

# **A303 Amesbury to Berwick Down**

**TR010025**

## **6.3 Environmental Statement Appendices**

### **Appendix 8.21 Hazel dormouse**

APFP Regulation 5(2)(a)

Planning Act 2008

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

October 2018



# **A303 Stonehenge Amesbury to Berwick Down**

## **Dormouse Survey Report 2016-2017**

**Arup Atkins Joint Venture**

**HE551506-AA-EBD-SWI-SU-YE-000005**

**P01**

**27/10/2017**

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## Document Control

Document Title	A303 Dormouse Survey Report 2016-2017
Document Reference	HE551506-AA-EBD-SWI-SU-YE-000005
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Document Status	Final Issue to HE for Acceptance

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Revision	Date	Status	Description	Author
P01	04/12/2017	Final	Issue for Acceptance	Eloise Arif
0	27/09/2017	Final Draft	For AmW Information	Eloise Arif

## Arup Atkins Joint Venture Approvals

Revision	Role	Name	Signature	Date
P01	Author	Eloise Arif		27/09/2017
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	Technical Reviewer	Alex Watson		06/12/172017
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### Highways England Approval

Revision	Title	Name	Signature	Date

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## Foreword

The A303/A358 corridor is a vital connection between the South West and London and the South East. While the majority of the road has been dualled, there are still over 35 miles of single carriageway. These sections act as bottlenecks for users of the route resulting in congestion, particularly in the summer months and at weekends, delays to traffic travelling between the M3 and the South West and an increased risk of accidents. The A303 passes through the Stonehenge, Avebury and Associated Sites World Heritage Site, separating the stones from other scheduled monuments and severely limiting the enjoyment of the wider site.

The A303 Stonehenge (Amesbury to Berwick Down) scheme is part of the wider package of proposals for the A303/A358 corridor designed to transform the connectivity to and from the South West by creating an expressway. This would comprise of consistently good dual carriageway roads with grade-separated junctions, giving most users a motorway-quality journey. The A303/A358 package was identified in the 2014 National Infrastructure Plan as one of the country's Top 40 priority infrastructure projects.

The proposals by Highways England to upgrade the A303 past Stonehenge consist of an eight mile (13 kilometre) stretch from Amesbury in the east, through the Stonehenge World Heritage Site (WHS) and the village of Winterbourne Stoke, to Berwick Down in the west. Proposals include a 1.8 mile (2.9 kilometre) tunnel with approach roads inside the WHS, a new bypass for Winterbourne Stoke (passing either north or south of the village) and improvements to existing junctions with the A345 and A360.

Highways England (HE) commissioned the Arup-Atkins Joint Venture (AAJV) to undertake the Options Phase for the scheme starting in January 2016. The AAJV was also commissioned by HE to undertake dormouse surveys along these proposed route options in order to de-risk the next stages of the project, due to the fast-tracked nature of the scheme. This report presents the findings of the dormouse surveys. The AAJV would like to thank all the landowners for their considerable help and consideration during the course of the surveys.

## Executive Summary

The AAJV were commissioned by Highways England in 2016 to undertake dormouse surveys as part of a programme of ecological surveys to inform the design of the proposed A303 Stonehenge (Amesbury to Berwick Down) Scheme.

This report presents the baseline survey results recorded during the 2016/2017 dormouse surveys across each of the three route options proposed at the time (1Na, 1Sa and 1Nd). It is intended that the information in this report will be used to identify and assess the potential implications of the Scheme and inform mitigation and compensation for the species.

A framework of European and national legislation, and planning policy guidance exists to protect and conserve dormice.

Over the course of 2016 and 2017, six sites were identified within 125 metres of the centreline of each proposed route options with the potential to support dormouse. These sites were selected for further survey. The 2016/2017 presence/assumed absence dormouse surveys identified no evidence of dormouse activity across any of the six sites. Dormice are therefore assumed absent from the survey area.

This survey fulfilled its objectives in identifying and surveying areas of suitable habitat to support dormice. A complete assessment of potential impacts to dormice will be undertaken within the Environmental Impact Assessment (EIA) for the preferred route option, along with details of mitigation and compensation measures as appropriate.

# 1 Introduction

## 1.1 Project Background

- 1.1.1 The A303 Stonehenge (Amesbury to Berwick Down) Scheme forms part of the A303/A30 trunk route, which provides vital east-west connectivity between London and the South West and is also part of the Trans-European Network-Transport (TEN-T). The A303, which runs for approximately 150 kilometres from Junction 8 of the M3 near Basingstoke towards Taunton and Exeter, serves not only long distance traffic but also intermediate regional destinations via connecting major north-south route options as well as local small and medium sized settlements along the route.
- 1.1.2 Recognising the importance of the A303/A358 Corridor and the problems along it, the Government has committed in its Road Investment Strategy (RIS) to create an 'Expressway' to the South West via the A303/A358 route by 2029. The A303 Stonehenge scheme, involving dualling the A303 between Amesbury and Berwick Down, including the construction of a tunnel at least 1.8 miles (2.9 kilometres) long as the road passes Stonehenge, has been prioritised within the first RIS period (2015/16 to 2019/20).
- 1.1.1 Following public consultation in January 2017, three routes were recommended for detailed assessment during 2017, Route Options 1Na, 1Sa and 1Nd. Figures HE551506-AA-VES-SWI-DR-YE-000011 and HE551506-AA-VES-SWI-DR-YE-000012 in Appendix A show the sites selected for dormouse presence/assumed absence surveys within 125 metres of these three Route Options.

## 1.2 Scope of the Document

- 1.2.1 This report presents the baseline survey results recorded during the 2016/2017 dormouse surveys. It is intended that the information in this report will be used with the results of other ecological surveys to identify and assess the potential implications of the scheme and inform mitigation and compensation for impacts to dormice.
- 1.2.2 This baseline report can be used to accompany any future Development Consent Order (DCO) and associated Environmental Impact Assessment (EIA) for the Scheme.

## 1.3 Survey Objectives

- 1.3.1 The aim of the dormouse surveys, was to ascertain the following:
- Identify the presence of dormice within the study area;
  - Confirm the distribution of dormice, if present;
  - To identify areas where mitigation or compensation may be required depending on the nature of the scheme; and
  - Confirm whether a European Protected Species (EPS) licence is likely to be required to ensure legal compliance.
- 1.3.2 This report details the methodology used and describes the results of the 2016/2017 dormice surveys.

## 1.4 Legislation

- 1.4.1 Dormice are a European Protected Species (EPS), and are protected under Regulation 41 of the Conservation of Habitats and Species Regulations 2010 (as amended), known as the Habitats Regulations.
- 1.4.2 Under the Habitats Regulations, it is an offence to deliberately capture, injure or kill any wild animal of an EPS, deliberately disturb wild animals of any such species, deliberately take or destroy the eggs of such an animal or damage or destroy a breeding site or resting place of such an animal.
- 1.4.3 Dormice receive further protection through inclusion on Schedule 5 of the Wildlife and Countryside Act (WCA) 1981 (as amended). Under this Act it is an offence to: intentionally kill, injure or take any protected species; intentionally or recklessly damage, destroy or obstruct access to any structure or place which a protected species uses for shelter or protection; and intentionally or recklessly disturb any protected species while it is occupying a structure or place which it uses for shelter or protection.
- 1.4.4 Actions which are prohibited by legislation can be made lawful on the approval and granting of a licence from Natural England (NE), subject to conditions.
- 1.4.5 The reader should refer to the original legislation for the definitive interpretation.

## 2 Methodology

### 2.1 Survey Area

- 2.1.1 The survey area was based on the three proposed route options being considered during 2017: Option 1Na, Option 1Sa and Option 1Nd. The survey area included a buffer of approximately 125 metres from the centreline of each route option; producing a search area of approximately 250 metres in total width for each route option.
- 2.1.2 Dormice are known to favour woodland habitat with a diverse scrub understorey<sup>1</sup> and readily colonise scrub and hedgerow habitats. Other habitats may be used by dormice where connected to these favoured habitats<sup>2</sup>. Dormouse habitat fragmentation can occur where there are gaps of 100 metres or more between areas of suitable habitat<sup>3</sup>. Woodlands should be at least 20 hectares in size to support a viable population of dormice unless they are linked to other areas of suitable habitat<sup>1</sup>.
- 2.1.3 A total of six sites within 125 metres of the proposed route options were selected for presence/assumed absence survey based on their potential to support dormice and based on a review of dormouse surveys undertaken for the previously Published Scheme<sup>4</sup>. In some instances, areas outside this were also surveyed due to the suitability and connectivity of proximal habitat, such as Winterbourne Stoke Hedgerows 1 and 2, and Longbarrow Copse, as seen in Figure HE551506-AA-VES-SWI-DR-YE-000011 in Appendix A.
- 2.1.4 The survey area and the sites selected for presence/assumed absence survey are shown in Figures HE551506-AA-VES-SWI-DR-YE-000011 and HE551506-AA-VES-SWI-DR-YE-000012 in Appendix A. The sites selected are described as follows:
- **Winterbourne Stoke Hedgerows 1 and 2:** two managed hedgerows surrounding an arable field. This site was surveyed for the previously Published Scheme<sup>4</sup>, and was therefore selected for further survey to allow for comparison. National Grid Reference (NGR SU 07326 40917);
  - **“One Mile” Hedgerow:** two long parallel relatively unmanaged mature hedgerows. This site was surveyed for the previously Published Scheme<sup>4</sup>, and was therefore selected for further survey to allow for comparison (NGR SU 08985 41659);
  - **Longbarrow Copse:** mixed semi-natural woodlands predominantly consisting of beech. This site was surveyed for the previously Published Scheme<sup>4</sup>, and was therefore selected for further survey to allow for comparison (NGR SU 10138 41562);
  - **Normanton Gorse/Wood:** mature broadleaved woodland with a diversity of tree species including beech, hawthorn, and hazel. This site was surveyed for the previously Published Scheme, and was therefore selected for further survey to allow for comparison, in particular due to the mention of an anecdotal record of a dormouse<sup>4</sup> (NGR SU 11376 41467);

<sup>1</sup> The Dormouse Conservation Handbook. Bright, Morris, & Mitchell-Jones, 2006.

<sup>2</sup> Annex C of Nature Conservation Management in Relation to Dormice. Highways Agency, 2001.

<sup>3</sup> Annex A of Nature Conservation Management in Relation to Dormice. Highways Agency, 2001.

<sup>4</sup> A303 Stonehenge Improvement: Dormice baseline survey results. Part 3a: Mammals, Appendix 4. Nicholas Pearsons Associates. October 2002.

- **The Park:** semi-natural woodlands predominantly consisting of beech. This site was assessed as having the potential to support dormice, and was therefore selected for further survey (NGR SU 09872 40329); and
- **Vespasian's Camp/Amesbury Woodland:** mixed semi-natural woodland with a prominent hillfort (Vespasian's Camp) predominantly consisting of ash, elder, beech, with some hazel and Wilson's honeysuckle. This site was assessed as having the potential to support dormice, and was therefore selected for further survey (NGR SU 14575 41902).

## 2.2 Presence/Assumed Absence Survey

- 2.2.1 The survey was carried out in accordance with the Dormouse Conservation Handbook<sup>1</sup> and consisted of installing nest tubes in the selected areas of woodland and hedgerow. In addition to tubes, five to ten nest boxes were also deployed in areas of woodland to increase the likelihood of detecting dormice as recommended in Natural England Standing Advice<sup>5</sup>.
- 2.2.2 Dates of nest tube and nest box deployment, and the number of nest boxes deployed in each area of woodland are provided in Table 1. The nest tubes were taken down in November 2016 and re-deployed in February 2017 at Winterbourne Stoke Hedgerows 1 and 2 and "One Mile" Hedgerow to allow for hedgerow management by landowners.

**Table 1: Dates of Nest Tube and Nest Box Deployment, and Number of Nest Boxes Deployed**

Site	Tubes Deployed	Boxes Deployed
Winterbourne Stoke Hedgerows 1 and 2	Initially deployed 02/08/2016 Removed 07/11/2016 Re-deployed 20/02/2017	None
"One Mile" Hedgerow	Initially deployed 02/08/2016 Removed 07/11/2016 Re-deployed 20/02/2017	None
Longbarrow Copse	02/08/2016	10/08/2016 (5 boxes)
Normanton Gorse/Wood	02/08/2016	02/08/2016 (5 boxes)
The Park	04/05/2017	None
Vespasian's Camp/Amesbury Woodland	18/08/2016	18/08/2016 (10 boxes)

- 2.2.3 The nest tubes were placed along the hedgerows at approximately 20 metre intervals. In the areas of woodland, nest tubes were placed 10-20 metres from each other in a grid system in groups of 10. The locations for these groups were chosen to ensure as much of the woodland was represented as possible whilst ensuring any areas of particularly favourable habitat for dormice such as areas with coppiced hazel *Corylus avellana* were covered.
- 2.2.4 A total of 340 nest tubes and 20 nest boxes were installed along the proposed Scheme. The locations of the nest tubes and nest boxes within each site are shown on Figures HE551506-AA-VES-SWI-DR-YE-000013 to HE551506-AA-VES-SWI-DR-YE-000019 in Appendix A.

<sup>5</sup> Natural England (2012) Standing Advice Species Sheet: Hazel dormouse

2.2.5 In accordance with the Dormouse Conservation Handbook<sup>1</sup> each of the six sites was surveyed between April and November, over 2016 and 2017, to obtain a probability score of at least 20. The score available for each month using 50 tubes as a standard are shown in Table 2. The nest boxes are not factored into the probability score as the seasonal use of these by dormice is different to the use of nest tubes, and the original research that provided the scoring system only used nest tubes.

**Table 2: Score Available in Any One Month, Using 50 Nest Tubes as a Standard.**

Month	Score
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

2.2.6 Scores were calculated by dividing the score available in each month (as shown in Table 2) by 50, and multiplying by the total number of tubes present within each site. Scores from each month were added together to give a total score for each site. A score of at least 20 at each site was achieved as follows:

- **Winterbourne Stoke Hedgerows 1 and 2:** 40 tubes surveyed in September and October in 2016, 39 tubes surveyed in May 2017 (see limitations below), and 41 tubes surveyed in August and September in 2017 achieving a score of 20.2 (Figures HE551506-AA-VES-SWI-DR-YE-000013 and HE551506-AA-VES-SWI-DR-YE-000014 in Appendix A). Extra tubes were taken as a contingency to replace tubes that were too damaged to re-deploy. After replacing damaged tubes, one tube was spare, resulting in an extra tube in 2017 as compared to 2016;
- **“One Mile” Hedgerow:** 37 tubes surveyed in September and October 2016, and 64 tubes surveyed in May and September 2017 achieving a score of 20.7. Tube numbers were increased from 37 to 64 between 2016 and 2017 due to updated route options altering what areas of this hedgerow would potentially be affected. Survey effort was therefore increased in 2017 to include the hedgerow running perpendicular to “One Mile” Hedgerow (Figures HE551506-AA-VES-SWI-DR-YE-000015 and HE551506-AA-VES-SWI-DR-YE-000016 in Appendix A);
- **Longbarrow Copse:** 56 tubes surveyed in September and October 2016, and 53 tubes surveyed in May and September 2017 (see limitations below) achieving a score of 21.7 (Figure HE551506-AA-VES-SWI-DR-YE-000017 in Appendix A);
- **Normanton Gorse/Wood:** 70 tubes surveyed in September and October 2016, and in May and September 2017 achieving a score of 28.0 (Figure HE551506-AA-VES-SWI-DR-YE-000018 in Appendix A);
- **The Park:** 50 tubes surveyed in May, June, July, August, and September 2017 achieving a score of 20 (Figure HE551506-AA-VES-SWI-DR-YE-000019 in Appendix A); and

- **Vespasian's Camp/Amesbury Woodland:** 60 tubes surveyed in September and October 2016, and in May, August, and September 2017 achieving a score of 30 (Figure HE551506-AA-VES-SWI-DR-YE-000020 in Appendix A).

- 2.2.7 More details on how these scores were achieved can be found in Table 4 in Appendix B. "One Mile" Hedgerow, Longbarrow Copse, and Normanton Gorse/Wood were not visited in August 2017 (when Winterbourne Stoke Hedgerows 1 and 2, The Park, and Vespasian's Camp/Amesbury Woodland were), as a score of at least 20 could be achieved at these sites without doing so.
- 2.2.8 The weather conditions during the presence/assumed absence survey are detailed in Table 5 in Appendix C.
- 2.2.9 Surveys were led on each occasion by AAJV ecologists holding Natural England (NE) survey licences or their accredited agents permitting survey for this species.

## 2.3 Limitations and Assumptions

- 2.3.1 During the visit to Winterbourne Stoke Hedgerows 1 and 2 in May 2017, it was discovered that two tubes had fallen down due to adverse weather conditions. These tubes were immediately replaced. On each visit in May and September 2017 in Longbarrow Copse, three tubes had fallen down or were missing. These instances have not affected the validity of the presence/assumed absence survey, as these limitations were included when calculating the scores achieved at these sites, and both sites still achieved a score of at least 20.
- 2.3.2 Nest boxes were not installed in addition to nest tubes in The Park woodland site due to the later land access to this part of the Scheme. This has not affected the validity of the presence/absence survey as the use of the nest tubes alone meets the requirements of the Dormouse Mitigation Handbook<sup>Error! Bookmark not defined.</sup>.
- 2.3.3 As with many ecological surveys, the effectiveness of these types of survey are subject to a range of seasonal, environmental and behavioural factors. The absence of evidence of a particular species in a survey should not be taken as conclusive proof that the species is not present or that it will not be present in the future.

## 3 Results

### 3.1 Presence/Assumed Absence Survey

- 3.1.1 No evidence of dormouse activity was found at any site during any visit. Dates of each visit and results are detailed in Table 3.
- 3.1.2 Evidence of wood mouse activity was identified at Winterbourne Stoke Hedgerows 1 and 2, "One Mile" Hedgerow, and Normanton Gorse/Wood. Photographs of this activity are provided in Table 6 in Appendix D.

**Table 3: Results of dormouse presence/assumed absence survey**

Site	Visit	Date	Results
Winterbourne Stoke Hedgerows 1 and 2	1	06/09/2016	<b>No evidence of dormice activity identified.</b> Evidence of wood mice found on visit 4 in tube 27a and 29a (nest made of dogwood leaves), and on visit 5 in tube 7a (food cache of beech nuts) and 27a (nest).
	2	06/10/2016	
	3	17/05/2017	
	4	17/08/2017	
	5	12/09/2017	
"One Mile" Hedgerow	1	06/09/2016	<b>No evidence of dormice activity identified.</b> Evidence of wood mice found on visit 4 in tube 32a (food cache of hawthorn berries).
	2	06/10/2016	
	3	16/05/2017	
	4	12/09/2017	
Longbarrow Copse	1	06/09/2016	<b>No evidence of dormice activity identified.</b>
	2	06/10/2016	
	3	17/05/2017	
	4	12/09/2017	
Normanton Gorse/Wood	1	06/09/2016	<b>No evidence of dormice activity identified.</b> Evidence of wood mice found on visit 2 in tube 4 and 57.
	2	06/10/2016	
	3	24/05/2017	
	4	20/09/2017	
The Park	1	24/05/2017	<b>No evidence of dormice activity identified.</b>
	2	13/06/2017	
	3	06/07/2017	
	4	17/08/2017	
	5	12/09/2017	
Vespasian's Camp/Amesbury woodland	1	21/09/2016	<b>No evidence of dormice activity identified.</b>
	2	18/10/2016	
	3	11/05/2017	
	4	24/08/2017	
	5	20/09/2017	

## 4 Discussion and Recommendations

### 4.1 Discussion

- 4.1.1 No evidence of dormouse activity was identified during the presence/assumed absence survey and it is considered unlikely that populations of dormice are present on site.
- 4.1.2 A complete assessment of the impact on dormice across the chosen route option along with mitigation measures will be provided within the Environmental Impact Assessment (EIA).

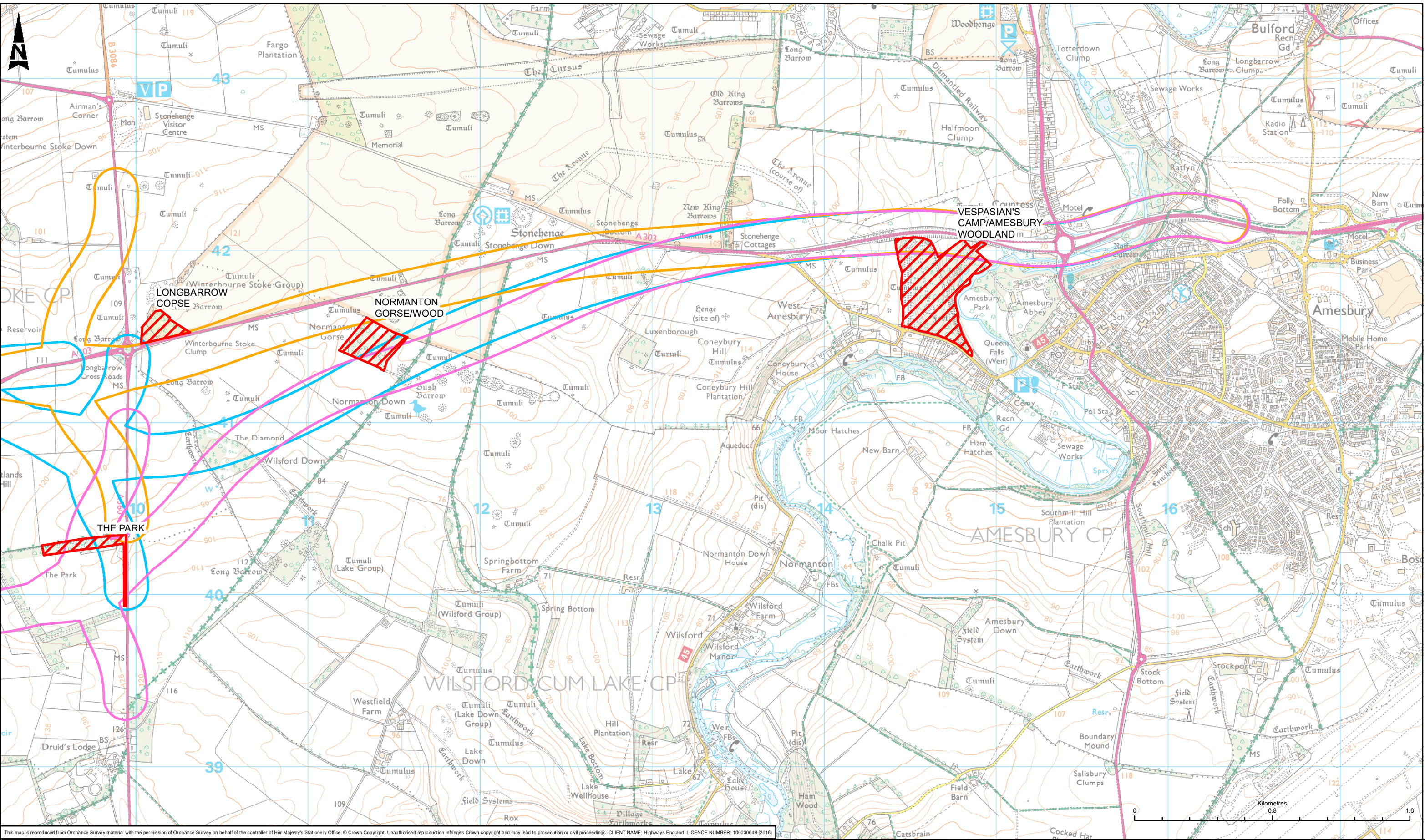
### 4.2 Recommendations

- 4.2.1 Given the lack of any evidence of dormouse activity being present throughout the presence/assumed absence survey, it is assumed that they are absent from the current study area.
- 4.2.2 A European Protected Species licence for dormice should therefore not be required for the proposed Scheme, and no specific mitigation should be necessary for dormice.

## Appendices

# Appendix A Figures





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LEGEND	
	SELECTED SURVEY SITE (HEDGEROW)
	SELECTED SURVEY SITE (WOODLAND)
	ROUTE OPTION 1SA 125M BUFFER
	ROUTE OPTION 1ND 125M BUFFER
	ROUTE OPTION 1NA 125M BUFFER

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION	
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)	
Construction	None
Maintenance / Cleaning	None
Use	None
Decommission/ Demolition	None

P02	30/10/17	FIRST ISSUE	EA	CD	LB
Rev	Date	Description	By	Chkd	App'd

Drawing Status  
FIT FOR INTERNAL REVIEW AND COMMENT

Client

Designers

Project Title					
A303 AMESBURY TO BERWICK DOWN					
Drawing Title					
FIGURE 2 : LOCATION OF SITES SELECTED FOR DORMOUSE PRESENCE/ ASSUMED ABSENCE SURVEYS PAGE 2 OF 2					
Scale 1:20,000	Designed / Drawn EA	Checked CD	Approved LB	Authorised SH	
Original Size A3	Date 30/10/17	Date 30/10/17	Date 30/10/17	Date 30/10/17	
Drawing Number Project				Revision	
Originator HE551506-AA-VES- SWI-DR-YE-000012				Volume P02	
Location	Type	Role	Number		



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## None

Location	Type	Role	Number
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P02	31/10/17	FIRST ISSUE	EA	CD	LB
Rev	Date	Description	By	Chk'd	App'



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<div>LEGEND</div> <div>▲ LOCATION OF NEST TUBES</div>	SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION										Drawing Status			Suitability	Project Title				
	In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)										FIT FOR INTERNAL REVIEW AND COMMENT			S3	A303 AMESBURY TO BERWICK DOWN				
	Construction										Client			<div></div>					
	None																		
	Maintenance / Cleaning										Designers			Drawing Title					
	None										<div></div>			FIGURE 5 : LOCATION OF NEST TUBES WITHIN "ONE MILE" HEDGEROW IN 2016					
	Use													Scale	Designed / Drawn	Checked	Approved	Authorised	
	None													1:4,000	EA	CD	LB	SH	
	Decommission/ Demolition										Original Size	Date	Date	Date	Date				
None										A3	31/10/17	31/10/17	31/10/17	31/10/17					
										Drawing Number	Project	Originator	Volume	Revision					
											HE551506-AA-VES-SWI-DR-YE-000015			P02					
										Location	Type	Role	Number						



LEGEND

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION	
<p>In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)</p>	
Construction	None
Maintenance / Cleaning	None
Use	None
Decommission/ Demolition	None

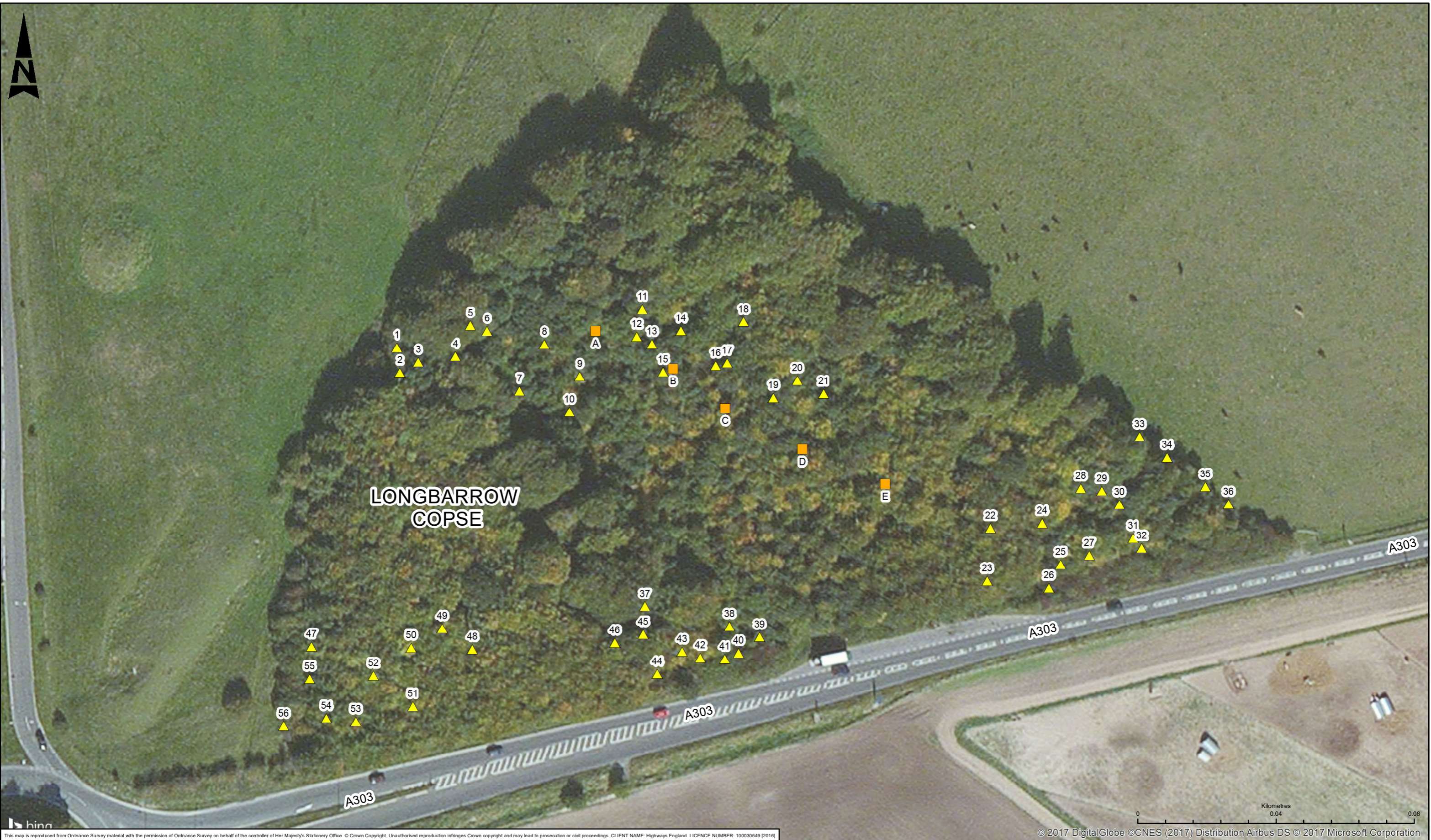
P02	31/10/17	FIRST ISSUE		EA	CD LB
Rev	Date	Description		By	Chk'd App'd

Client

 highway  
england



ARUP  ATKIN 

Suitability	Project Title				
T S3	A303 AMESBURY TO BERWICK DOWN				
YS	Drawing Title				
	FIGURE 6 : LOCATION OF NEST TUBES WITHIN "ONE MILE" HEDGEROW IN 2017				
	Scale	Designed / Drawn	Checked	Approved	Authorised
	1:4,000	EA	CD	LB	SH
NS	Drawing Number				
	Original Size	Date	Date	Date	Date
	A3	31/10/17	31/10/17	31/10/17	31/10/17
	Drawing Number Project				Revision
	<div> <div>Originator</div> <div>Volume</div> </div> <div>HE551506-AA-VES-SWI-DR-YE-0000016</div>				P02
	Location	Time	Role	Number	



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LEGEND

-  LOCATION OF NEST BOXES  
 LOCATION OF NEST TUBES

## SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)

## Construction

None

### Maintenance / Cleaning

None

## Use

None

## Decommission/ Demolition

None

P02	31/10/17	FIRST ISSUE	EA	CD	LB
Rev	Date	Description	By	Chk'd	App'd

Drawing Status	FIT FOR INTERNAL REVIEW AND COMMENT
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Suitability  
S:

Project Title	A303 AMESBURY TO BERWICK DOWN
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Client \_\_\_\_\_

Drawing Title
---------------

FIGURE 7 : LOCATION OF NEST TUB  
AND NEST BOXES WITHIN LONGBARR  
COPSE IN 2016 AND 2017

Scale 1:1,000	Designed / Drawn EA	Checked CD	Approved LB	Author
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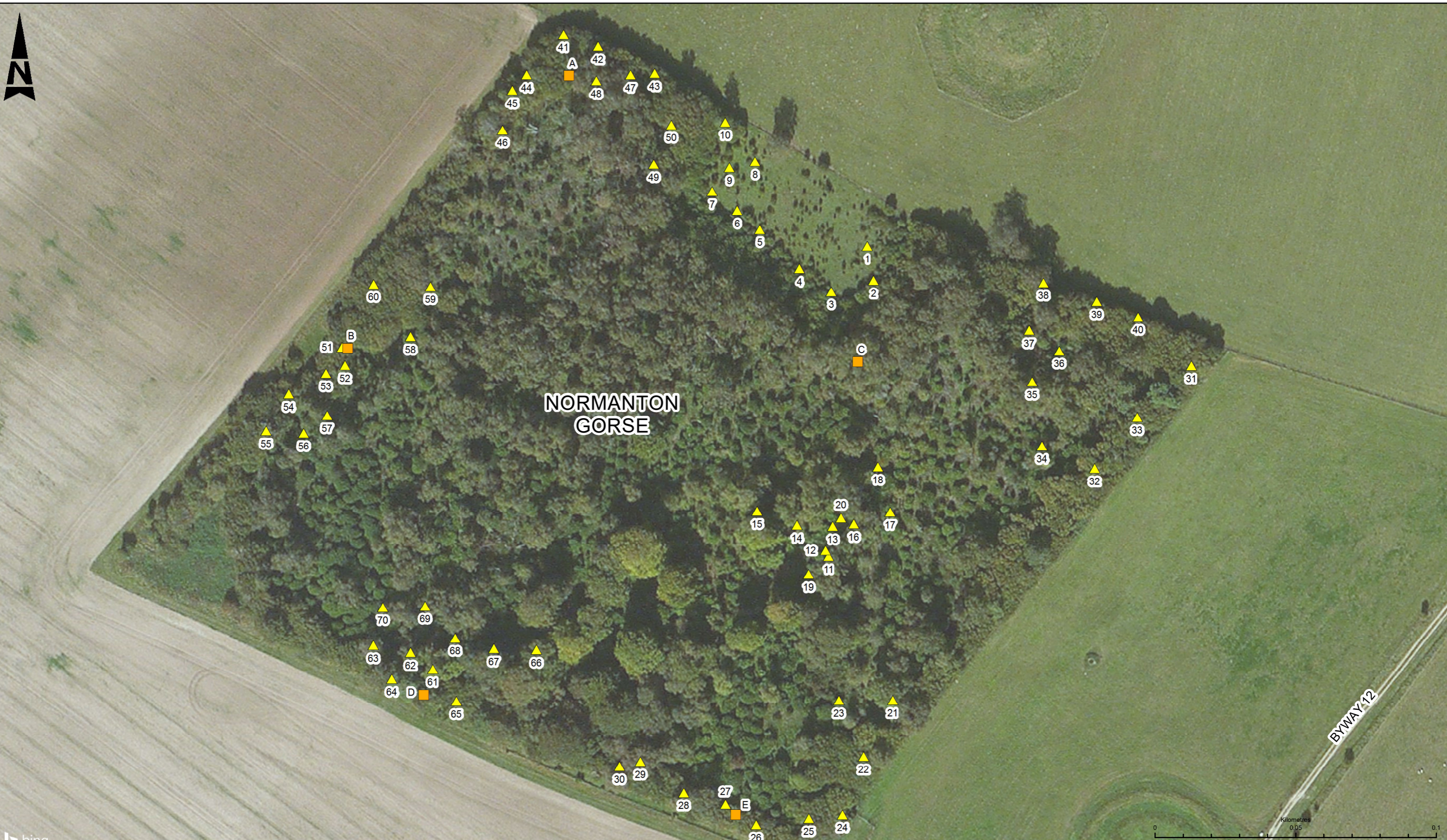
Original Size A3	Date 31/10/17	Date 31/10/17	Date 31/10/17	Date 31/10/17
---------------------	------------------	------------------	------------------	------------------

Drawing Number	Project	Originator	Volume	Revision
		HE551506-AA-VES-		

SWI-DR-YE-000017			
Location	Type	Role	Number



ARUP **ATKINS**



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**LEGEND**

LOCATION OF NEST BOXES

LOCATION OF NEST TUBES

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)

<b>Construction</b>	
None	
<b>Maintenance / Cleaning</b>	
None	
<b>Use</b>	
None	
<b>Decommission/ Demolition</b>	
None	

P02	31/10/17	FIRST ISSUE	EA	CD	LB
Rev	Date	Description	By	Chk'd	App'd

Drawing Status  
**FIT FOR INTERNAL REVIEW AND COMMENT**

Client

Designers

Suitability  
**S3**


Project Title  
**A303 AMESBURY TO BERWICK DOWN**


Drawing Title  
**FIGURE 8 : LOCATION OF NEST TUBES AND NEST BOXES WITHIN NORMANTON GORSE/WOOD IN 2016 AND 2017**

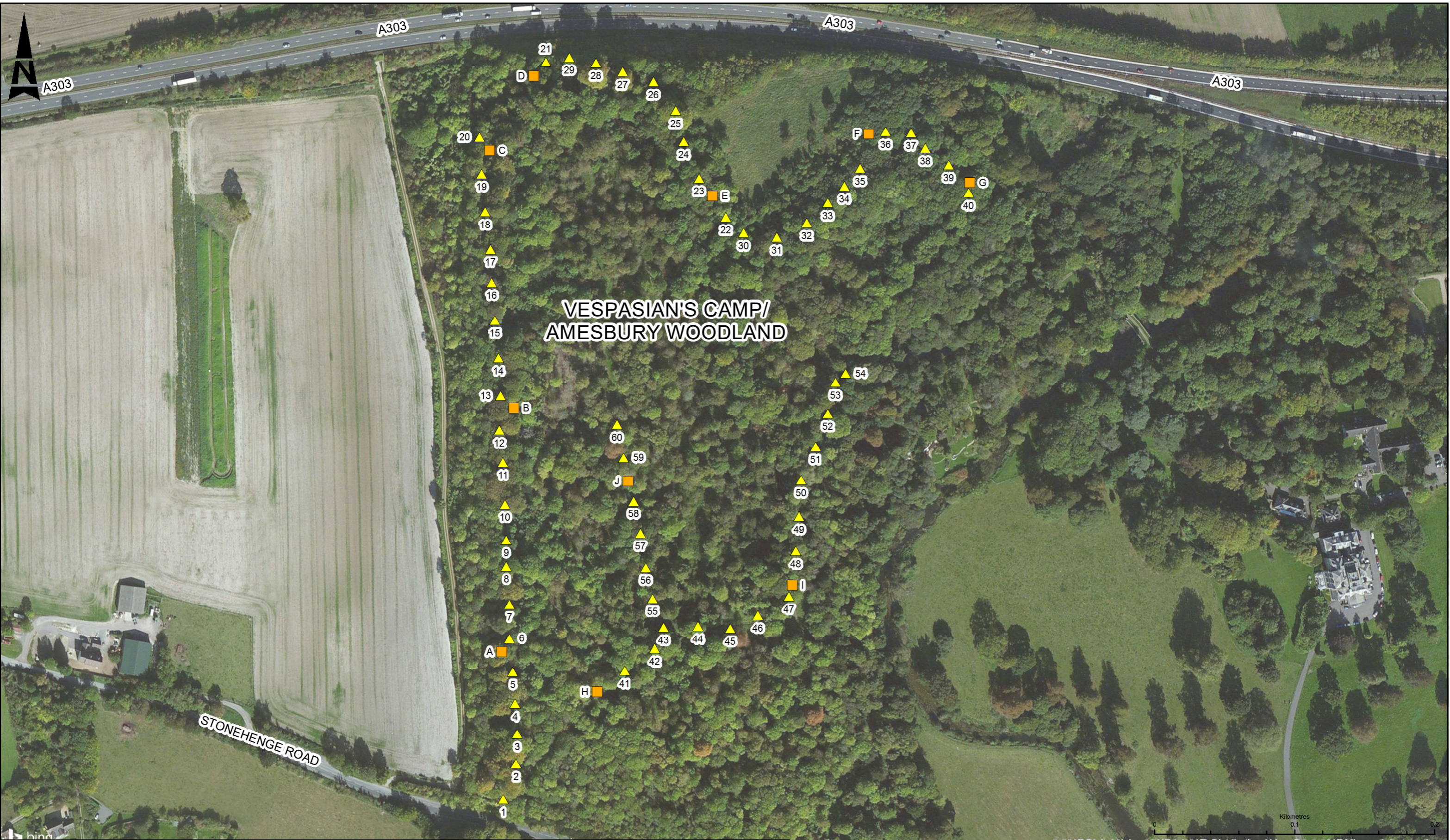
Scale <b>1:1,250</b>	Designed / Drawn <b>EA</b>	Checked <b>CD</b>	Approved <b>LB</b>	Authorised <b>SH</b>
Original Size <b>A3</b>	Date <b>31/10/17</b>	Date <b>31/10/17</b>	Date <b>31/10/17</b>	Date <b>31/10/17</b>
Drawing Number <b>HE551506-AA-VES-SWI-DR-YE-000018</b>	Originator <b>Volume</b>	Volume		Revision <b>P02</b>
Location	Type	Role	Number	





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LEGEND		SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION										Drawing Status		Suitability		Project Title											
▲	LOCATION OF NEST TUBES	In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)										FIT FOR INTERNAL REVIEW AND COMMENT		S3		A303 AMESBURY TO BERWICK DOWN											
		Construction														Client											
		None																									
		Maintenance / Cleaning														Drawing Title											
		None														FIGURE 9 : LOCATION OF NEST TUBES WITHIN THE PARK IN 2017											
		Use														Scale		Designed / Drawn		Checked		Approved		Authorised			
		None														1:2,000		EA		CD		LB		SH			
		Decommission/ Demolition																Original Size		Date		Date		Date		Date	
		None										P02		31/10/17		FIRST ISSUE				EA		CD		LB			
		Rev										Date		Description				By		Chk'd		App'd					

Drawing Status		Suitability		Project Title									
FIT FOR INTERNAL REVIEW AND COMMENT		S3		A303 AMESBURY TO BERWICK DOWN									
Client				Drawing Title									
				FIGURE 9 : LOCATION OF NEST TUBES WITHIN THE PARK IN 2017									
				Scale		Designed / Drawn		Checked		Approved		Authorised	
				1:2,000		EA		CD		LB		SH	
Designers				Original Size		Date		Date		Date		Date	
ARUPATKINS				A3		31/10/17		31/10/17		31/10/17		31/10/17	
Drawing Number		Project		Originator		Volume		Revision					
		HE551506-AA-VES-SWI-DR-YE-000019						P02					
Location		Type		Role		Number							



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LEGEND		SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION										Drawing Status		Suitability		Project Title															
<div>▲ LOCATION OF NEST TUBES</div> <div>■ LOCATION OF NEST BOXES</div>		In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks. (Reference shall also be made in the design hazard log)										FIT FOR INTERNAL REVIEW AND COMMENT		S3		A303 AMESBURY TO BERWICK DOWN															
		Construction										<div>Client</div> <div></div>		Drawing Title																	
		None												FIGURE 10 : LOCATION OF NEST TUBES AND NEST BOXES WITHIN VESPASIAN'S CAMP/ AMESBURY WOODLAND IN 2016 AND 2017																	
		Maintenance / Cleaning												Scale		Designed / Drawn		Checked		Approved		Authorised									
		None												1:2,500		EA		CD		LB		SH									
		Use										<div>Designers</div> <div></div>		Original Size		Date		Date		Date		Date									
		None												A3		31/10/17		31/10/17		31/10/17		31/10/17									
		Decommission/ Demolition												Drawing Number		Project		Originator		Volume		Revision									
		None										P02		31/10/17		FIRST ISSUE		EA		CD		LB		HE551506-AA-VES-SWI-DR-YE-000020		P02					
		Rev										Date		Description		By		Chk'd		App'd				Location		Type		Role		Number	

# Appendix B Scores Achieved During Presence/Assumed Absence Survey

## B.1 Scores Achieved at Each Site During Presence/Assumed Absence Survey

Table 4: Scores Achieved at Each Site During Presence/Assumed Absence Survey

Survey date	Score available using 50 tubes as a standard (see Table 2)	Calculation	Score achieved	Total score achieved
Winterbourne Stoke Hedgerows 1 and 2				
06/09/2016	7	(7 ÷ 50) x 40 tubes	5.60	20.2
06/10/2016	2	(2 ÷ 50) x 40 tubes	1.60	
17/05/2017	4	(4 ÷ 50) x 39 tubes	3.12	
17/08/2017	5	(5 ÷ 50) x 41 tubes	4.10	
12/09/2017	7	(7 ÷ 50) x 41 tubes	5.74	
“One Mile” Hedgerow				
06/09/2016	7	(7 ÷ 50) x 37 tubes	5.18	20.7
06/10/2016	2	(2 ÷ 50) x 37 tubes	1.48	
16/05/2017	4	(4 ÷ 50) x 64 tubes	5.12	
12/09/2017	7	(7 ÷ 50) x 64 tubes	8.96	
Longbarrow Copse				
06/09/2016	7	(7 ÷ 50) x 56 tubes	7.84	21.7
06/10/2016	2	(2 ÷ 50) x 56 tubes	2.24	
17/05/2017	4	(4 ÷ 50) x 53 tubes	4.24	
12/09/2017	7	(7 ÷ 50) x 53 tubes	7.42	
Normanton Gorse/Wood				
06/09/2016	7	(7 ÷ 50) x 70 tubes	9.80	28.0
06/10/2016	2	(2 ÷ 50) x 70 tubes	2.80	
24/05/2017	4	(4 ÷ 50) x 70 tubes	5.60	
20/09/2017	7	(7 ÷ 50) x 70 tubes	9.80	
The Park				
24/05/2017	4	N/A	4	20.0
13/06/2017	2	N/A	2	
06/07/2017	2	N/A	2	
17/08/2017	5	N/A	5	
12/09/2017	7	N/A	7	
Vespasian’s Camp/Amesbury Woodland				
21/09/2016	7	(7 ÷ 50) x 60 tubes	8.40	30.0
18/10/2016	2	(2 ÷ 50) x 60 tubes	2.40	
11/05/2017	4	(4 ÷ 50) x 60 tubes	4.80	
24/08/2017	5	(5 ÷ 50) x 60 tubes	6.00	
20/09/2017	7	(7 ÷ 50) x 60 tubes	8.40	

# Appendix C Weather Conditions During Surveys

## C.1 Weather Conditions During Presence/Assumed Absence Survey

Table 5: Weather Conditions During Presence/Assumed Absence Survey

Date	Weather Conditions			
	Temperature (°C)	Wind speed (Beaufort Scale)	Cloud cover (%)	Precipitation
06/09/2016	22	2	80	Dry
21/09/2016	18	3	60	Dry
06/10/2016	12	3	80	Dry
18/10/2016	13	1	50	Dry
11/05/2017	18	1	60	Dry
16/05/2017	14	2	100	Light drizzle
17/05/2017	14	2	100	Heavy rain
24/05/2017	22	1	25	Dry
13/06/2017	21	1	15	Dry
06/07/2017	28	1	0	Dry
17/08/2017	21	3	30	Dry
24/08/2017	19	1	20	Dry
12/09/2017	14	3	15	Dry
20/09/2017	15	4	80	Dry

## Appendix D Photographs of Wood Mouse Activity

### D.1 Photographs of Wood Mouse Activity

Table 6: Photographs of wood mouse activity

Winterbourne Stoke Hedgerows 1 and 2			
Visit 4		Visit 5	
Tube 27a	Tube 29a	Tube 7a	Tube 27a
			No photographs taken.
"One Mile" Hedgerow; Visit 4; Tube 32a			
No photographs taken.			

**Normanton Gorse/Wood; Visit 2**

**Tube 4**



**Tube 57**



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