



Ashfield Land Management and Gazeley GLP Northampton s.à.r.l

# Annex F: Reptile Survey Report

Rail Central

855950

FEBRUARY 2018

**RSK**

## RSK GENERAL NOTES

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**Client:** Ashfield Land Management Limited and Gazeley GLP Northampton s.à.r.l

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK.

# CONTENTS

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<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>1 INTRODUCTION .....</b>	<b>2</b>
Structure of this Report .....	2
<b>2 METHODS.....</b>	<b>3</b>
Background Data Search.....	3
Habitat Assessment .....	3
Refuge Surveys .....	3
Assumptions and Limitations .....	5
Population Estimates .....	5
<b>3 RESULTS – MAIN SRFI SITE .....</b>	<b>6</b>
Background Data Search.....	6
Habitat Assessment .....	6
Refuge Surveys .....	6
<b>4 RESULTS – JUNCTION 15A SITE.....</b>	<b>8</b>
Background Data Search.....	8
Habitat Assessment .....	8
Refuge Surveys .....	8
<b>5 RESULTS – OTHER MINOR HIGHWAY WORKS.....</b>	<b>10</b>
<b>6 EVALUATION AND CONCLUSIONS.....</b>	<b>11</b>
Reptiles .....	11
Potential Impacts .....	11
Mitigation and Conclusions.....	11
<b>7 REFERENCES .....</b>	<b>13</b>
 <b>APPENDICES</b>	
<b>APPENDIX A: LEGISLATION.....</b>	<b>14</b>
<b>APPENDIX B: FIGURES .....</b>	<b>15</b>

## EXECUTIVE SUMMARY

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1. This report presents the results of reptile surveys carried out in 2016 in connection with a possible future rail development project on land south of Milton Malsor, Northamptonshire (Ordnance Survey Grid reference: SP 733 544) (the Main SRFI Site), at the Junction 15a Site, and Other Minor Junction Works.
2. A Preliminary Ecological Appraisal in March 2016 identified habitat suitable for reptiles in various areas across the Main SRFI Site and Junction 15a Site. A background data search indicated that all four common species of reptile have been recorded on or within 5km of the Potential Development Area (PDA).
3. A presence-absence survey which followed best practice guidelines was carried out at the Main SRFI Site between May and September 2016, during which no reptiles were found.
4. A presence-absence survey which followed best practice guidelines was carried out at Junction 15a site during September 2017, during which no reptiles were found.
5. Despite there being suitable habitat in several locations across both sites, no reptiles were found during any of the seven survey visits with the methods used. However, anecdotal sightings of Grass Snake (a single individual) on the Main SRFI Site and at the Junction 15a site (a single individual) during other site surveys highlight that the that numbers are too low to have been detected, and the population has therefore been described as 'Low'.
6. Common toad (*Bufo bufo*), a species listed in the *NERC Act (2006)*, was recorded during the population estimate surveys at both the main SRFI site and the Junction 15a site.
7. Any works involving vegetation clearance or topsoil removal should be carried out under a method statement with supervision by a suitably qualified ecologist. An ecologist should be consulted during the detailed design stage in order to ensure that the layout of the development (particularly any associated landscaping) is compliant with the requirements for reptile species.

# 1 INTRODUCTION

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## Purpose of this Report

This annex presents the results of reptile surveys carried out in connection with a possible future rail development project on land south of Milton Malsor, Northamptonshire (Ordnance Survey Grid reference: SP 733 544)(*Figure F1.1*), in conjunction with improvement works at Junction 15a and Junction 15 and Tove (*Figure F1.2*). RSK carried out the surveys at the Main SRFI Site during May, June and September 2016 and at Junction 15a in September 2017.

During the Preliminary Ecological Appraisal (PEA) suitable habitat was identified, comprising rough grassland and field margins in various locations across the main SRFI site as illustrated in *Figure F2.1*. Presence-absence surveys of areas suitable for reptiles were required, first to determine whether the proposals could affect reptiles, and second to inform a mitigation strategy to reduce any potential impacts to non-significant levels.

## Structure of this Report

The remainder of the report is structured as follows:

- *Section 2* describes the survey methods;
- *Section 3,4 & 5* summarises the results;
- *Section 6* details the evaluations and conclusions; and
- *Section 7* lists the documents referenced in this report

*Appendix A* provides the relevant legislation; and

*Appendix B* provides the figures

## 2 METHODS

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### Background Data Search

A search was made for reference materials relating to the presence of reptiles, on and within 2km of the PDA. The results of this are presented in *Appendix 16, Annex A*.

### Habitat Assessment

The PDA was assessed for reptiles, with particular attention to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (e.g. rough grassland and scrub).

The site was assessed for its suitability for each of the four common reptile species. Specific habitat requirements differ between species. Common lizards (*Lacerta vivipara*) use a variety of habitats from woodland glades to walls and pastures, although one of their favoured habitats is rough grassland. Slow-worms (*Anguis fragilis*) use similar habitats to common lizards, and are often found in rank grassland, gardens and derelict land. Grass snakes (*Natrix natrix*) have broadly similar requirements to common lizards with a greater reliance on ponds and wetlands, where they prey on Common frogs (*Rana temporaria*). Adders (*Vipera berus*) use a range of fairly open habitats with some cover, but are most often found in dry heath (Beebee & Griffiths 2000).

### Refuge Surveys

The standard method for establishing reptile presence or likely absence is to use reptile 'tinning' surveys. Artificial refuges (roofing felt tiles c. 0.5 m<sup>2</sup> called 'tins') were placed in the areas that had been identified as suitable for reptiles during the habitat assessment. The felt tiles attract reptiles, which use them for shelter and to aid temperature regulation; this allows surveyors to find reptiles that would otherwise be widely dispersed and well-hidden. So far as possible they were placed on slightly uneven ground so as not to lie completely flat (which makes it difficult for reptiles to get underneath).

Surveys covered areas of field boundaries, rough grassland and scrub on the Main SRFI Site and involved 200 felt tiles that were checked between May and September 2016 when reptiles are active.

Surveys on the Junction 15a site focused on the boundary of the canal and stream within the tall herb swamp to the west of the canal and involved 120 felt tiles. The surveys were conducted in September 2017.

All suitable areas had a higher number of artificial refuges per hectare than the minimum recommended level of 10 per hectare (Froglife, 1999). The refuges were checked for reptiles on seven occasions during suitable weather conditions as detailed in *Table 1* below. When checking tins, a general watch was kept for other signs of reptiles, e.g. Grass Snake eggs, excrement or sloughed skins (often found beneath refuges).

The tins were regularly checked between the hours of 0830 and 1200. Days with the air temperatures between 9 and 15°C plus bright sunshine are generally accepted as suitable for reptile capture, or if there is hazy or intermittent sunshine and little wind (less than Beaufort Scale Force 3) then between 9 and 18°C (HGBI 1998). Days with rain are generally accepted as unsuitable, though sunny periods after rain may be ideal because reptiles emerge from cover to bask.

As a result, checks took place on 7 suitable-weather days between 13 May 2016 and 29 September 2016 on the Main SRFI Site (*Table F1*) and between 04 September 2017 and 29 September 2017 on the Junction 15a Site (*Table F2*).

**Table F1: Weather conditions on survey dates (Main SRFI Site).**

Date	Time of check	Temperature (C <sup>0</sup> )	Wind speed (Beaufort 1-12)	Cloud cover (%)	General weather
13.05.16	10:00 – 12:00	12-14	2-4	100	Overcast
27.05.16	08:30-10:30	12-14	2	30	Some cloud
02.06.16	10:15-12:30	12-14	3	80	Overcast
09.06.16	10:00-12:00	17-18	2	20	Warm with a little cloud
21.09.16	09:15-11:30	15-17	1-2	80	Damp, drying
23.09.16	09:15-11:30	14-18	2-3	30	Some cloud
29.09.16	09:15-11:30	16-19	0-4	60	Damp, windy but sunny

**Table F2: Weather conditions on survey dates (Junction 15a Site).**

Date	Time of check	Temperature (C <sup>0</sup> )	Wind speed (Beaufort 1-12)	Cloud cover (%)	General weather
04.09.17	09:30 – 10:30	16	2	100	Overcast, rain overnight, damp in places
07.09.17	10:30 – 11:00	15	2-3	40	Sunny intervals
12.09.17	10:00 – 11:00	14	3	30	Sparse cloud with sunny intervals
14.09.17	09:30 – 10:30	15	2	20	Sunny
22.09.17	10:00 – 11:00	14	1-2	60	Sunny
26.09.17	10:30 - 11:30	13	0-1	10	Sunny

29.09.17	10:30 – 11:30	13	1-2	40	Overcast with sunny intervals
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## Assumptions and Limitations

Part of Section R2 on the Main SRFI Site was mown in May and as many as a third of the reptile felts were destroyed. These were replaced; however the issue occurred again in September. During the season many of the mats became overgrown with weeds and some simply degraded over time.

Areas of the tall herb swamp on the Junction 15a site were not accessible due to water-logging however felt refuges were placed in the higher areas which coincided with the habitat that could be used by reptiles for basking.

Owing to the survey effort and number of felts used it is still considered that the surveys were appropriate and that the data collected is representative of the reptile population in the area.

## Population Estimates

Due to the complexity of reptile biology and ecology, reptile population sizes are notoriously difficult to estimate accurately. However, to ascertain the extent to which reptiles are present on a site, population scores following Froglife (1999) are widely used. In addition, these population scores are the criteria for assessing sites that qualify for the Key Reptile Site Register (Froglife, 1999) and provide a basic evaluation of the ecological value of the site for reptiles. The scores are estimated by taking the maximum number of adults seen by one person in a day (by direct observation or under refuges) given refuges at a density of 10 per hectare. Here the refuges were placed at higher densities than this, so this might over-estimate the population.

**Table F3: Reptile populations, following Froglife Advice Sheet 10**

	'Low' Population	'Good' Population	'Exceptional' Population
Adder	<5	5-10	>10
Grass Snake	<5	5-10	>10
Common Lizard	<5	5-20	>20
Slow-worm	<5	5-20	>20

### 3 RESULTS – MAIN SRFI SITE

#### Background Data Search

Records of Grass Snake and Adder on or within 100 m of the Main SRFI Site, and Slow worm and Common Lizard within 5 km were returned from the data search (*Table F4*).

**Table F4: Protected Species Records within 5 km of the Main SRFI Site Boundary**

Latin Name	Common Name	Designation	Within 100m	Within 1km	Within 5km
<b>Reptiles</b>					
<i>Anguis fragilis</i>	Slow-worm	WCA5			☒
<i>Lacerta vivipara</i>	Common Lizard	WCA5			☒
<i>Natrix natrix</i>	Grass Snake	WCA5	P	☒	☒
<i>Vipera berus</i>	Adder	WCA5	P	P	☒

Note - P relates to records with 4 figure or tetrad grid references that could potentially be anywhere within a 1 km or 2 km square.

#### Habitat Assessment

Field margins and areas of rough grassland provide suitable basking and foraging environments for all four common reptile species. These habitats were identified in several areas of the main SRFI site, as shown in *Figure F2.1*.

#### Refuge Surveys

Results from the refuge surveys are outlined in *Table F5*.

**Table F5. Main SRFI Site Refuge Survey Summary.**

Survey Visit	Survey Location	Reptiles (A – Adult; SA – Sub Adult; J – Juv; E – Eggs)					Suitable Conditions (Y, N, Fair, Unknown)
		Common Lizard	Slow Worm	Grass Snake	Adder	Other	
1	R1	0	0	0	0	0	F
	R2	0	0	0	0	0	F
	R3	0	0	0	0	Common Toad 1	F
2	R1	0	0	0	0	0	Y
	R2	0	0	0	0	0	Y

	R3	0	0	0	0	Common Toad 1	Y
3	R1	0	0	0	0	0	F
	R2	0	0	0	0	0	Y
	R3	0	0	0	0	Common Toad 1	Y
4	R1	0	0	0	0	0	Y
	R2	0	0	0	0	0	Y
	R3	0	0	0	0	Common Toad 1	Y
5	R1	0	0	0	0	0	F
	R2	0	0	0	0	Common Toad 1 (SA)	F
	R3	0	0	0	0	0	F
6	R1	0	0	0	0	0	Y
	R2	0	0	0	0	0	Y
	R3	0	0	0	0	0	Y
7	R1	0	0	0	0	0	F
	R2	0	0	0	0	0	Y
	R3	0	0	0	0	0	Y

## 4 RESULTS – JUNCTION 15A SITE

### Background Data Search

Records of Grass Snake within 1km of the Junction 15a Site were returned from the data search (January 2018) (*Table F6*).

**Table F6: Protected Species Records within 5 km of the Junction 15a Site Boundary**

Latin Name	Common Name	Designation	Within 100m	Within 1km	Within 5km
<b>Reptiles</b>					
<i>Natrix natrix</i>	Grass Snake	WCA5		☒	☒

### Habitat Assessment

Field margins, tall herb swamp, canal side margins and stream margins provide suitable basking and foraging environments for all four common reptile species. These habitats were identified in several areas of the Junction 15a site, as shown in *Figure F2.2*.

### Refuge Surveys

Results from the refuge surveys are outlined in *Table F7*.

**Table F7. Junction 15a Site Refuge Survey Summary.**

Survey Visit	Survey Location	Reptiles (A – Adult; SA – Sub Adult; J – Juv; E – Eggs)					Suitable Conditions (Y, N, Fair, Unknown)
		Common Lizard	Slow Worm	Grass Snake	Adder	Other	
1	R1	0	0	0	0	Common Toad (A & SA)	F
	R2	0	0	0	0	Common Toad (A & SA)	F
2	R1	0	0	0	0	Common Toad (A & SA)	Y
	R2	0	0	0	0	Common Toad (A & SA)	Y

						SA)	
3	R1	0	0	0	0	Common Toad (A & SA)	F
	R2	0	0	0	0	Common Toad (A & SA)	F
4	R1	0	0	0	0	Common Toad (A & SA)	Y
	R2	0	0	0	0	Common Toad (A & SA)	Y
5	R1	0	0	0	0	Common Toad (A & SA)	Y
	R2	0	0	0	0	Common Toad (A & SA)	Y
6	R1	0	0	0	0	Common Toad (A & SA)	Y
	R2	0	0	0	0	Common Toad (A & SA)	Y
7	R1	0	0	0	0	Common Toad (A & SA)	F
	R2	0	0	0	0	Common Toad (A & SA)	F

## 5 RESULTS – OTHER MINOR HIGHWAY WORKS

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No reptile surveys have been carried out on any of the minor highway improvement sites, due to lack of access and information about the extent of vegetation clearance or manipulation. However, the highway works are within the adopted highway, and habitats affected are considered likely to be sub-optimal for reptiles, in the majority of sites. If vegetation clearance is required, this will be supervised by an Ecological Clerk of Works.

## 6 EVALUATION AND CONCLUSIONS

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### Reptiles

Grass snake and adder are wide ranging species that occur in different parts of their range at various times of the year, which may explain why they were not picked up during these surveys. In view of this and considering the suitable habitat present on the site, it is possible that reptiles are present in such low numbers that they were undetectable by the methods used. It has therefore been concluded on a precautionary basis that there is a 'Low' reptile population. A precautionary approach is best when removing suitable habitat for these species.

In addition, anecdotal sightings from RSK ecologists conducting other ecology surveys included single adult Grass Snakes being observed on the Main SRFI Site and on the Junction 15a Site. These sightings when combined with the survey results indicate that there is a likely to be a 'Low' Grass Snake population using both sites. The sighting of the Grass Snake on the Main SRFI Site was along the southern boundary adjacent to the canal and it is considered likely that the riparian vegetation along the canal is of considerable importance to this species. This area of the site will remain as a natural habitat under the proposed development. The sighting of the Grass Snake on the Junction 15a Site was within the tall herb swamp and in close proximity to the canal. This area will remain as a natural habitat under the current proposals.

There are records of two of the four common species within 1km of the site and it is likely that reptiles do use the site, which is further reason for taking a precautionary approach. There remains an appreciable likelihood that otherwise reptiles might be harmed during construction.

### Potential Impacts

The Main SRFI Site and J15a Site have terrestrial habitat suitable for reptiles in the form of rough grassland and field margins in various locations across the potential development area (*Figure F2.1 and Figure F2.2*). Since it has been determined that no more than very low numbers of reptiles are using the site, a translocation will not be necessary. During removal of vegetation from the potential development area, use of a watching brief and method statement will be required to prevent impacts on any local reptile population.

Toads were also recorded on both the Main SRFI Site and the Junction 15a Site. Toads are Species of Principal Importance under *Section 41* of the *NERC Act* (2006) and are listed as UK BAP Priority Species.

### Mitigation and Conclusions

Habitat compensation for any reptile habitat lost is required to ensure that there is no detrimental impact on the wider reptile population as a result of the development. This will be provided through the retention and enhancement of existing habitat corridors on the sites and where in particular where the site is adjacent to the canal. Enhancements

may include hibernacula, and the implementation of a rotational cutting regime in which areas of grassland and field margins are periodically left long to provide suitable habitat. An ecologist will be consulted during the detailed design stage in order to ensure that the layout of the development (particularly any associated landscaping) is compliant with the requirements for these species.

Development at **the site will** take into account any impact on Toads and in particular migration routes should be provided through **the site** to ensure that Toads are able to return to their breeding place, which is thought to be the canal, each year. Therefore, at no time during construction, will movement of toads be restricted along the canal towpath, or from the canal into adjacent riparian habitat.

Five ponds will be lost due to the development on the Main SRFI Site, however all of these ponds are considered sub-optimal for Toad to spawn (small size and very low water levels throughout). Newly created ponds will be an integral part of the on-site mitigation and will ensure high quality spawning habitat for the species.

## 7 REFERENCES

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Beebee, T.J.C. & Griffiths, R.A. (2000). Amphibians and Reptiles. HarperCollins, London.

Froglife (1999). Froglife Advice Sheet 10: Reptile Survey. Froglife, London.

HGBI (1998) Evaluating local mitigation/translocation programmes: Maintaining Best Practice and lawful standards. HGBI advisory notes for Amphibian and Reptile Groups (ARGs). Herpetofauna Groups of Britain and Ireland, c/o Froglife, Halesworth.

## APPENDIX A: LEGISLATION

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### Common Reptiles

*Lacerta vivipara* (Common Lizard), *Natrix natrix* (Grass Snake), *Anguis fragilis* (Slow-worm), and *Vipera berus* (Adder) are listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the *Countryside and Rights of Way Act 2000* (the CRow Act).

Under the above legislation it is an offence to:

- Intentionally or deliberately kill or injure any individual of such a species; or
- Sell or attempt to sell any part of the species alive or dead.

## APPENDIX B: FIGURES

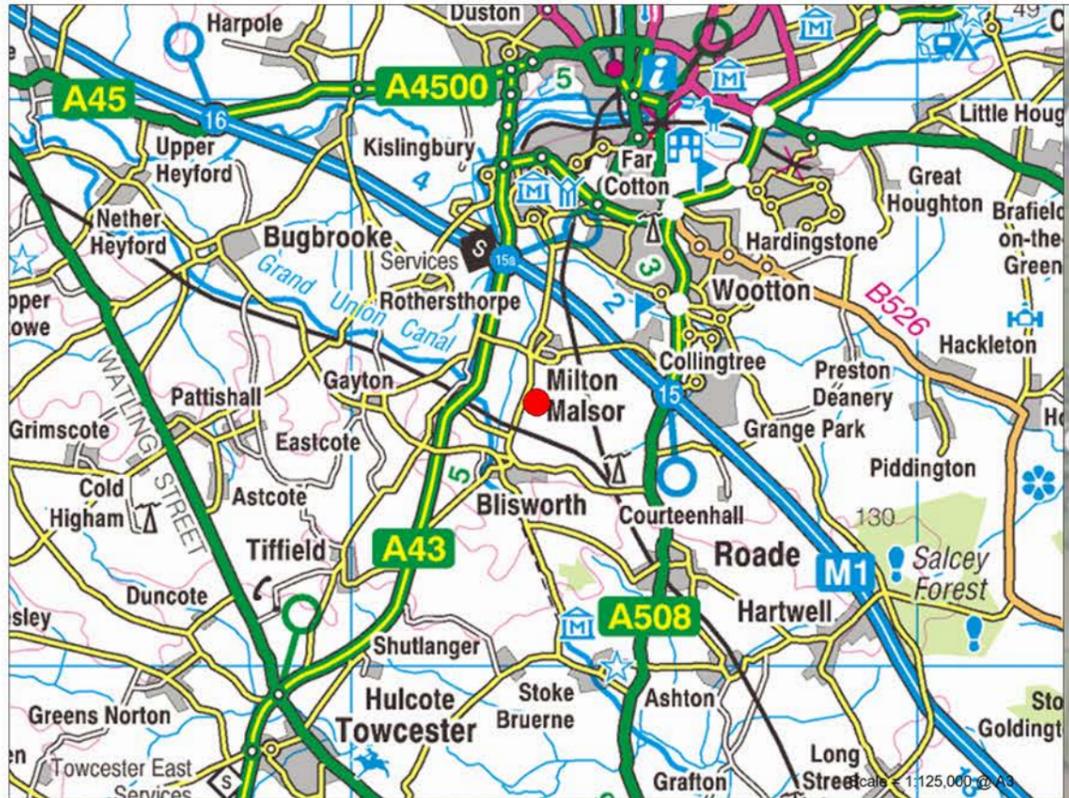
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Figure F1.1 – Site Location Plan

Figure F1.2 – Site Location Plan

Figure F2.1 – Reptile Habitat Areas

Figure F2.2 – Reptile Habitat Areas



Site boundary (July 2017)



Rev	Date	Description	Drn	Chk	App
00	13.07.17	855950	SP	RG	RE

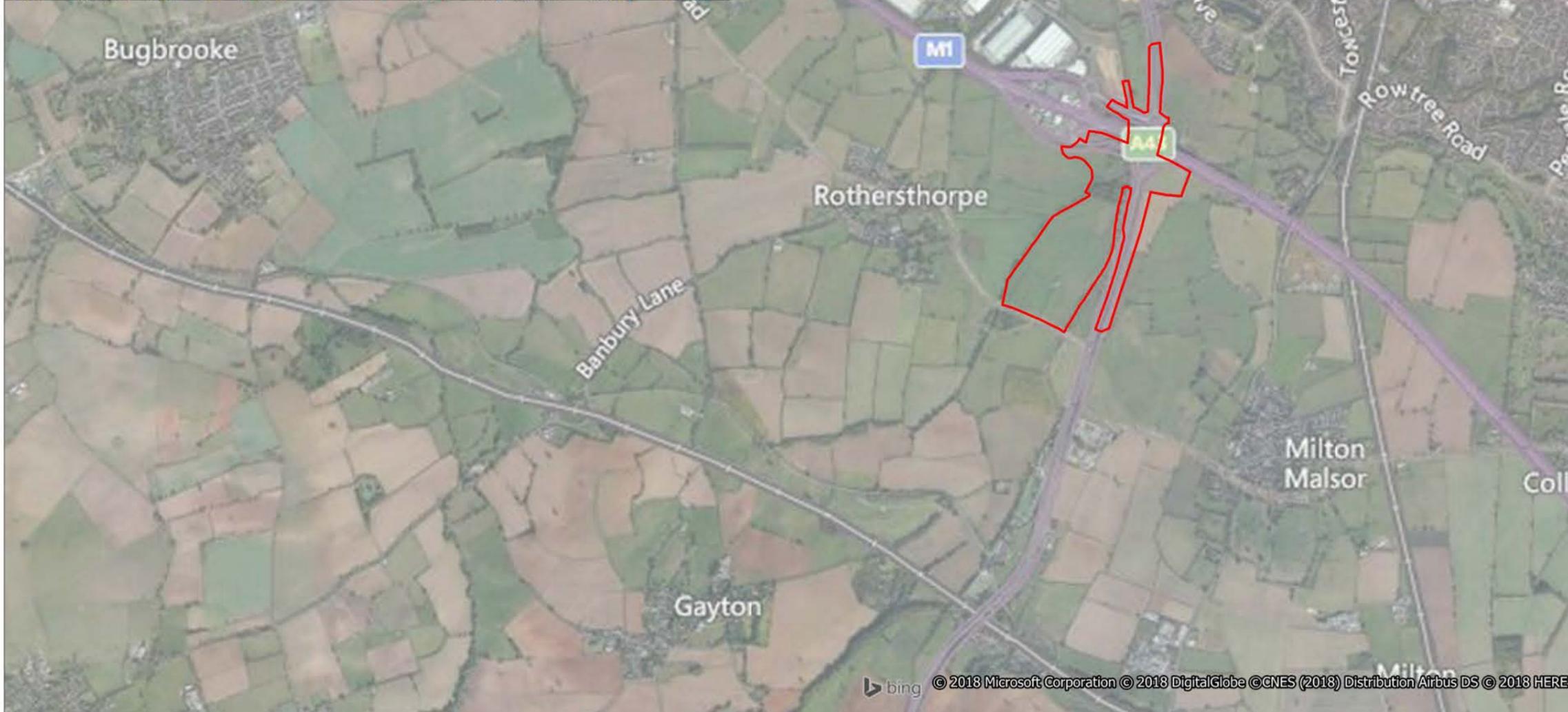
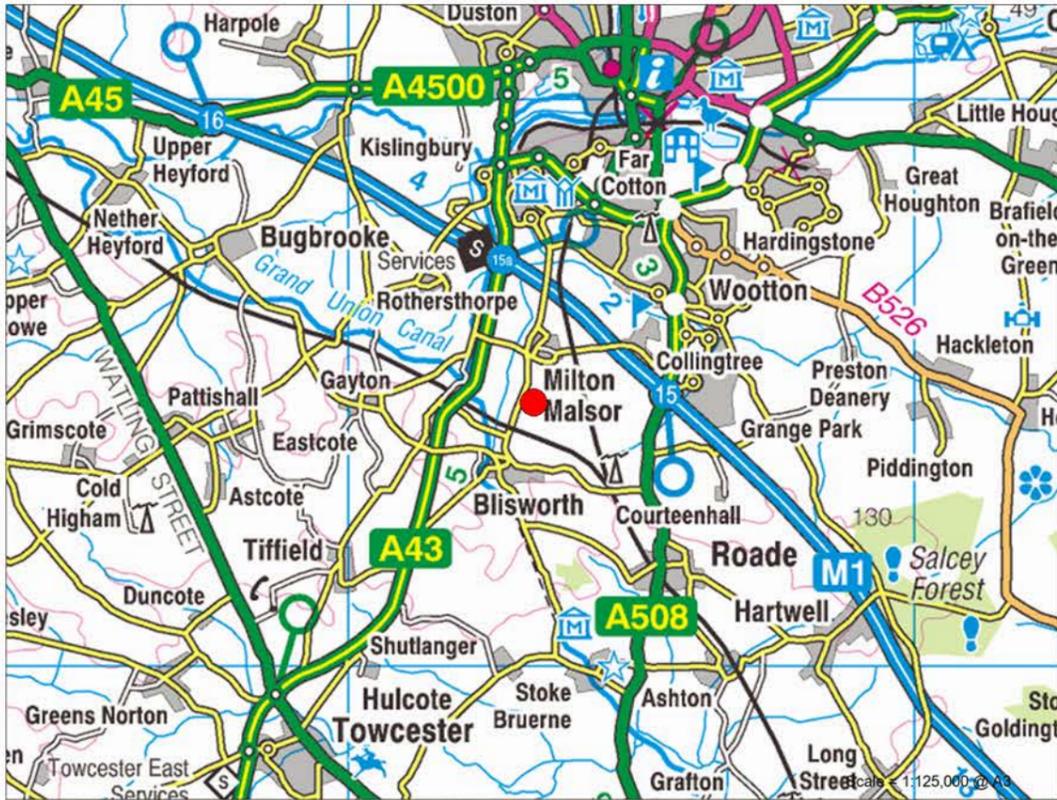
Rail Central



Figure F.1.1  
Main SRFI Site  
Site Location Plan

0 750 Metres  
Scale = 1:25,000 @ A3

REV 00



Site boundary (Jan 2018)

00	29.01.18	855950	SP	RG	RE
Rev	Date	Description	Drn	Chk	App

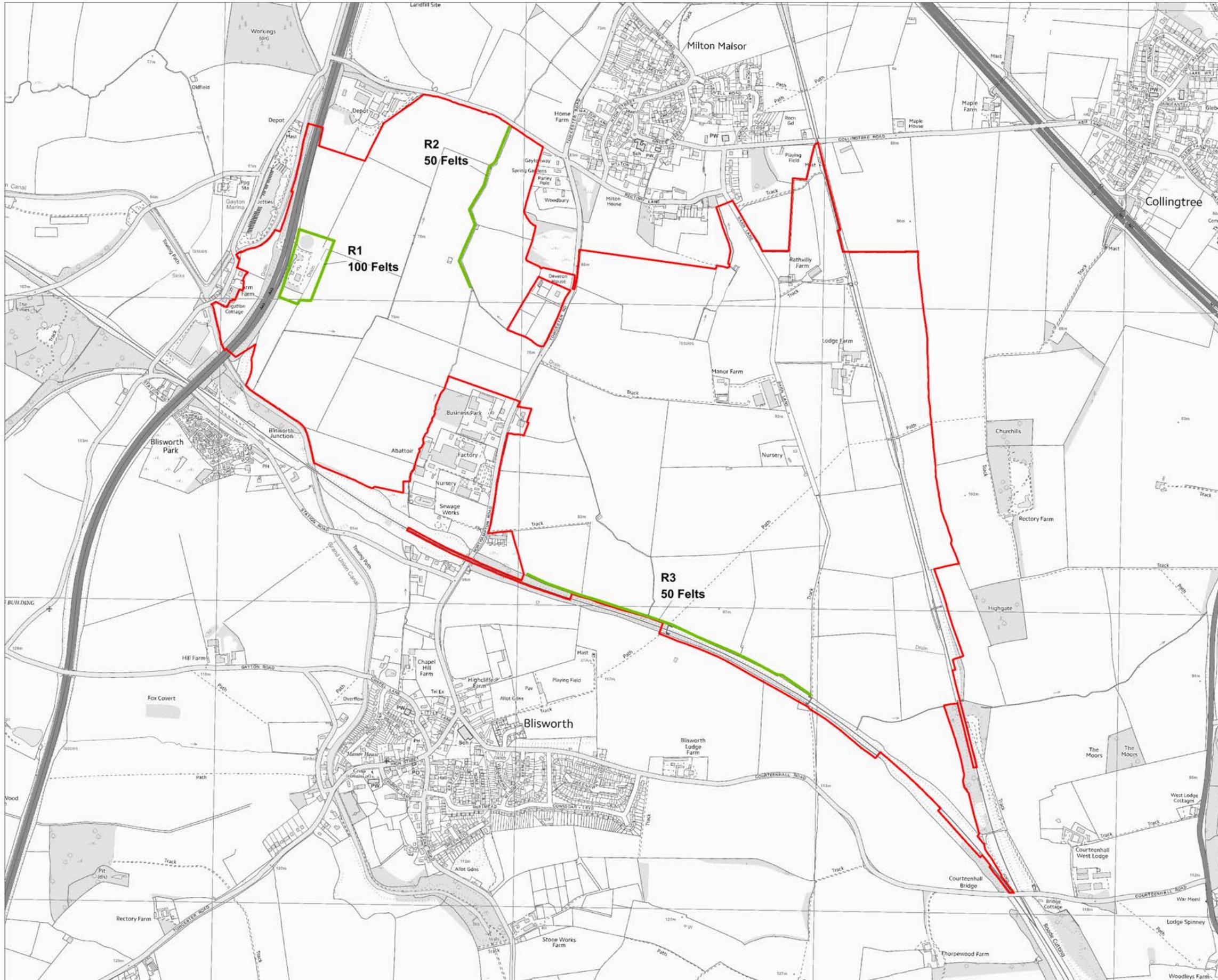
**Rail Central**

Figure F1.2  
Junction 15a  
Site Location Plan

0 750  
Metres  
Scale = 1:25,000 @ A3

REV 00

File Name : L:\Ecology\855000s\855950 - Armtrack (Rail Central)



Site boundary (July 2017)  
 Location of reptile felt transect - no reptiles found



Rev	Date	Description	Drn	Chk	App
00	04.12.17	855950	SP	RG	TC

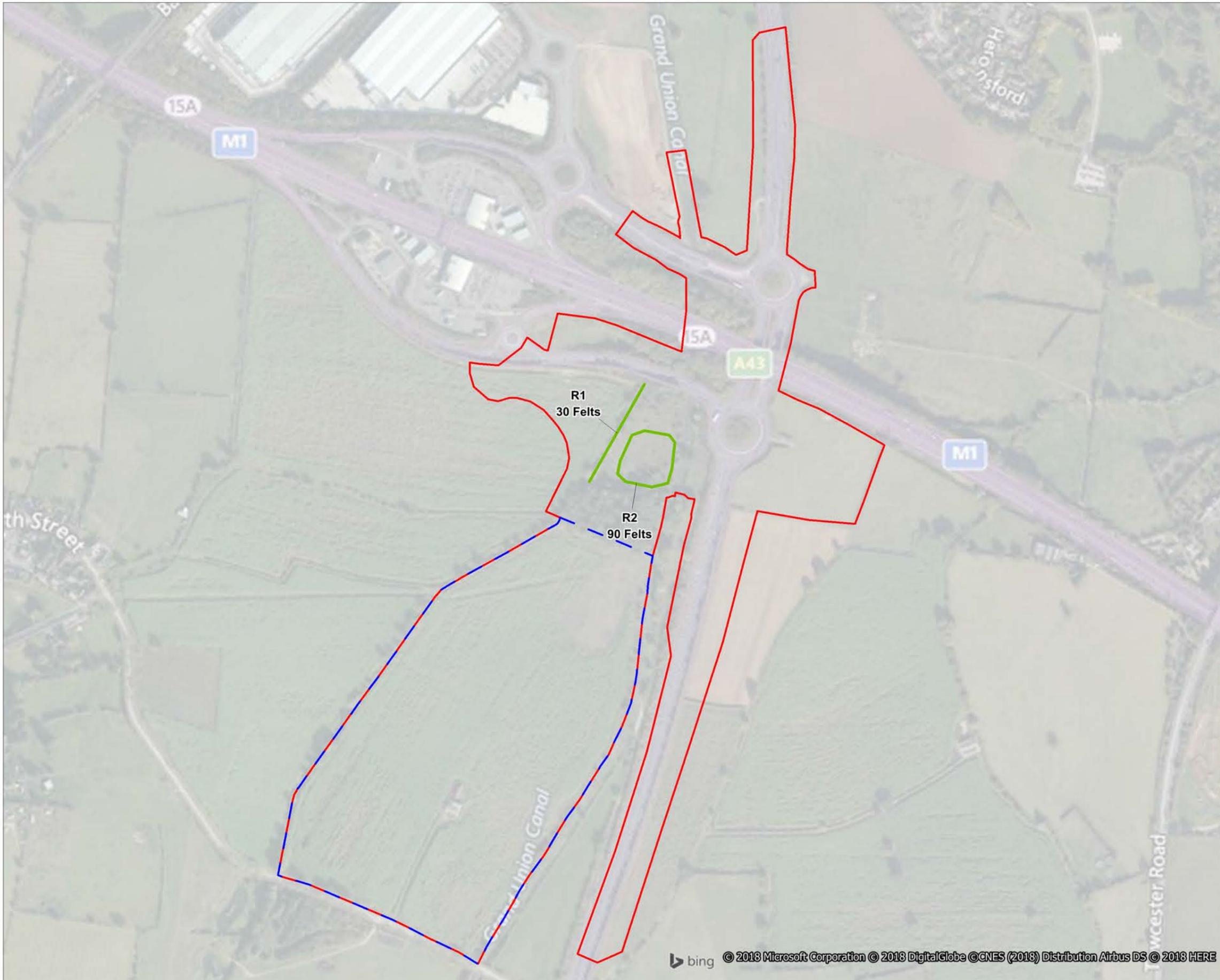
**Rail Central**



**Figure F2.1**  
 Reptile Transect Survey Results



Contains Ordnance Survey data © Crown copyright and database right 2017  
 Base plan provided by client, Drawing: OS\_Vectormap\_Local\_Raster\_297671\_409492.tif



- Site boundary (Jan 2018)
- Ecological mitigation area
- Location of reptile felt transect - no reptiles found



Rev	Date	Description	Drn	Chk	App
00	29.01.18	855950	SP	RG	RE

**Rail Central**



Figure F2.2  
Reptile Transect Survey Results

0 180

metres

Scale = 1:6,000 @ A3

REV 00