the proposed route of the scheme to encompass the likely 'zone of influence (ZoI)'. The ZoI is defined as an estimated 'effect area' where biophysical changes in the receiving environment are likely to occur as a result of the scheme. A plan showing the scheme extent and likely ZoI is provided in Appendix C where it is referred to as the 250 m survey buffer. The Extended Phase 1 Habitat Survey is a standard technique for rapidly obtaining baseline ecological information over a large area of land.

The main techniques included:

- Identifying main habitat types in compliance with the 'Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit' (JNCC, 2010);

- Each parcel of land demarcated by land ownership boundaries (within the survey corridor) had its habitats classified, recorded and mapped in accordance with a list of ninety specified types;
- Standard colour codes were used to produce an Extended Phase 1 Habitat Map to allow rapid visual assessment of the extent and distribution of different habitat types (Appendix D);
- Dominant plant species were noted along with any uncommon species, invasive species or species indicative of particular habitat types. Any further ecological features or species of interest were target noted (Appendix E). This may include factors (but not exclusively) such as individual features, fauna species or structures etc. No attempt was made to compile an exhaustive species lists;
- Recording the potential presence and habitat suitability for any protected and notable species was also carried out. Relevant features such as whole trees, individual features within trees such as cracks and fissures, hedgerows, ponds or other structures were noted for their potential to support protected species and other species of conservation concern;
- Incidental records of fauna were also made during the survey such as direct evidence and/or any species observations; and
- Photographs are taken to visually record some target notes or other features of interest (Appendix F).

Results of the desk study and the Extended Phase 1 Habitat Survey can be found in Chapter 3.

3 Results

3.1 Desk Study

3.1.1 Study Area

Anglesey is a topographically low lying island with gently rolling landforms and glacial sediments. It is considered as having one of the most varied geology within the British Isles. Anglesey is underlain by igneous, sedimentary and metamorphic rocks ranging in age of between 300–650 million years ago, transacted by a series of major faults and thrusts (British Geological Survey, 2014).

Land use is dominated by agriculture, predominantly sheep farming with some areas of coniferous forestry plantations. Approximately 70% of the land is dedicated to permanent grassland and arable farming, market gardening, chicken, pig, sheep, beef cattle rearing and dairy farming. Land parcels are bounded by hedgerows and clawdd walls (banks of earth clad in stone often planted with a hedge). A series of rivers, streams and ditches further divide the landscape.

3.1.2 Statutory Designated Sites

There are 14 statutory designated sites present within 2 km of the proposed road scheme. These sites are presented in Table 3.1 below and full citations can be found on the NRW website. Statutory designated sites maps are presented in Appendix G.

Table 3.1: Table of Statutory Designated Sites

	Name	Designation	Primary Reason for Designation	Distance and Direction from the A5025
1	Anglesey	Areas of Outstanding Natural Beauty (AONB)	Designated to protect the aesthetic appeal & variety of the island's coastal landscape & habitats from inappropriate development. The AONB covers an area of 221 km ² making it the largest AONB in Wales.	0.0 km in sections
2	Cemlyn Bay	SAC Sites of Special Scientific Interest (SSSI)	Designated for representing the best example of a saline coastal lagoon in Wales. Supports a relatively diverse set of species, several of which are specific to lagoons and uncommon plant species	~ 0.2 km North
3	Cemlyn Bay, Ynys Feurig and the Skerries	Special Protection Areas (SPAs)	Supports the largest breeding colony of Common, Atlantic, Sandwich and Roseate Tern in Wales. The SPA is composed of three separate areas that are treated as a single site as a consequence of regular movement by birds between the component parts.	~ 0.2 km North
4	Cae Gwyn	SSSI	Two wetland areas separated by heathland with rock exposure. Supports a profusion of common wetland herbs; marsh cinquefoil, bogbean, cranberry and bog sedge.	~ 0.2 km South
5	Llyn Llygeirian	SSSI	An example of a moderately base-rich lake with fringing reedswamp and associated vegetation. Designated for biological interest with particular	~ 0.3 km East

	Name	Designation	Primary Reason for Designation	Distance and Direction from the A5025
			regard to aquatic flora including the regionally rare frogbit and the nationally uncommon waterworts, needle spike-rush and spring quillwort.	
6	Llyn Garreg / Iwyd	SSSI	A shallow basin mire, selected as an example of tall fen dominated by common reed with botanical and ornithological interest. The high water table supports extensive mats of floating vegetation. Supports breeding bird species such as warbler sp. and bittern.	~ 0.3 km North
7	Tre'r Gof	SSSI	A small basin mire designated for its biological interest. Comprises a mosaic of rich fen habitats and associated communities supporting a wide variety of plants; great pond sedge, greater reedmace and the nationally scarce marsh fern.	~ 0.5 km North
8	Llanbadrig - Dinas Gynfor	SSSI	A unique exposure of geological unconformity (the contact between 2 temporally separate rock formations - the ancient Mona Complex and over-lying Ordovician rocks). Also one of the best and most accessible exposures of Gwna Melange (a chaotic jumble of hard rock fragments immersed in a softer, green, slaty matrix). One of the most important geological localities in North Wales.	~ 0.7 km North
9	Henborth	SSSI	Geomorphological interest, a rare and excellent exposure through the long axis of a drumlin (glacial mound) clearly revealing internal structure and composition.	~ 1.2 km West of Pen-yr-Orsedd
10	Wylfa Head	Local Nature Reserve (LNR)	A local nature reserve on the headland adjacent to the Power Station. Designated for coastal heath and grassland.	~ 1.4 km North
11	Llyn Dinam	SAC	It is an example of a naturally nutrient-rich lake with pondweeds (<i>Potamogeton sp.</i>) dominating the vegetation. The water chemistry characteristics are typical of nutrient-rich lakes, including relatively high pH and alkalinity.	~ 2.0 km South West
12	Llynnau y Fali – Valley Lakes (Llyn Dinam)	SSSI	A mosaic of open water areas with associated mesotrophic marshland and damp grassland habitat. Designated for biological and ornithological interest. Aquatic macrophyte communities including floating water-plantain and marsh fern. Supports overwintering wildfowl such as shoveler, teal and goldeneye and provides breeding habitat to wetland birds.	~ 2.0 km South West
13	Mynydd Parys	SSSI	Formally the largest copper mine in Wales. Selected for its interesting mineralogy, geology, history and biology. There are a number of scheduled ancient monuments on site and ten nationally scarce lichens and a nationally scarce liverwort.	~ 1.5 km East
14	Beddmanarch / Cymran	SSSI	A collective of sandbanks, mudflats, saltmarsh and dune heath supporting a range of ornithological and botanical species including the uncommon golden samphire and all three species of eelgrass. The site is important for overwintering ringed plover, greenshank	~ 2.0 km North West

Name	Designation	Primary Reason for Designation	Distance and Direction from the A5025
		and red breasted merganser.	

Source: Cofnod, Anglesey Nature, MAGIC

3.1.3 Non-statutory Designated Sites

There are 24 non-statutory designated sites present within 2 km of the proposed road scheme. The sites encompass a wide range of habitats including woodland, fen, marshy grassland, sea cliff, inland heath, acid dry heath, basin mire, valley mire, reed bed, rivers and lakes. These are listed in Table 3.2, and presented on maps in Appendix G.

Table 3.2: Non-Statutory Designated Sites

	Name	Site Description	Distance and Direction from the A5025
1	Afon Wygyr	A small river with species rich bankside vegetation, marshy grassland and small woodlands. Biological and ecological interest for the presence of abundant monkey flower, purple looestrife and greater tussock sedge among others.	Adjacent to site at Cemaes
2	Porth Llechog	Mozaic of seacliff and inland heath and grassland with flushes and streams. Botanical interest for the presence of eyebright, sea campion, spring squill and bog asphodel among others.	~ 0.2 km north east
3	North Anglesey Coast	Heritage Coast - Undeveloped coastline defined to conserve, protect & enhance the natural beauty of the coasts, their marine flora & fauna, & their heritage features.	~ 0.2 km North
4	Tir Lleidiog Ty Du	Basin mire, marshy grassland, raised bog and willow carr. Botanical and ornithological interest for the presence of cross leaved heath, common cotton-grass, bog bean, locally rare whorl grass, grasshopper warbler and reed bunting amongst others.	~ 0.3 km north
5	Tir Gwlyb Teilia Neuadd	Base rich valley mire surrounded by herb-rich wet meadows and willow carr. Botanical interest for the presence of marsh orchids, wild angelica and reed canary grass among others.	~ 0.5 km north
6	Coed Carreglwyd	Broadleaved woodland. Botanical interest for the presence of bluebell, wych elm, sessile oak and broad buckler fern.	~ 0.5 km west
7	Pyllau Pentrefelin a Dyffryn Adda	A series of former lakes with open water, swamp and basin mire, marshy grassland and wet heath displaying interesting habitat progression / transition. Botanical interest for the presence of water horsetail, bulbous rush and star sedge among others.	~ 0.7 km south west
8	Cae Barcdy	A reed bed with areas of marshy grassland, wet and dry scrub and a pond. Botanical interest for the presence of greater spearwort and bladder wort.	~ 0.7 km south east
9	Cors Cromlech	Basic mire with fen and marshy grassland. Botanical interest for the presence of yellow flag, branched bur-reed, northern marsh orchid among others.	~ 0.7 km south east

	Name	Site Description	Distance and Direction from the A5025
10	Gwely Cyrs Caergeiliog	Reed bed with marshy grassland. Ornithological and botanical interest for the presence of snipe, sedge warbler, marsh pennywort and common spotted orchid.	~ 0.7 km south east
11	Cors Cae Owen	Basin wetland with scrub-covered outcrops, herb-rich fen. Botanical interest for the presence of rare marsh fern and northern marsh orchids among others.	~ 0.8 km north
12	Arfordir Trwyn y Buarth - Porth Wen	A wildlife site divided into four sections comprising species rich grassland, cliff gullies, flushes and heathland. Botanical and ornithological interest for the presence of primrose, bluebell, ramsons, dog's mercury and kidney vetch among others.	~ 0.8 km north
13	Llyn Cors Goch	Basin mire, marshy grassland and species-rich meadow. Botanical and herpetological interest for the presence of amphibians, reptiles, eyebright, sneezewort and common spotted orchids.	~ 0.8 km east
14	Arfordir Porth Wen i Porth Llechog	A narrow strip of sea cliff sloping toward sheer rock cliffs with several crevices. The cliff is topped with grassland and heath. Ornithological and botanical interest for the presence of common cat's ear, English stone crop, sheeps-bit scabious and kidney vetch among others.	~ 0.9 km north
15	Arfordir Mynydd y Wylfa - Trwyn Penrhyn	Coastal cliffs and cliff-top grassland with rocky outcrops. Botanical interest for the presence of birds foot trefoil, couch grass, thrift and wild thyme among others. Ornithological interest for the presence of breeding stonechat.	~ 1.1 km north
16	Tir Lleidiog Llanlleiana	A valley mire featuring a wet fen meadow and an extensive reed bed. Botanical and ornithological interest for the presence of hybrid rushes, common spike rush and orchids among others.	~ 1.2 km north
17	Rhostir a Phwl Caergeiliog	Wet heath, basin mire and scrub. Botanical interest for the presence of marsh cinquefoil, marsh pennywort and marsh willowherb.	~ 1.3 km south east
18	Tywyn Gwyn a Phenial Dowyn	Acid marshy grassland and dune grassland. Ornithological and botanical interest for the presence of shelduck, lapwing, reed bunting, sneezewort and bog pimpernel.	~ 1.9 km west
19	Llyn Bwch	A lake surrounded by tall fen and heath and marshy grassland. Ornithological and entomological interest for the presence of dragonflies, damsel flies, wild angelica, water mint and lady fern.	~ 1.9 km east
20	Cors Bonw	Fen bordered by willow carr and cross-leaved heath. Botanical and ornithological interest for the presence of rare sedges - white sedge and bog sedge among others.	~ 1.9 km north west
21	Clwch Dernog	Basin mire, grassland and willow scrub. Ornithological and botanical interest for the presence of grasshopper warbler, whitethroat, yellow flag, floating sweet grass and water horsetail.	~ 2.0 km east
22	Rhostir Mynydd Mechell	Fragmented acid dry heath and marshy grassland. Botanical interest for the presence of heather, bell heather and western gorse.	~ 2.0 km south east
23	Mynydd y Garn	Mosaic of acid dry heath / grassland. Botanical interest for the presence of bucks horn plantain, tormentil, sheeps bit	~ 2.0 km north west

	Name	Site Description	Distance and Direction from the A5025
		scabious and sweet vernal grass among others. Ornithological species such as stone chat and yellow hammer are recorded breeding in Mynydd y Garn.	
24	Trwyn Pencarreg	Coastal to inland heath and marshy grassland. Botanical interest for the presence of bell heather, red fescue, goldenrod, spring squill and mat grass among others.	~ 1.6 km north west

Source: Cofnod, Anglesey Nature, MAGIC

In addition to the above, 21 ancient and semi-natural woodlands (ASNW), 9 Restored Ancient Woodland and an un-categorised Ancient Woodland site have been identified within 2 km of the scheme. The location of these woodlands is shown on maps in Appendix G.

The Isle of Anglesey Council were contacted on several occasions to request details of any trees with Tree Preservation Orders (TPO's) within 2 km of the road scheme. Whilst this data is being pursued, to date no information has been provided.

Anglesey has a number of habitats within the survey area that are included within the Local Biodiversity Action Plan (LBAP). These include:

- Fen: Located in the Llyn Garreg / Iwyd SSSI and Tre'r Gof SSSI;
- Coniferous plantation, broad-leaved woodland and scrub: Located throughout the survey area;
- Gardens: Located adjacent to the numerous dwellings within the survey area;
- Ponds: Several located within the survey area;
- Field edges: Located throughout the study area;
- Maritime cliffs and slopes: Located to the west along the coastline; and
- Streams: Located within the study area.

3.1.4 Protected and Notable Species

Species records within 2 km of the road scheme supplied by Cofnod are listed within Appendix H. To refine the records, only data extracted from the last 10 years is presented and only examples of key species within the list are shown. The full species list, including all Schedule 1 birds, is held within the Cofnod data which can be provided in Geographical Information System (GIS) format. All of the species listed in the Appendix are LBAP species, and a number of these species are protected under species specific legislation as well as European Union (EU) Directives and UK legislation. Species marked * are listed as Schedule 1 of the Wildlife and Countryside Act 1989 (as amended) (WCA) while species marked with † are listed as a priority species on Section 42 of the Natural Environment and Rural Communities Act, 2006 (NERC). Appendix I provides maps locating only national and international protected species records. It does not include all notable species listed in the Appendix or Schedule 1 birds, however this information is included within the GIS Cofnod data.

In addition to the Cofnod records, an unpublished report from the 2010 Otter survey of Wales was obtained from NRW. This highlighted Anglesey as having an expanding otter (*Lutra lutra*) 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).

Moreover the desk study searched for certain species which may not be represented by this dataset or are under recorded. For example the study revealed Anglesey forming a strong hold for the red squirrel (*Sciurus vulgaris*) (Red Squirrels Trust Wales, 2014).

3.2 Extended Phase 1 Habitat Survey Results

Maps showing the results of the Extended Phase 1 Habitat Survey are presented in Appendix D. The section below gives a descriptive outline of the habitats mapped.

3.2.1 Arable Land

Arable land constituted approximately 5% of the land surveyed and included cereal and non-cereal crops.

3.2.2 Improved Grassland

The survey corridor predominantly comprised large areas of intensively managed improved grassland pasture covering approximately 50% of areas surveyed. The sward within the survey boundary was generally dominated by perennial rye grass (*Lolium perenne*), white clover (*Trifolium repens*) and cock's-foot (*Dactylis glomerata*). Also recorded within the sward were creeping thistle (*Cirsium arvense*), creeping buttercup (*Ranunculus repens*), nettle (*Urtica dioica*) and dock (*Rumex* sp.).

3.2.3 Semi-improved Neutral Grassland

Semi improved neutral grassland was second largest in habitat extent after the improved grassland habitat, covering approximately 32% of the land and varied in both species richness and management.

Typical grass species recorded include cock's foot, common bent (*Agrostis capillaris*), crested dog's- tail (*Cynosurus cristatus*), false oat grass (*Arrhenatherum elatius*), meadow fescue (*Festuca pratensis*), and red fescue (*Festuca rubra*).

Where adjacent to streams or in land depressions, the grasslands was became damper and contained species indicative hydrophilic conditions such as rushes and sedges (*Juncus* and *Carex* sp.).

3.2.4 Poor Semi-improved Grassland

Covering approximately 7% of the areas surveyed, this habitat type mainly consisted of false-oat grass, Yorkshire fog and cock's foot with occasional patches of soft and hard rush (*Juncus effusus*, *Juncus inflexus*) in damper areas. In certain land parcels the following species were also recorded: Yorkshire fog, creeping buttercup, common sorrel (*Rumex acetosa*), dock, common knapweed (*Centaurea nigra*), common daisy (*Bellis perennis*), dandelion (*Taraxacum* sp.) and plantain (*Plantago* sp.).

3.2.5 Unimproved Grassland

This was very rarely recorded in the survey. Small patches of unimproved acid grassland were recorded at Target Note (TN) 79.1, and of unimproved neutral grassland at TN 197.1.

3.2.6 Amenity Grassland

This habitat type covers a smaller proportion of the area surveyed, approximately 0.6%, and was largely located around buildings and in private gardens. The sward composition was generally composed of perennial ryegrass, red fescue, white clover (*Trifolium repens*), dandelion (*Taraxacum officinale*), creeping buttercup (*Ranunculus repens*) and greater plantain.

3.2.7 Marshy Grassland

Small patches of marshy grassland were recorded within fields dominated by improved and semi improved grassland, in close proximity to water bodies such as streams and ditches.

Larger area examples of this habitat can be found to the south east of Valley, and as patches on fields stretching across 1 km, and immediately adjacent to the existing A5025 north of Valley. South of Llanrhyddlad, a mosaic of this habitat was recorded straddling adjacent streams on both eastern and western banks. Similarly a large cover was recorded on the western boundary of Lake Llygeirian SSSI (TN 90.1, and TN 90.2).

Species recorded included purple moor grass (*Molinia caerulea*), soft and hard rush, sedges, Yorkshire fog, yarrow (*Achillea millefolium*), meadow sweet (*Filipendula ulmaria*), cocks foot and creeping buttercup.

3.2.8 Hedgerows

Approximately 530 native and non-native hedgerows were recorded within the survey area. The predominate type identified were intact species-poor hedgerows which were occasionally recorded growing on earth banks. Defunct species poor hedgerows covered approximately 13% of the total hedgerow extent. Species poor hedgerows with trees were also frequently recorded. Intact native species rich hedgerows were recorded in small numbers.

The dominant hedgerow species documented by the survey was hawthorn (*Crataegus monogyna*) with frequent or scattered pedunculate oak (*Quercus robur*), dog-rose (*Rosa canina*), English elm (*Ulmus procera*), blackthorn (*Prunus spinosa*) and elder (*Sambucus nigra*) with occasional willow (*Salix sp.*) and gorse (*Ulex europaeus*). The ground flora was generally species poor and dominated by bramble (*Rubus fruticosus*), ivy (*Hedera sp.*) and common nettle (*Urtica dioica*).

3.2.9 Running Water

A relatively high density of rivers and streams were recorded running adjacent to and occasionally crossing the road scheme (Appendix J). These flow in a north-east to south-west direction following the general line of strike of the underlying rock formations. The longest of the rivers relevant to the survey is the Afon Alaw, approximately 7 km long. Others include the Afon Tan-yr-allt, Afon Crigyll and Afon Wygr.

The scheme is crossed by water courses as follows:

- The Afon Alaw river crosses the road scheme in its lower reaches as it flows southwestwards to the island's west coast near Llanfachraeth where it is tidal;
- Where the road bypass to the east of Llanfachraeth is being considered, three sections of the Afon Alaw intersect the scheme. Two of these locations is situated south of the village and at one location to its north;
- The Afon Alaw crosses the scheme at a few more locations north of Llanfachraeth village.
- North of Llanyngghened, water courses forming part of the Afon Alaw catchment, flow on the eastern and western sides, and in close proximity to the scheme;
- A sluice outflow connected to Lake Llygeirian SSSI crosses the scheme directly west of the lake;
- Small tributaries of the Afon Crigyll flow to the west of the scheme North of Valley, and cross the scheme at various points between Valley and Llanyngghened;
- The Afon Tany Yr Allt flows in south westerly direction near the north west coast and crosses the scheme close to Dronwy Caravan Park;
- To the north, an unnamed water course, possibly part of the Afon Tan Yr Allt, crosses the scheme at several locations around Pen-yr-Orsedd heading to the Wylfa Power Station;
- The main channel of Afon Wygr crosses the scheme at Cemaes next to Wylfa Power Station where it drains into the Irish sea at Cemaes Bay; and
- Water courses forming part of the Afon Wygr catchment flow around Tank Farm and cross the road scheme at a few points. Further west other water courses belonging to this river catchment feed into the Cae Gwyn SSSI situated north of the scheme.

3.2.10 Standing Water

Approximately 147 ponds were recorded throughout the survey extent; of these several were noted as permanent for example TN 79.5 and others noted as small and temporary (TN 79.6). Many of these supported aquatic vegetation and occur as a group of adjacent water bodies with several ponds and wet ditches. Drainage ditches were frequent and were recorded bordering improved and semi improved fields. Some also supported a diversity of aquatic vegetation such as those recorded at TN 51.1.

3.2.11 Scrub

Scrub was recorded frequently and has been identified around field boundaries and in small patches within fields. Within the survey extent the dominant type of scrub habitat recorded was dense and continuous. Scattered scrub was also recorded, but less frequently. Typical species observed were gorse, bracken

(*Pteridium aquilinum*) and bramble. Scrub habitat was frequently associated with rocky outcrop that was abundant in the northern part of the survey extent.

3.2.12 Woodland

Woodland covered approximately 1% of the survey corridor.

Mixed plantation woodland covered the largest extent, and was recorded at a few locations most notably at TN 28.5 north east of Llanrhyddlad and north east of Tank Farm. Second in extent were mixed semi-natural woodland. Examples can be found to the north east of the Tank Farm. Woodland species recorded for both these types include birch (*Betula Pendula*), ash (*Fraxinus excelsor*), willow, oak, sycamore (*Acer Pseudoplatanus*), Scott's pine (*Pinus sylvestris*), and Leylandii cypress (*x Cupressocyparis leylandii*).

Broadleaved semi natural woodland is recorded in a few locations including south of the village of Camaes and south of Llanfachraeth bordering the river Alaw. Broad-leaved woodland plantation is recorded north east of Llanrhyddlad approximately 300 m from the A5025, and to the east of Camaes in the form of a 200 m strip bordering the A5025. Species recorded for both these woodland types include, ash, sycamore, oak, alder (*Alnus* sp.) and hazel (*Corylus* sp.). An orchard was recorded at TN 53.2.

3.2.13 Scattered Trees

Broadleaved, coniferous and mixed trees were found bordering field margins, around amenity grassland areas and along lanes and pathways. Trees recorded include oak, ash, scots pine, sycamore and Leylandii Cyprus. Possible TPOs were recorded at TN 29.1, TN 36.1, and TN 150.1.

3.2.14 Buildings

A number of buildings were recorded during the survey and were predominantly composed of brick with render. Many were recorded as rural and agricultural in type typical of Anglesey and North Wales. Agricultural sheds made of breeze block were common. Other buildings recorded included stone barn, stone cottages, derelict and dilapidated buildings. Photographs in Appendix F illustrate examples of the buildings recorded.

3.2.15 Invasive Species

Invasive species have been found to be present in a few locations across the survey extent. To date the following invasive species have been noted:

- Himalayan balsam:
 - At TN 28.5 adjacent to a pond within a mixed plantation woodland. The pond is within close proximity to a running water courses several meters to the North.
- Japanese knotweed:
 - At TN 16.1 adjacent to the river Alaw, TN 38.1;
 - At 131.1 within a car park at Valley; and

- At TN 187.1.

3.2.16 Tall Herb and Fern

Bracken, both continuous and scattered was widely distributed and was common around field boundaries. Other tall ruderals recorded include cow parsley (*Anthriscus sylvestris*), cleavers (*Galium aparine*), and common nettle.

3.2.17 Rock Exposure

Rock exposures recorded covered very small areas and collectively constituted approximately 0.4% of the areas surveyed. Artificial quarry was present at TN 79.7 and artificial spoil was present at TN 79.9.

3.2.18 Other Habitats

In addition to previous habitat, other categories recorded include field boundaries; these often comprising of fences, dry ditches and earth banks. Anglesey is known for its traditional field boundary comprised of low stone walls sometimes with an earth bank referred to as a clawdd walls or cloddiau in plural (translated from Welsh for hedge, dyke or embankment). The survey recorded many defunct species poor hedges with walls that are likely to be clawdd walls. The Extended Phase 1 Habitat map found in Appendix D can be referred to, to view these features.

3.3 Protected and Notable Species

3.3.1 Bats

3.3.1.1 Bat Roosts

Two stone barns with high bat roost potential were recorded at TN 177 and at TN 64.7 (Appendix F, page 7 Photo F.8). At these locations the owners reported the presence of a Brown Long Eared (BLE) roost within the buildings.

3.3.1.2 Roost Potential

The following list provides examples of buildings of medium to high roosting potential for bats:

- Old farm buildings e.g. TN 4.1, TN 7.1, TN 8.5, TN 13.4, TN 30.1;
- Stone barns e.g. TN 61.1, TN 177 and TN 64. 7;
- Derelict buildings e.g. TN 61.2;
- Houses e.g. TN 171.1;
- Sheds e.g. TN 178.1;
- Stone walls e.g. TN 18.8;
- Bat boxes e.g. TN 97.1; and
- Ivy covered trees e.g. across the entire scheme.

Examples of trees with features of medium to high potential features for roosting bats were recorded such as:

- Cracks e.g. TN 18.4;
- Cracked limbs and loose bark e.g. TN 33.1, TN 34.3, TN 58.2; and
- Woodpecker holes e.g. TN 18.6 and TN 18.7.

3.3.1.3 Bat Foraging and Commuting Habitats

The extensive hedgerows, walls and water courses around the site offer connectivity to the wider countryside and are likely to be utilised by bats in varying degrees for foraging and commuting.

3.3.2 Water voles

The survey area has numerous streams and ditches. Several were assessed as being suitable for water vole. Further evidence was found on several occasions; this including small mammal holes being observed at TN 57.2. In addition, an unofficial account by surveyors working for Celtic Offshore Wind Farms confirmed water vole presence at TN 8.1. Water vole pathways were also observed at TN 18.3 where the land owner has reported speaking to local wildlife groups who had confirmed their presence.

3.3.3 Otters

The survey recorded a multitude of habitats that are deemed suitable for use by otters. This includes rivers, streams, ditches, ponds, lakes, estuaries and coastal areas, some of which lie within close proximity to the 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. Mammal spraint (likely to be otter) was recorded at TN 119.2.

3.3.4 Great Crested Newts (GCN)

Many ponds within the survey extent have potential for GCN e.g. TN 8.1 (an unofficial account by surveyors working for by Celtic Offshore Wind Farms confirmed GCN presence here), TN 13.1, TN 95.3, TN 96.3, TN 111.2 and TN 116.1. Some of these include manmade ponds e.g. TN 64.5.

Slow flowing ditches with pools were recorded across the site. These water bodies were often surrounded by grasslands with scrub that provide good terrestrial habitat for this species.

An individual GCN was observed on the edge of a small watercourse several meters away south west of a pond and adjacent to a marshy grassland strip at TN 28.1.

3.3.5 Badgers

Many habitats across the survey extent offered suitable foraging habitat for badgers such woodland, dense scrub, hedges and field boundaries. The survey recorded one active badger sett at TN 254.1. This is currently located over 250 m from the existing road.

3.3.6 Birds

The desk study and the Extended Phase 1 Habitat Survey revealed the following habitats to provide diverse foraging and refuge habitat for use by breeding and ground nesting birds:

- All woodland, hedgerows, trees, scrub, tall grassland, wet grassland, arable fields and grassland adjacent to water bodies; and
- Old farm buildings, in particular for barn owls and swallows. The Extended Phase 1 Survey recorded nests in building at TN 109.1 and TN 30.1 and a barn owl box at TN 64.1.

There are a number of Sites of Special Scientific Interest (SSSI) within 2 km of the road, some of which are designated due to their ornithological interest.

Birds observed during the survey include skylark (in song and flight), Jacksnipe, starling, jay, rook, dunnock and ravens. Foraging curlews were recorded at TN 269.3. An old rookery was recorded at TN 18.8.

3.3.7 Reptiles and Amphibians

Several habitats recorded across the survey extent provided opportunities for reptiles to bask and forage. These include hedgerows, marshy grassland, damp neutral semi-improved grassland, and scattered scrub. Within all these habitat categories, suitability for reptiles is enhanced in the less intensively managed areas where the vegetation is overgrown or has been left ungrazed such as that observed at TN 193.1 and TN 193.2.

The following structures were noted as suitable features for foraging, basking, commuting and/or hibernating reptiles and amphibians:

- Dry stone walls e.g. TN 1.1, TN 34.1;
- Stone outcrops surrounded by scrub and gorse e.g. TN 10.4;
- Disused quarry at TN 79.7;
- Spoil and bare ground e.g. TN 79.9;
- Compost piles e.g. TN 26.1;
- Rubble piles e.g. TN 29.2, TN 30.2 and TN 193.2; and
- Log piles e.g. TN 64.3 and TN 183.1.

3.3.8 Botanical Species

The dominant flora recorded was indicative of improved and semi improved grassland habitats. A variety of flora rich habitats were recorded on site; this includes wet woodland, rush pasture and wetland areas and meadow habitat. Botanical species were noted at TN 79.1 and TN 171.1.

Unidentified orchid species were recorded at TN 28.3 with botanically rich flora typical of riparian habitat recorded at TN 16.1 and 62.4.

Protected sites designated for their botanical interest features such as Cae Gwyn SSS and Tre'r Gof SSSI are species rich.

The high concentration of standing and running water bodies recorded by the survey is likely to support underlying freshwater macrophyte communities and important riparian communities.

3.3.9 Invertebrates

All the habitats recorded by the survey support invertebrates to varying degrees. Of greatest invertebrate interest are the woodland, hedges, areas of long, semi improved grassland and the bare ground associated with field margins. Open water habitats (ponds and ditches) recorded are suitable for freshwater invertebrates.

3.3.10 Other Notable Species

3.3.10.1 Common Mammals

There is potential for numerous common mammals to be present within close proximity to the road scheme. The following species were observed and/or reported to surveyors by various landowners or members of the public encountered:

- Brown hare (*Lepus europaeus*) – observed using scrub to the east of Pilwern, and at TN 15.1; and
- European hedgehog (*Erinaceus europaeus*) - landowner reported several sightings of hedgehogs at TN 17.1.

A number of additional mammal species are known to be present on the Isle of Anglesey (Wales Biodiversity Partnership, 2013). This includes (but not exclusively) red squirrel (*Sciurus vulgaris*) and European polecat (*Mustela putorius*). There are no records of red squirrel within 2 km of the existing road. The closest polecat record is located approximately 1.5 km south of Pen-yr-Orsedd, immediately adjacent to the existing road. Evidence for both species has not been noted during the Extended Phase 1 Habitat Survey.

The survey recorded suitable habitats for other common mammals such as fox (*Vulpes sp.*), bank vole (*Myodes glareolus*), wood mouse (*Apodemus sylvaticus*), and common shrew (*Sorex araneus*). These include scrub, grassland, woodland, water course margins and hedgerows.

3.3.10.2 Pest Species

Signs of moles and rabbits were regularly recorded through the survey corridor. The land use and habitats are suitable for use by rats.

3.3.10.3 NERC Section 42 Species

Several habitats recorded across the survey extent provided opportunities for all the terrestrial Section 42 species identified by the desk study (Appendix H). Where these species are afforded higher level of protection under European and national legislation, they are addressed in this report under other independent headings and include bats, otters, water voles, and great crested newts. The report addresses hedgehog, brown hare and polecat under the common mammal section. Section 42 invertebrates, reptiles, amphibians and birds are similarly addressed under the corresponding species group section.

4 Assessment

The Extended Phase1 Habitat Survey has highlighted the ecological constraints associated with the scheme and these are assessed below. The assessment is general and does not provide detail over scale and magnitude of impacts and is to be used as an objective basis for which ecological features warrant further assessment.

4.1 Designated Sites

The high ecological value of designated sites is discussed under the legislative framework in Appendix B. The scheme as is currently proposed is likely to have direct and indirect impacts on some of the statutory and non-statutory designated sites for nature conservation within a 2 km radius. The impacts can be highly localised or affect habitats some distance away. Table 4.1 provides an outline of generic impacts that can potentially affect sites closest to the scheme within 500 m radius. More detail is given in the section that follows for other site specific potential impacts.

Table 4.1: General outline of potential impacts on sites within 500 m of the scheme

Site	Pollution/ sediment loading	Alteration to surface/ ground hydrologic al regime	Water Quality	Air Quality	Habitat Quality	Habitat Extent/ Integrity	Increased disturbance	Species loss
Statutory Protected Sites								
Cemlyn Bay SAC & SSSI	✓	✓	✓	✓	✓	✓	✓	✓
Cemlyn Bay and Skerries SAC & SPA	✓	✓	✓	✓	✓	✓	✓	✓
Beddman arch / Cymran SSSI	✓	✓	✓	✓	✓		✓	✓
Tre'r Gof SSSI	✓	✓	✓	✓	✓		✓	✓
Lyn Garred-Lwyd SSSI	✓	✓	✓	✓	✓		✓	✓
Llyn Llygeirian SSSI	✓	✓	✓	✓	✓		✓	✓
Cae Gwyn SSSI	✓	✓	✓	✓	✓		✓	✓
Non Statutory Protected Sites								
Afor Wygr	✓	✓	✓	✓	✓	✓	✓	✓

Site	Pollution/ sediment loading	Alteration to surface/ ground hydrologic al regime	Water Quality	Air Quality	Habitat Quality	Habitat Extent/ Integrity	Increased disturbance	Species loss
Porth Llechog	✓	✓	✓	✓	✓	✓		✓
Tir Lleidiog Ty Du	✓	✓	✓	✓	✓			✓
Tir Gwlyb Teilia Neuadd	✓	✓	✓	✓	✓			✓
Coed Carreglw yd	✓	✓	✓	✓	✓		✓	✓

Under the current plans, many sections of the scheme boarder the Ynys Mon/Anglesey AONB which covers the entire coast line of the island, with likely impacts on the landscape, and on the natural elements that create the living landscape from flora and fauna.

The main overlap is namely between:

- Ty Gwyn, Llanynghenedl and Pen-yr-orsedd;
- Llanfachraeth; the Post Office and Chapel street at Llanfaethlu; and
- Bridge street, Cemaes and Lon Bach, Amlwch.

The Cemlyn Bay SAC and SSSI and the Cemlyn Bay and Skerries SPA are located approximately 200 m away at its closest point. As well as the generic impacts listed above, the scheme is likely to provide increased levels of disturbance the qualifying bird species caused from increased human activity in the area from increased vibration and noise caused by construction activities.

Llyn Dinam SAC and Valley Lakes SSSIs, situated approximately 2 km away from the scheme, appear to be hydrologically connected to small streams that run adjacent to the scheme just North of Valley. The scheme can therefore have potential impacts during construction and operation through water quality and alteration to surface and ground hydrology.

Llanbading Dinas Gyfnor and Henborth geological SSSIs, are 0.7 and 1.2 km away respectively and can potentially be impacted upon for example through accelerating natural physical processes, by surcharging of the ground or by altering the geological strata or through alteration of surface and ground hydrology.

Wylfa Head LNR is 1.4 km from the scheme and may be subject to indirect impacts on the bird features using the site and the wider countryside and though air quality.

None of the ancient woodland sites (Appendix G) are intersected by the proposed scheme. The closest woodland lies 20 m away from the road.

4.2 Habitats

Direct habitat loss as result of the scheme is most likely to take place in the habitats immediately surrounding the current road layout from construction activity and material storage. Other main impacts will be expected along the offline routes where the scheme will slice through areas of previously undisturbed land.

4.2.1 Grasslands

4.2.1.1 Arable

Improved and semi improved grassland are likely to incur the highest direct loss in habitat extent. Most of these habitats recorded are of low ecological value with limited range of grasses and a few common forbes, mainly those tolerant of nutrient enrichment from grazing animals and fertiliser. Where the vegetation is less intensively managed, and in locations close to ponds, ditches and streams, these habitats are of higher value for wildlife. In the context of Anglesey, they form important components of the open agricultural countryside with less human disturbance. Arable field margins are a Section 42 priority habitat under NERC.

4.2.1.2 Semi Improved Grassland

Semi improved grassland fields are of low to medium ecological value. Where the grass sward is long and where scrub is abundant around the margins, the potential for invertebrates and reptiles is higher. Where it is wet, and adjacent to running water or open water, it acts as a potential terrestrial habitat for nesting birds and reptiles and other amphibians.

4.2.1.3 Unimproved Neutral and Acidic Grassland

The small patches of recorded unimproved neutral and acid grassland are of high ecological value but are at sufficient distance away from the scheme that no direct impact is anticipated.

4.2.1.4 Amenity Grassland

Amenity grassland recorded is highly managed and is generally of low ecological value.

4.2.1.5 Marshy Grassland

Marshy grasslands is more diverse botanically and can support many Section 42 species including the marsh fritillary (*Euphydryas aurinia*) and is deemed of medium to high ecological value. Where it's been recorded adjacent to other habitats such as ponds and streams, it is more likely to be used by a wider array of wildlife including ground nesting birds, reptiles and amphibians invertebrates and small mammals. In Wales it has dramatically declined in extent due to agricultural intensification and land drainage. Where it has been recorded right next to the existing road, for example north of Valley, direct loss of this habitat to

the scheme is likely. Other potential impacts include disruption to the local hydrology which this habitat ecology is reliant upon.

4.2.2 Woodland

The extent of all woodland habitat recorded in the survey is very small. Small scale direct loss of broadleaved semi natural woodland is likely at the locations closest to the existing road such as at TN18.8.

The mixed woodland plantation and the broadleaved woodland plantation north of Llanryddlad can potentially be subject to drainage pollution during construction and operation. Wildlife using the area is likely to be subject to increased disturbance.

4.2.3 Hedges

All hedges mapped adjacent to the existing road are likely to be lost to or damaged by the scheme. Whether species poor or rich, intact or defunct, hedges are important wildlife corridors linking habitats, especially when surrounding agricultural fields. Hedgerows are a Section 42 priority habitat under NERC, form a main and distinct part of Anglesey's landscape, and are part of Anglesey's rural heritage.

The survey recorded many defunct species poor hedges with clawdd walls. The stone wall element within these hedges is likely to provide refuges for small mammals and reptiles, if present. The scrub that grows on the walls will provide nesting locations for a range of bird species and may support invertebrates.

4.2.4 Scattered Trees

Some of the trees on site are likely to support a range of notable and protected species including birds and bats.

There is a possibility that some of the scattered trees may hold a Tree Preservation Orders (TPO). This is currently unknown and clarification has been sought from IoACC . If any trees are to be disturbed or completely removed, it may cause an impact on bats and birds.

4.2.5 Standing & Running Water

Possible impacts on water bodies during construction and operation are associated with pollution from mobilised suspended solids and spillages of materials associated with routine runoff or spillages.

Standing water bodies such as ponds and ditches provide important habitat for wildlife and are important in defining the water regime for adjoining terrestrial wet habitats. Ditches can act as linear features in the landscape used for navigation and as a main habitat of invertebrates, the food source of other species higher in the food chain.

Where the running water bodies such as rivers and streams run directly adjacent to or cross the existing road (Section 3.2.9), and where new by-passes are proposed such as that to the east of Llanfachraeth village, destruction of riverbank corridor or floodplain habitat may take place. Bridge and culvert design which canalise water can alter flows and drainage and affect the river ecology.

As well as impact on the water bodies themselves, the supporting species from invertebrates, fish, otter, water vole, and birds, can in turn be potentially affected. Running water adjacent to the scheme forms hydrological connections to nearby aquatic habitats and wetlands both upstream and downstream which in turn can be affected by potential pollution, alteration to flow rate, flooding and drainage.

Rivers and ponds are a Section 42 priority habitat under NERC.

4.2.6 Scrub

Scrub is an important wildlife habitat providing nectar, seeds, fruits, shelter, and nest sites for invertebrates, birds and mammals, and offers suitable habitat for many flowering plants. If scrub is to be removed as part of the development it may have an impact on these supporting species.

4.2.7 Buildings and Hard Standing

The areas of hard standing recorded are ideal sheltering and basking habitats for reptiles but overall offer little ecological value. The buildings within the survey are potentially of medium to high value corridor for protected and notable species because their type and rural setting. For example, timber framed and stone barns may be used by bats throughout the year and can support a range of roost types for a variety of different species (Bat Conservation Trust (BTC), 2012). Similarly, the agricultural buildings recorded particularly old stone, brick barns and sheds with large roof voids are important for barn owls. Birds such house sparrow, house martin and swifts are known to breed extensively in or on buildings.

4.3 Protected and Notable Species

The impacts on the habitats listed above will in turn have implications for the supporting species populations. According to DMRB manual, the following impacts are generally associated with road schemes:

- Loss of wildlife habitats;
- Severance of habitats, creating a barrier and dividing existing habitats may therefore make a site unattractive to or wildlife corridors;
- Creatures may be killed trying to cross a road which cuts across their traditional territory or foraging route. For all mammals including otters, it is now acknowledged that since the improvement in the quality of UK waters, road traffic represents the most important cause of death of otters. Road schemes with its enhanced networks and increased traffic will have implications for higher mammal mortality;
- Disruption to the local hydrology;

- Polluted run-off from roads can lead to pollution of local watercourses through oil, de-icing salt, particulates and accidental spillages. Pollution runoff during construction and operation can reduce water quality and can in turn have potential implications for the wildlife habitat
- Air pollutants from road traffic;
- Effects of road lighting;
- Spray from road traffic; and
- Disturbance during construction.

As well as the above impacts, the following list highlights species specific impacts associated with this scheme:

- Otters
 - Severance to the river corridor habitat such as that at the 2 locations where the proposed route goes offline and crosses the Afon Alaw to the east of Llanfachraeth village;
 - Destruction of riverbank or floodplain habitat, which in turn reduces the amount of cover available to otters; and
 - Bridge and culvert design which canalise water creating faster flows reduce the opportunities for the otter to swim.
- Bats
 - The loss of the hedgerow habitat will have implications for bats. The hedgerows around the site offer connectivity to the wider countryside and are likely to be used by bats in varying degrees for foraging and commuting;
 - Loss of actual roosts in trees and buildings;
 - Loss of new roosting opportunities; and
 - Disturbance from light spill during construction and operation.
- Reptiles and Amphibians including great crested newts
 - Where the route is proposed to go offline, potential terrestrial habitat for reptiles and amphibians is likely to be severed, and possibly sever populations; and
 - Direct loss of habitats identified as important for reptiles and amphibians. For example the clawdd walls and hedges for reptiles and ponds for amphibians.
- Breeding and over wintering birds
 - Disturbance, habitat loss and reduction of nesting and foraging resources; and
 - Bird populations, that are features of statutory protected sites are also likely to forage outside the boundaries of the sites and can experience.
- Invasive plants
 - There is potential for invasive species identified by the survey to be spread during the works. These include risk of dispersal of Himalayan balsam seeds and Japanese knotweed plant fragments during construction & maintenance. These are pioneer species and benefit from disturbed environments. Invasive plant species not only disturb the ecological balance of habitats but can incur serious damage to the road infrastructure and can have implication to maintenance and costs.

5 Conclusions and Recommendations

5.1 Conclusions

The Preliminary Ecological Appraisal was undertaken to assess the ecological value of habitats and their potential to support protected and notable species on areas relevant to the proposed Route Improvement Contract. Of national and international importance the PEA identified 3 European sites, 11 SSSIs and 24 non-statutory protected sites within 2 km radius and potentially affected by the scheme.

The survey area is dominated by semi-improved grassland and improved grassland habitats with hedgerows and scattered trees at the boundaries. A network of rivers streams and ditches run adjacent to and across the survey corridor.

The site has the potential to support a number of protected and notable species including otters, bats, great crested newts, water voles, birds and badgers. Records of otters indicate their presence on the rivers that are directly affected by the scheme. Appropriate actions in relation to habitats and species have also been provided in the form of further assessments and surveys, outline mitigation and compensation.

5.2 Recommendations

Further ecological assessment and phase surveys 2 are recommended for protected sites, for sensitive habitats likely to be impacted by the scheme, for water courses, and for protected species. The findings of such recommended assessment should inform the scheme of any ecological licenses and/or method statements required for the proposed works. In addition, this information would feed into a design and mitigation plan as well as a construction environmental management plan and landscape environmental management plan. Compensation and/or mitigation would be expected as discussed briefly below.

5.2.1 Further Assessments

Further assessments are recommended for the scheme and are summarised in Table 5.1 below:

Table 5.1: Further Assessments

	Recommendations
Anglesey AONB	Landscape Assessment
Cemlyn Bay SSSI, SAC, SPA Cemlyn Bay, Yns Feurig and the Skerries SPA Lyn Dinam SAC	Screening for HRA in Consultation with NRW
Tre'r Gof, Llyn Garreg / Iwyd, Llyn Llygeirian, Cae Gwyn SSSIs	Further Assessment in Consultation with NRW
Other SSSIs	Seek advice from NRW over assessment if required
Main rivers and streams	Water Framework Directive Assessment
Local sites	Further assessment in consultation with relevant local authorities or Wildlife Trusts

5.2.1.1 Statutory Designated Sites

Further assessments for statutory protected sites within 0.5 km from the scheme are recommended under the guidance of NRW. Consultation with NRW at the earliest opportunity will ensure the appropriate level of assessments is undertaken and will guide design and associated plans for avoidance and mitigation.

The proximity of the road scheme to the Cemlyn Bay SAC, SPA and SSSI, and to Cemlyn Bay, Yns Feurig and the Skerries SPA, requires that under the provisions of the Habitats Regulations 2010 that a Test of Likely Significant Effect (Habitats Regulation Assessment Stage 1 screening process) is undertaken to confirm whether the scheme, alone or in combination with other plans and projects, would have a significant effect on European and International sites. This screening exercise will determine whether an Appropriate Assessment (HRA Stage 2) on the sites' conservation objectives is required. This assessment will ensure that the integrity of the site is not adversely affected.

For Lyn Dinam SAC, the distance from the scheme it is unlikely to have significant effect on its interest features. However the screening exercise should be undertaken nevertheless to ensure compliance with the Regulations.

Similarly consultation with NRW should take place over Tre'r Gof, Llyn Garreg / Iwyd, Llyn Llygeirian, Cae Gwyn SSSIs to agree best avoidance measures, and obtain advice over other assessments that maybe necessary.

5.2.1.2 Non-Statutory Designated Sites and TPOS

For non-statutory protected sites particularly ones with closest proximity to the scheme such as the river Wygyr, and Porth Llechog, it is recommended that IoACC, and where necessary the local Wildlife Trust are consulted. The consultation can feed into the design and mitigation plan as well as a construction environmental management to ensure there is no reduction in the overall nature conservation value of the area or feature.

Similarly information on TPO should be sought from the Council and the information used to feed into the mitigation plan.

5.2.1.3 Main Rivers and Streams

All locations where waterways will be impacted, e.g. due to a discharge, crossing or diversion, should be identified and assessed against the requirements of the Water Framework Directive (WFD).

5.2.2 Phase II Surveys

Further surveys are recommended for habitats of medium value and above that are likely to be directly affected by the scheme and for protected species that have been recorded by the Extended Phase 1 Habitat Survey, identified as potentially being present, or have a previous desk record in areas potentially

affected the scheme. For details of recommended method statements, reference should be made to the Ecological Method Statement report prepared by Mott MacDonald (2014).

Table 5.2: Further Surveys

Habitat/Species	Survey Type	Time Frames	Survey Extent
All habitats	Extended Phase 1 Habitat Survey.	All year.	On approximately 25% of land parcels not yet accessed in order to complete the Extended Phase 1 Habitat Survey.
Hedges	Hedgerow survey to assess the value of individual hedges.	Outside the winter period when the hedge trees and shrubs are in leaf.	within the survey area of 100 m.
Rivers	River Habitat Survey to assess physical character and quality of rivers & to provide geomorphological information and Identify all river sections where impact is expected i.e. bridge improvements, culverting watercourses.	May to June	All impacted river sections and adjacent land within 50 m of river.
	River Corridor Survey provides information on the location of habitats and plant assemblages within river channels, margins and the river corridor.	May to June.	All impacted river sections and adjacent land within 50m of river.
Otters	Otters survey.	March to November.	Along suitable watercourses up to 500 m of the proposed scheme extent.
Bats	Emergence surveys.	April to October.	All buildings and trees with roost potential inclusive.
	Transect surveys.	April to October.	Along linear features identified as being suitable for bat foraging and commuting, such as hedgerows, walls, rivers and streams. Both survey types to be undertaken during the active season.
Great crested newts	Habitat Suitability Index (HSI) to measure the suitability of ponds and ditches for this species.	March to May.	147 ponds and ditches within 500 m of the proposed scheme extent.
	Presence/absence surveys.	March to May.	Any ponds or ditches which are assessed as suitable for GCN by the HSI survey.
Water voles	Water Voles survey.	March to November.	Along suitable

Habitat/Species	Survey Type	Time Frames	Survey Extent
			watercourses up to 500 m of the proposed scheme extent.
Birds	Breeding bird surveys in order to determine the utilisation of the site by breeding bird.	March to October.	
	Overwintering bird survey in order to determine the utilisation of the site by overwintering birds.	November to March.	An area of up to 250 m from proposed scheme for offline sections and up to 100 m for online sections.
Reptiles	Reptile survey.	April-May and/or August-September.	At the sites/habitats where the scheme will sever populations such as locations where the route goes offline and cuts through fields.
Badgers	General badgers survey to fully assess the level of badger activity in the area.	All year round.	50 m around the proposed road corridor.
Terrestrial invertebrates		April to June & September to October.	

5.2.3 Outline Mitigation and Compensation

Based on the level of data acquired by the Extended Phase 1 Habitat Survey, the following generic outline mitigation measures are recommended. The following lists general measures to be implemented for all aspects of the scheme, and then specific measures relating to the ecological restraint identified:

5.2.3.1 Outline General Mitigation

It is recommended that Environmental Management Plans are put in place to manage the effects of the scheme in the post-consent phase, typically in the run up to, during, and after the construction phase of a project.

- Design and Mitigating Plan can incorporate specific mitigation measures, during the design stage in order to aid the planning application. This will be informed by the results of any Phase 2 surveys further ecological assessments conducted at the site. Longer term measures maybe included where habitats are to be lost, then recreated or restored. It may also include monitoring the effectiveness of the mitigation measures put in place after the road has been opened to traffic.
- Construction and Environmental Management Plan (CEMP) can be produced and put in place to be followed by personnel to minimise works footprint is as practicably possible. A CEMP would include (but is not exclusive to):
 - Management and protection of ecological resources;
 - Water management (surface and groundwater);
 - Pollution prevention measures being implemented during the next to rivers streams and wet ditches. A full list of up-to-date appropriate Pollution Prevention Guidelines (PPG) is provided on

the Environment Agency website: www.environment-agency.gov.uk/business/topics/pollution/39083.aspx.

- Construction noise and vibration management;
- Air quality including dust management;
- Sustainable waste management;
- Traffic management; and
- Invasive non-native species management, including early eradication to reduce impact and cost.

5.2.3.2 Outline Mitigation for Protected Sites

Where the scheme is likely to affect protected sites, specific measures may be considered for

- Incorporation in the design of the scheme such as:
 - Route alignment - to avoid loss and/or severance of particularly sensitive areas such as SSSIs or disturbance during construction;
 - Bridges and viaducts; and
 - Drainage.
- Avoidance of any loss of habitat within the protected sites for example the Afon Wygyr that is directly adjacent to the scheme extent;
- Protection measures for protected sites such as the placement of a buffer zone of a minimum distance of 10 to 15 m between works and the border of site, clearly demarcated where no activities are undertaken and no material are stored. The importance of this marked boundary should be briefed to all personnel; and
- Natural regeneration in areas of conservation interest to encourage colonisation by plants from the surrounding area.

5.2.3.3 Outline Mitigation for Habitats

The following outline mitigation for habitats should be considered:

- Protection measures for retained habitat, and later for the maintenance of any created habitats, such as hedgerows, trees and the protection of soils;
- Vegetation management: Any tree pruning or removal and any vegetation clearance should be conducted outside the breeding bird season between March and August. If such works cannot avoid the breeding bird season a nesting bird check should be conducted. This should be carried out by an appropriately qualified person and no more than 48 hours prior to the commencement of works, to confirm no active nests will be affected. If an occupied nest is discovered, it must be clearly demarcated and left undisturbed until the chicks have fledged;
- Habitat enhancement to incorporate: Incorporation of Sustainable Urban Drainage (SuDs) within scheme design to reduce runoff impacts and pollution of watercourses;
- Any hedgerows or trees that are removed should be replaced to mitigate the loss;
- All planting should be of native tree, shrub and herbaceous species in agreement with NRW; and
- Planting of new native hedgerows on borders of offline sections to create wildlife corridors connected with other habitats.

5.2.3.4 Outline Mitigation for Protected and Notable Species

Where the habitats have been identified as potentially suitable for notable and protected species, it is recommended that following actions are considered in line with legislation and best practice:

- The CEMP should include specific recommendations for these including otters badgers, reptiles and amphibians, water voles, invertebrates, common mammals and pest species;
- Animal passes for severed species habitats such as otters, badgers and other small mammals;
- Use of directional lighting in areas near to potential bat habitat (during construction & operation);
- Erection of bat & bird boxes on mature trees to increase nesting/roosting opportunities; and
- Recreating lost habitats as described above.

6 References

Anglesey Nature website: <http://angleseynature.co.uk/>

British Geological Survey website: <http://www.bgs.ac.uk/research/ukgeology/angleseyNorthWales.html>

Bat Conservation Trust website: http://www.bats.org.uk/pages/bat_roosts.html

CIEEM (2013). Guidelines for Preliminary Ecological Appraisal. Chartered Institute of Ecology and Environmental Management, Winchester.

Cofnod - North Wales Environmental Information Service.

Dry Stone Walling association website: http://www.dswales.org.uk/English_Index.html

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/>

JNCC (2010): Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit (reprint). Joint Nature Conservation Committee, Peterborough.

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

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

Mott MacDonald (2014), A5025 RIC Upgrade EIA, Ecology Method Statements.

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

The Red Squirrel Trust Wales website: <http://www.redsquirrels.info/>

UK Biodiversity Action Plan (UKBAP) website: <http://jncc.defra.gov.uk/default.aspx?page=5155>

UK Biodiversity Partnership website: <http://www.biodiversitywales.org.uk/en-GB/Anglesey>

UK Grid Reference Finder website: <http://gridreferencefinder.com/>

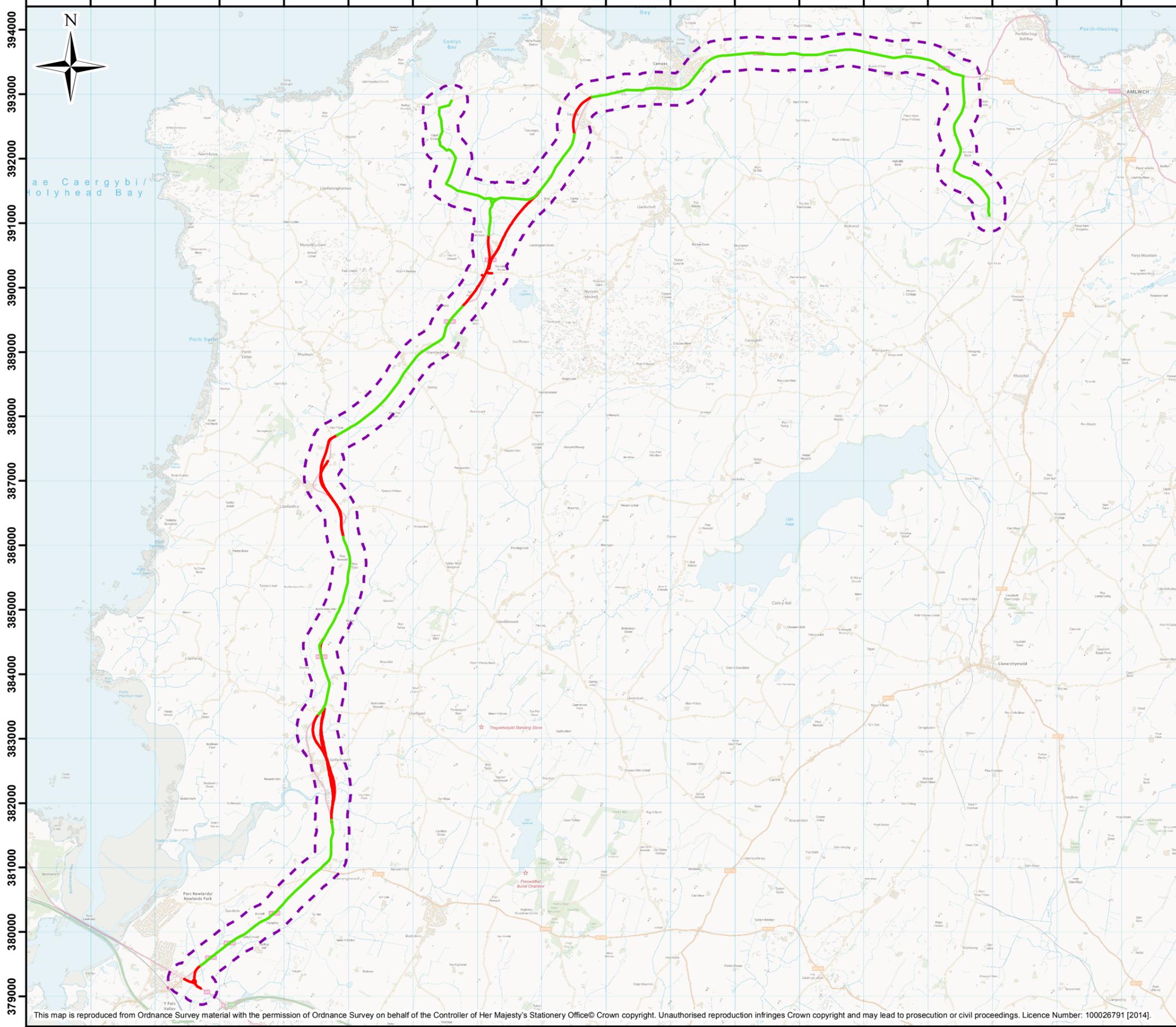
Where's the path website: <http://wtp2.appspot.com/wheresthepath.htm>

7 Appendices

Appendix A. Map of Proposed Extent of the Scheme	38
Appendix B. Legislative Framework	39
Appendix C. Map of Ecology Survey Buffers	45
Appendix D. Map of Extended Phase 1 Habitat	46
Appendix E. Target Notes	47
Appendix F. Photographs	55
Appendix G. Map of Designated Sites	62
Appendix H. Protected Species Records	63
Appendix I. Map of Protected Species Records	66
Appendix J. Map of Rivers & Main Watercourses	67

Appendix A. Map of Proposed Extent of the Scheme

227000 228000 229000 230000 231000 232000 233000 234000 235000 236000 237000 238000 239000 240000 241000 242000 243000 244000



Legend

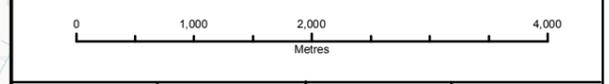
- Proposed online sections
- Proposed offline sections
- - - Indicative site extent - 250m buffer

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

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



Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale: 1:60,000	@ A3
Drawing No: MMD-320831-L-DR-XX-3398			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office© Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

Appendix B. Legislative Framework

The two main pieces of legislation under which habitats and species are protected in the England and Wales are:

The Conservation of Habitats and Species Regulations 2010 (as amended); and, the Wildlife and Countryside Act 1981 (as amended) (WCA 1981).

The WCA 1981 consolidates and amends existing national legislation in order to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) in Great Britain. Under the WCA 1981, Sites of Special Scientific Interest (SSSIs) are designated for providing the best remaining examples of the UK's flora, fauna, or geological or physiographical features. The Conservation of Habitats and Species Regulations 2010 (as amended) transposes the European Habitats Directive into national law. The Regulations provide for the designation and protection of 'European sites' known as Special Protection Areas (SPA) for Birds and Special Areas of Conservation (SAC), and the protection of 'European protected species'. Under the Regulations, competent authorities, have a general duty, in the exercise of any of their functions, to have regard to the EC Habitats Directive. The Habitats Regulations define a "competent authority", as a Minister, a government office, a statutory undertaker or public body.

The Crown Rights of Way Act 2000

This CRoW Act increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB).

The National Parks and Access to the Countryside Act 1949

Under this Act, Areas of Outstanding Natural Beauty, AONBs are designated solely for their landscape qualities, for the purpose of conserving and enhancing their natural beauty (which includes landform and geology, plants and animals, landscape features and the rich history of human settlement over the centuries). They designation aims to secure their permanent protection against development that would damage their special qualities, thus conserving a number of the finest landscapes in England for the nation's benefit. Planning Policy Wales (PPW) confirms the need for local authorities to conserve and enhance the natural beauty of AONBs in Wales.

Three sections of coastline within the AONB are also designated as Heritage Coasts. Heritage Coasts are a non-statutory landscape designation that exist to protect areas of undeveloped coastline in Wales and England from development and also to make them accessible to the public for recreation.

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003.

The EU Water Framework Directive (WFD) was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. The Directive requires that Environmental Objectives be set for all surface and ground waters in England and Wales to enable them to achieve Good Status (or Good Ecological Potential for Heavily Modified and Artificial Water Bodies) by 2015 and that deterioration in the status of aquatic ecosystems and associated wetlands, which depend on aquatic ecosystems is prevented.

WFD Assessments are required to assess scheme component or activity against the relevant WFD classification elements and the following WFD Objectives:

- To prevent deterioration in the ecological status of the water body;
- To prevent the introduction of impediments to the attainment of Good WFD status for the water body; and
- To ensure that the attainment of the WFD objectives for the water body are not compromised.

Natural Environment and Rural Communities Act

Under Section 40(1) of the Natural Environment and Rural Communities (NERC) Act 2006 public bodies, including local authorities are required, 'to have regard to the conservation of biodiversity in Wales when carrying out their normal functions. Under The Act a list of species of 'principal importance to the conservation of biodiversity in Wales' (under Section 42 of the Act and also commonly known as Section 42 species and habitats) was drawn up which acts as an aid to guide public bodies in implementing their duty. The Local Authority must consider the impact of the proposed development on protected habitats and species.

The UK Post-2010 Biodiversity Framework

The UK Post-2010 Biodiversity Framework covers 2011 – 2020) replaces the UK Biodiversity Action Plan (UKBAP) 1994 - 2010. This is a policy framework that the United Kingdom has produced to deliver its commitments signed to under the United Nations Convention on Biological Diversity. Its aim is to address the underlying causes of biodiversity loss and improve and enhance biodiversity and ecosystem services. In Wales, the UKBAP is implemented through the Wales Biodiversity Partnership. UKBAP priority habitats and species background information is still widely used at country level. UKBAP priority habitats and species have been considered within this report and enhancement measures have been suggested within the recommendations section. Non statutory designated sites are of local importance for nature conservation that complement nationally and internationally designated geological and wildlife sites. They support both locally and nationally threatened wildlife, and many sites will contain habitats and species that are priorities under the county or UK Biodiversity Action Plans (BAP) and Anglesey LBAP.

Planning Policy Wales

At national level, Planning Policy Wales (2012) (PPW) provides the policy framework for the effective preparation of local planning authorities' development plans with Chapter 5 addressing Conserving and Improving Natural Heritage and the Coast.

The objectives of the Welsh Planning Framework are to:

- Promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
- Ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;
- Ensure that statutorily designated sites are properly protected and managed;
- Safeguard protected species; and
- Promote the functions and benefits of soils, and in particular their function as a carbon store.

The above framework is supplemented by 21 topic based Technical Advice Notes (TANs). TAN 5 (2009) (outlined below) provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. Planning Policy Wales, the TANs and the circulars may be material to decisions on individual planning application, and are considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.

TAN 5 (Nature Conservation and Planning):

- Consolidates advice on sources of legislation relevant to various nature conservation topics which may be encountered by local planning authorities;
- Sets out the key principles of planning for nature conservation; and
- Provides advice on the conservation of internationally and nationally designated sites and habitats and also covers local sites and the conservation of protected and priority species.

Hedgerow Regulations

The Hedgerow Regulations 1997 are aimed at protecting hedgerows in their own right and are intended to protect important countryside hedges from removal. It is against the law to remove most hedges without permission. Removal is uprooting or otherwise destroying a hedgerow. Serious damage to the root system or over-maintenance resulting in the death of the hedgerow counts as removal. The regulations only cover hedgerows that are at least 20 m long or, if shorter, connected to other hedgerows at both ends or part of a longer hedgerow. They must be in or adjacent to common land, village greens, SSSIs, LNRs, or land used for agriculture, forestry or breeding or keeping of horses, ponies or donkeys. Garden hedges and former hedgerows that have grown to a line of trees are not covered by the regulations. Trees within a hedgerow are considered to be a part of the hedge

Tree Preservation Order (TPO)

Technical Advice Note (TAN) 10: Tree Preservation Orders (1997) provides guidance on the protection of trees in Wales. A Tree Preservation Order (TPO) is an order made by a local planning authority which in general makes it an offence to cut down, top, lop, uproot, wilfully damage or wilfully destroy a tree without the planning authority's permission. The purpose of a TPO is to protect trees which make a significant impact on their local surroundings. This is particularly important where trees are in immediate danger. The order covers all types of trees including hedgerow trees, but not hedges, bushes or shrubs. The order can cover anything from a single tree to woodlands.

Species Specific Conservation Legislation

Bats

All bat species are fully protected under The Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act. Taken together, the Act and the Regulations make it illegal to intentionally or deliberately kill, injure or capture (or take) bats; deliberately disturb bats (whether in a roost or not); recklessly disturb roosting bats or obstruct access to their roosts; damage or destroy bat roosts; possess or transport a bat or any part of a bat, unless acquired legally; sell (or offer for sale) or exchange bats, or parts of bats.

Great Crested Newt

Great crested newts (GCN) are fully protected under the Conservation of Habitat and Species Regulations 2010 and the WCA. This means that it is an offence to intentionally or recklessly kill, injure or take GCN. In addition the following are also in breach of the legislation: To possess or control any live or dead specimen or anything derived from a GCN; to intentionally or recklessly damage, destroy or obstruct access to any structure or place used as shelter or protection by a GCN; to intentionally or recklessly disturb a GCN while it is occupying a structure or place, which it uses for that purpose. The legislation applies to all life stages of great crested newts.

Otter

Otters are fully protected under the Conservation of Habitat and Species Regulations and the WCA. Otters and their resting places are fully protected, it is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It is also an offence to disturb otters in their breeding or resting places.

Water Voles

Water voles are legally protected under the WCA. It is an offence to Intentionally kill, injure or take (capture) a water vole; possess or control a live or dead water vole, or any part of a water vole;

Intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place; and sell, offer for sale or advertise for live or dead water voles.

Birds

All wild birds, their eggs and nests are protected under the EC Birds Directive and the WCA. It is an offence to disturb birds from the point they begin building a nest, to when the young have fledged. Bird species listed under Schedule 1 of the WCA such as Barn owl (*Tyto alba*) are afforded greater protection under the Act. In addition it is an offence to disturb Schedule 1 birds at the nest or the dependant young of Schedule 1 birds.

Badger

Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act 1992. It is an offence to destroy a sett, or to kill, injure or disturb a badger.

Reptiles and Amphibians

Widespread reptiles are protected under the WCA. It is an offence to intentionally kill, injure or trade common lizard (*Lacerta vivipara*), slow-worm (*Anguis fragilis*), grass snake (*Natrix natrix*) and adder (*Vipera berus*). Widespread amphibians (common frog (*Rana temporaria*), common toad (*Bufo bufo*), smooth newt (*Lissotriton vulgaris*) and palmate newt (*Lissotriton helveticus*)) are protected under the WCA from trade only.

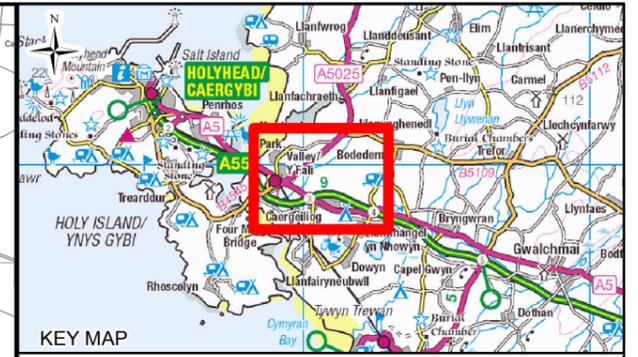
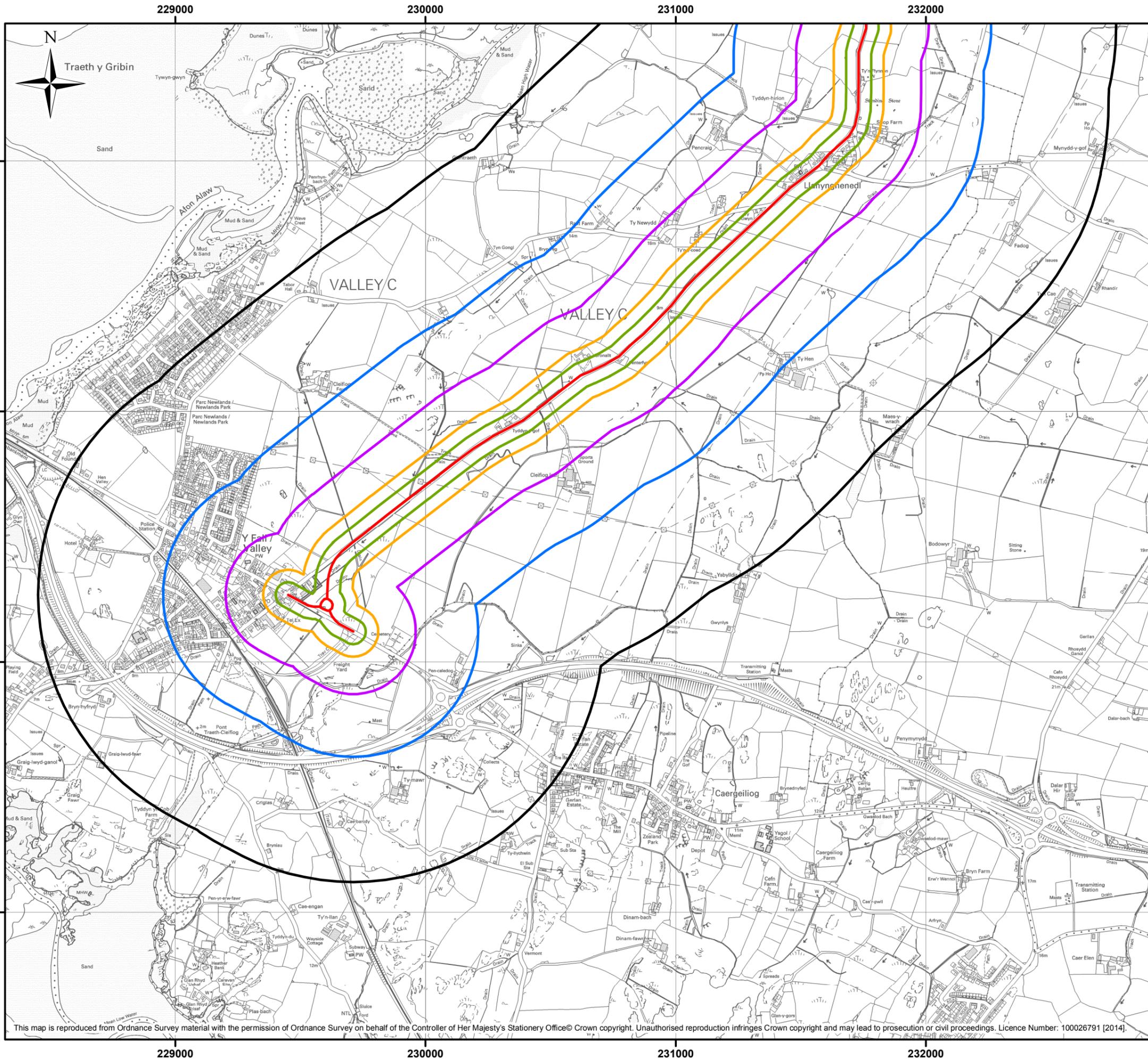
Wild Mammals

All wild mammals are protected under the Wild Mammals (Protection) Act 1996. It is an offence to kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

NERC Section 42 list

Section 42 is a list of habitats and species of principal importance for the conservation of biodiversity in Wales. The list contains all UK BAP priority habitats and species known to occur in Wales in addition to species of particular conservation significance in Wales. The production of the list is a requirement of the NERC Act, and it will be used to guide and prioritise future conservation action in Wales. It supersedes the Section 74 list ('Going Wild in Wales 2003').

Appendix C. Map of Ecology Survey Buffers



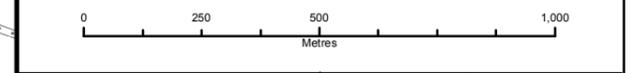
- Legend**
- Indicative route
 - Jacobs survey area
 - 50m survey buffer - badgers
 - 100m survey buffer - hedgerow & bat surveys
 - 250m survey buffer - Phase1, NVC, reptiles, invertebrates
 - 500m survey buffer - great crested newts
 - 1km survey buffer - barn owl

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



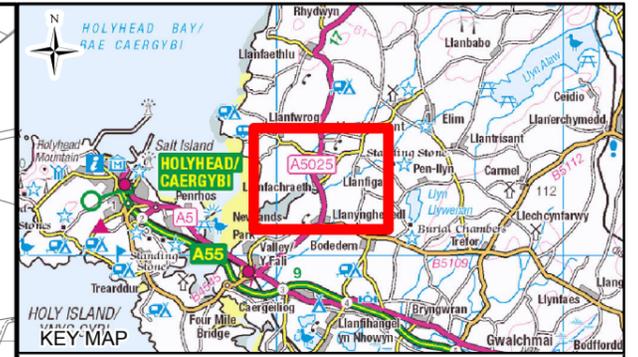
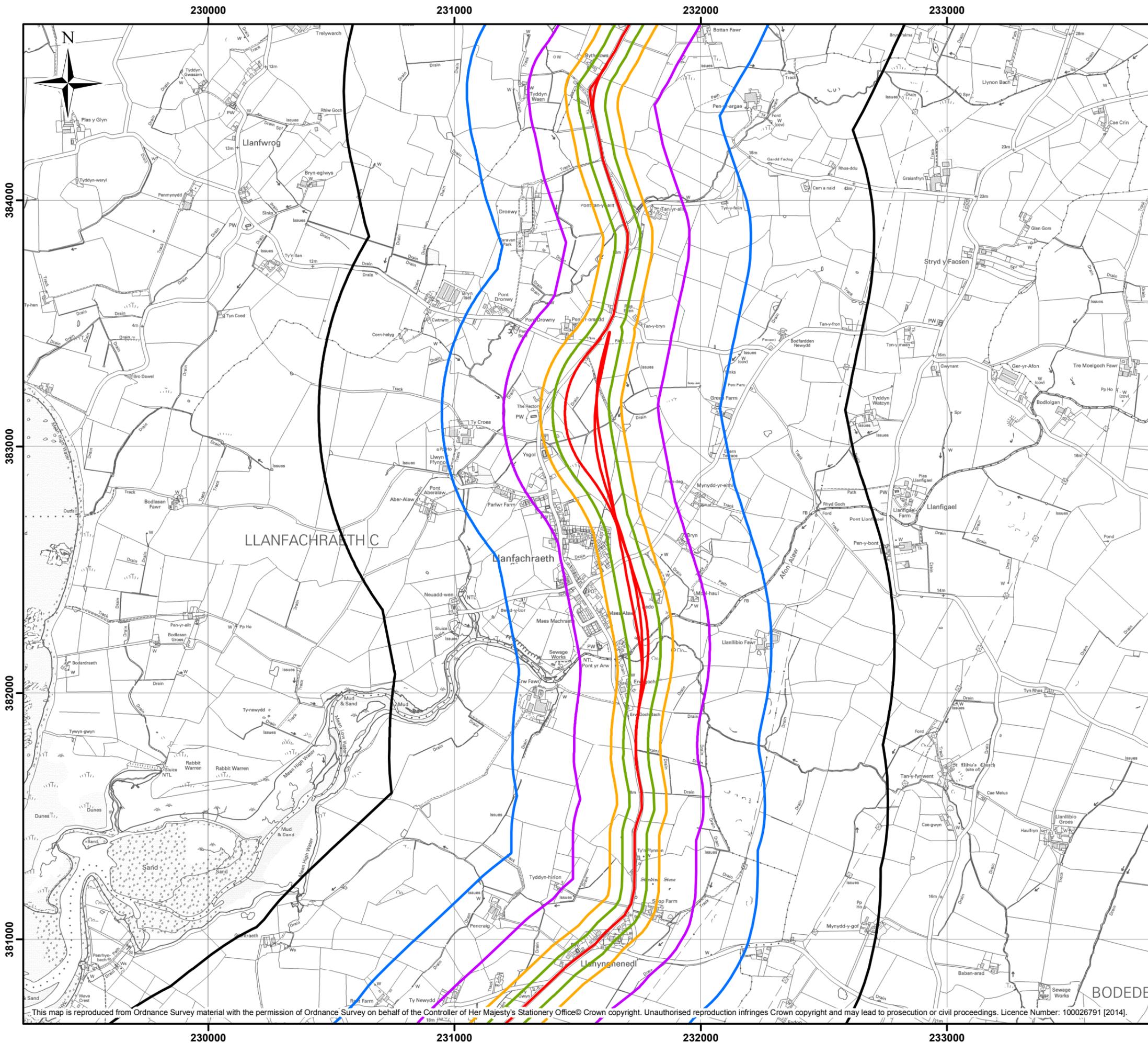
Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Improvements Ecology Survey Areas**
Page 1 of 7



Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3323			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office© Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].



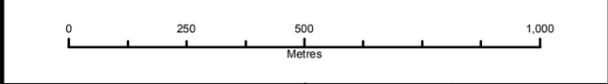
- Legend**
-  Indicative route
 -  Jacobs survey area
 -  50m survey buffer - badgers
 -  100m survey buffer - hedgerow & bat surveys
 -  250m survey buffer - Phase1, NVC, reptiles, invertebrates
 -  500m survey buffer - great crested newts
 -  1km survey buffer - barn owl

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



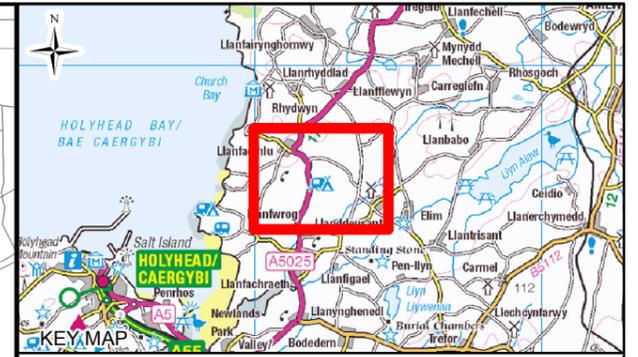
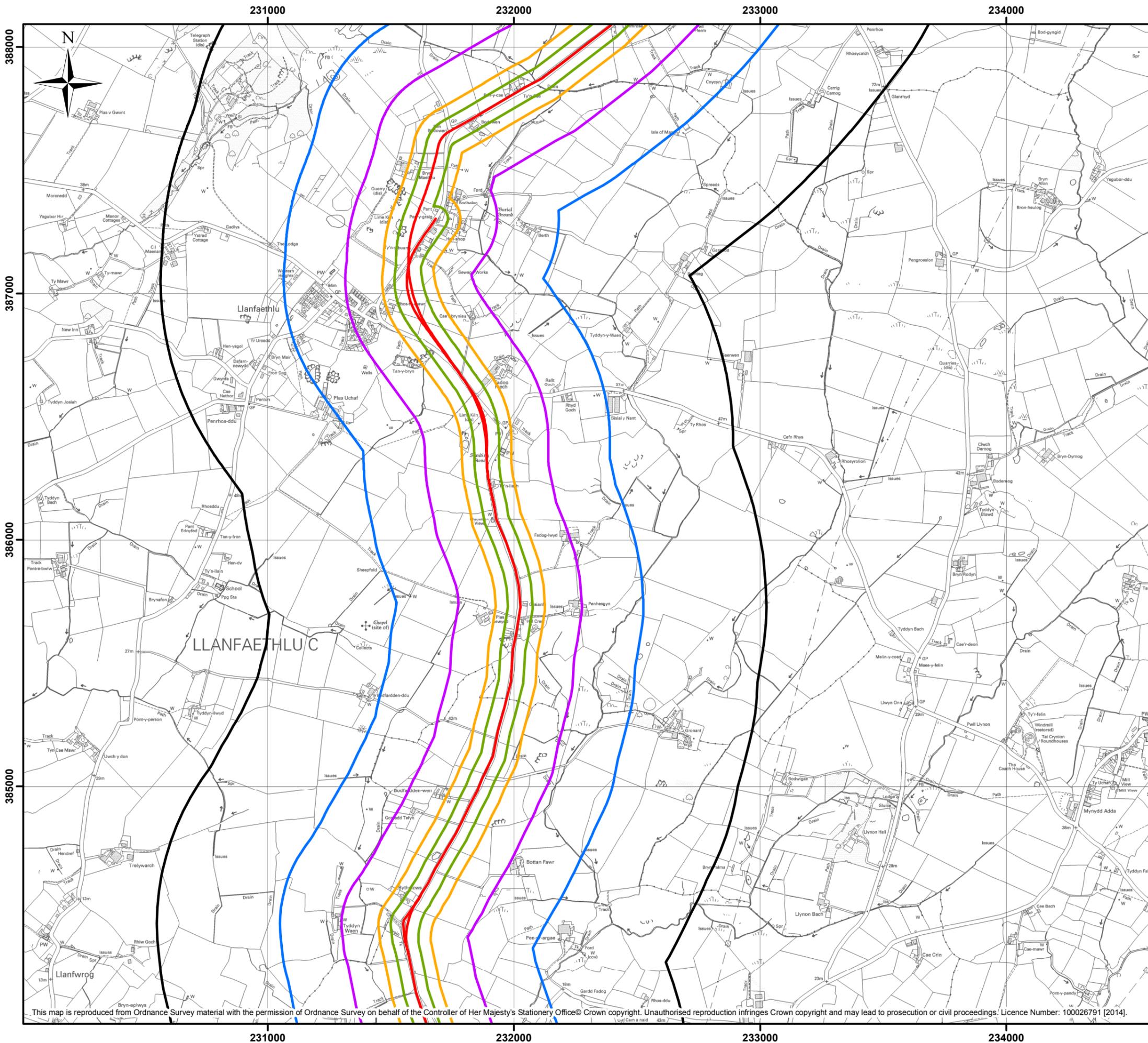
Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.motmac.com

Title: **A5025 Improvements Ecology Survey Areas**
Page 2 of 7



Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3324			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].



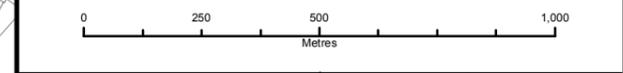
- Legend**
- Indicative route
 - Jacobs survey area
 - 50m survey buffer - badgers
 - 100m survey buffer - hedgerow & bat surveys
 - 250m survey buffer - Phase1, NVC, reptiles, invertebrates
 - 500m survey buffer - great crested newts
 - 1km survey buffer - barn owl

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



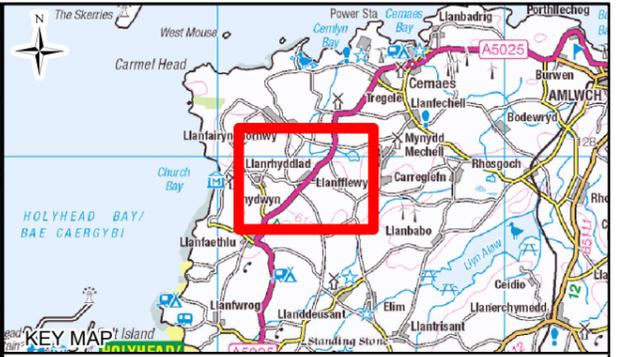
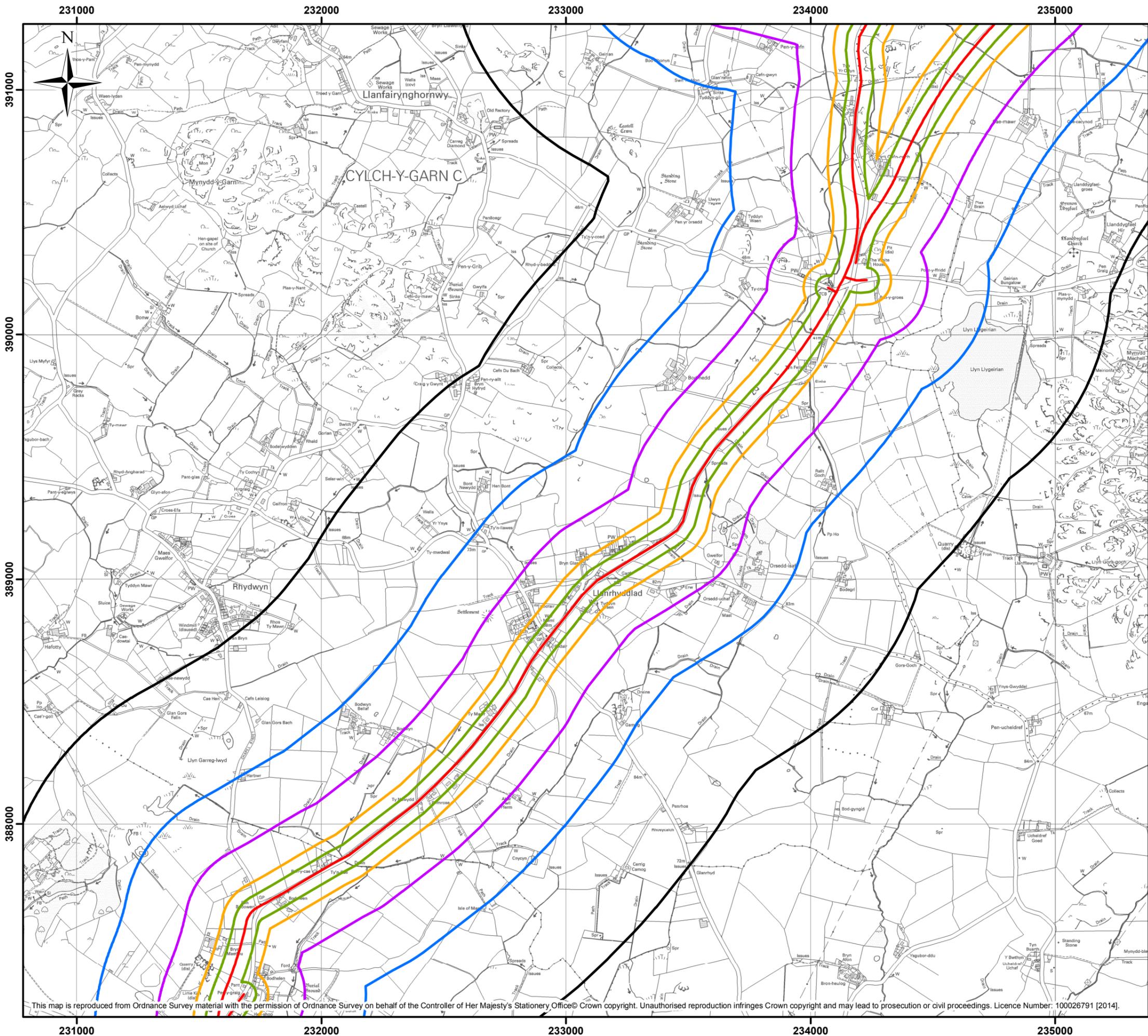
Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Improvements Ecology Survey Areas**
Page 3 of 7



Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3325			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].



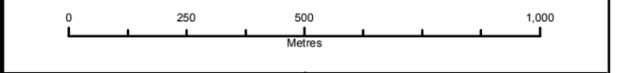
- Legend**
-  Indicative route
 -  Jacobs survey area
 -  50m survey buffer - badgers
 -  100m survey buffer - hedgerow & bat surveys
 -  250m survey buffer - Phase1, NVC, reptiles, invertebrates
 -  500m survey buffer - great crested newts
 -  1km survey buffer - barn owl

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Improvements Ecology Survey Areas**
Page 4 of 7



Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3326			

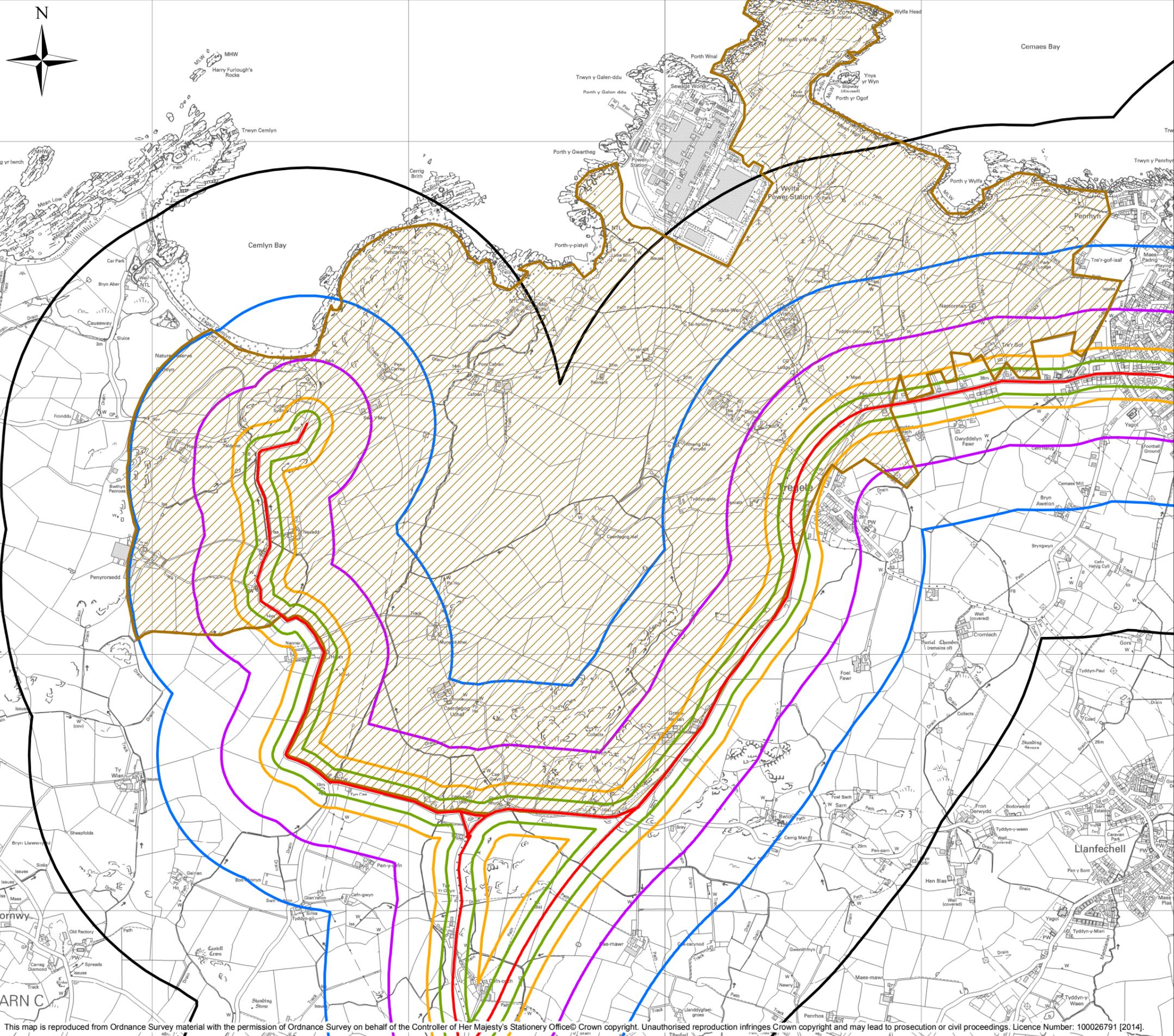
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

233000

234000

235000

236000



Legend

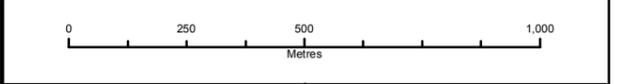
-  Indicative route
-  Jacobs survey area
-  50m survey buffer - badgers
-  100m survey buffer - hedgerow & bat surveys
-  250m survey buffer - Phase1, NVC, reptiles, invertebrates
-  500m survey buffer - great crested newts
-  1km survey buffer - barn owl

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Improvements Ecology Survey Areas**
Page 5 of 7



Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3327			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office© Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

233000

234000

235000

236000

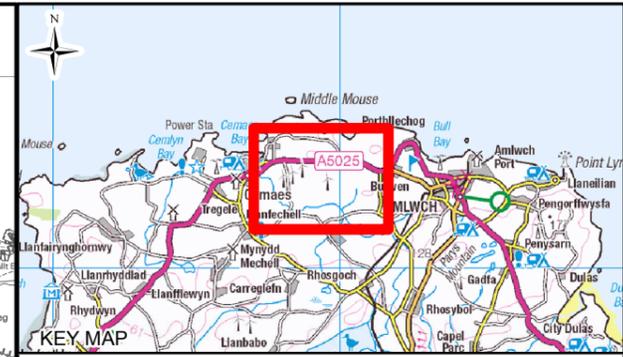
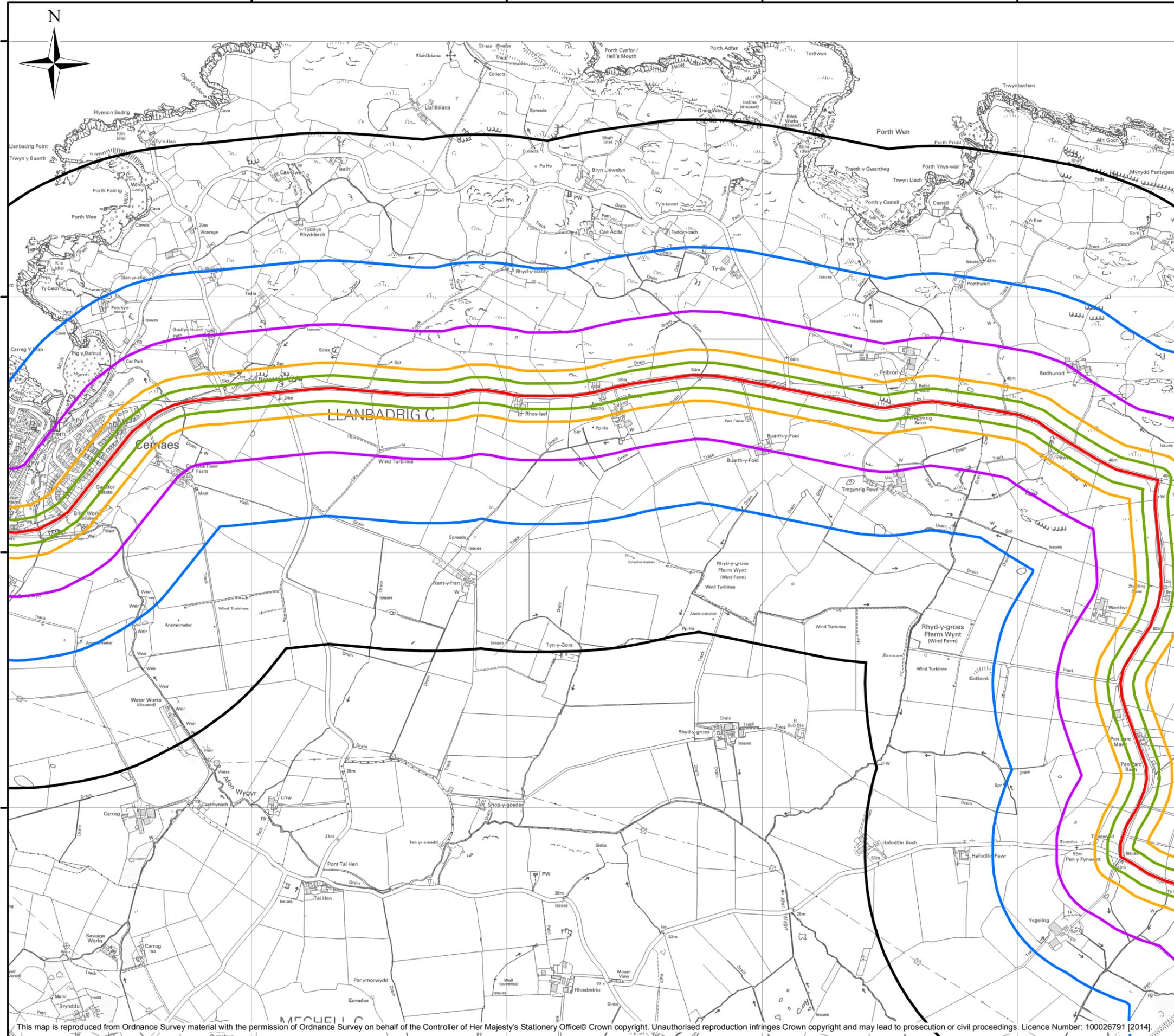
238000

239000

240000

241000

395000
394000
393000
392000



Legend

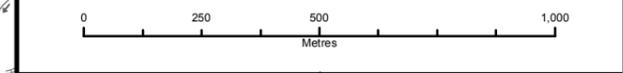
-  Indicative route
-  Jacobs survey area
-  50m survey buffer - badgers
-  100m survey buffer - hedgerow & bat surveys
-  250m survey buffer - Phase1, NVC, reptiles, invertebrates
-  500m survey buffer - great crested newts
-  1km survey buffer - barn owl

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Improvements Ecology Survey Areas**
Page 6 of 7



Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3328			

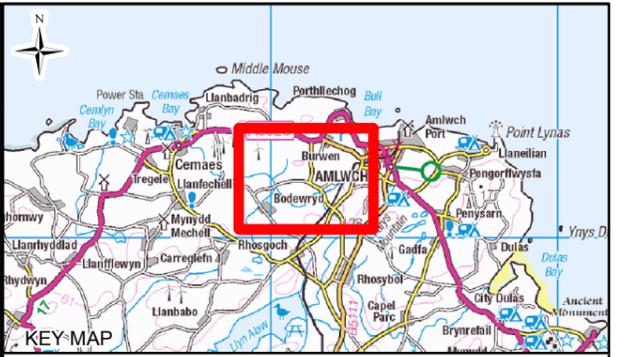
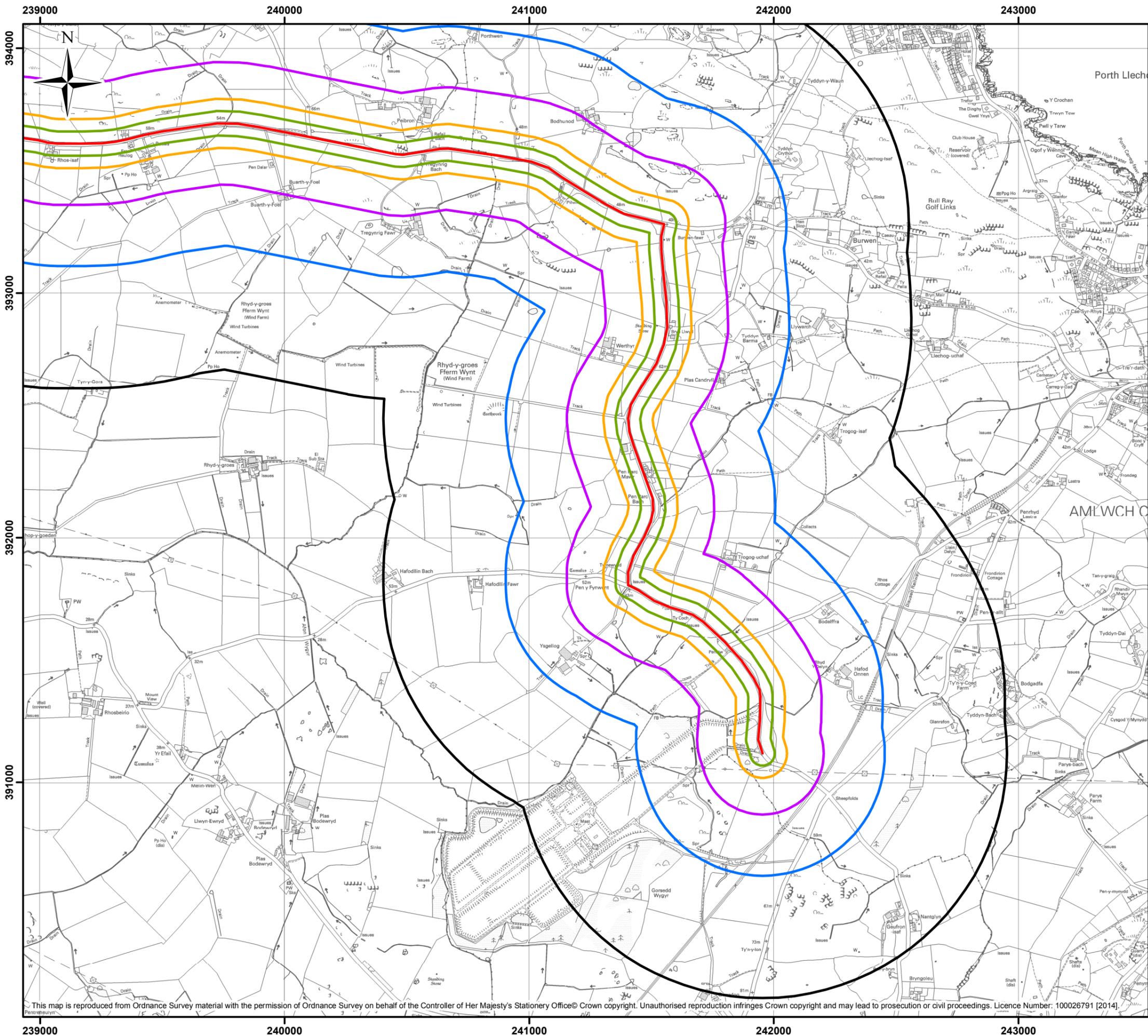
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office© Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

238000

239000

240000

241000



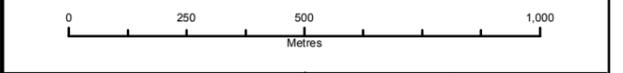
- Legend**
- Indicative route
 - Jacobs survey area
 - 50m survey buffer - badgers
 - 100m survey buffer - hedgerow & bat surveys
 - 250m survey buffer - Phase1, NVC, reptiles, invertebrates
 - 500m survey buffer - great crested newts
 - 1km survey buffer - barn owl

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Improvements Ecology Survey Areas**
Page 7 of 7



Drawn	JW	Checked	TC
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3329			

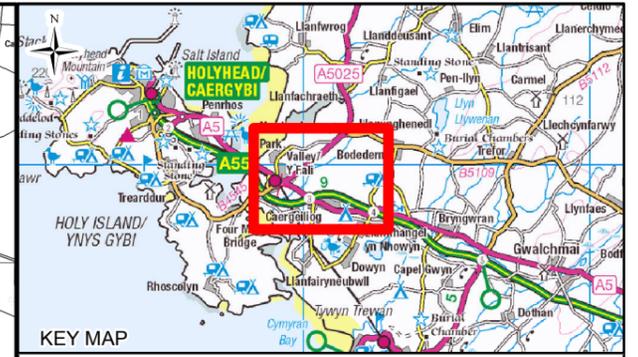
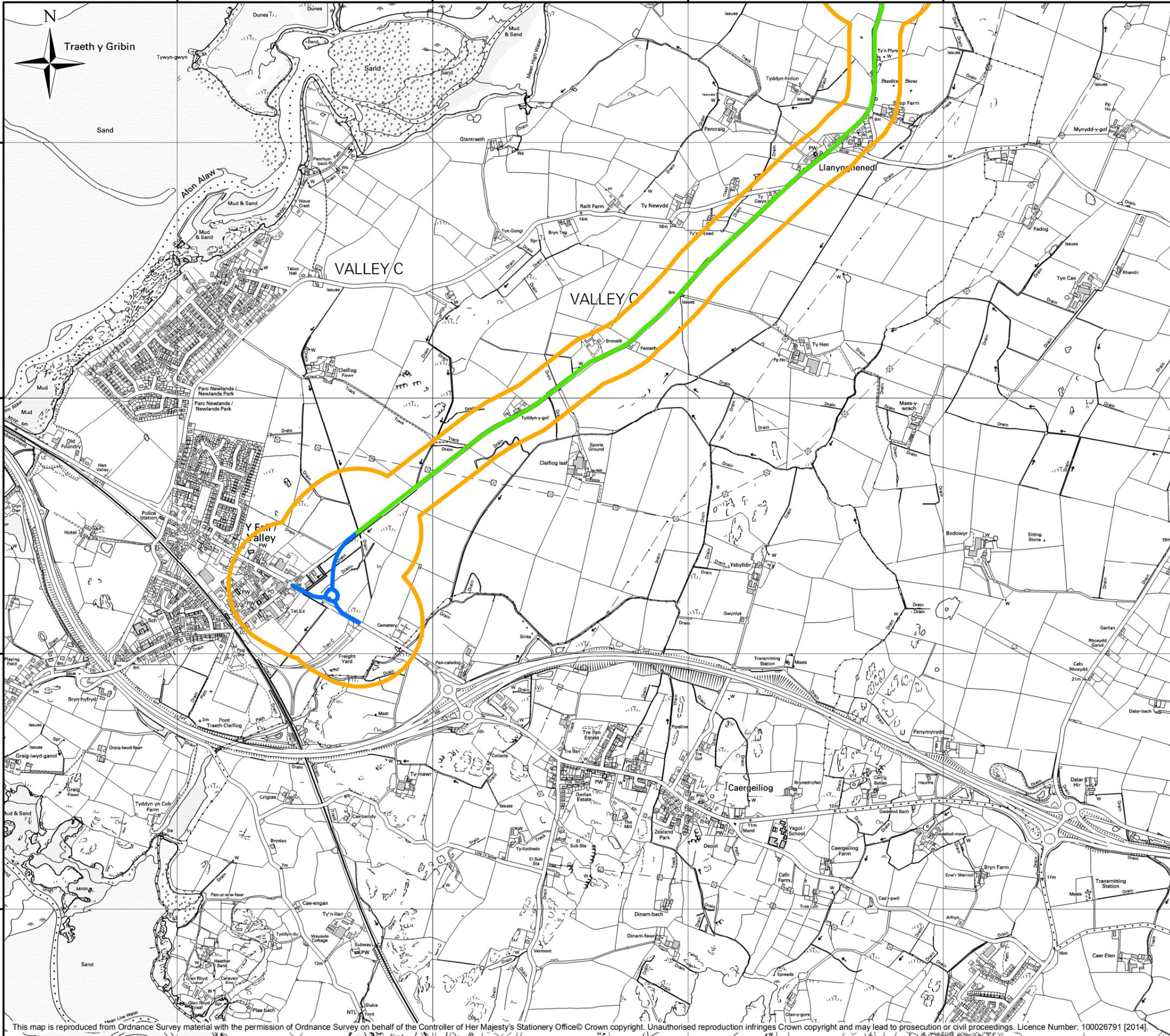
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

229000

230000

231000

232000



Legend

- Proposed online sections
- Proposed offline sections
- Jacobs area of responsibility

Breeding & wintering birds survey buffer distances:

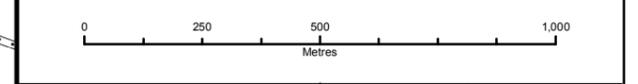
- 100m (online) - 250m (offline)

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Road Improvements Contract**
Breeding & Wintering Bird Survey Areas
Page 1 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3429			

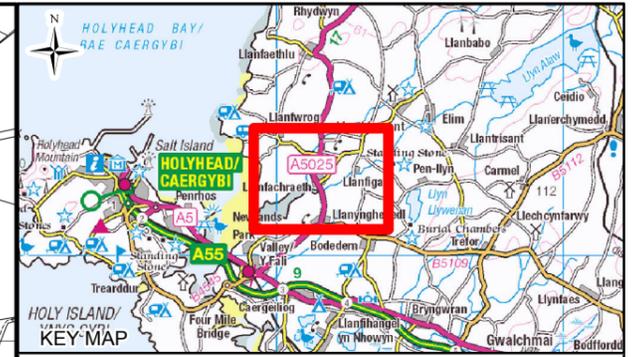
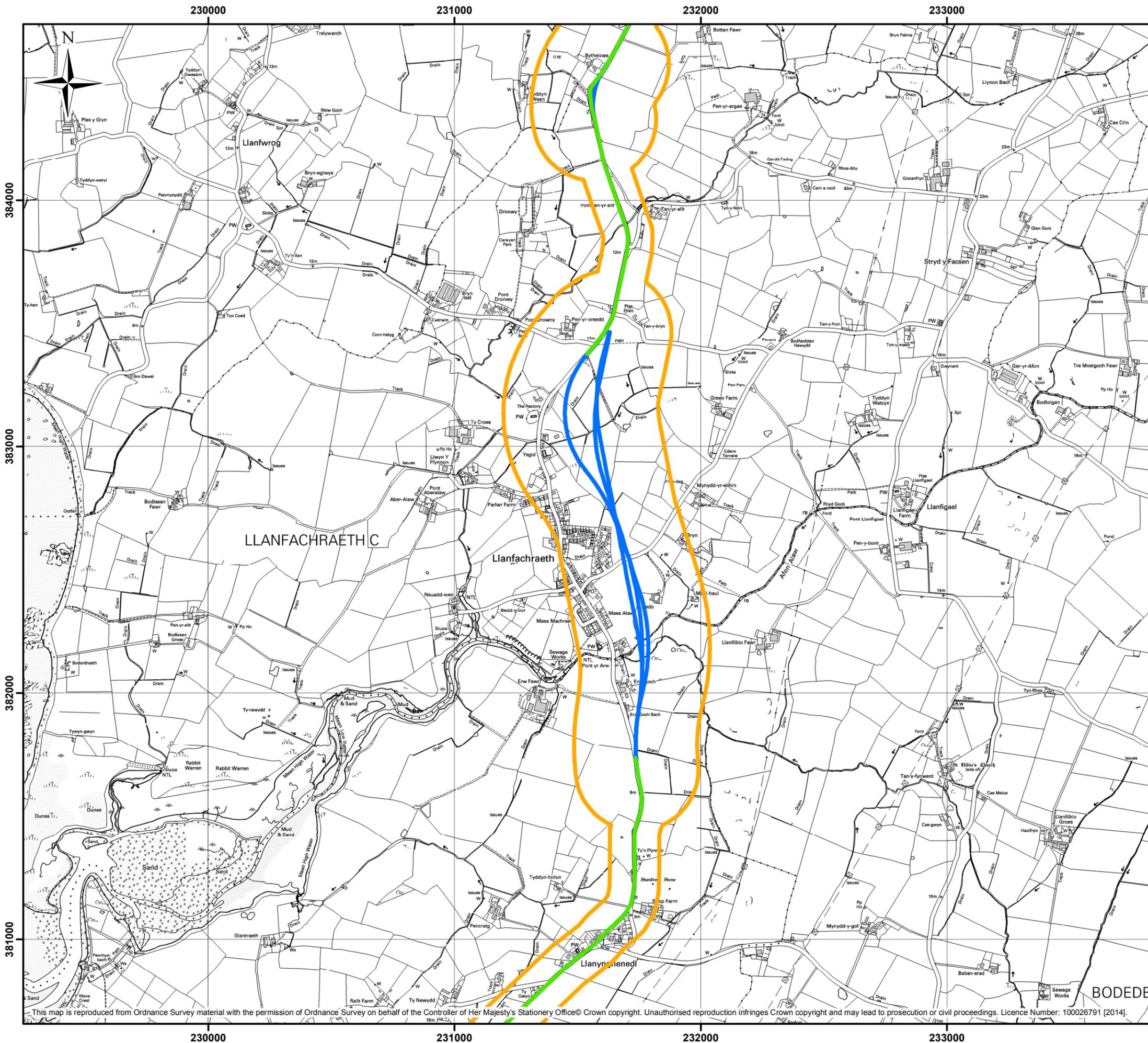
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office© Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

229000

230000

231000

232000



Legend

- Proposed online sections
- Proposed offline sections
- Jacobs area of responsibility

Breeding & wintering birds survey buffer distances:

- 100m (online) - 250m (offline)

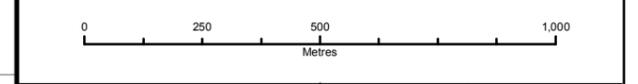
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

Mott MacDonald

Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

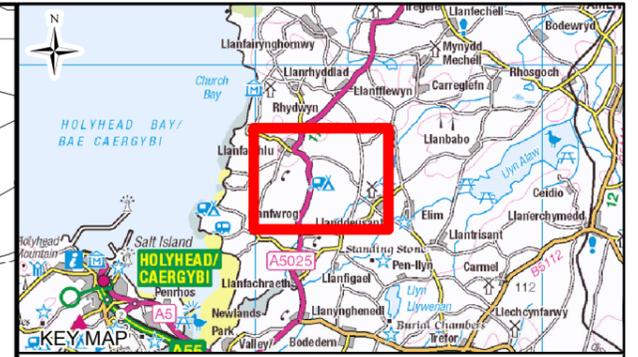
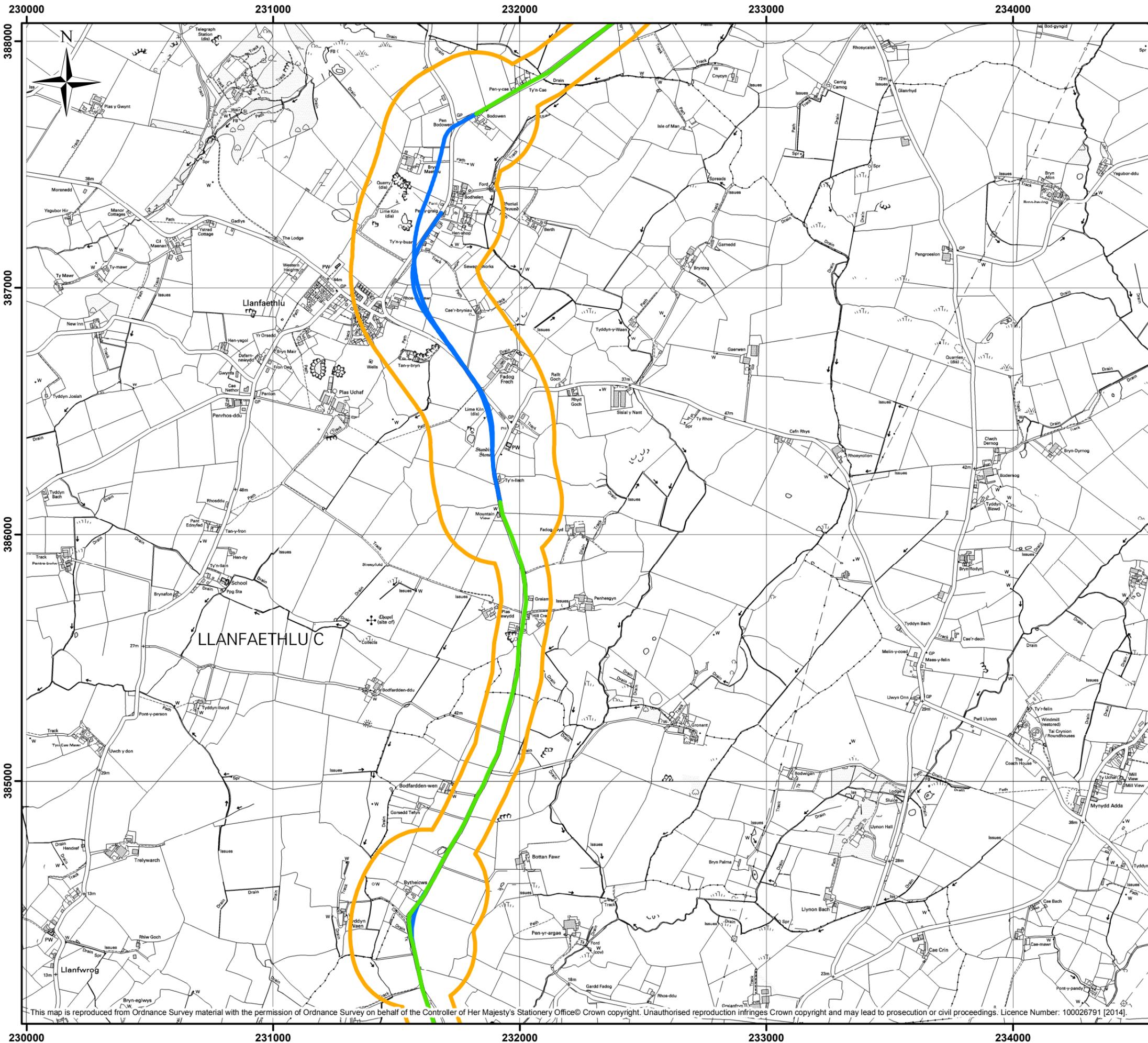
Title: **A5025 Road Improvements Contract
Breeding & Wintering Bird Survey Areas**

Page 2 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3430			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].



Legend

- Proposed online sections
- Proposed offline sections
- Jacobs area of responsibility
- Breeding & wintering birds survey buffer distances:**
- 100m (online) - 250m (offline)

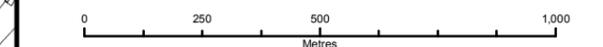
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

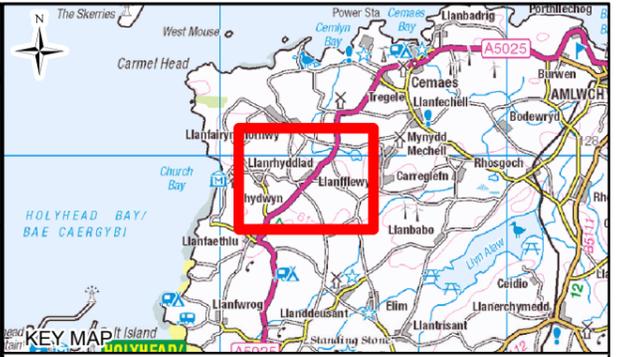
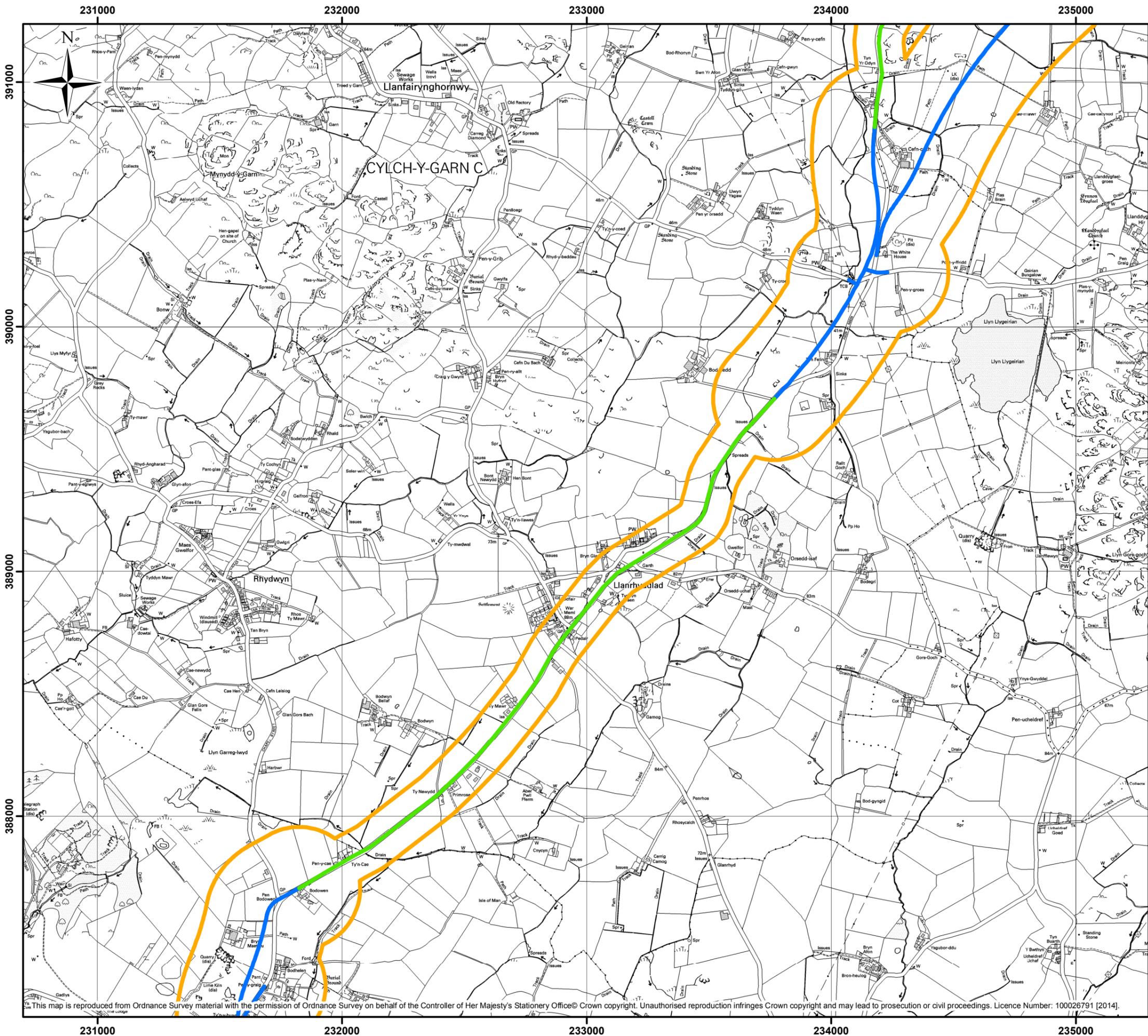
Title: **A5025 Road Improvements Contract
Breeding & Wintering Bird Survey Areas**

Page 3 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3431			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].



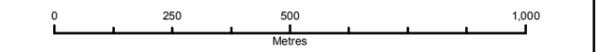
- Legend**
- Proposed online sections
 - Proposed offline sections
 - Jacobs area of responsibility
 - Breeding & wintering birds survey buffer distances:**
 - 100m (online) - 250m (offline)

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Road Improvements Contract
Breeding & Wintering Bird Survey Areas**
Page 4 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3432			

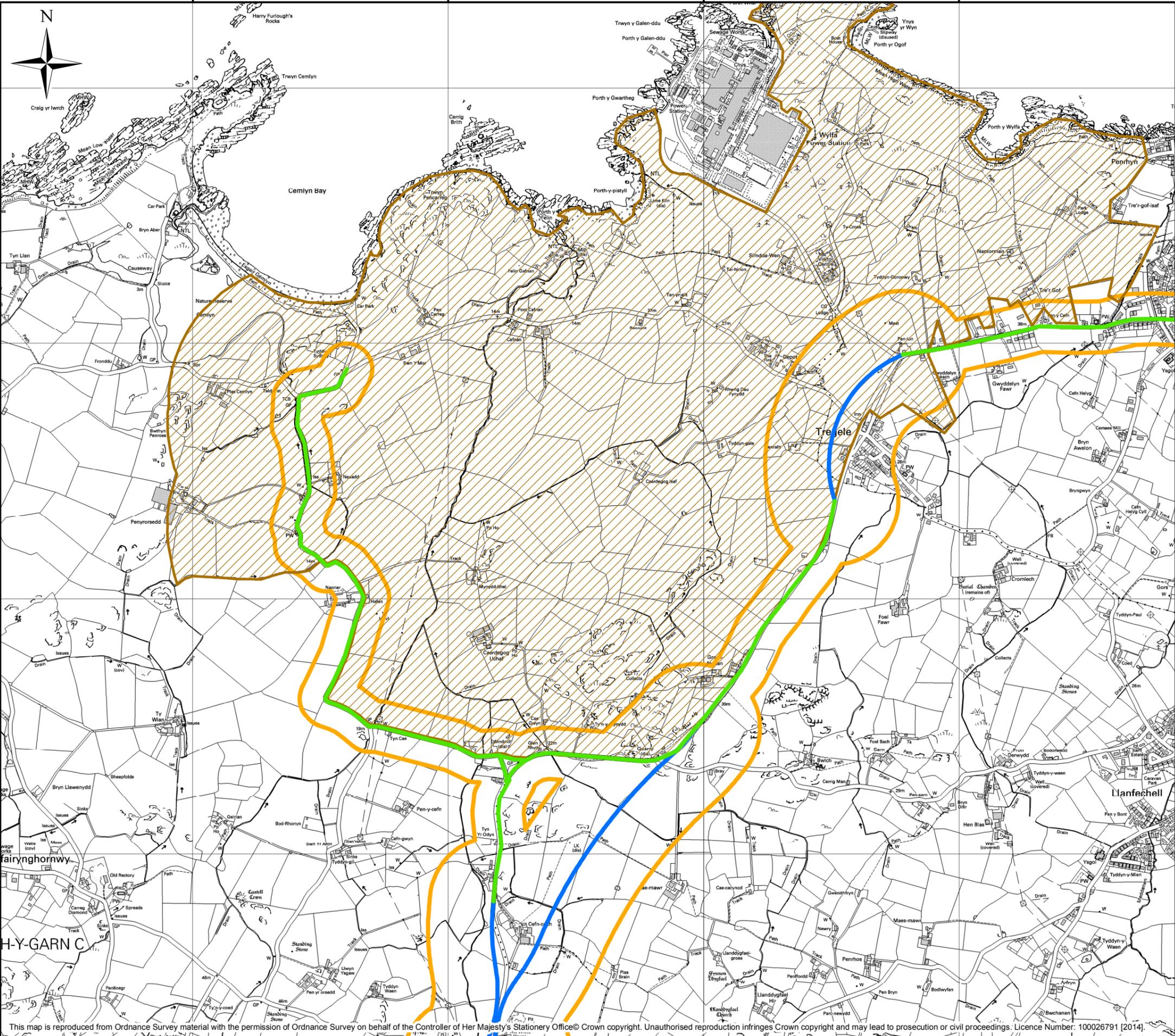
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

233000

234000

235000

236000



Legend

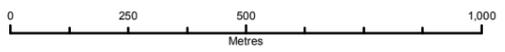
-  Proposed online sections
-  Proposed offline sections
-  Jacobs area of responsibility
- Breeding & wintering birds survey buffer distances:**
-  100m (online) - 250m (offline)

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Road Improvements Contract**
Breeding & Wintering Bird Survey Areas
Page 5 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3433			

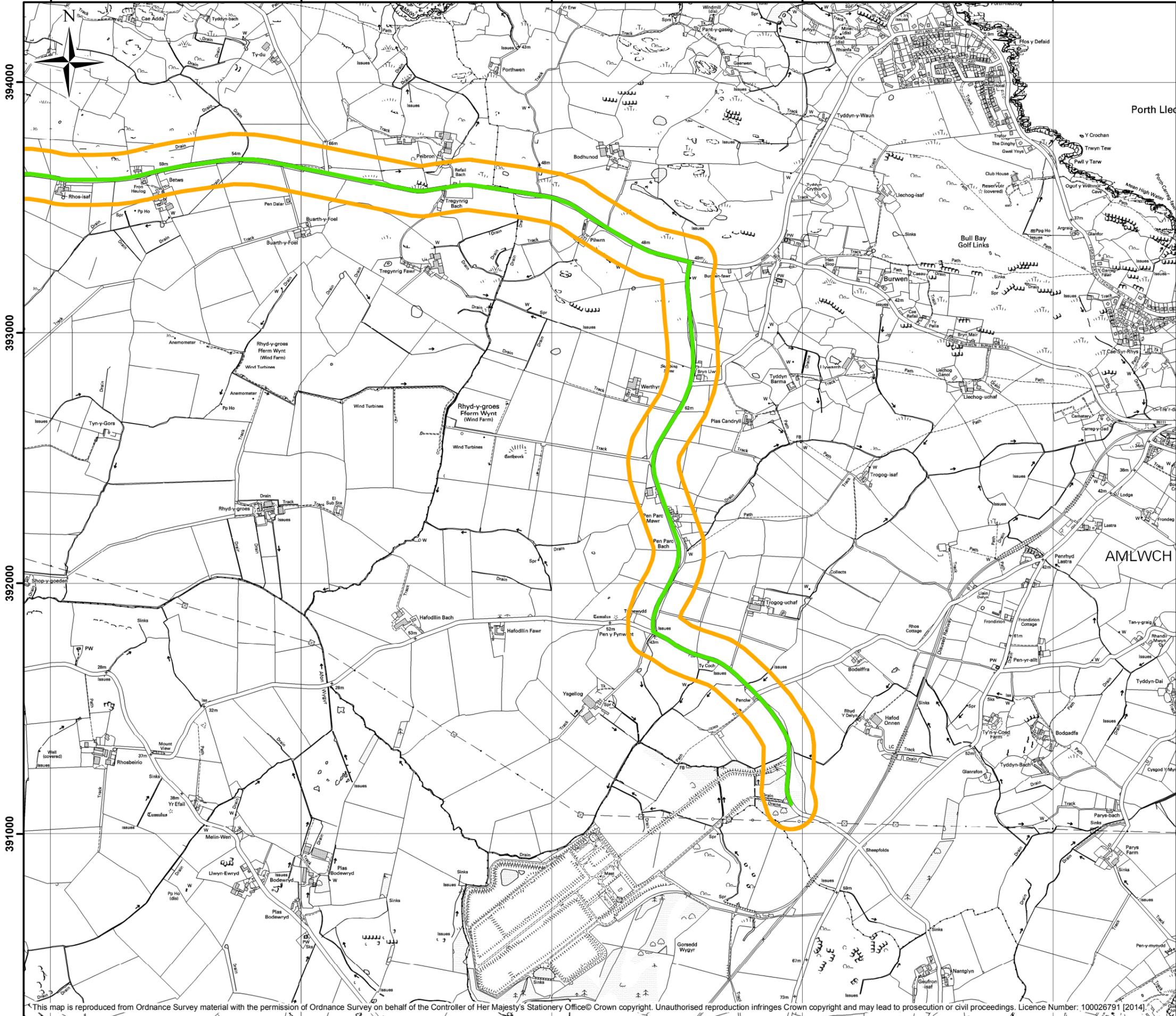
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

233000

234000

235000

236000



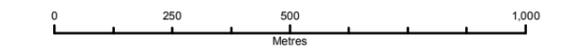
- Legend**
- Proposed online sections
 - Proposed offline sections
 - Jacobs area of responsibility
- Breeding & wintering birds survey buffer distances:**
- 100m (online) - 250m (offline)

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

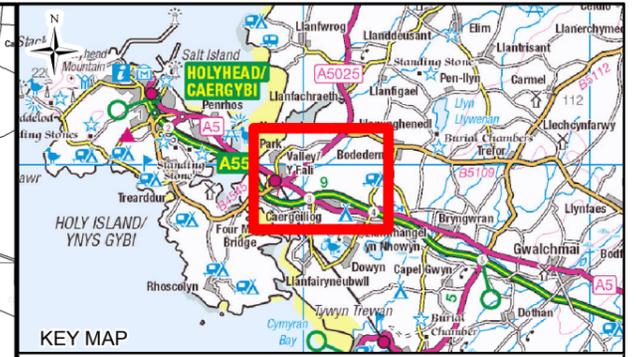
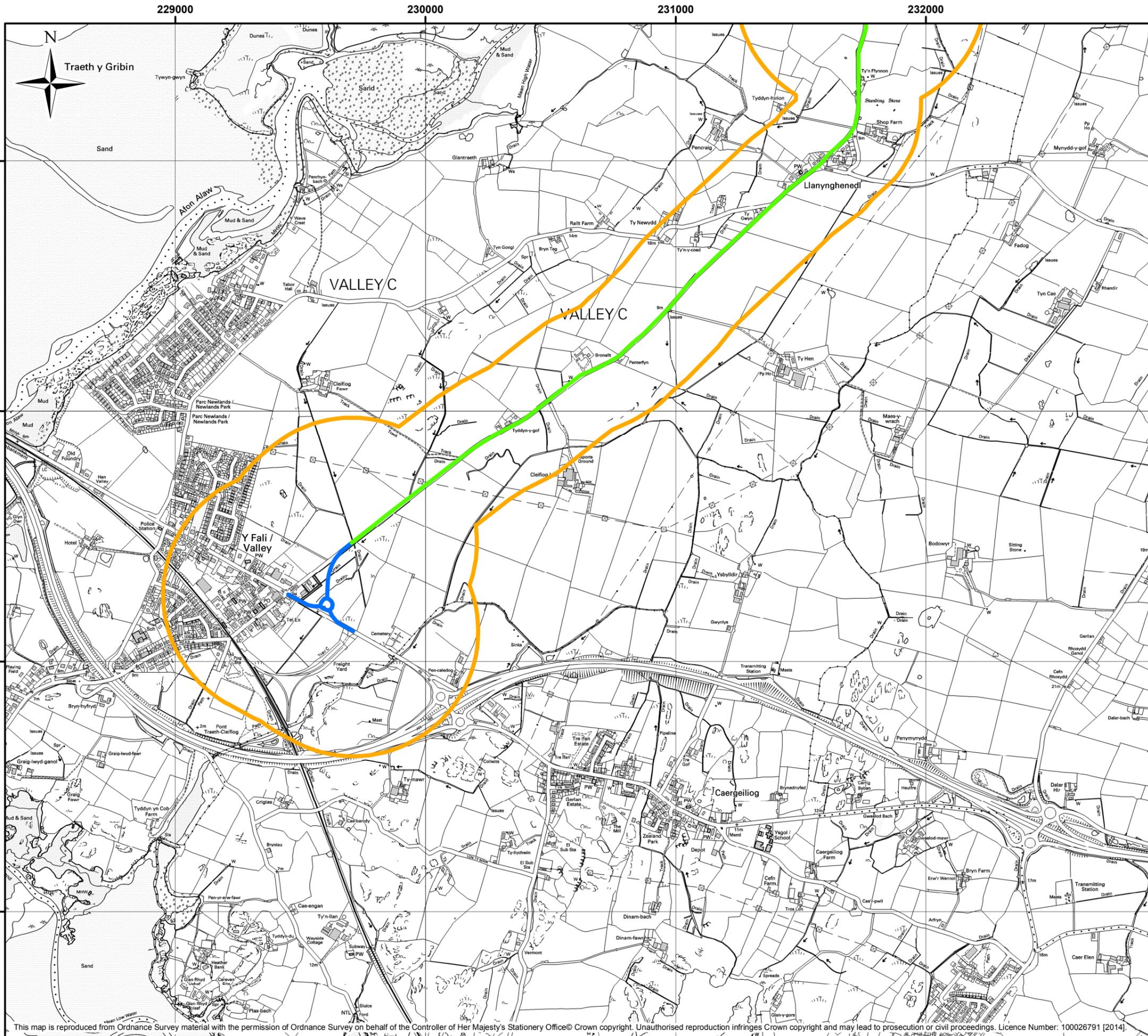


Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Road Improvements Contract**
Breeding & Wintering Bird Survey Areas
Page 7 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3435			

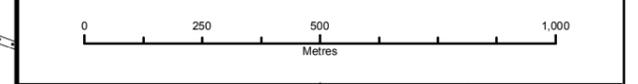


- Legend**
- Proposed online sections
 - Proposed offline sections
 - Jacobs area of responsibility
 - 250m (online) - 500m (offline)

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

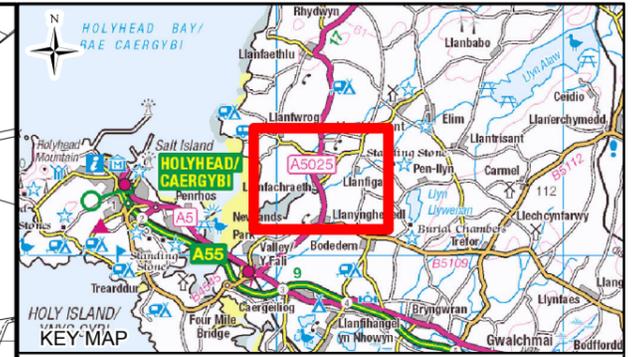
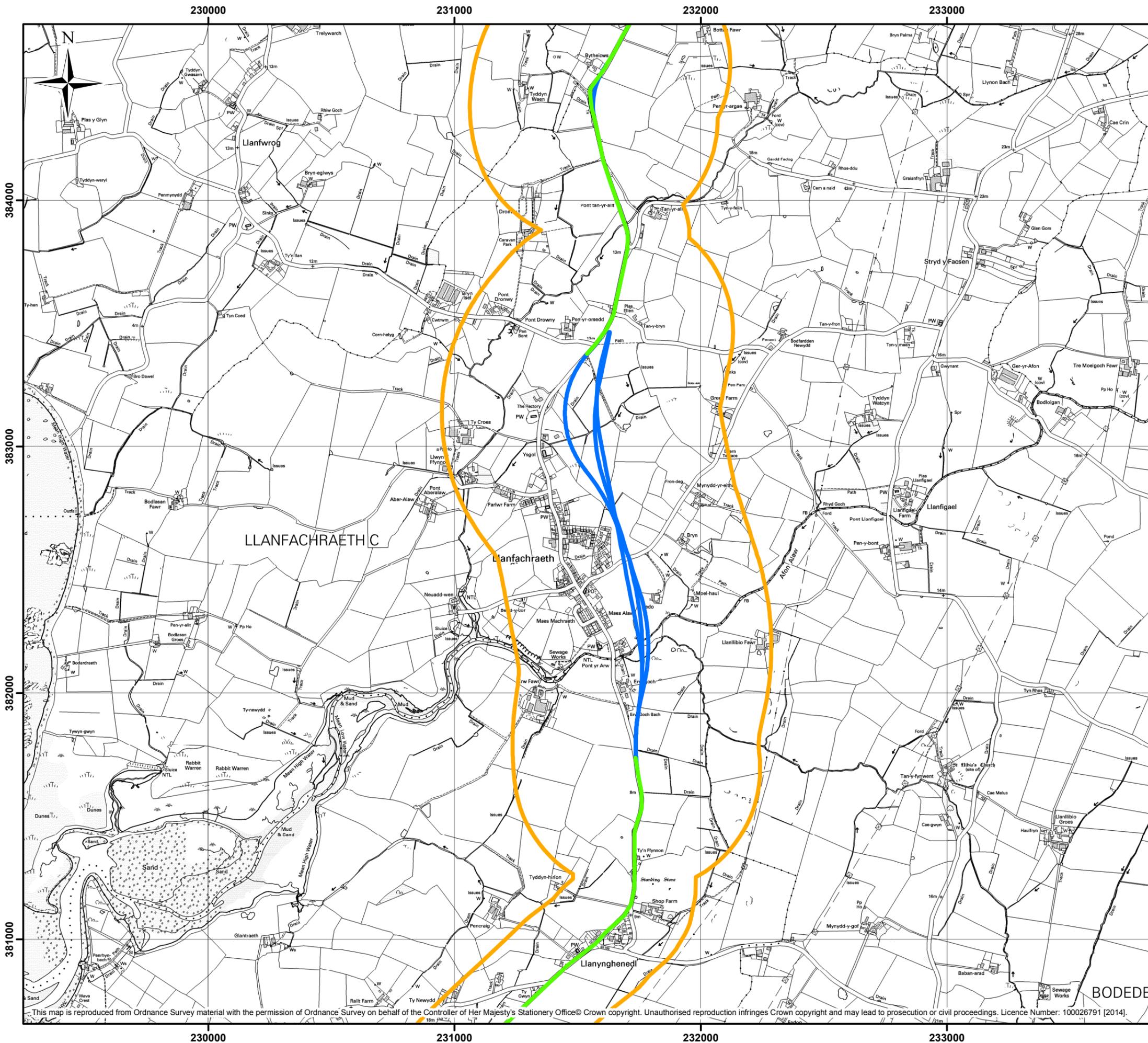
Mott MacDonald
 Fitzalan House
 Fitzalan Road
 Cardiff
 CF24 0EL
 Tel +44 (0) 2920 467800
 Fax +44 (0) 2920 467801
 Web www.mottmac.com

Title: **A5025 Road Improvements Contract
 Otter & Water Vole Survey Areas**
 Page 1 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3337			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].



- Legend**
- Proposed online sections
 - Proposed offline sections
 - Jacobs area of responsibility
 - 250m (online) - 500m (offline)

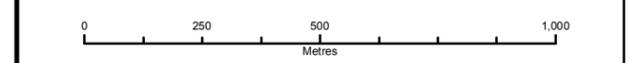
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

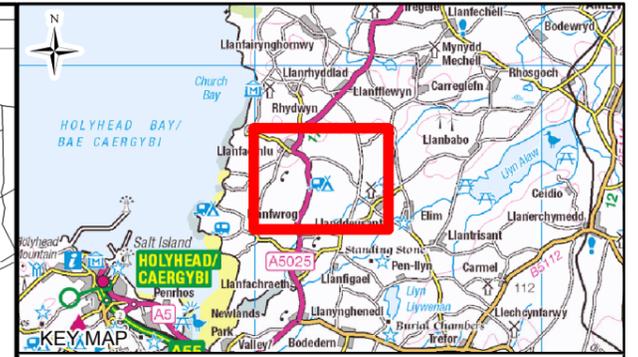
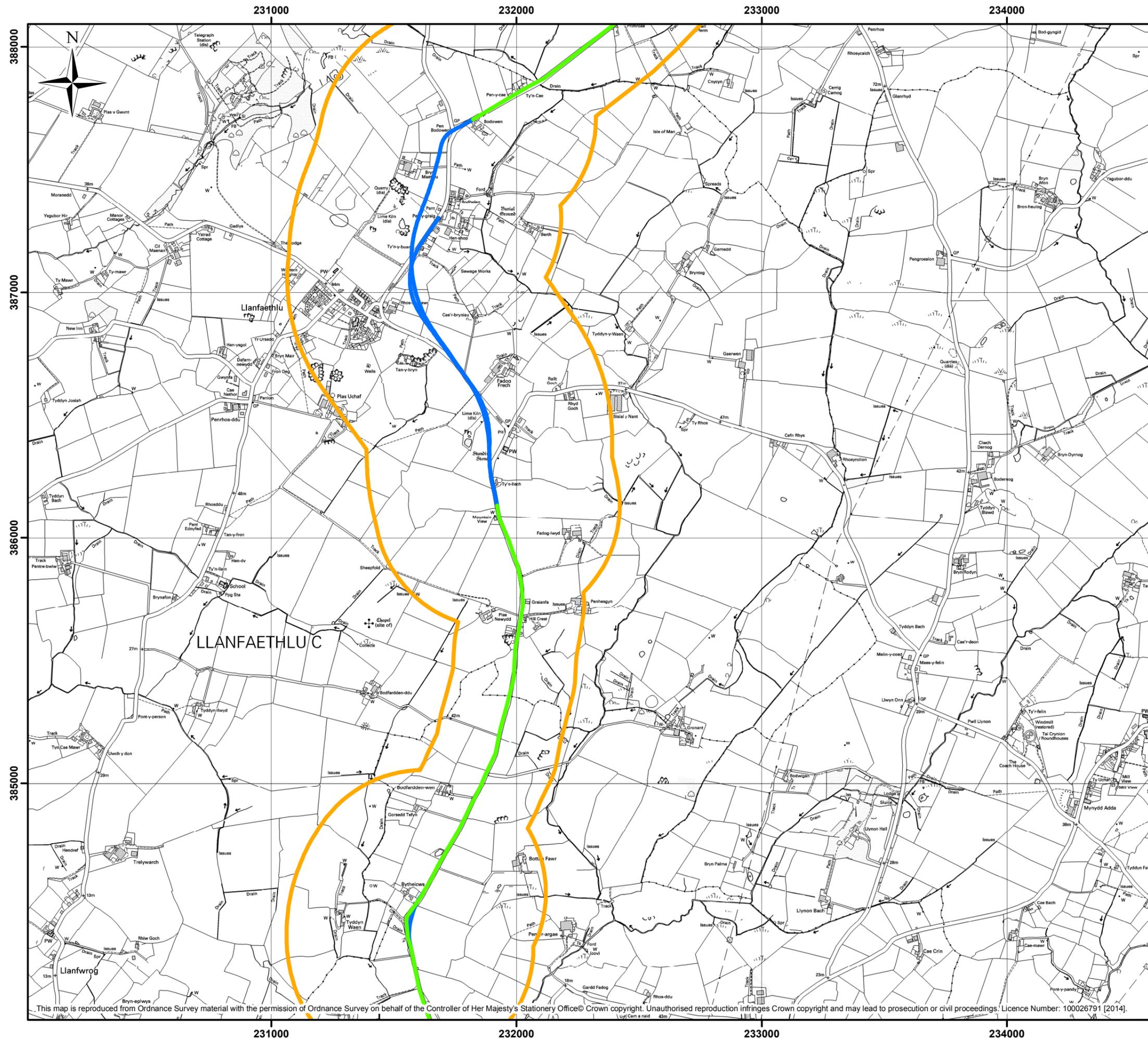
Title: **A5025 Road Improvements Contract
Otter & Water Vole Survey Areas**

Page 2 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3338			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].



Legend

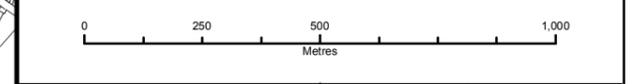
- Proposed online sections
- Proposed offline sections
- Jacobs area of responsibility
- 250m (online) - 500m (offline)

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



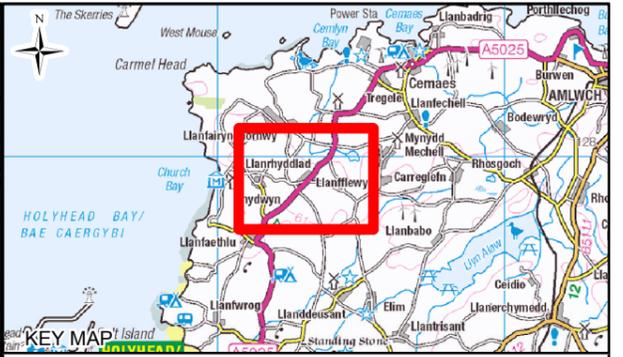
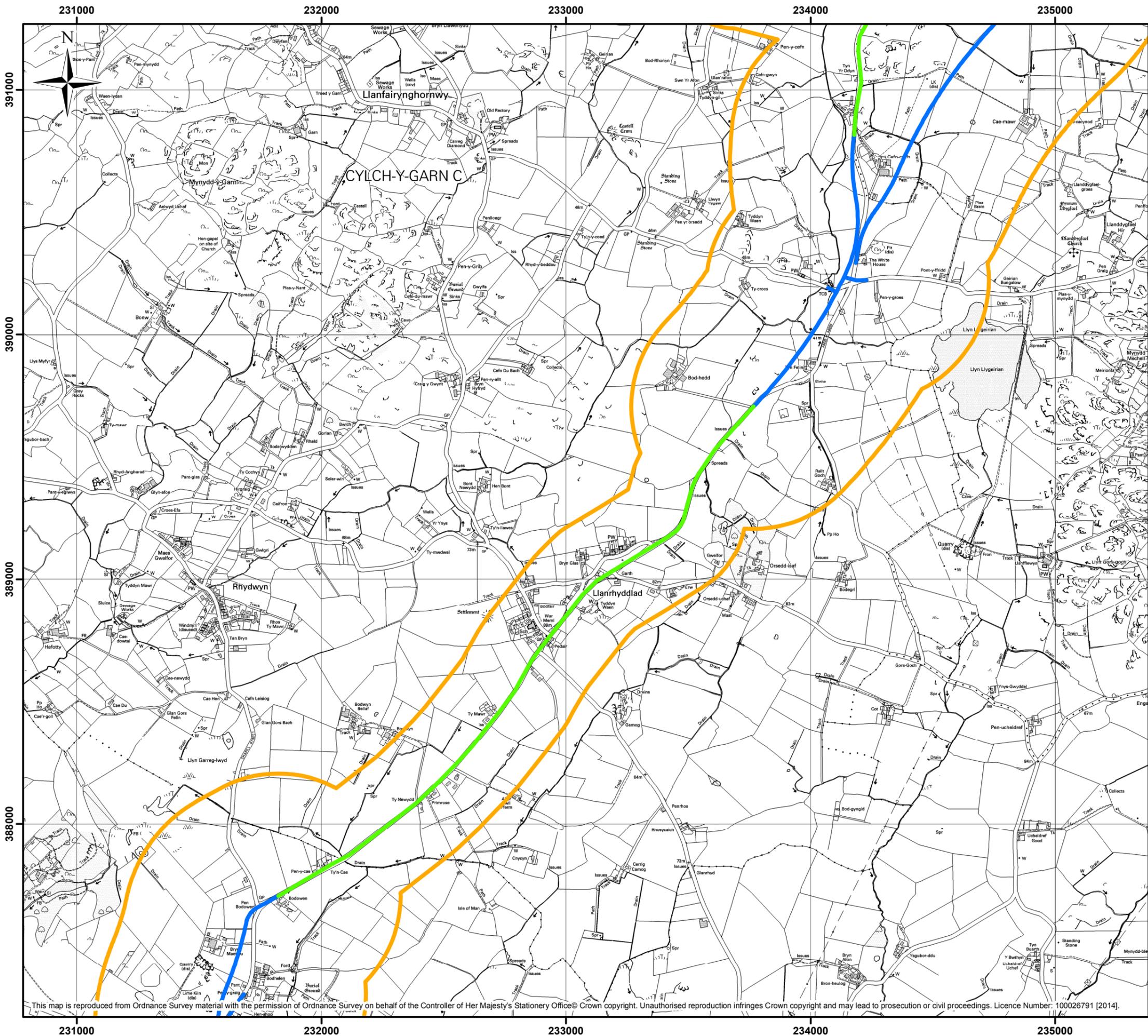
Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Road Improvements Contract
Otter & Water Vole Survey Areas**
Page 3 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3339			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].



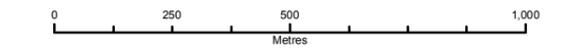
- Legend**
- Proposed online sections
 - Proposed offline sections
 - Jacobs area of responsibility
 - 250m (online) - 500m (offline)

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.motmac.com

Title: **A5025 Road Improvements Contract
Otter & Water Vole Survey Areas**
Page 4 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3340			

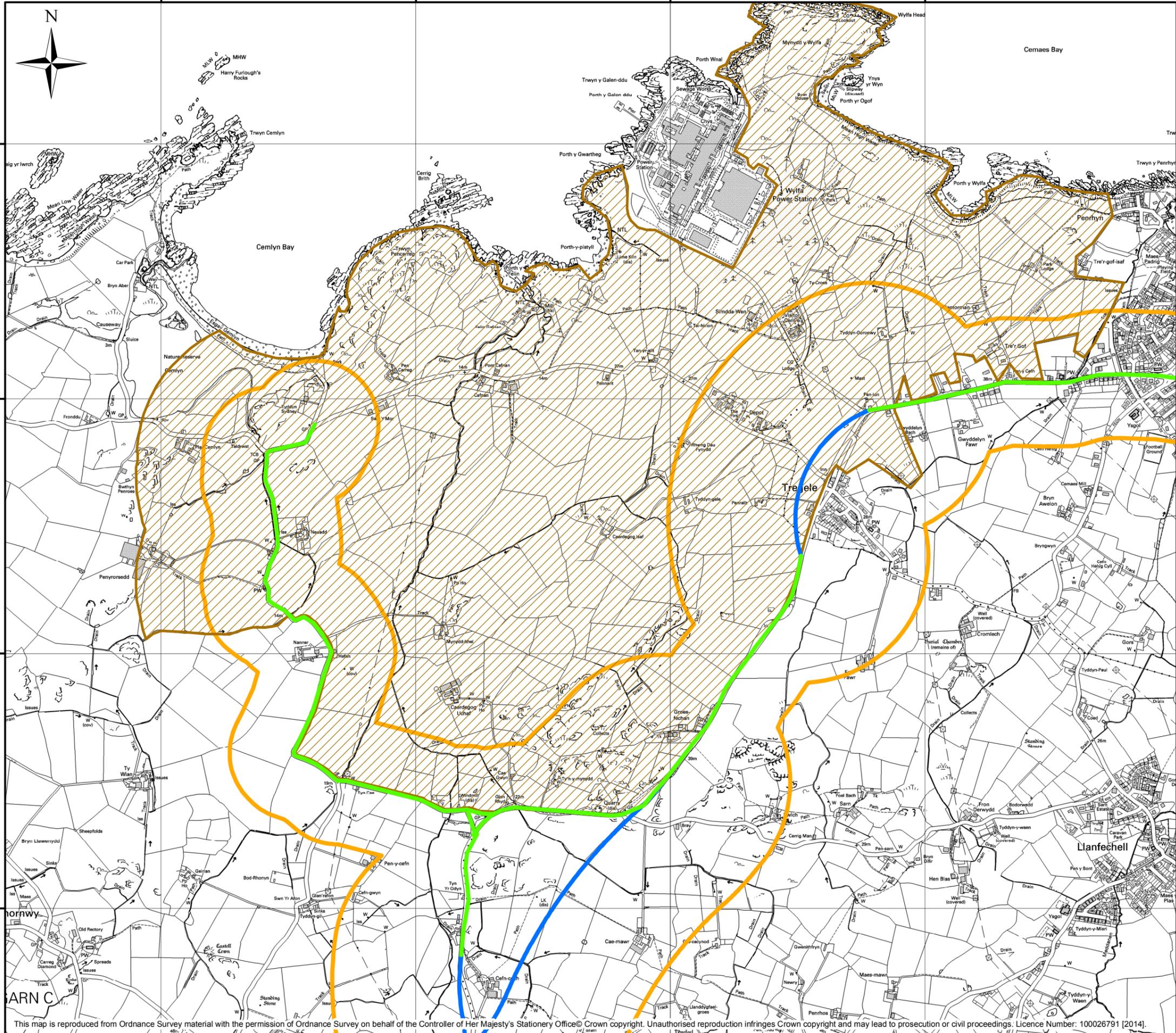
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

233000

234000

235000

236000



Legend

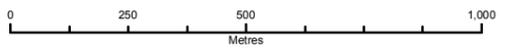
-  Proposed online sections
-  Proposed offline sections
-  Jacobs area of responsibility
-  250m (online) - 500m (offline)

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House
Fitzalan Road
Cardiff
CF24 0EL
Tel +44 (0) 2920 467800
Fax +44 (0) 2920 467801
Web www.mottmac.com

Title: **A5025 Road Improvements Contract
Otter & Water Vole Survey Areas**
Page 5 of 7



Drawn	TC	Checked	LH
Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale:	1:15,000 @ A3
Drawing No: MMD-320831-L-DR-XX-3341			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].

233000

234000

235000

236000

CONTACT US:

If you have any questions or feedback regarding the Wylfa Newydd Project you can contact us on our dedicated Wylfa Newydd freephone hotline and email address, by calling on **0800 954 9516** or emailing **wylfaenquiries@horizonnuclearpower.com**

.....
Horizon Nuclear Power
Sunrise House
1420 Charlton Court
Gloucester Business Park
Gloucester, GL3 4AE

T +44 (0)1242 508508

www.horizonnuclearpower.com

All material in this document is, unless specified otherwise, copyright of Horizon Nuclear Power Wylfa Ltd and may not be reproduced without prior permission. Any unauthorised use or copying of the material may violate trademark, copyright and other proprietary rights and civil and criminal statutes. The material shall not be used in any manner that infringes any trademark, copyright or other proprietary rights and Horizon Nuclear Power Wylfa Ltd reserves all rights with respect to such unauthorised use.