



Wylfa Newydd Project

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Highway Improvements App G9-8 - A5025
Route Improvement Contract EIA: Reptile
Survey Results

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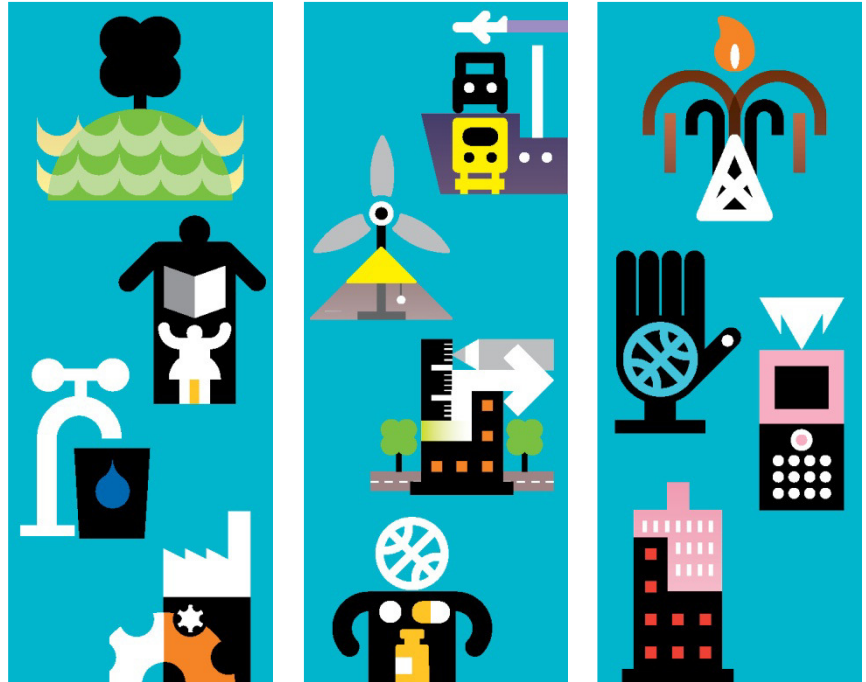
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A5025 Route Improvement Contract EIA

Reptile Survey Results

May 2014

Horizon Nuclear Power

A5025 Route Improvement Contract EIA

Reptile Survey Results

May 2014

Horizon Nuclear Power

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1 Introduction

1.1 A5025 Background

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

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

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

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

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

The following areas for possible offline route improvements are:

- The Valley crossroads which may require bypassing;
- Llanfachraeth where a bypass to the east of the village is being considered;
- Llanfaethlu where bends at the Black Lion Inn and Llanfaethlu may need to be straightened;
- Cefn Coch where the existing route between Bod-Hedd and Cefn Coch may need to be straightened;
- 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.

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

1.2 Ecology Background

Extended Phase 1 Habitat Surveys were carried out by Mott MacDonald between August 2011 and March 2014. To fully utilise land access, protected species data was gathered simultaneously during the initial habitat surveys. This included recording when habitat was deemed suitable for reptiles. Using the schedule of proposed works for the time, sites likely to become isolated due to road improvements (predominantly off line improvement locations) were highlighted as high risk areas where further surveys would be expected. Presence / absence surveys for reptiles commenced in 2013 during the appropriate survey season.

1.2.1 Reptile Ecology Background

There are six native species of reptiles in the United Kingdom (UK), four of these are wide spread species and are detailed below:

- Slow-worm (*Anguis fragilis*);
- Common Lizard (*Zootoca vivipara*);
- Grass snake (*Natrix natrix*); and
- Adder (*Vipera berus*).

There are two rarer species of reptiles occurring within the UK but in restricted populations which are:

- Sand lizard (*Lacerta agilis*); and
- Smooth snake (*Coronella austriaca*).

Biological records indicated that smooth snakes are absent from the Isle of Anglesey, however records show that sand lizards are known to occur on the island.

1.3 Scope of the Report

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

The objectives of this report are as follows:

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

1.4 Survey Limitations

It was not possible to survey some areas within the survey extent; this was largely due to limited and/or irregular land access. This had implications for timing and duration of the surveys, whereby the Extended Phase 1 surveys were conducted over a longer period of time and subsequently covered a spectrum of optimal and non-optimal time for assessment. Adverse weather conditions also had a negative effect on the survey timings in 2013, resulting in delays. Subsequently a number of the reptile surveys were carried out towards the end of the optimal survey season and further reptile surveys were not completed in 2013.

2 Methodology

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

2.1 Desk Study

The aims of the desk study with specific regards to reptiles was to review the presence of statutory and non-statutory designated sites within a 2 km buffer – these may be designated for the presence of reptiles (namely sand lizard in this instance) or may provide habitat suitable for reptiles within the surrounding area. In addition the desk study allowed a review any reptile records within 2 km of the road and to identify any connecting habitats and more importantly, any isolated areas or areas which were expected to become isolated from the proposed works.

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

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

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

2.2 Field Surveys

Extended Phase 1 Habitat Surveys were carried out on land up to 250 m from the boundary of the A5025. During these surveys the land was assessed for its suitability for reptiles, and where appropriate Habitat Suitability Assessment (HSA) surveys were conducted. Based on the findings of the initial assessments, further surveys were recommended and presence/absence surveys were commenced in line with the methodologies defined above.

2.2.1 Habitat Suitability Assessment Surveys

During the Phase 1 Habitat Surveys, a HSA was undertaken in any areas highlighted as having potential habitats for reptiles. The purpose of the HSA was to establish which reptiles, were likely to occur in the area, and if the habitats were “poor”, “good” or “exceptional” from uniform sites. The survey recorded the following details to make an assessment:

- Location in relation to species range;
- Vegetation structure;
- Insolation (Sun exposure);
- Aspect;
- Topography;
- Surface geology;
- Connectivity to nearby quality habitat;
- Prey abundance;
- Refuge opportunity;
- Hibernation habitat potential;
- Disturbance; and
- Egg-laying site potential (grass snake and sand lizard only).

2.2.2 Presence / Absence Surveys

If the finding of the HSA survey identified suitable habitat and the proposed development was deemed to have an impact on the reptiles within that habitat, an Artificial Refuge Survey (ARS) would be undertaken. The aim of this survey is to achieve a population estimate (peak count) of the reptiles in these areas. This survey technique utilises Artificial Cover Objects (ACO's) such as roofing felt or corrugated iron placed (commonly known as refugia) within areas deemed to be suitable habitat as identified in the HSA. These materials warm up in the sun providing attractive basking areas for reptiles in addition to acting as suitable cover for reptiles and amphibians (herptofauna).

Once the ACO have been placed, a minimum of five inspections should be undertaken under suitable weather conditions and at suitable times of day (as detailed below). The visits should be spread over the periods from April to late May and/or mid-August to late September. Following best practice guidelines, refugia should be placed out at least 2 weeks prior to the commencement of refugia checks. This will allow a ‘settling-in’ period in order to maximise the potential success of the surveys. Approximately 50 refuges per hectare would be placed at each suitable site along the development area.

The most appropriate time within which to survey are dependent upon temperature, sunshine and rainfall. Generally, in these months the best times of day are between 08:30 and 11:00 and between 16:00 and 18:30. Very early or later in the year, the middle part of the day will be more suitable for reptiles, whereas during the hotter parts of the year, reptiles will be found basking earlier in the day. Between June and mid-August there can be a very narrow ‘window’ for inspections being early in the morning, and again in the later, cooler part of the day within which either survey is effective.

When the air temperature exceeds 18 °C many reptiles may not be found basking at all and surveys, particularly using refuges, will be unreliable. The optimum temperature range for surveys to be the most effective when the air temperature is between 9 and 18 °C.

Where it is not possible to undertake all of the visits within one or other of these seasonal 'windows', then the minimum number of visits needs to be extended to ten (all of which still need to be carried out under suitable conditions between April and September).

3 Results

The Extended Phase 1 Habitat Survey recorded a multitude of habitats that were deemed suitable for use by reptiles that were in close proximity to the road scheme.

3.1 Species Records

The following reptile records from Cofnod have been provided within the last ten years. All records are located at the village of Cemlyn within the North West region:

- 35 records of adder; and
- 22 records of common lizard.

3.2 Further Surveys

The land surrounding the A5025 was 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, scrub, hedgerows, rivers, streams and ditches. A few rivers transect and run adjacent to the scheme at multiple locations.

This habitat provides potential areas suitable for common reptiles and therefore reptiles would be expected to be present within the footprint of the works.

Along the A5025 road verges, in particular where there is scrub and clawdd walls present, reptiles would be at risk of direct harm during the construction phase. In addition, where land becomes isolated through the actions of the proposed works (predominantly from offline works), reptiles would also be at risk of isolation and habitat fragmentation where new bypasses are constructed. Subsequently presence/absence surveys were recommended at areas where new bypasses were proposed.

The following detail outlines the progress of these surveys to date.

3.3 Proposed Bypasses

The following locations were identified as having potentially isolating works proposed. Reptile surveys would be expected at these locations:

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

A map showing these proposed bypass locations can be found within Appendix A.

3.4 Reptile Surveys To-Date

The following table below outlines the reptile surveys carried out to-date. A map reference has also been included for ease of identification, and these maps are located within Appendix B.

Table 3.1: Reptile Survey Results

Plot Number (MM reference)	Map reference	5 Reptile surveys completed (✓ or x)	Result (+ve or -ve)
32	MMD-320831-L-DR-XX-3395	✓	-ve
60	MMD-320831-L-DR-XX-3397	✓	-ve
77	MMD-320831-L-DR-XX-3396	✓	+ve
80	MMD-320831-L-DR-XX-3396	✓	-ve
81	MMD-320831-L-DR-XX-3396	✓	-ve
146	MMD-320831-L-DR-XX-3397	✓	-ve

4 Recommendations

4.1 Further Reptile Surveys – Offline Works

To date six sites have had completed reptile surveys. All surveys were conducted in September 2013 due to access and permission issues. Further surveys are recommended to ensure all impacted land within the proposed bypass locations have reptile surveys undertaken. Surveys should be conducted over the periods from April to late May and/or mid-August to late September following the survey methodologies outlined in Chapter 2.

Where reptiles are found to be present, a strict method statement should be provided to ensure the safe removal of all reptiles from within the working footprint. Reptile translocations would not be expected at this stage due to the extensive habitat surrounding the proposed works. If appropriate, phased clearance of each site should be conducted in advance of the works and the areas safe guarded against any reptiles re-entering the sites.

Updated recommendations would be expected once all surveys have been carried out.

4.2 Reptile Method Statement

As detailed within Chapter 3, reptiles would be expected both within the construction footprint and within the immediate surrounding landscape. It would therefore be recommended that in addition to reptile surveys being carried out for the offline works, all other works should proceed under a reptile method statement. In particular this should provide sensitive working procedures in areas where any vegetation clearance or excavation works are expected. Clearance of any such areas is likely to be restricted to seasonal constraints.

5 References

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

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

Cofnod - North Wales Environmental Information Service;

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

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

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

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

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

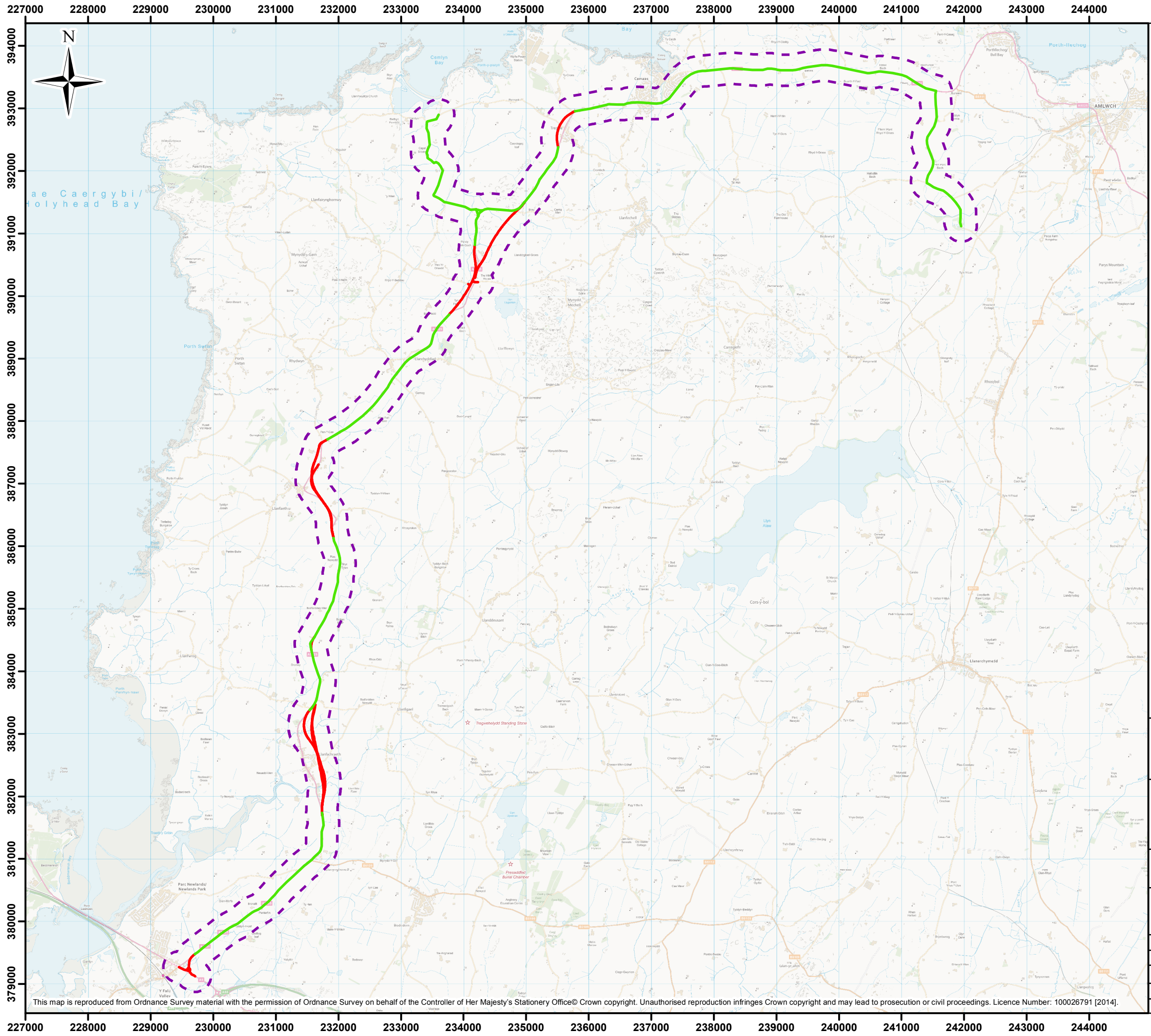
Joint Nature Conservation Council (JNCC) website: <http://jncc.defra.gov.uk/>; and

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

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Appendix A. A5025 Online and Offline Works



Legend

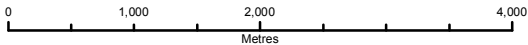
- Proposed online sections
- Proposed offline sections
- Indicative site extent - 250m buffer

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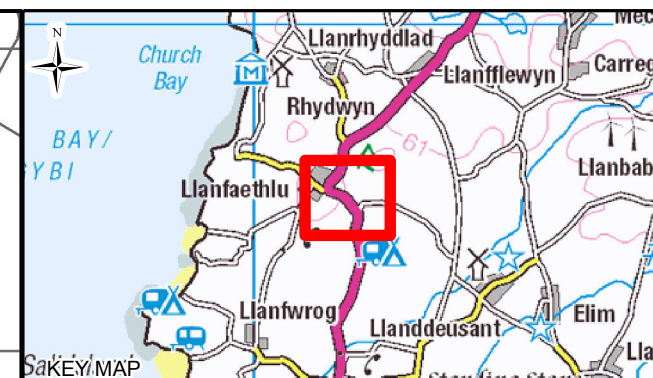
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Title: A5025 Road Improvements Contract
Proposed Extent of Scheme - Online and Offline Sections








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Approved	ECP	Rev No	P1
Date:	14/05/2014	Scale: 1:60,000	@ A3
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Appendix B. Maps of Reptile Survey Results



Legend

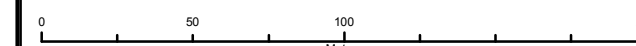
-  Indicative site extent
-  ¹ Reptile refugia location
-  ¹ Reptile refugia location - reptiles present
-  Surveys complete - reptiles absent
-  Surveys complete - reptiles discovered
- CL** Common Lizard
- 1** Mott MacDonald field reference

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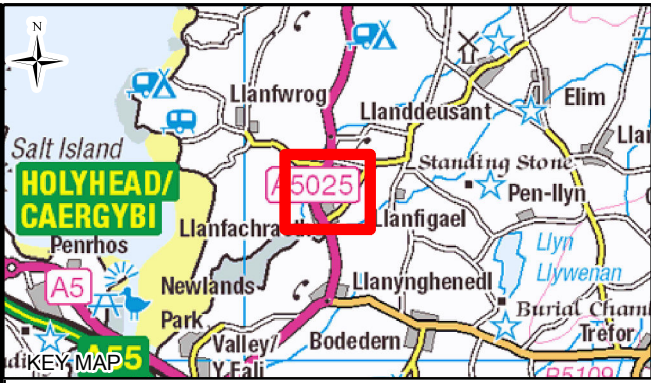
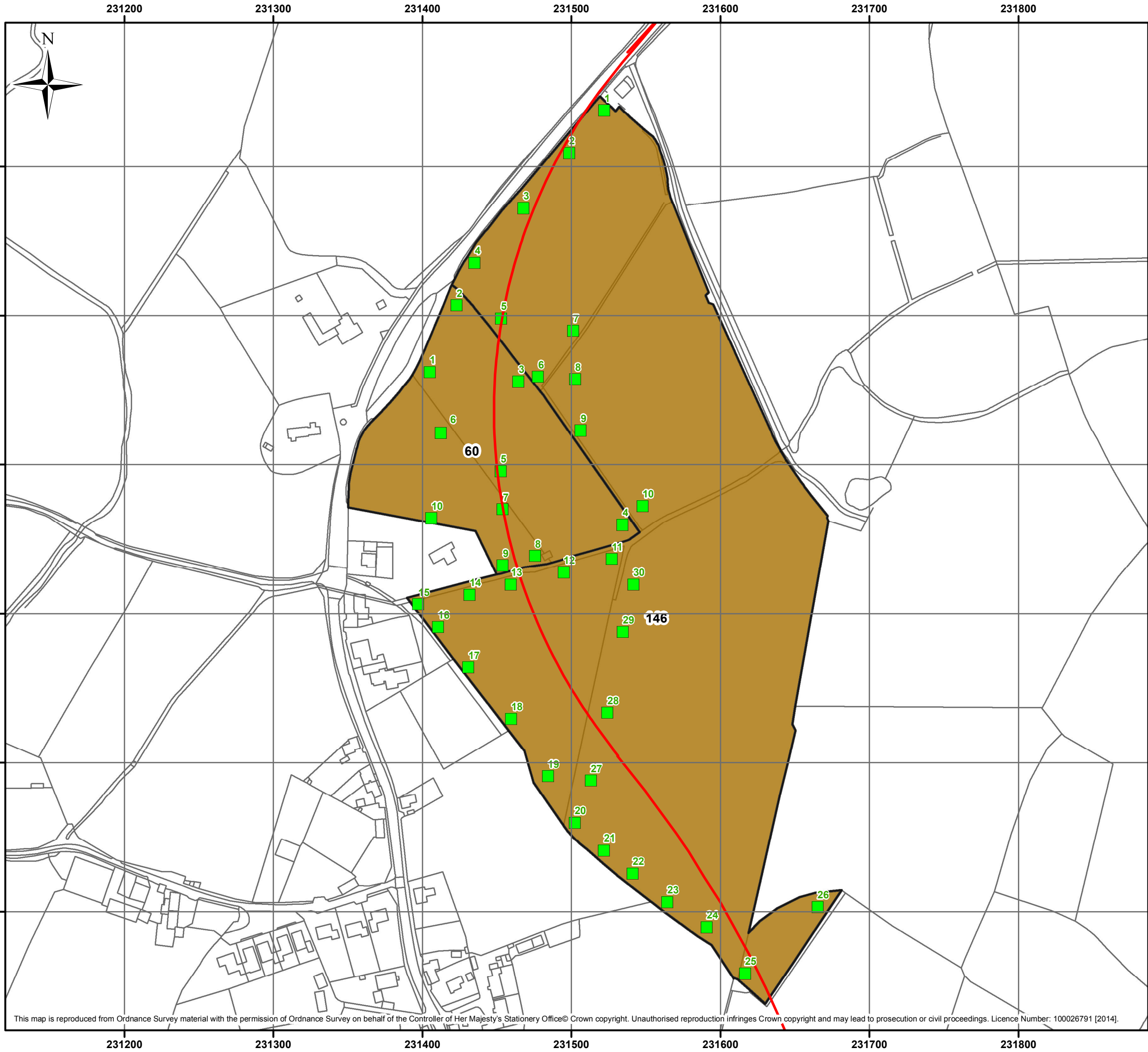
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Title: **A5025 Road Improvements Contract**
Reptiles Survey Areas
Page 2 of 3



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Date:	29/04/2014	Scale: 1:2,500	@ A3
Drawing No: MMD-320831-L-DR-XX-3396			

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Legend

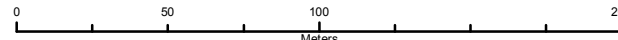
- Indicative site extent
- 1 Reptile refugia location
- 1 Reptile refugia location - reptiles present
- Surveys complete - reptiles absent
- Surveys complete - reptiles discovered
- CL Common Lizard
- 1 Mott MacDonald field reference

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Title: A5025 Road Improvements Contract
Reptiles Survey Areas
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Drawing No: MMD-320831-L-DR-XX-3397			