

A47/A11 Thickthorn Junction

Scheme Number: TR010037

Volume 6

6.3 Environmental Statement Appendices **Appendix 8.5 – Reptile Survey Report**

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

March 2021

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulations 2009**

The A47/A11 Thickthorn Junction
Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT APPENDICES

Appendix 8.5 – Reptile Survey Report

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1. Introduction

- 1.1.1. Sweco UK Ltd. was commissioned to undertake a reptile survey for the A47/A11 Thickthorn Junction. Full details on the study area can be found in Section 1.2. This report is to inform the Environmental Statement (ES) Chapter 8, Biodiversity **(TR010037/APP/6.1)** for the A47/A11 Thickthorn Junction.
- 1.1.2. The scheme improvements will:
- Improve accessibility to and around the region, reducing congestion and delays so encouraging more reliable journey times.
 - Improve safety performance for all road users – drivers, public transport users, cyclists, horse riders and pedestrians.
 - Provide alternative access to local roads.
 - Protect the environment by minimising adverse impacts and, where possible, deliver benefits.
 - Support economic growth in the Peterborough, Norwich, Cambridge and Great Yarmouth areas by improving overall road capacity.
- 1.1.3. This report details the results of the reptile surveys undertaken at Thickthorn Junction from July to September 2020.
- 1.1.4. This detailed baseline report provides a summary of the results of the surveys carried out, the impacts of the proposed development and proposals for mitigation which are addressed in Section 5.3.

1.2. Scheme description

- 1.2.1. A47/A11 Thickthorn Junction is located on the south-western edge of Norwich, at national grid reference TG 18424 05483, and provides access to the A47 via the A11 for Eaton, Cringleford, Hethersett and Wymondham.
- 1.2.2. The proposed A47/A11 Thickthorn junction improvements aim to:
- create a new connector road from the A11 to the A47
 - improve the existing Thickthorn Junction roundabout
 - create a new link road between Cantley Lane South and the B1172 Norwich Road
 - create a new Cantley Lane Footbridge (Cringleford) across the A47 for walkers, cyclists and horse riders
- 1.2.3. The study area comprises of the proposed route of the new road layout, with a buffer zone of 50m. The buffer is primarily the existing A47 and agricultural fields

with associated hedgerows, stands of trees, small woodlands, farm buildings and residential properties.

2. Ecological background

2.1. Desk study

- 2.1.1. A desk study was undertaken in 2017 including the purchase of data from Norfolk Biodiversity Information Service (NBIS) which returned no records of reptiles within the 2km study area.

2.2. Phase 1 habitat surveys

- 2.2.1. A phase 1 habitat survey was undertaken in 2016 (and updated in 2017) within 100m of the outermost route options identified. Within this survey habitats suitable for supporting reptiles were later identified within 50m of the final route option during 2017.

2.3. Phase 2 habitat surveys

- 2.3.1. In 2017, a suite of reptile surveys were undertaken at the site between April and August 2017 (inclusive). All habitats within 50m of the final route option were assessed for their suitability to support reptiles.
- 2.3.2. Four grass snakes *Natrix natrix* were noted in total throughout the survey, and a single common lizard *Zootoca viviparia* was recorded in September 2017. In addition, common lizards were reported by the owner in the garden of a property along Cantley Lane South in 2016 (TG 18322 04847).

2.4. Legislation

Wildlife and Countryside Act (WCA) 1981 (as amended)

- 2.4.1. Common lizard, slow worm, adder and grass snake are native reptile species and are protected under Schedule 5, Section 9.1 and 9.5(a)(b) of the WCA 1981 (as amended), making it an offence to:
- Intentionally kill or injure a reptile,
 - Trade or sell a reptile.
- 2.4.2. Full protection of Schedule 5, Section 9 is afforded the sand lizard *Lacerta agilis* and the smooth snake *Coronella austriaca*, for which it is an offence to:
- Intentionally kill, injure or take (capture) a sand lizard or smooth snake,
 - Intentionally disturb a sand lizard or smooth snake while it is occupying a place used for shelter or protection,
 - Intentionally destroy a place used by a sand lizard or a smooth snake for shelter or protection.

The Conservation of Habitats and Species Regulations (CHSR) 2017

2.4.3. The sand lizard and smooth snake are European Protected Species (EPS) afforded protection under Section 2 of the CHSR 2017 Regulation 42.

2.4.4. Under the CHSR, it is an offence if you:

- Deliberately capture, injure or kill any wild animal of a EPS,
- Deliberately disturb wild animals of any such species,
- Deliberately take or destroy the eggs of such an animal,
- Damage or destroy a breeding site or resting place of such an animal.

2.4.5. Disturbance is defined as that which is likely:

1. To impair their ability –
 - to survive, to breed or reproduce, or to rear or nurture their young
 - in the case of animals of a hibernating or migratory species, to hibernate or migrate
2. To affect significantly the local distribution or abundance of the species to which they belong.

Norfolk Biodiversity Action Plan (BAP)

2.4.6. There are no reptile species listed as Local Priority Species (LPS) by the Norfolk Biodiversity Partnership (Norfolk Biodiversity Partnership, undated).

Mistreatment

2.4.7. The Animal Welfare Act 2006 came into force in 2007 and places a duty of care on an individual responsible for an animal. The duty of care is placed on an individual to meet the welfare needs of the animal. The Act states that the following are an animal's welfare needs:

- A suitable environment,
- A suitable diet,
- The ability to exhibit normal behaviour patterns,
- Needs it has to be housed with, or apart from, other animals,
- Protection from pain, suffering, injury and disease.

2.4.8. Should mitigation such as capture and translocation of animals be required as a result of the development, the Animal Welfare Act 2006 would apply.

2.5. Aims and objectives

- 2.5.1. This survey and the report presented herein are intended as an update to the reptile survey undertaken in 2017 outlined in Section 2.3.1.
- 2.5.2. The aim of the survey is to establish the presence or likely absence of reptiles in the same study area as the locations previously surveyed, assess potential impacts of the scheme upon reptiles and provide recommendations for undertaking the scheme in compliance with relevant legislation regarding reptiles (Section 2.4).
- 2.5.3. The following elements of work were included in the reptile survey programme:
 - Field surveys, including one visit to place artificial refugia on site and seven subsequent visits undertaken in July, August and September 2020 to survey the refugia and site for reptiles.
- 2.5.4. Production of the ecological report, detailing the reptile survey results, implications of the scheme on reptiles and recommendations for mitigation.

3. Methodology

- 3.1.1. The locations of the reptile survey remain the same as the locations previously surveyed. The locations were originally determined based on the potential zone of influence over which the scheme may have ecological impacts upon each individual ecological receptor and previously identified habitat suitable for reptiles.
- 3.1.2. The survey was undertaken with reference to the best practice guidelines in Froglife Advice Sheet 10: Reptile Survey (Froglife, 1999) and the Herpetofauna Workers Manual (Gent and Gibson, 2003).
- 3.1.3. The survey utilised the following methodologies:
- The use of mats, further referred to as ‘artificial refugia’, which attract reptiles as a place of shelter from predation and disturbance, and as an aid to absorbing heat when basking.
 - Manual searches of placed artificial refugia on the study area.
 - Visual observations of all areas of the study area, including checking for signs of sloughed skin, burrows and egg laying.
- 3.1.4. A record was kept throughout the surveys noting the reptiles observed, including their species, number, gender and age. Amphibians and other protected or notable species observed during the survey visits were also recorded.
- 3.1.5. The population size was classified in accordance with Froglife Advice Sheet 10 (Table 1).

Table 1: Froglife Advice Sheet 10 used to classify reptile population size

	Low population score Score 1	Good population Score 2	Exceptional population Score 3
Adder	<5	5 – 10	>10
Grass Snake	<5	5 – 10	>10
Common lizard	<5	5 – 20	>20
Slow-worm	<5	5 – 20	>20

3.2. Refugia

- 3.2.1. In total 57 artificial refugia were placed on the study area, across four study areas (Annex A).
- 3.2.2. Artificial refugia was composed of roofing felt mats cut to approximately 50cm x 50cm. These were placed in suitable reptile habitat including rides through

grassland or scrub and road verge embankments. These areas provide basking habitat adjacent to areas of shelter and protection. It was not considered necessary to place artificial refugia in less optimal habitat around the study area as the survey aims to determine presence or likely absence only.

3.3. Survey timings, weather conditions and limitations

- 3.3.1. Reptiles are active between March and October (Froglife, 1999) and the seven survey visits were undertaken in July, August and September 2020.
- 3.3.2. Surveys timings focussed on the species most likely to be found at the study area: slow worm, grass snake, common lizard and adder. Sand lizard is associated with heathland and coastal sand dunes and smooth snake is associated with heathlands (Gent and Gibson, 2003). Therefore, it is considered unlikely these species are present on the study area due to the lack of suitable habitat to support them.
- 3.3.3. Froglife (1999) recommends surveying between temperatures of 9 to 18°C. Common lizard and slow worm will bask between 9 to 18°C, grass snake will bask between 12 to 20°C and adder will bask between 8 to 16°C (Gent and Gibson, 2003). Most surveys were undertaken within the recommended temperatures of 9 to 18°C (see Table 2 below). The temperature was 24°C during survey visit four, undertaken on 18 August 2020, and survey visit six, undertaken on 26 August 2020. Although this is higher than the recommended temperatures for surveying this is not considered a significant constraint as the other survey visits were undertaken within the recommended temperatures.
- 3.3.4. The recommended times for checking artificial refugia are between 08:30 – 11:00 and 16:00 – 18:30 in April, May and September, when it is considered conditions in these optimum months are best for basking (Froglife, 1999). As the reptile surveys were undertaken outside of the optimum months due to time constraints resulting from COVID-19, the time of some surveys also differ slightly from these recommended timings (see Table 2 below) in an effort to ensure the recommended temperatures for survey, 9 to 18°C (Froglife, 1999), were adhered to. The changes of timings are not considered a significant constraint.
- 3.3.5. The surveys were undertaken by [REDACTED] (Consultant Ecologist, Sweco), [REDACTED] (Ecology Field Assistant, Sweco), [REDACTED] (Ecology Field Assistant, Sweco), [REDACTED] (Ecologist, MLM), [REDACTED] [REDACTED] MCIEEM (Ecologist, MLM), [REDACTED] GradCIEEM (Ecologist, MLM) and [REDACTED] (Graduate Ecologist, MLM).

- 3.3.6. The results of this survey will remain valid until September 2022. Beyond this period, if works have not commenced, it is recommended that a new review of the ecological conditions is undertaken.

4. Results

- 4.1.1. The surveys comprised of eight visits, one visit to place out the artificial refugia, undertaken on 1 July 2020, and seven subsequent visits to manually check the artificial refugia and undertake visual observations of the study area. These visits were undertaken on 16 July 2020, 22 July 2020, 29 July 2020, 18 August 2020, 24 August 2020, 26 August 2020 and 1 September 2020.
- 4.1.2. The date of the survey, time of the survey and weather conditions are shown in Table 2 below.

Table 2 : Survey dates, times and weather conditions

Visit Number	Date	Start and Finish Time	Weather Conditions	Temperature (°C) at the start and end of the survey
Artificial refugia placement	1 July 2020			
1	16 July 2020	15:00 – 17:30	Cloud cover – 80% Wind (Beaufort) – 0	20 – 19
2	22 July 2020	10:45 – 12:45	Cloud cover – 90% Wind (Beaufort) – 0	19 – 19
3	29 July 2020	11:00 – 12:40	Cloud cover – 75% Wind (Beaufort) – 2	18 – 19
4	18 August 2020	17:00 – 19:30	Cloud cover – 30% Wind (Beaufort) – 2	24 – 22
5	24 August 2020	17:00 – 19:00	Cloud cover – 15% Wind (Beaufort) – 2	20 – 19
6	26 August 2020	17:45 – 19:30	Cloud cover – 20% Wind (Beaufort) – 1	24 – 23
7	1 September 2020	12:30 – 14:30	Cloud cover – 1% Wind (Beaufort) – 1	18 – 20

- 4.1.3. One juvenile grass snake (gender could not be identified) (approximately 40cm in length) and one adder (gender could not be identified) (approximately 30cm in length) were recorded during survey visit one. Both were recorded under Mat 50 which is located approximately 7m from the A47 (see Annex A).
- 4.1.4. During survey visit two, one juvenile male grass snake at approximately 25cm in length was recorded under Mat 50 and one juvenile female grass snake at approximately 40cm in length was recorded under Mat 51. A male common lizard at approximately 15cm in length was recorded on top of an artificial refugia (Mat 40) (see Annex A).

- 4.1.5. During survey visit three, one juvenile grass snake was recorded under Mat 50 and one grass snake was recorded under Mat 51. The grass snake under Mat 51 was slightly larger than the one seen under Mat 50.
- 4.1.6. No reptiles were recorded during site visit four, visit five or visit six.
- 4.1.7. One common lizard was recorded under Mat 36 during survey visit seven. This was the last survey visit.

5. Impact assessment and requirements

5.1. Reptile status at the site

- 5.1.1. To summarise the total number of reptile recordings during the surveys was:
- One adder
 - Two common lizards
 - Five juvenile grass snakes (maximum of two in any one survey and they were all recorded in the same area).
- 5.1.2. The reptile observations recorded during the survey (see Sections 4.1.3 – 4.1.7) suggest a low population of grass snake, common lizard and adder within the study area.

5.2. Impact assessment

- 5.2.1. Anticipated impacts of the Proposed Scheme upon common and widespread reptiles include the temporary loss of habitats including roadside verges and field margins. Some permanent loss of potential reptile habitat will occur as woodland and arable field margins and their associated habitats will be lost in areas.
- 5.2.2. The construction phase also has the potential to adversely impact upon reptiles through the risk of incidental mortality. De-vegetation undertaken as part of advance mobilisation works and general works activities throughout the construction phase may, if undertaken without appropriate mitigation, result in incidental injury or death of reptiles in the study area.

5.3. Mitigation measures

- 5.3.1. Vegetation clearance should take place during the reptile active season (from March to October inclusive) in order to prevent any hibernating reptiles being killed or injured which would constitute an offence (see Section 2.4).
- 5.3.2. An Ecological Clerk of Works (ECoW) should be present during vegetation clearance to deliver a toolbox talk regarding relevant legislation, the risk of finding reptiles on site and reptile identification. Vegetation within reptile habitat should be directionally strimmed to a height of approximately 10 – 15cm to allow the ECoW to undertake a fingertip search, removing any reptiles (or allowing reptiles to move away from the works area themselves), or other animals found, offsite to a place of safety. Vegetation should then be strimmed to ground level and any areas of potential refugia on the study area should be subject to a destructive search by the ECoW and removed from the study area. The locations

of where the reptiles will be moved to will be provided in the Environmental Management Plan (EMP) **(TR010037/APP/7.4)**.

5.3.3. The following general mitigation measures should be employed on the study area throughout the site:

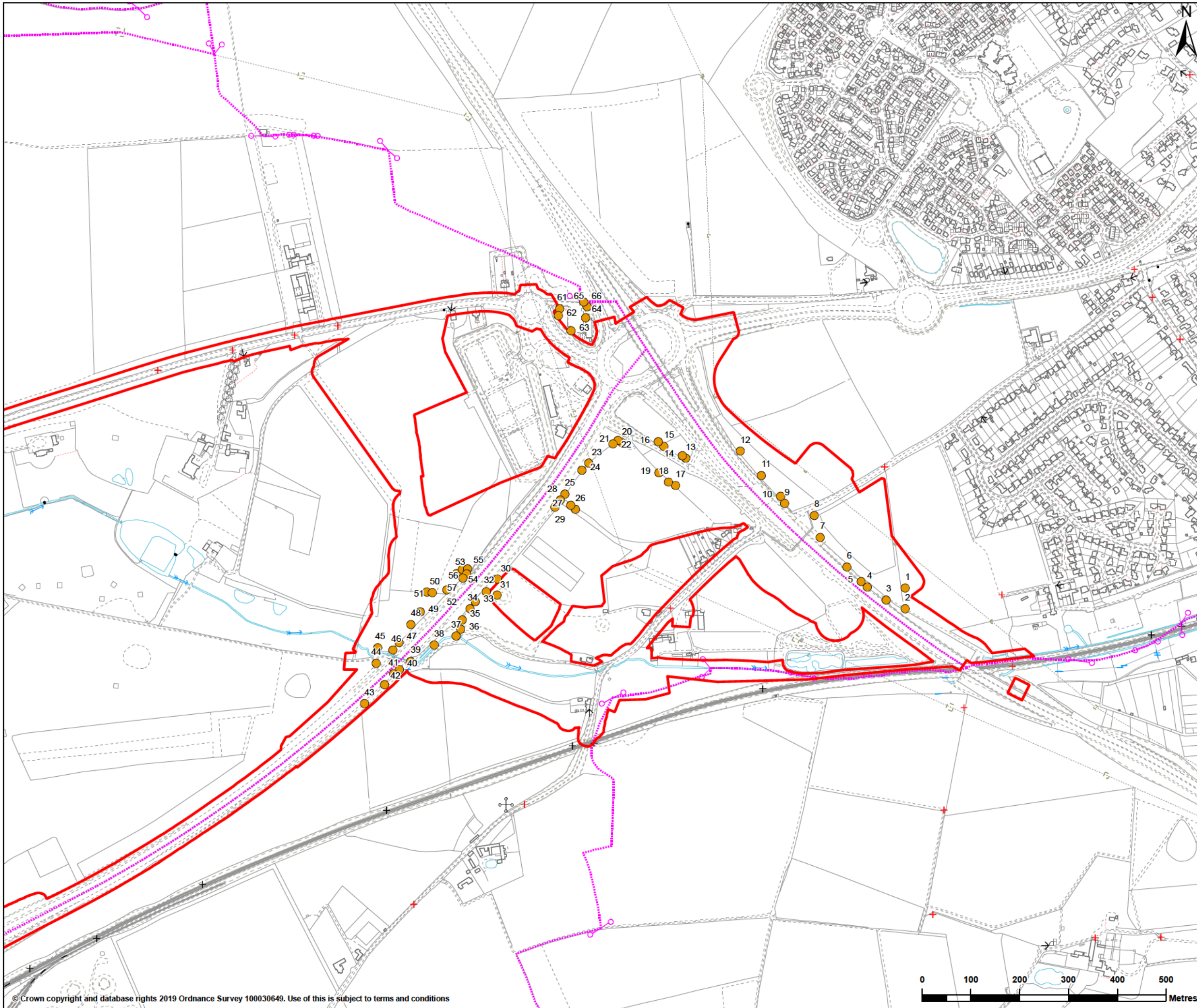
- In the event a reptile is found in the study area during works, works in the vicinity of the reptile should cease until the reptile has moved out of the works area.
- Trenches and excavations should be covered overnight to prevent injury/death of reptiles. If this is not possible, a means of escape, such as a ramp, should be inserted into the trench or excavation to allow animals to exit.
- The site should be kept tidy at all time. Materials should not be left/stored in piles/heaps on the ground but should be stored in skips or raised off the ground on pallets to prevent creating any potential refugia on site for reptiles.
- Pollution prevention methods will be written into the EMP and should be employed during and post construction. Guidance on best practice in relation to pollution prevention and water management is set out in Construction Industry research and Information Associated (CIRIA) Guidelines ((Soubry (2001), Murnane *et al.* (2006), Charles and Edwards (2015)), and the Environment Agency's approach to groundwater protection (Environment Agency, 2018) and groundwater protection guides¹, as required under the Water Framework Directive.

¹ Available at - <https://www.gov.uk/government/collections/groundwater-protection>

6. References

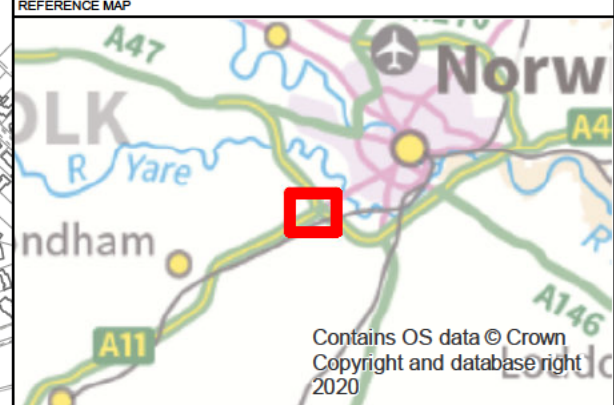
- 6.1.1. Charles, P. and Edwards, P. (2015) Environmental good practice on site guide (Fourth Edition). CIRIA C741.
- 6.1.2. Environment Agency, (2018) The Environment Agency's approach to groundwater protection, [Online]
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692989/Environment-Agency-approach-to-groundwater-protection.pdf [Accessed Sept 2020]
- 6.1.3. Froglife (1999). Froglife Advice Sheet 10 'Reptile Survey – an introduction to planning, conducting and interpreting surveys for snake and lizard conservation'. Froglife.
- 6.1.4. Gent, T. and Gibson, S. (2003) Herpetofauna Workers' Manual. JNCC, Peterborough.
- 6.1.5. Murnane, E., Heap, A. and Swain, A. (2006) Control of water pollution from linear construction projects. Technical guidance. CIRIA C543.
- 6.1.6. Soubry, M. (2001) Bridge Detailing Guide. CIRIA C543.

Annex A. Study site and artificial refugia locations



LEGEND

- DCO boundary - Nov 2020
- Reptile matt locations



REV	DATE	LEGEND UPDATE	AC	LW	DW
		REVISION NOTE	ORG	CHK D	APPD

DESIGNER

SWECO

CONTRACTOR

GallifordTry

CLIENT

**highways
england**

PROJECT TITLE

A47/A11 THICKTHORN JUNCTION

PROJECT STAGE

PCF STAGE 3

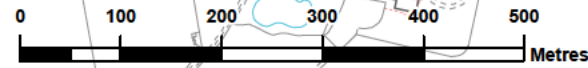
DRAWING TITLE

**ANNEX A
STUDY SITE AND ARTIFICIAL
REFUGIA LOCATIONS**

SUITABILITY

FOR INFORMATION

SHEET SIZE	SCALE	STATUS
A3	1:7,500	S0



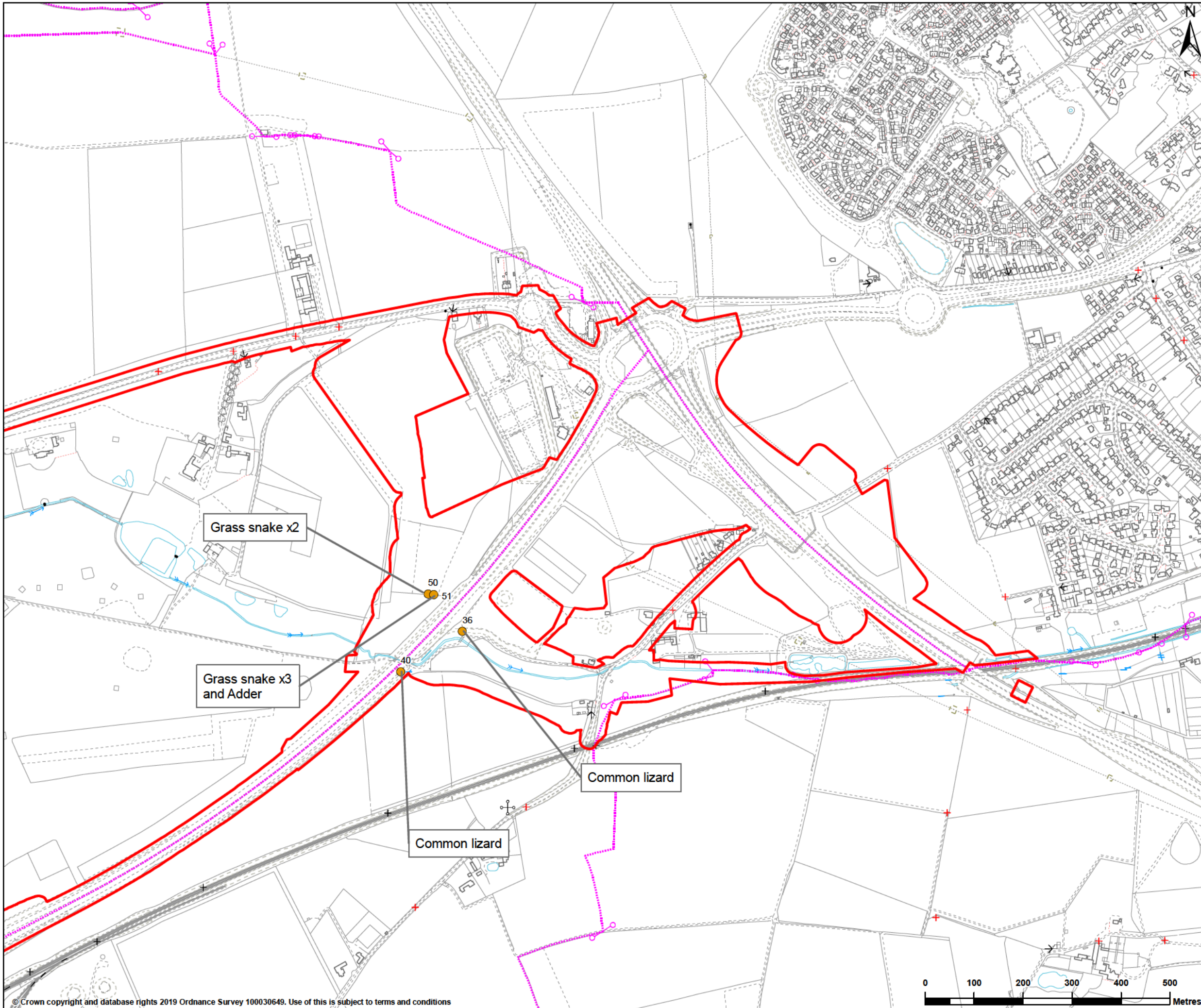
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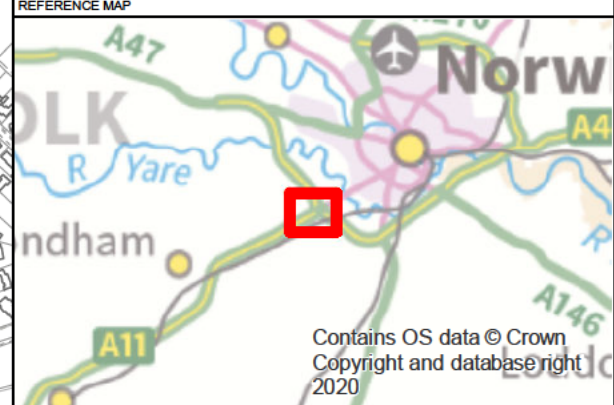
HE551492-GTY-EBD-000-DR-LB-30005

Annex B. Survey results map



LEGEND

- DCO boundary - Aug 2020
- Reptile matt locations



REV	DATE	LEGEND UPDATE	AC	LW	DW
		REVISION NOTE	ORG	CHK D	APPD

DESIGNER

SWECO

CONTRACTOR

GallifordTry

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**highways
england**

PROJECT TITLE

A47/A11 THICKTHORN JUNCTION

PROJECT STAGE

PCF STAGE 3

DRAWING TITLE

**ANNEX B
REPTILE SURVEY RESULTS**

SUITABILITY

FOR INFORMATION

SHEET SIZE	SCALE	STATUS
A3	1:7,500	S0

DRAWING NUMBER

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