



Rampion Offshore Wind Farm



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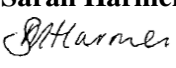
Rampion Offshore Wind Farm –
Onshore EIA

Dormouse Survey
Technical Report

Prepared For E.ON Climate and
Renewables

October 2012

INTERNAL PROJECT REPORT FOR EON**RSK General Notes****Project No:** 852425**Title:** Rampion Offshore Wind Farm – Onshore EIA – Dormouse
Survey Technical Report**Client:** E.ON Climate and Renewables**Issue Date:** October 2012**Revision:** Rev02**Issuing Office:** Hemel Hempstead

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Figure 3 – Location of Dormouse nest and connected hedges nearby

1 INTRODUCTION

1.1 Purpose of this Report

This report presents the findings of Dormouse surveys carried out along the alignment of a proposed cable route through Sussex associated with a proposed offshore windfarm development. An outline of the cable route is shown in *Figure 1*. The surveys comprised nest box and nest tube surveys, carried out between July and October 2011.

1.2 Scheme Description

The proposed cable route is approximately 27 km long running south to north from a landfall site near East Worthing to a proposed substation site east of the existing Bolney substation near Twineham. Construction activities will be undertaken within a fenced strip of land, known as the working width. The working width is expected to be no wider than 40m, comprising 15m for the cable easement, and 25m for additional areas for storage of excavated material and access along the cable trench. The cable easement will not necessarily be central to the working width.

For the purposes of the ecological surveys, a survey corridor of 65m or 125m (depending on the survey-type) was used. For the detailed surveys for Dormouse, a 65m survey corridor was used.

The term ‘cable route’ has been used throughout this report and represents the area within the Development Boundary for the onshore cable.

As shown on *Figure 2*, the ecology survey corridor for the cable route extends further north than the Development Boundary. This is due to the fact that the cable route connection with the substation was not defined at the time of the surveys and therefore a wider survey area was covered.

Ecological surveys undertaken for the proposed substation are detailed elsewhere in the Substation Technical Report (*Appendix 24.11*), although the survey areas do overlap, as shown in *Figure 2*.

1.3 Ecological Context

The proposed cable route starts at the Sussex coast on the eastern outskirts of Worthing and proceeds in a general north-east direction, crossing the South Downs National Park and terminating east of Bolney Substation.

Between the coast and the A27 road, the route crosses semi-urban habitats, including a golf course, parkland and former allotments, and a section of mostly arable farmland. It then enters the South Downs NP, passing through a landscape of rolling chalk hills predominately converted to intensive arable farming. Beyond Tottington Mount the final half of the route comprises a mixture of arable and pastoral farmland enclosed by hedges.

The route generally avoids large areas of woodland and other semi-natural habitats, though it crosses a few discrete areas of unimproved grassland, most notably at Tottington Mount and Old Erringham Farm Valley and road cutting SNCI. Other noteworthy habitats crossed include coastal shingle, the tidal River Adur (which will be crossed via directional drilling techniques) and a few narrow woodland corridors.

1.4 *Structure of this Report*

The remainder of the report is set out as follows:

- *Section 2* describes the survey and assessment methods;
- *Section 3* presents the results of the surveys;
- *Section 4* provides the evaluation and conclusions;
- *Section 5* is the reference section;
- *Section 6* provides the figures; and,
- *Appendix A* gives relevant legislation.

2 ***METHODS***

2.1 ***Survey Constraints***

Access was denied by landowners for a 1 km section of the route between Horn Lane and the A281 road, although it was included in the animal walkover in December 2010 so some information is available, although limited.

In addition there were two hedgerows, on the southside of the South Downs east of Titch Hill Farm, which could not be accessed at the time of survey due to health and safety reasons associated with the presence of bulls in the fields.

A minor route change occurred subsequent to the completion of the Dormouse surveys to accommodate the 'Teville Stream Restoration Project'. As a result, survey locations DOR003, DOR004 and DOR005 no longer fall within the 65m survey corridor, although the same hedgerows will be affected. Dormice have large territories, and if they have been shown to be absent from a hedgerow then it is reasonable to assume that they are absent from the entire hedge. Therefore, considering the negative results for this area, and indeed the majority of the route, it was not necessary to repeat these surveys.

2.2 ***Survey Method***

2.2.1 ***General***

In most habitats, artificial nest-tubes are widely regarded as the most appropriate technique for establishing the presence of Dormice on grounds of cost, efficacy and disturbance (Mammal Society 2005). The technique uses tubes that are square in cross-section, open at one end, and made of corrugated plastic with a wooden base-plate. Dormice tend to use nest-tubes if there are few natural nest sites, but in some habitat (such as coppice-woodland) there are already numerous suitable nesting locations. In these cases, nest-boxes are used rather than nest-tubes because they provide alternative, high-quality nesting sites that are more likely to be used by Dormice than nest-tubes. The density and positioning of the boxes depends upon habitat structure and suitability.

Tubes and boxes both provide a weatherproof site for Dormice to build summer nests, which are distinctive, neatly woven balls of leaves or grass, lined with finer material, often shredded honeysuckle bark and fine grass (Corbet & Harris, 1991). Other less-distinctive assemblages of leaves are likely to be made by Wood Mice (*Apodemus sylvaticus*), as are caches of food including nuts and berries because Dormice are not known to store food in this way. Signs of Wood Mice were recorded in case of confusion with Dormice.

2.2.2 *Habitat Assessment*

Woodland, tree-lined watercourses, hedgerows and associated scrub along the proposed cable route were identified during the Extended Phase 1 Habitat Survey in December 2010 as being suitable for Dormice. These features have several woody species, which gives a continuous supply of food from April to November when Dormice are active. Features with the food-plants *Corylus avellana* (Hazel), *Quercus robur* (Oak) and *Rubus fruticosus* agg. (Bramble) are especially important for Dormice.

2.2.3 *Artificial Refuge Surveys*

The surveys for Dormice used nest-tubes and nest-boxes in appropriate densities and numbers according to habitat type. A total of 467 nest-tubes and 41 nest-boxes were placed at 52 locations. Maps showing the proposed cable route and the location of the Dormouse nest tubes and nest boxes are included in *Figures 1* and *2* respectively.

Nest-tubes and nest-boxes were checked on five occasions between July and October 2011. These surveys correlate positively with the index of probability for finding Dormice in any one month (English Nature, 2006). The surveys were carried out by Jonathan Jackson and Sarah Brooks (Natural England Dormouse licence number 20113040 and 20114143 respectively).

Any incidental signs of Dormice i.e. feeding remains, evidence of bark stripping for nest building, wild nests or sightings were also recorded.

3

RESULTS

Table 1 summarises the details of the targeted Dormice surveys. *Column 1* gives the area identification number, which relates to locations on the *Dormouse Tube/Box Location Map 1*. *Column 2* gives the number of tubes used. *Column 3* gives the number of nest-boxes used. *Columns 4 to 8* give species evidence found on the first survey visit to the fifth survey visit. The following species codes are used: WM – Wood Mouse, DM - Dormouse

Table 1: Results of Dormouse Surveys

Area ID	Tubes	Boxes	Visit 1 25.07.11 – 28.07.11	Visit 2 22.08.11 – 25.08.11	Visit 3 12.09.11 – 16.09.11	Visit 4 11.10.11- 14.10.11	Visit 5 24.10.11- 28.10.11
001	-	8	-	-	WM	WM	WM
002	-	8	-	-	WM	WM	-
003	10	-	-	-	WM	WM	WM
004	10	-	-	-	WM	WM	WM
005	10	-	-	-	WM	WM	-
006	5	-	-	WM	WM	WM	WM
007	10	-	-	-	WM	WM	-
008	10	-	-	WM	WM	WM	-
010	10	-	-	-	WM	<u>DM</u>	WM
011	10	-	-	-	-	WM	-
012	10	-	-	-	-	WM	WM
013	10	-	-	-	WM	WM	-
014	10	-	WM	WM	WM	WM	WM
015	10	-	-	-	WM	WM	WM
016	10	-	-	-	WM	WM	-
017	10	-	-	-	WM	WM	-
018	-	10	WM	WM	WM	WM	WM
020	10	-	-	WM	WM	WM	WM
021	10	-	-	-	WM	WM	WM
022	10	-	-	-	WM	WM	WM
023	9	-	-	-	WM	WM	WM
024	10	-	WM	-	WM	WM	WM
025	10	-	-	-	WM	WM	WM
026	10	-	-	-	WM	WM	WM
027	10	-	-	-	WM	WM	WM
028	10	-	-	-	WM	WM	WM
029	10	-	-	-	WM	WM	WM
030	10	-	-	-	WM	WM	WM
031	10	-	-	-	WM	WM	WM

Area ID	Tubes	Boxes	Visit 1 25.07.11 – 28.07.11	Visit 2 22.08.11 – 25.08.11	Visit 3 12.09.11 – 16.09.11	Visit 4 11.10.11- 14.10.11	Visit 5 24.10.11- 28.10.11
032	10	-	-	-	WM	WM	WM
033	10	-	-	-	WM	WM	WM
035	10	-	-	-	WM	WM	-
036	8	-	-	-	WM	WM	WM
037	10	-	-	-	WM	WM	WM
038	10	-	-	-	WM	WM	-
039	10	-	-	-	WM	WM	WM
040	10	-	-	-	WM	WM	WM
041	10	-	-	-	WM	WM	WM
052	10	-	-	-	WM	WM	WM
053	10	-	-	-	WM	WM	WM
061	10	-	-	-	WM	WM	-
062	10	-	-	-	-	WM	WM
064	10	-	-	-	WM	WM	-
065	10	-	-	-	-	WM	-
066	10	-	-	-	WM	WM	-
070	10	-	-	-	WM	WM	WM
071	10	-	-	-	-	WM	-
072	15	-	-	-	WM	WM	WM
073	5	-	-	-	WM	WM	-
074	5	5	-	-	WM	WM	WM
075	-	10	-	WM	WM	WM	WM
076	10	-	-	-	WM	WM	WM

EVALUATION AND CONCLUSIONS

A single Dormouse nest was found at *Location 10* in a nest tube. This is positive evidence that Dormouse are present in this area of the proposed cable route.

Location 10 is on the south side of the South Downs east of Titch Hill Farm. The hedge comprises semi-mature trees, with a very poor understorey in places. The hedge is not large enough to support a viable population of Dormice without being connected to a larger area of suitable habitat.

There are two large areas of suitable habitat near to the nest location. These are the wooded area called “The Mountain” to the south-east and a long thin strip of woodland to the north. *Location 10* combined with other hedges form a link between the two wooded areas, this is illustrated in *Figure 3*.

The proposed cable route does not cross the hedge at *Location 10*. However, if works will disturb any Dormice using the hedge then action will need to be taken to protect them. This may include supervision of works by an ecologist, works being carried out under a licence, and reinstatement of any hedge that is removed.

There are two additional hedges to the south that could not be accessed at the time of survey due to health and safety reasons associated with the presence of bulls in the fields; these are shown on *Figure 3*. These hedges are connected to The Mountain area of woodland and will be crossed by the proposed cable route. Given the proximity to a known population of Dormice, presence has been assumed at these two hedgerows and mitigation measures will be put in place to eliminate any risk of injuring or disturbing Dormice during construction. A development licence issued by Natural England will be required for the works.

There were no other locations with signs of Dormouse presence. Dormice are notoriously slow to colonise new areas and therefore these results are valid for three years (English Nature, 2006). Should works be completed after three years then further surveys may be required.

REFERENCES

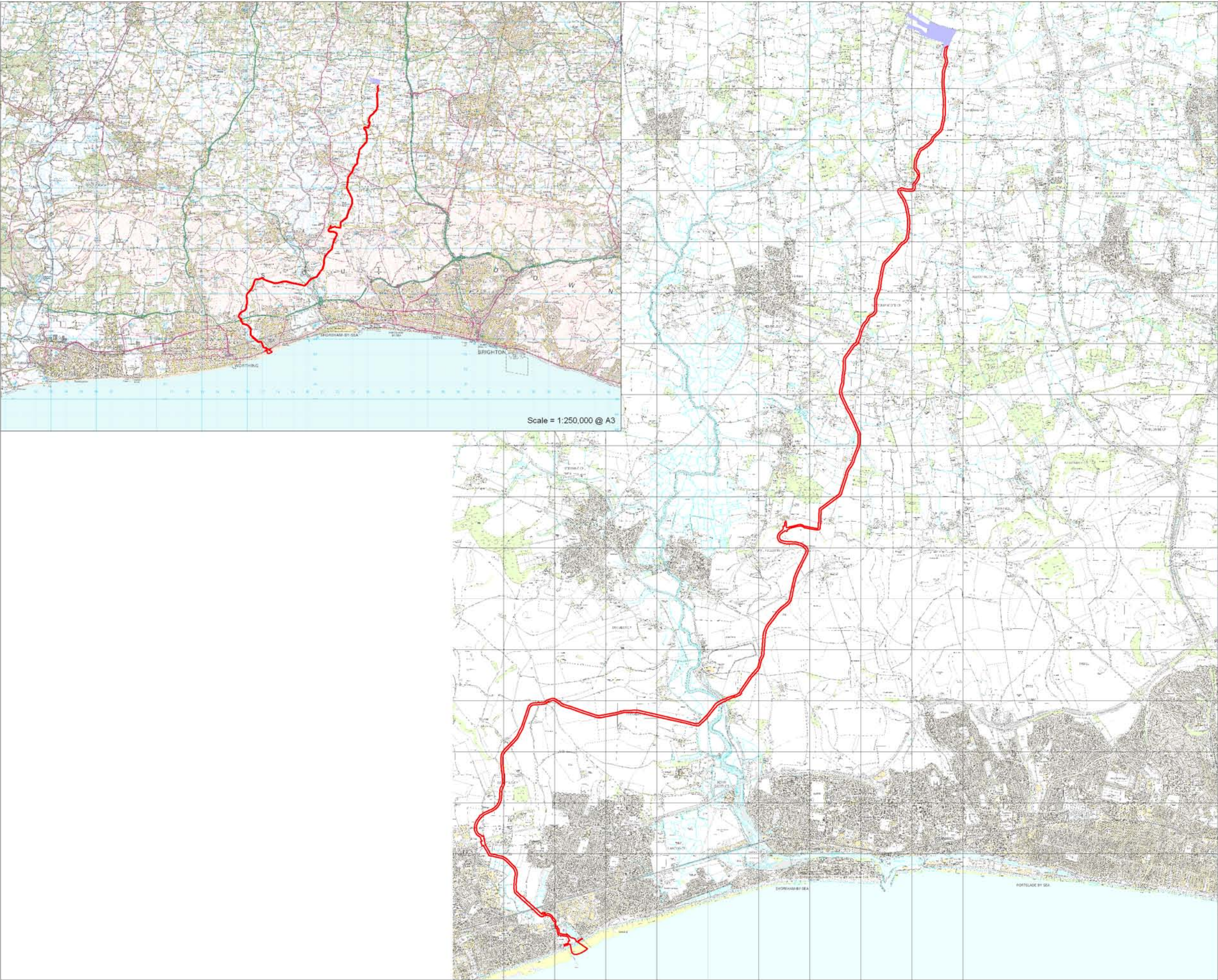
English Nature, (2006), *Dormouse Conservation Handbook 2nd Edition*

FIGURES

Figure 1 – Site location plan

Figure 2 – Nest box and tube locations

Figure 3 – Location of Dormouse nest and connected hedges nearby



Legend :

Development Boundary

Substation Development Boundary

00	21.11.12	Loc	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm

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Title :

Figure 1 -
Site Location Plan

012

kilometres

Scale = 1:75,000 @ A3

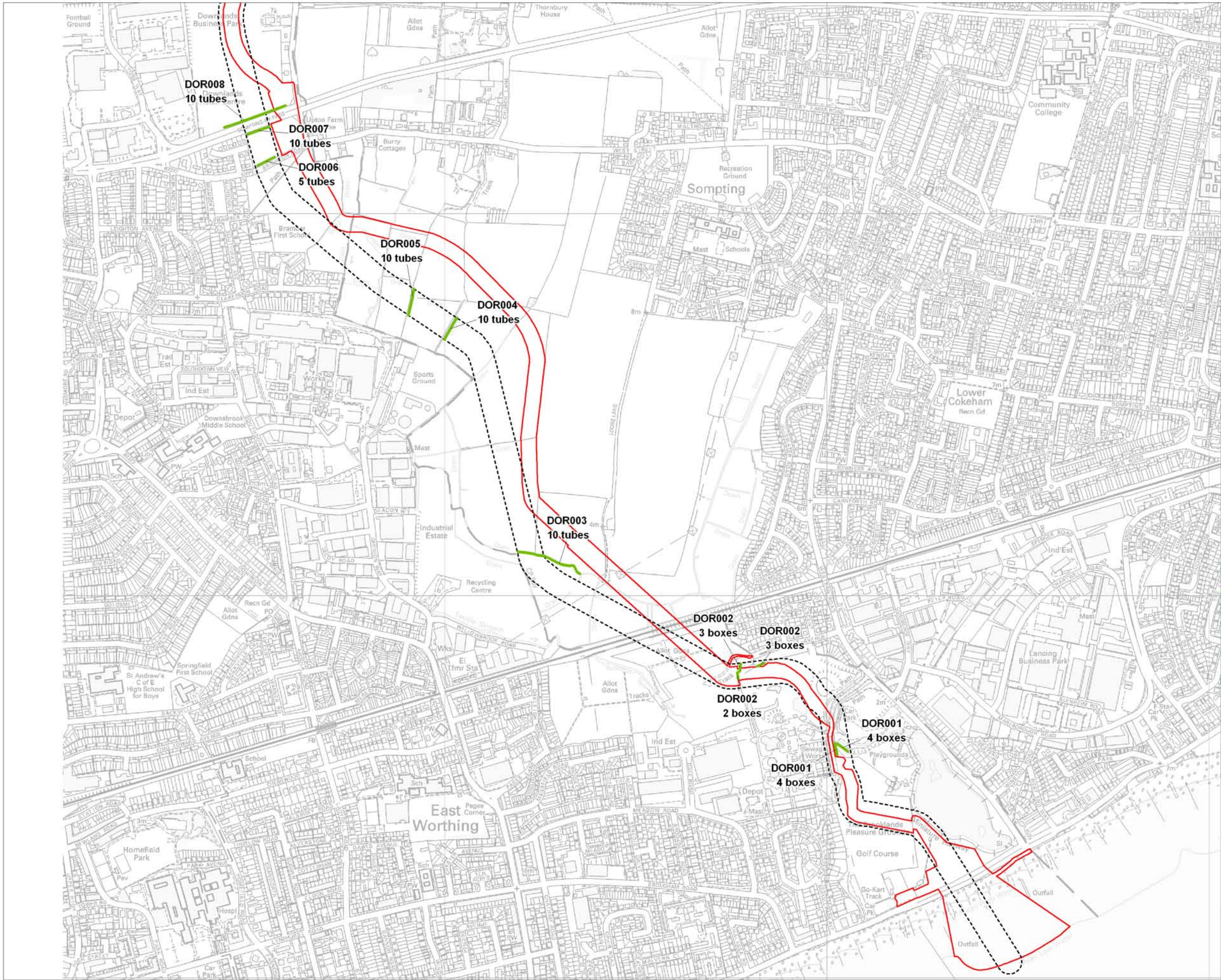
N

W

E

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REV 16



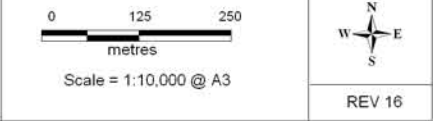
- Legend:**
- Ecology survey corridor (65m)
 - Development Boundary
 - Substation Development Boundary
 - No access
 - Dormouse equipment
 - DOR002 Survey location reference



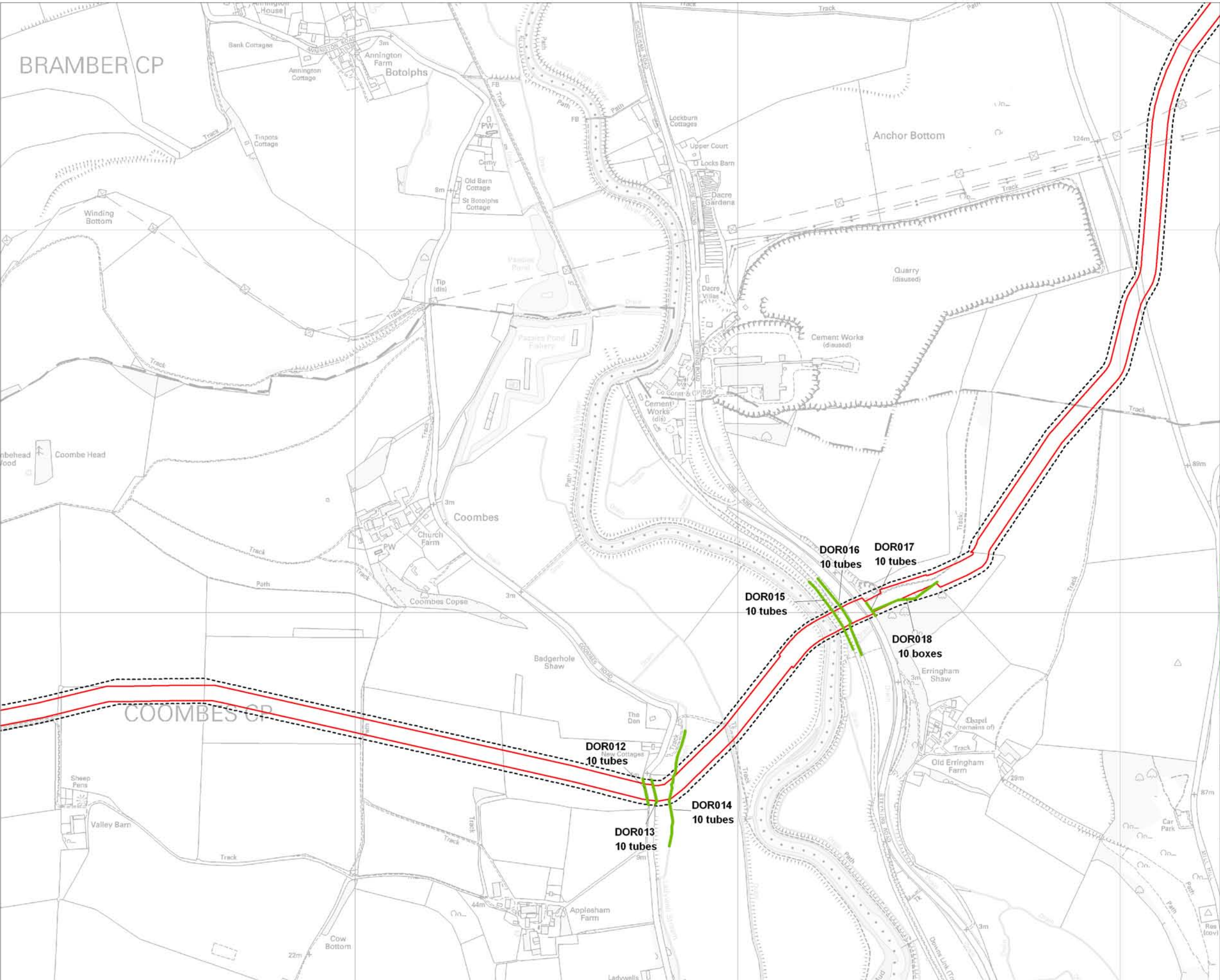
00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App
Rampion Wind Farm					



Title:
Figure 2 -
Dormouse Nest Box and Nest
Tube Locations
Map 1 of 8







Legend:

- Ecology survey corridor (65m)
- Development Boundary
- Substation Development Boundary
- No access
- Dormouse equipment
- DOR002 Survey location reference

Map 3 of 8

Rampion Wind Farm

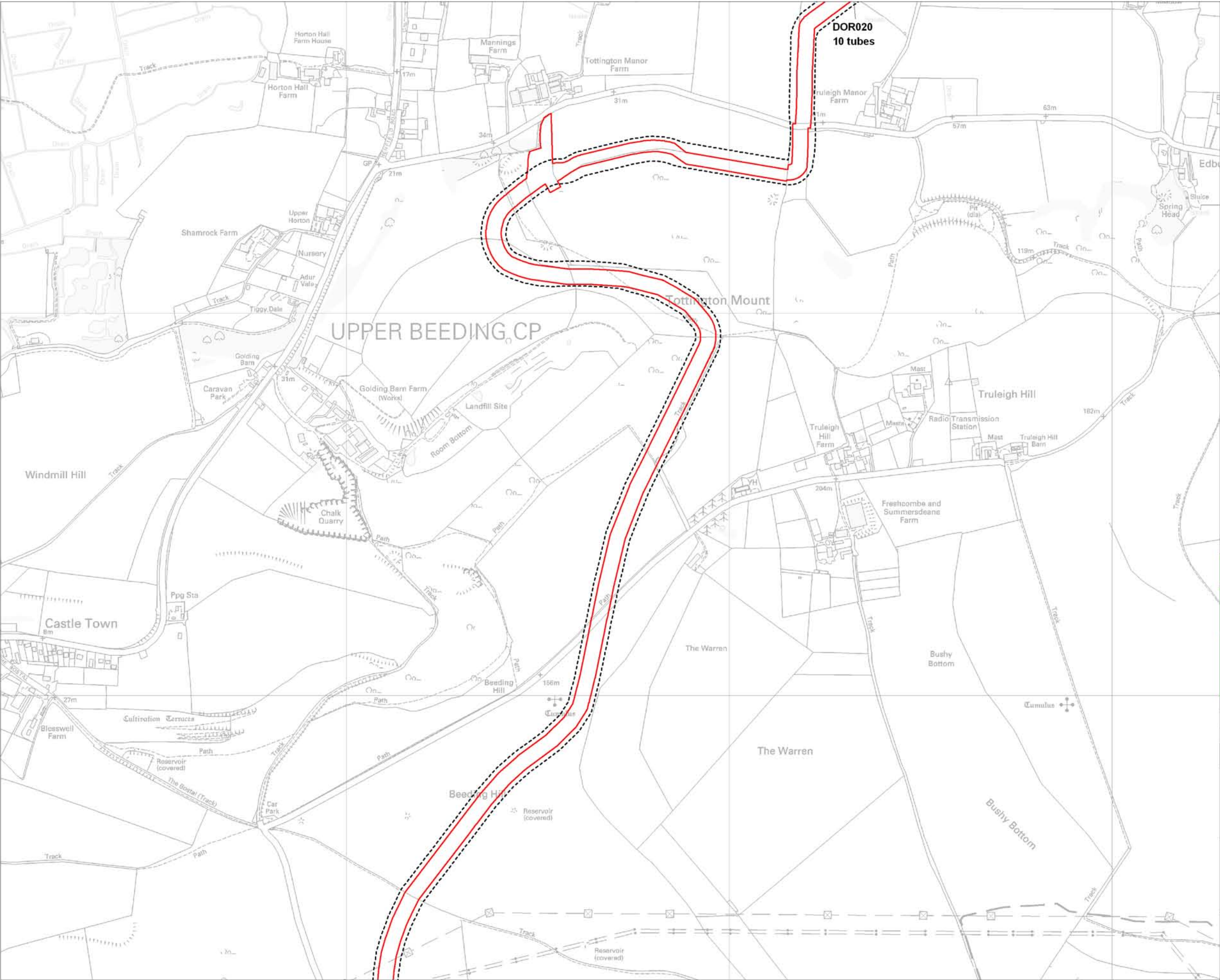
RSK e-on

Title:

Figure 2 -
Dormouse Nest Box and Nest
Tube Locations
Map 3 of 8

0 125 250
metres
Scale = 1:10,000 @ A3

REV 16



Legend :

- Ecology survey corridor (65m)
- Development Boundary
- Substation Development Boundary
- No access
- Dormouse equipment
- DOR002 Survey location reference



00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm

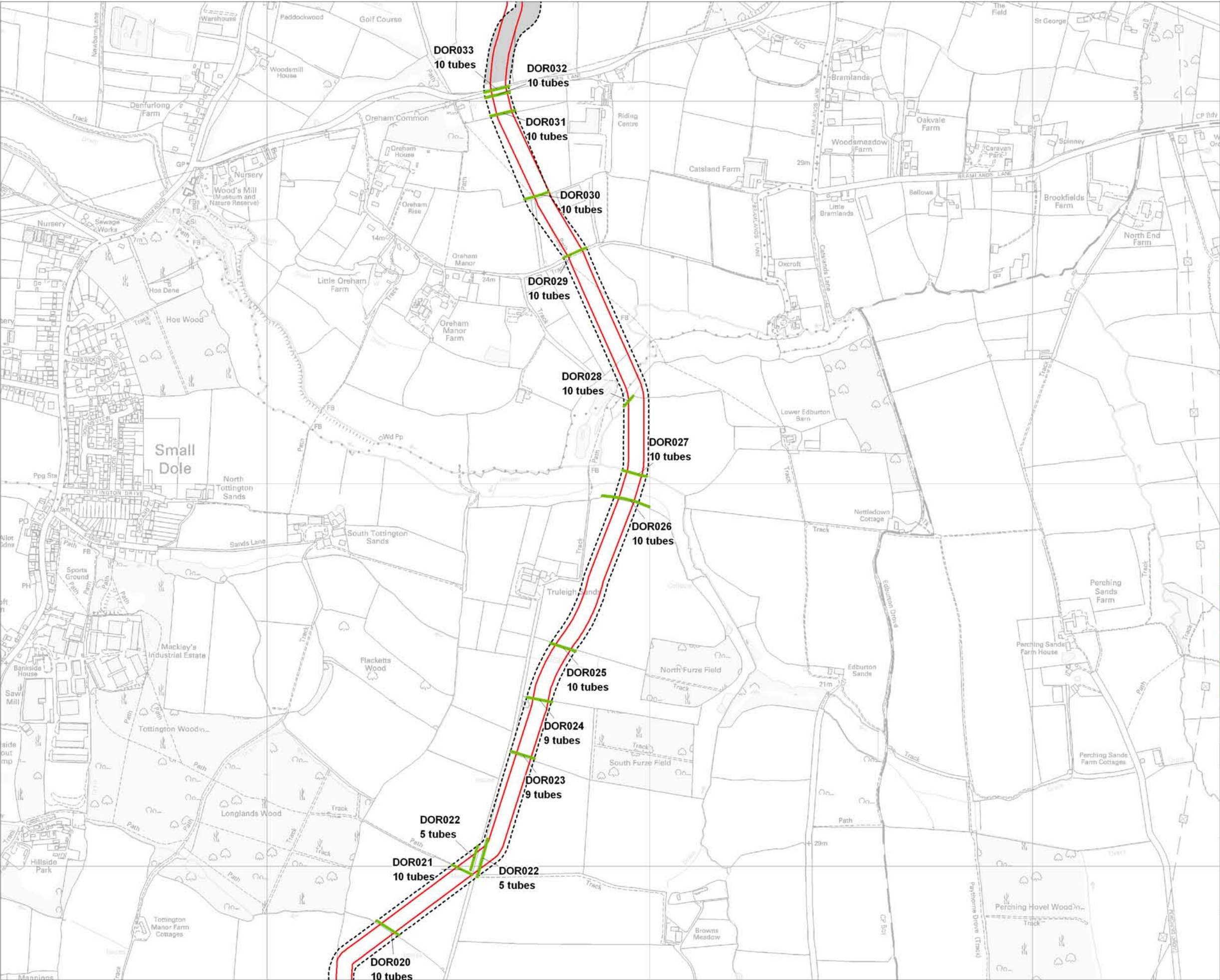


Title :
Figure 2 -
Dormouse Nest Box and Nest
Tube Locations
Map 4 of 8

0 125 250
metres
Scale = 1:10,000 @ A3

N
W E
S

REV 16



Legend :

- Ecology survey corridor (65m)
- Development Boundary
- Substation Development Boundary
- No access
- Dormouse equipment
- DOR002 Survey location reference

00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm

RSK e-on

Title :

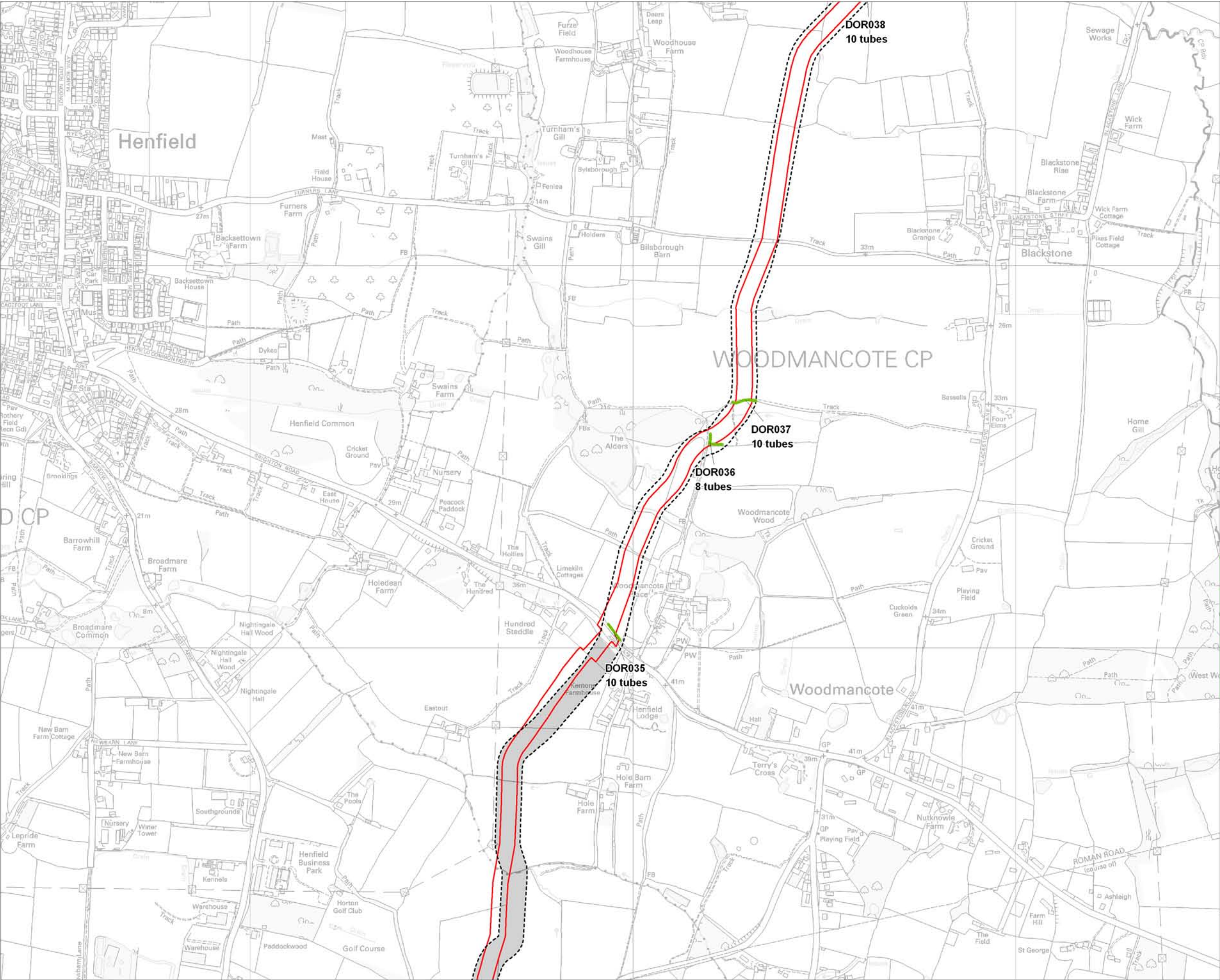
Figure 2 -
Dormouse Nest Box and Nest
Tube Locations
Map 5 of 8

0 125 250
metres

Scale = 1:10,000 @ A3

N
W
E
S

REV 16



Legend :

- Ecology survey corridor (65m)
- Development Boundary
- Substation Development Boundary
- No access
- Dormouse equipment
- DOR002 Survey location reference

00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm

RSK e-on

Title :

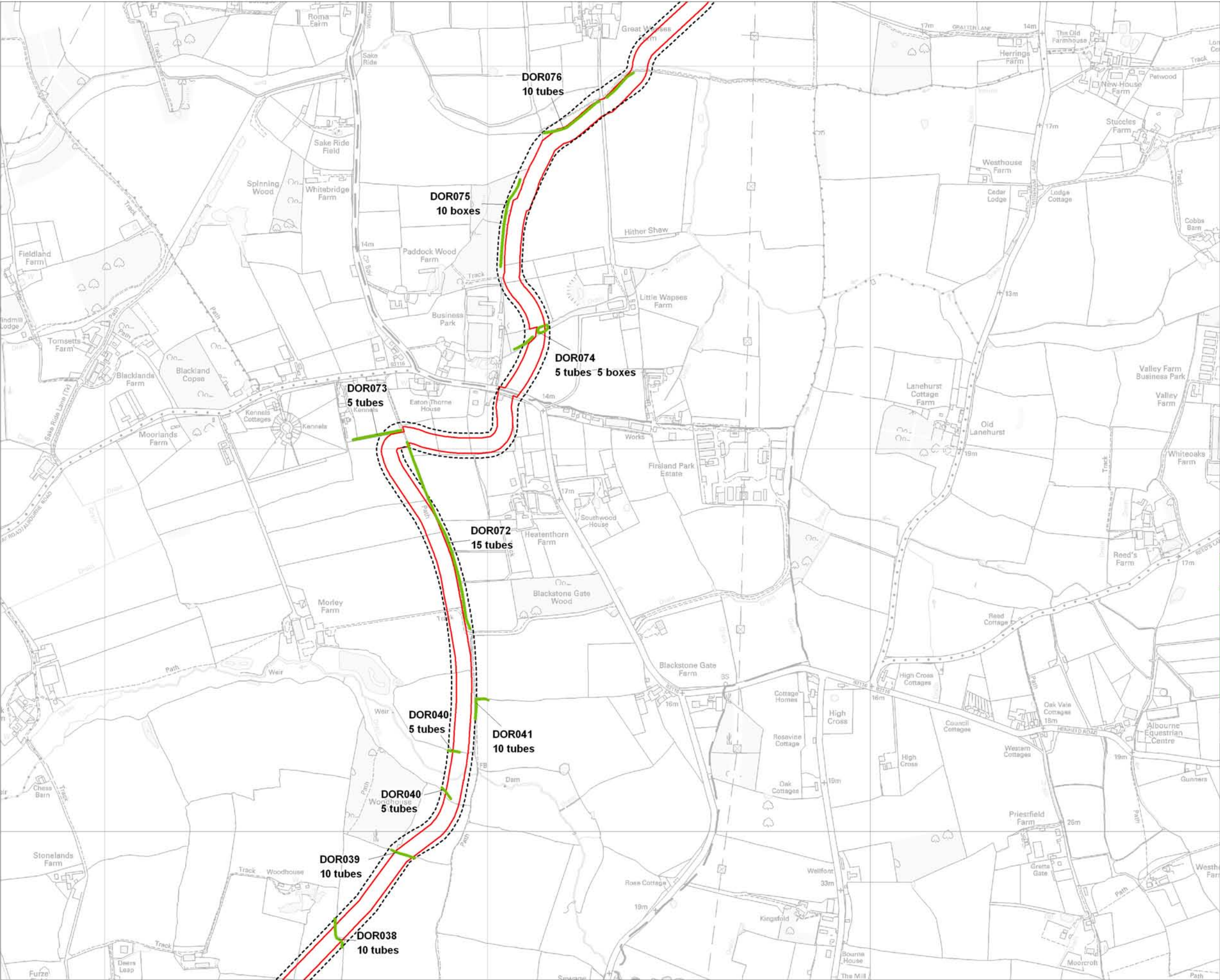
Figure 2 -
Dormouse Nest Box and Nest
Tube Locations
Map 6 of 8

0 125 250
metres

Scale = 1:10,000 @ A3

N
W
E
S

REV 16



Legend:

- Ecology survey corridor (65m)
- Development Boundary
- Substation Development Bounday
- No access
- Dormouse equipment
- DOR002 Survey location reference

00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm

RSK e-on

Title:

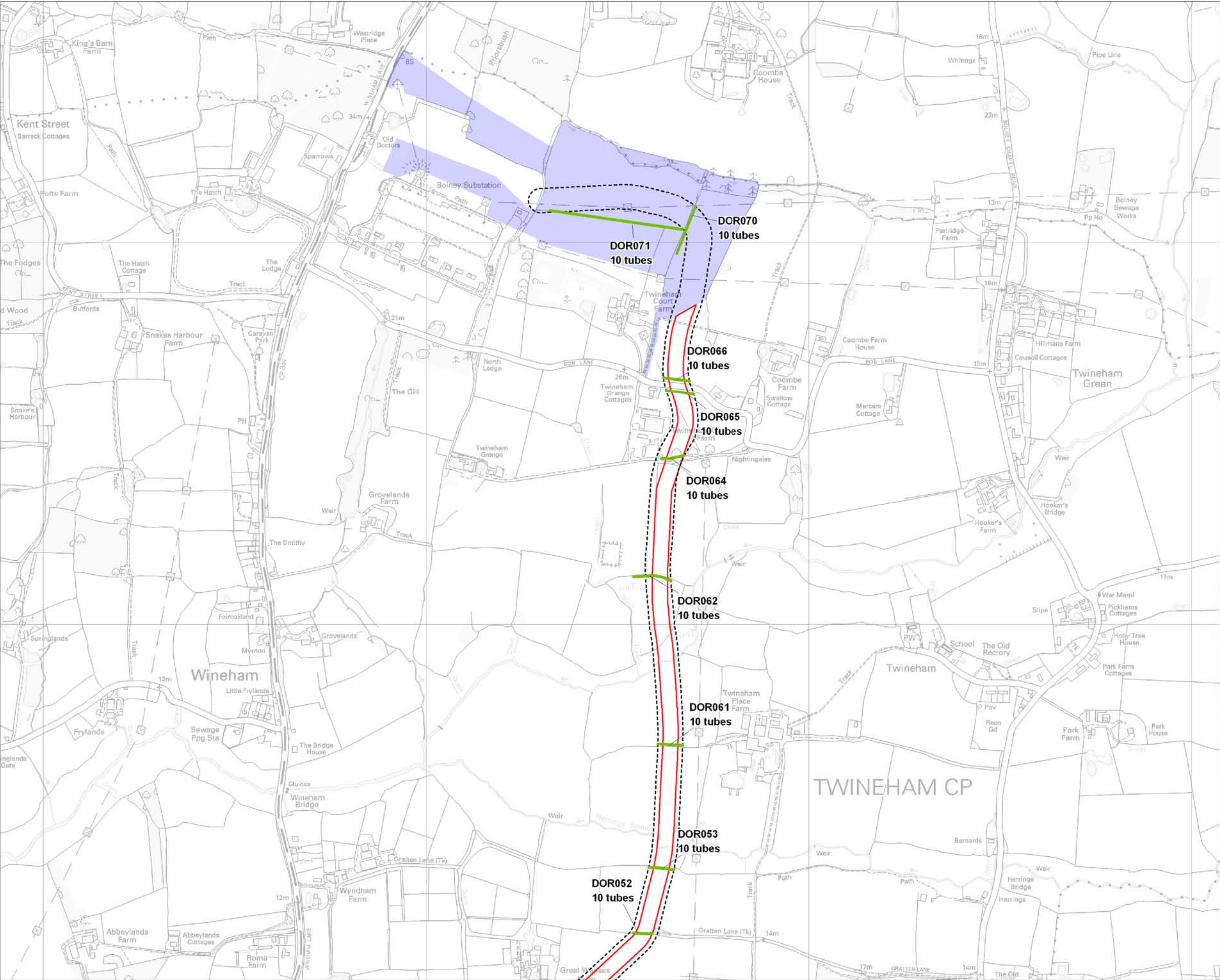
Figure 2 -
Dormouse Nest Box and Nest
Tube Locations
Map 7 of 8

0 125 250
metres

Scale = 1:10,000 @ A3

N
W
E
S

REV 16



Legend:

- Ecology survey corridor (65m)
- Development Boundary
- Substation Development Boundary
- No access
- Dormouse equipment
- DOR002 Survey location reference

00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm

RSK e-on

Title:

Figure 2 -
Dormouse Nest Box and Nest
Tube Locations
Map 8 of 8

0 125 250
metres

Scale = 1:10,000 @ A3

N
W
E
S

REV 16



- Legend :
- Development Boundary
 - Dormouse nest found
 - Location not surveyed - assumed Dormouse presence due to connectivity
 - Connectivity
- DOR002 Survey location reference



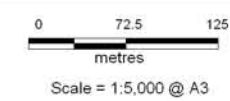
00	21.11.12	P2	RG	NH	VG
Rev	Date	Description	Drn	Chk	App

Rampion Wind Farm



Title :

Figure 3 -
Location of Dormouse Nest and
Connected Hedges Nearby



REV 16

7 **APPENDIX A – LEGISLATION**

7.1 **General**

This section briefly describes the legal protection afforded to protected species. It is for information only and is not intended to be comprehensive or to replace specialised legal advice. It is not intended to replace the text of the legislation, but summarises the salient points.

7.2 **Dormice**

Common Dormouse (*Muscardinus avellanarius*) are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. Common Dormouse also receives protection under *Schedule 6* of *The Wildlife and Countryside Act 1981* (as amended) relating specifically to trapping and direct pursuit of these species. These species are also all listed as European Protected Species on *Schedule 2* of the *Conservation (Natural Habitats, etc.) Regulations 1994* which gives them full protection under *Regulation 39*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRow Act).

Under the above legislation it is an offence to:

- kill, injure or take an individual;
- possess any part of an individual either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by these species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- sell or attempt to sell any individual.