



# CLEVE HILL SOLAR PARK

ENVIRONMENTAL STATEMENT  
VOLUME 4 - TECHNICAL APPENDIX A8.5  
BAT SURVEY

November 2018  
Revision A

Document Reference: 6.4.8.5  
APFP Regulation: 5(2)(a)

[www.clevehillsolar.com](http://www.clevehillsolar.com)



# Cleve Farm - Bat Survey Report



2015

Prepared by: RM  
Ecologist

Checked by: EC  
Senior Ecologist  
AD  
Principal Ecologist

Approved by: MW  
Technical Director (Ecology)

Rev No	Comments	Checked by	Approved by	Date
1	Internal Draft	EC	AD	February 2016
2	Draft for Client Comment	AD	MW	May 2016
3.	Final following Comments	AD	JR	July 2016

Scott House, Alençon Link, Basingstoke, Hampshire, RG21 7PP, United Kingdom  
Telephone: 01256 310 200 Website: <http://www.aecom.com>

Job No	Reference	Date Created
47069809	Cleve Farm Bat Survey Report	January 2016

Limitations

AECOM Infrastructure & Environment UK Limited ("AECOM") has prepared this Report for the sole use of Hive Energy ("Client") in accordance with the Agreement under which our services were performed (Proposal letter dated 21<sup>st</sup> May 2015 and approval received on 2<sup>nd</sup> June 2015). No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by AECOM. This Report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written agreement of AECOM.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken between June and September 2015 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

AECOM disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. AECOM specifically does not guarantee or warrant any estimate or projections contained in this Report.

Unless otherwise stated in this Report, the assessments made assume that the sites and facilities will continue to be used for their current purpose without significant changes.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

Copyright

© This Report is the copyright of AECOM Infrastructure & Environment UK Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

Contents

1 Summary ..... 4

2 Introduction ..... 5

2.1 Background ..... 5

2.2 Scope ..... 5

3 Relevant wildlife legislation ..... 6

3.1 Bats ..... 6

4 Methodology ..... 7

4.1 Desk study ..... 7

4.2 Bat activity walked transect surveys ..... 7

4.3 Automated bat echolocation surveys ..... 8

4.3.1 June-July ..... 8

4.3.2 August ..... 8

4.3.3 September ..... 8

4.4 Constraints ..... 8

5 Results ..... 9

5.1 Desk study ..... 9

5.2 Bat activity transect surveys ..... 10

5.2.1 June 2015 ..... 10

5.2.2 August 2015 ..... 10

5.2.3 September 2015 ..... 11

5.3 Static detectors ..... 12

6 Discussion and recommendations ..... 18

7 References ..... 19

List of Appendices

- Appendix A. Full bat activity survey data
- Appendix B. Bat activity survey echolocation sonograms
- Appendix C. Automated detector survey echolocation sonogram

## 1 Summary

Development works have been proposed at Cleve Farm (hereafter referred to as the 'Site'), Graveney, Kent, for a solar park. The Site comprises agricultural fields with wet ditches and some semi-mature tree lines and hedgerows adjacent to the Site boundary. Preliminary surveys undertaken by AECOM in 2015 identified suitable habitat to support commuting and foraging bats, and further surveys were therefore recommended. No habitats or features suitable to support roosting bats were recorded within the Site.

Three bat activity survey visits were undertaken between June and September 2015, with one visit comprising both dusk and pre-dawn surveys. Each survey visit comprised three transects designed to include potential flight paths and foraging areas within the Site. Six SM2BAT+ static detectors were also left in-situ for at least four nights in June/July, August and September 2015. From the results of both the activity surveys and the static detectors, it is concluded that the Site offers foraging and commuting habitat used by at least nine species of bat. This includes high numbers of common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) and moderate numbers of noctule (*Nyctalus noctula*) and serotine bat (*Eptesicus serotinus*). Low numbers of *Myotis* bats (considered most likely to be Daubenton's bat (*Myotis daubentonii*), Leisler's bat (*Nyctalus leisleri*), brown long-eared bat (*Plecotus auritus*) and Nathusius' pipistrelle (*Pipistrellus nathusii*) were also recorded.

Key areas utilised for foraging and commuting within the Site comprised the ditch network, the sea wall zone and cattle grazed pastures adjacent to the north of the site, and along the tree lines adjacent to the south of the site. Activity recorded within the arable fields was limited. No habitat suitable to support roosting bats was recorded within the Site, however from the results, it is considered that the site overall provides an important foraging resource within the wider area, utilised by bats commuting into the Site from offsite roosting locations.

## 2 Introduction

### 2.1 Background

Development works have been proposed at Cleve Farm (hereafter referred to as the 'Site'), Graveney, Kent, for a solar park.

Covering approximately 359.5 hectares, the Site is located to the north-west of Graveney, Kent, centred on approximate National Grid reference TR 038 643. The Site is bounded to the south by horticultural use and agricultural fields and to the east by managed grassland fields, to the west by Faversham Creek with agricultural fields beyond, and to the north by a sea wall, beyond which is the Swale estuary. The existing Site comprises agricultural fields, with a network of ditches and tracks.

The Site contains suitable habitat to support commuting and foraging bats. Therefore, surveys were required to determine the use of the Site by bats. The Site does not contain habitats suitable to support roosting bats.

### 2.2 Scope

The purpose of this report is to provide an assessment of the use of the habitats within and directly adjacent to the Site by bat species. This assessment is informed by bat activity transect surveys supplemented by automated static bat echolocation detector survey.

This report presents the findings of the bat activity surveys undertaken between June and September 2015 inclusive.

### 3 Relevant wildlife legislation

#### 3.1 Bats

All UK native bat species and their roosts (whether bats are present or not) are protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and under the Wildlife and Countryside Act 1981 (as amended). Taken together, under this legislation it is an offence to:

- deliberately, intentionally or recklessly capture, injure or kill a bat;
- damage/destroy a breeding site or resting place of a bat (this is an offence whether the act is deliberate or not);
- deliberately, intentionally or recklessly disturb a bat; or
- intentionally or recklessly obstruct access to any structure which a bat uses for shelter or protection.

A bat roost is defined as “any structure or place, which is used for shelter or protection” or a “breeding site or resting place” (Conservation of Habitats and Species Regulations, 2010). Because bats commonly use the same roosts at particular times of the year after periods of absence, the roost is protected whether or not bats are resident.

Given the above legislation the potential presence of bats at a site represents a material consideration in the planning process. Even where planning permission is not required there is still a legal responsibility placed on the developer to ensure that a Natural England licence is obtained to cover any works that have the potential to result in an offence under the above legislation.

Seven of the UK bat species are listed as species of principal importance within Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006): namely, the barbastelle bat (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), noctule bat (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*).

### 4 Methodology

#### 4.1 Desk study

A desk study was carried out to identify records of bats, including roost locations, located within 5km of the Site. Data were obtained from Kent and Medway Biological Records Centre (KMBRC).

#### 4.2 Bat activity walked transect surveys

The location of the proposed development within the Site is likely within agricultural fields with a series of wet ditches and some semi-mature tree lines and hedgerows adjacent to the Site boundary.

The Site is of low quality habitat, but is of a large size (more than 15ha). Therefore, following current best practice survey guidelines published by the Bat Conservation Trust (Hundt, 2012), three survey visits between June and September 2015 were undertaken, with one survey visit comprising both a dusk and pre-dawn survey. Two dusk surveys were undertaken on 25<sup>th</sup> June and 10<sup>th</sup> September 2015, and a dusk and pre-dawn survey was undertaken on the 10<sup>th</sup> – 11<sup>th</sup> August 2015.

Each survey visit comprised three transects designed to include potential flight paths and foraging areas within the Site (see Figure 1). Each transect survey was undertaken by two experienced AECOM ecologists. The three transect routes included a series of 'listening points' located at potentially important features with regard to bats. The transects walked during the activity survey followed the higher quality habitats deemed suitable for foraging or commuting bats. This included tree lines and hedgerows on the edge of the Site boundary and the ditch network that crosses the Site. However, during these transects any bats crossing the centre of the fields was also recorded.

At each 'listening point' along the transect route surveyors recorded bat activity for three minutes. Any additional activity encountered while walking between points was also recorded. Surveyors carried echolocation detectors (*Pettersson D240x*) to help determine which species of bat were present. Bat activity was plotted in the field on a Trimble Juno 3D mobile mapper using ArcPad software.

Dusk surveys were undertaken from 15 minutes before sunset to at least two hours after, while the pre-dawn survey commenced two hours before sunrise and finished at sunrise or later. The direction of the transect was varied during each survey visit in order to ensure all areas of the transect were walked close to dusk.

The time, location, number, species (where possible) and direction of flight were recorded for each bat pass (either echolocation heard or activity seen) encountered during the survey. The echolocation calls detected were recorded onto a *Roland Edirol* digital recorder to allow the use of *Batsound* analysis software to verify bat calls where required. All surveys were undertaken during favourable weather conditions, as summarised in Table 1.

**Table 1: Bat activity survey weather conditions.**

Date and Sunset/Sunrise Time	Temperature (°C) at start of survey	Weather conditions
Dusk 25/06/2015 Sunset 21:17	19	Mild, calm, dry, 40% cloud cover
Dusk 10/08/2015 Sunset 20:38	20	Light breeze, dry, 60% cloud cover
Dawn 11/08/2015 Sunrise 05:39	15	Light breeze, dry, 60% cloud cover
Dusk 10/09/2015 Sunset 19:23	15	Clear, dry, still, 0% cloud cover

### 4.3 Automated bat echolocation surveys

In accordance with the Bat Conservation Trust (2012) good practice survey guidelines, six SM2BAT+ detectors were left in situ for at least four nights in June/July, August and September 2015. Data were recorded onto a SD card in zero crossing format for echolocation call analysis using Analook software. The aim of the automated bat echolocation surveys was to provide supplementary information on bat activity, in addition to the activity surveys undertaken.

The six detectors were deployed at the same locations during each month (Figure 1):

- Location A is to the west of the Site, the detector was placed in an area of reeds along a river, at the western margin of an agricultural field.
- Location B is to the north of the Site, the detector was placed on a fence post adjacent to a ditch and a path intersecting two fields.
- Location C is to the south-west of the Site, the detector was placed in a tree line adjacent to a ditch at the southern end of an agricultural field.
- Location D is to the east of the Site, the detector was placed in a hawthorn bush at a ditch intersecting two fields.
- Location E is to the south-east of the Site, the detector was placed in a wooded copse at the east of an agricultural field.
- Location F is to the south of the Site, the detector was placed on a fallen tree along a ditch intersecting two fields.

#### 4.3.1 June-July

Six SM2BAT+ detectors were placed around the Site at location A, B, D, E and F on the 25<sup>th</sup> June 2015 for four nights. The detector in location C did not record, and therefore the monitoring for this location was repeated for four nights on 3rd July 2015.

#### 4.3.2 August

Six SM2BAT+ detectors were placed at locations A-F on the 10<sup>th</sup> August 2015 for four nights.

#### 4.3.3 September

Six SM2BAT+ detectors were placed at locations A-F on the 11<sup>th</sup> September for six nights.

### 4.4 Constraints

There was a technical issue with the SM2BAT+ detector placed at location C in June, and therefore the automated detector survey for this location was not valid during this month. However, this is not considered to be a significant constraint to results as this survey was repeated in July.

There are no other constraints to the survey work undertaken.

## 5 Results

### 5.1 Desk study

Nine bat species were recorded within 5km of the Site. No records of flying or roosting bats were found to have been made within the Site. The closest record was for a noctule bat and soprano pipistrelle maternity roost located 0.2km south of the Site. Serotine (*Eptesicus serotinus*), Daubenton's (*Myotis daubentonii*) and common pipistrelle (*Pipistrellus pipistrellus*) bats were recorded 0.4km east of the Site. Nathusius' pipistrelle (*Pipistrellus nathusii*) was recorded 0.9km south-west of the Site. Brown long-eared bat was recorded 1.6km south of the Site, Natterer's bat (*Myotis nattereri*) was recorded 1.8km west of the Site and whiskered bat (*Myotis mystacinus*) was recorded 2.2km south-west of the Site. Full desk study results are shown in Table 2.

**Table 2: Records of bat species within 5km of the Site.**

Common name	Scientific name	Date of last record	Location of nearest record (km) and bearing	Type of Record	Accuracy of record (e.g. 8 figure grid reference, 1km, 2km)	Legal status & Conservation Aims*
Noctule bat	<i>Nyctalus noctula</i>	2014	0.2 S	Roost	6 figure grid reference	Cons Regs, W&CA, NERC S41
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	2014	0.2 S	Roost	6 figure grid reference	Cons Regs, W&CA, NERC S41
Serotine bat	<i>Eptesicus serotinus</i>	2012	0.4 E	Flying bat	6 figure grid reference	Cons Regs., W&CA
Daubenton's bat	<i>Myotis daubentonii</i>	2014	0.4 E	Flying bat	6 figure grid reference	Cons Regs., W&CA
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	2014	0.4 E	Flying bat	6 figure grid reference	Cons Regs., W&CA
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	2014	0.9 SW	Flying bat	6 figure grid reference	Cons Regs., W&CA
Brown long-eared bat	<i>Plecotus auritus</i>	2014	1.6 S	Flying bat	6 figure grid reference	Cons Regs., W&CA, NERC S41
Natterer's bat	<i>Myotis nattereri</i>	2012	1.8 W	Hibernating bat	6 figure grid reference	Cons Regs., W&CA
Whiskered bat	<i>Myotis mystacinus</i>	2014	2.2 SW	Flying bat	6 figure grid reference	Cons Regs., W&CA
*Key of legal status: Cons Regs: Conservation of Habitats and Species Regulations 2010 (as amended) W&CA: Wildlife and Countryside Act 1981 (as amended) NERC S41: Section 41 of the Natural Environment and Rural Communities Act (2006)						

## 5.2 Bat activity transect surveys

The results of the walked transect activity surveys are summarised in Table 3. Complete activity survey data sheets are contained within Appendix A, with example sonograms contained within Appendix B. The transect routes and location of transect points (TP) are shown on Figure 1. The survey results are shown in Figures 2 to 4. Figure 5 details the key areas of bat commuting and foraging habitat recorded from the transect surveys.

### 5.2.1 June 2015

During the June 2015 activity survey noctule, common pipistrelle, soprano pipistrelle, serotine and Daubenton's bat were recorded (see Table 3 and Figure 2). In addition calls of a *Myotis* bat species<sup>1</sup> was recorded which could not be identified to species level (after reference to Russ, 2012). Soprano pipistrelle was the most frequently recorded species across the three transects with 17 registrations. In addition 10 registrations of pipistrelle bat species<sup>2</sup> were made (which could not be identified to species level (after reference to Russ, 2012)), seven registrations of common pipistrelle bat and a single registration of serotine bat. Activity recorded was predominantly foraging, indicated by 'feeding buzzes' with the bat echolocation heard during bat passes, or commuting within the Site between foraging areas. No activity was observed which confirmed the presence of a roost in the immediate local area.

Table 3: Summary of bat activity recorded during June 2015 dusk bat activity transect.

Date and survey time	Transect route	Results
25/06/2015 – Dusk (sunset 21:17)	A	The first bat recorded was a brief pass of a pipistrelle bat 47 minutes after sunset at TP7. Registrations of common and soprano pipistrelle (a total of 14 bats) were recorded foraging and commuting along wet ditches between 1 hour 3 minutes and 2 hours 36 minutes after sunset, with concentrated activity from TP2 to TP5. A single brief pass of a serotine bat was recorded along the ditch between TP4-5 2 hours 27 minutes after sunset.
	B	The first bat recorded was a brief pass of a soprano pipistrelle 10 minutes after sunset at TP9, where a ditch meets a field margin. A further four soprano pipistrelle bats were recorded during the survey between 1 hour 22 minutes and 1 hour 59 minutes after sunset along ditches between fields, and one common pipistrelle was recorded 1 hour 14 minutes after sunset along a track between an arable field and a ditch.
	C	The first bat recorded was a soprano pipistrelle 17 minutes after sunset, foraging along the ditch at TP3. Registrations of common and soprano pipistrelles (a total of nine bats) were recorded foraging and commuting along ditches between 26 minutes and 2 hours 33 minutes after sunset. Four pipistrelle bats were also recorded, with one commuting along a ditch between TP4-5 at 32 minutes after sunset.

### 5.2.2 August 2015

During the August 2015 dusk activity survey noctule, common pipistrelle, soprano pipistrelle, serotine Leisler's (*Nyctalus leisleri*) and Daubenton's bat were recorded (see Table 4 and Figure 3). In addition, calls of a pipistrelle bat species, *Myotis* bat species and *Nyctalus* bat species were recorded which could not be identified to species level. Soprano pipistrelle was the most frequently recorded species across the three transects with 27 registrations. In addition, 16 common pipistrelle registrations, ten pipistrelle bat registrations, ten noctule registrations, four serotine registrations, one Leisler's registration, one *Nyctalus* species registration<sup>3</sup>, one Daubenton's (*Myotis daubentonii*) registration and one brown long-eared registration were made. Activity recorded was predominantly bat foraging, indicated by 'feeding buzzes' with the bat echolocation heard during bat passes, or commuting within the Site between foraging areas. No activity was observed which confirmed the presence of a roost in the immediate local area.

<sup>1</sup> *Myotis* bat calls can be very similar, therefore have been classified as *Myotis* species unless call characteristics or observations of the bat and behaviour have been recorded to enable species level identification

<sup>2</sup> Common pipistrelle and soprano pipistrelle can be difficult to separate when calls recorded are towards the lower end of the soprano pipistrelle peak frequency and higher end of the common pipistrelle peak frequency. As such any pipistrelle bat with a peak frequency between 49kHz and 51kHz has been classified as pipistrelle bat.

<sup>3</sup> Leisler's and noctule bats can be difficult to identify accurately when calls are recorded towards to lower end of the Leisler's peak frequency and higher end of the noctule peak frequency, therefore unless the species could be clearly distinguished have been grouped together.

During the August 2015, dawn activity survey noctule, common pipistrelle, soprano pipistrelle, noctule and serotine bats were recorded (see Table 4 and Figure 3.). In addition calls of a pipistrelle bat species were recorded which could not be identified to species level (after reference to Russ, 2012). Common pipistrelle was the most frequently recorded species across the three transects with 25 registrations. In addition, 20 registrations of soprano pipistrelle, four registrations of pipistrelle bat (either common or soprano pipistrelle), one registration of serotine and one registration of noctule were made. Activity recorded was predominantly bat foraging, indicated by 'feeding buzzes' with the bat echolocation heard during bat passes, or commuting within the Site between foraging areas. No activity was observed which confirmed the presence of a roost in the immediate local area.

Table 4: Summary of bat activity recorded during August 2015 dusk and dawn bat activity transect.

Date and time of survey	Transect route	Results
10/08/2015 – Dusk (sunset 20:38)	A	The first bat recorded was a common pipistrelle 39 minutes after sunset at TP6, commuting along the arable field margin. Further registrations of common and soprano pipistrelle (a total of 21 bats) were recorded foraging and commuting between 42 minutes and 2 hours 12 minutes after sunset, with concentrated foraging activity along the ditches, from TP6 to TP2. A single brief pass of a Daubenton's bat was recorded between TP3-2 1 hour 27 minutes after sunset, and a brief pass of a single noctule bat was recorded at TP1 1 hour 38 minutes after sunset.
	B	The first bat recorded was a noctule brief pass 16 minutes after sunset at TP6. A further 7 registrations of noctule were recorded foraging between 28 minutes and 1 hour 16 minutes after sunset, with activity concentrated between TP9-10 along a track between arable fields and a ditch. One registration of a foraging serotine bat was recorded at 44 minutes after sunset, and one further registration of a serotine bat was recorded 54 minutes after sunset. Registrations of common and soprano pipistrelle (a total of 14 bats) were recorded foraging and commuting between 41 minutes and 2 hours 10 minutes after sunset, with activity concentrated in the north of the Site, along a track between arable fields and a ditch. A single Leisler's bat was recorded commuting at 1 hour 54 minutes after sunset at TP6.
	C	The first bat recorded was a soprano pipistrelle foraging 29 minutes after sunset at TP6. Further registrations of common and soprano pipistrelle, as well as pipistrelle bat (a total of 15 bats) were recorded foraging and commuting between 35 minutes and 2 hours 6 minutes after sunset, with activity concentrated around ditches throughout the transect and a tree line in the south of the Site.
11/08/2015 – Dawn (sunrise 05:39)	A	The first bat recorded was a brief pass of a common pipistrelle bat 1 hour 51 minutes before sunrise at TP10. Further registrations of common and soprano pipistrelle (a total of 19 bats) were recorded foraging and commuting between 1 hour 39 minutes and 41 minutes before sunrise, with activity concentrated along ditches throughout the transect route. A single noctule bat brief pass was recorded 1 hour 32 minutes before sunrise between TP9-8.
	B	The first bat recorded was a brief pass of a common pipistrelle bat 1 hour 45 minutes before sunrise at TP9. Further registrations of common and soprano pipistrelle (a total of 23 bats) were recorded foraging and commuting between 1 hour 36 minutes and 46 minutes before sunrise, with activity concentrated between TP9 and TP1, along a track between arable fields and a ditch in the north of the Site. A single serotine bat was recorded foraging in the cattle grazed pasture to the north of the Site 1 hour 3 minutes before sunrise between TP10-1.
	C	The first bat recorded was a common pipistrelle foraging 2 hours 17 minutes before sunrise along a hedgerow in the south-east of the Site. Further registrations of common and soprano pipistrelle, as well as pipistrelle bat (a total of 11 bats) were recorded foraging and commuting between 2 hours 14 minutes and 35 minutes before sunrise, with activity concentrated along ditches throughout the transect route.

### 5.2.3 September 2015

During the September 2015 activity survey noctule, common pipistrelle, soprano pipistrelle and pipistrelle bat (either common or soprano pipistrelle) were recorded (see Table 5 and Figure 4). In addition calls of a *Myotis* bat species was recorded which could not be identified to species level (after reference to Russ, 2012). Common pipistrelle was the most frequently recorded species across the three transects with 26 registrations. In addition, 13 registrations of soprano pipistrelle, two registrations of pipistrelle bat (either common or soprano pipistrelle), two registrations of noctule and one registration of a *Myotis* bat species were made. Activity recorded was predominantly bat foraging, indicated by 'feeding



buzzes' with the bat echolocation heard during bat passes, or commuting within the Site between foraging areas. No activity was observed which confirmed the presence of a roost in the immediate local area.

**Table 5: Summary of bat activity recorded during September 2015 dusk bat activity transect.**

Date and time of survey	Transect route	Results
10/09/2015 – Dusk (sunset 19:23)	A	The first bat recorded was a common pipistrelle foraging 45 minutes after sunset between TP6-7, along a track between arable fields and a ditch. Further registrations of common and soprano pipistrelle (a total of 17 bats) were recorded foraging and commuting between 47 minutes and 2 hours 6 minutes after sunset, with activity concentrated between TP7 and TP10, along ditches. A brief pass of a <i>Myotis</i> bat species was recorded 1 hour 8 minutes after sunset at TP8.
	B	The first bat recorded was a brief pass of a noctule bat 41 minutes after sunset between TP10-1, along a field margin. Registrations of common and soprano pipistrelle (a total of 11 bats) were recorded foraging and commuting between 49 minutes and 1 hour 59 minutes after sunset, with activity concentrated along a ditch in the east of the Site.
	C	The first bat recorded was a brief pass of a noctule bat 7 minutes after sunset, along a tree line at TP4. Registrations of common and soprano pipistrelle (a total of 10 bats) were recorded foraging and commuting between 18 minutes and 1 hour 51 minutes after sunset, with activity concentrated along ditches in the south of the Site.

### 5.3 Static detectors

The SM2bat+ detectors in locations A, B, D, E and F recorded on site for 14 of 14 nights deployed. Registrations of bats were made on 10 nights at location A, 11 nights at location B, 14 nights at location D, 14 nights at location E and 14 nights at location F.

The SM2bat+ detector at location C did not record during four nights in June 2015 so this survey was repeated in July 2015. The detector recorded on site for 14 of 18 nights that it was deployed. Registrations of bats were made on 11 nights.

Species recorded by the static automated detector monitoring comprised common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, pipistrelle species<sup>4</sup>, noctule, serotine, *Nyctalus/Eptesicus*<sup>5</sup>, brown long-eared bat, Leisler's bat, Daubenton's bat, *Myotis* sp. and undetermined bat species.

At location A, the most frequently recorded species was soprano pipistrelle with a total of 363 registrations<sup>6</sup>. Pipistrelle bat was the next most frequently recorded with 278 registrations. Also recorded were 163 registrations of common pipistrelle, 55 registrations of *Myotis* sp., 19 registrations of Daubenton's bat, seven registrations of serotine, four registrations of an undetermined bat species (considered most likely to be a *Myotis* bat species), two registrations of Nathusius' pipistrelle and one registration of noctule, brown long-eared and Leisler's bats.

At location B, the most frequently recorded species was common pipistrelle with a total of 782 registrations. Soprano pipistrelle was the next most frequently recorded with 479 registrations. Also recorded were 306 registrations of pipistrelle bat, 35 registrations of noctule and serotine bats, 19 registrations of Nathusius' pipistrelle, 15 registrations of *Myotis* sp., three registrations of Daubenton's bat and two registrations of Leisler's bat.

At location C, the most frequently recorded species was soprano pipistrelle with a total of 2690 registrations. Pipistrelle bat was the next most frequently recorded with a total of 667 registrations. Also recorded were 387 registrations of common pipistrelle, 50 registrations of *Myotis* sp., eight registrations of Nathusius' pipistrelle, five registrations of noctule bat two registrations of serotine, one registration of *Nyctalus/Eptesicus* sp. and one registration of a brown long-eared bat.

At location D, the most frequently recorded species was soprano pipistrelle with a total of 555 registrations. Common pipistrelle was the next most frequently recorded with a total of 304 registrations. Also recorded were 61 registrations of

<sup>4</sup> Common pipistrelle and soprano pipistrelle can be difficult to separate using a zero crossing file when calls recorded are towards the lower end of the soprano pipistrelle peak frequency and higher end of the common pipistrelle peak frequency. As such any pipistrelle bat with a peak frequency between 49kHz and 51kHz has been classified as pipistrelle bat.

<sup>5</sup> Serotine, Leisler's and noctule bats can be difficult to identify accurately using a zero crossing file alone, therefore unless the species could be clearly distinguished have been grouped together.

<sup>6</sup> A registration has been classed as a single bat within a zero crossing file.

pipistrelle bat, eight registrations of Nathusius' pipistrelle, five registrations of *Myotis* sp., four registrations of noctule, one registration of serotine and one registration of Leisler's bat.

At location E, the most frequently recorded species was soprano pipistrelle with a total of 1230 registrations. Common pipistrelle was the next most frequently recorded with 412 registrations. Also recorded were 49 registrations of pipistrelle bat, 18 registrations of serotine, 12 registrations of *Myotis* sp., eight registrations of noctule, three registrations of Nathusius' pipistrelle, two registrations of brown long-eared bat and one registration of *Nyctalus/Eptesicus* sp.

At location F, the most frequently recorded species was soprano pipistrelle with a total of 110 registrations. Common pipistrelle was the next most frequently recorded with a total of 63 registrations. Also recorded were 36 registrations of pipistrelle bat, eight registrations of serotine, seven registrations of *Myotis* sp., two registrations of Nathusius' pipistrelle, two registrations of Leisler's bat and one registration of noctule, Daubenton's bat and *Nyctalus/Eptesicus* sp..

A summary of the results of the static SM2BAT+ monitoring are contained within Tables 4 to 9. Sonograms of species recorded are included within Appendix C.

**Table 4: SM2BAT+ monitoring results - location A.**

Date (Night commencing)	Observation										
	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle bat	Serotine	Noctule	Brown long-eared bat	Leisler's bat	Daubenton's bat	<i>Myotis</i> sp.	Undetermined bat species (probable <i>Myotis</i> sp.)
25/06/15	21	31	-	44	-	-	-	1	4	6	-
26/06/15	3	17	-	61	-	-	-	-	5	6	-
27/06/15	9	39	-	47	-	-	-	-	6	8	-
28/06/15	7	53	2	61	-	-	-	-	4	5	-
10/08/15	41	88	-	22	2	-	-	-	-	2	-
11/08/15	17	43	-	14	3	-	-	-	-	1	-
12/08/15	-	4	-	2	-	-	-	-	-	8	3
13/08/15	51	60	-	22	2	-	-	-	-	15	1
11/09/15	12	21	-	5	-	1	-	-	-	2	-
12/09/15	2	7	-	-	-	-	1	-	-	2	-
13/09/15	-	-	-	-	-	-	-	-	-	-	-
14/09/15	-	-	-	-	-	-	-	-	-	-	-
15/09/15	-	-	-	-	-	-	-	-	-	-	-
16/09/15	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	163	363	2	278	7	1	1	1	19	55	4



Table 5: SM2BAT+ monitoring results - location B.

Date (Night commencing)	Observation								
	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle bat	Serotine	Noctule	Leisler's	Daubenton's	Myotis sp.
25/06/15	31	18	1	20	-	13	-	2	4
26/06/15	35	13	-	15	-	5	-	-	1
27/06/15	38	22	-	25	-	11	2	-	1
28/06/15	16	9	-	21	-	4	-	-	-
10/08/15	78	65	-	32	12	1	-	1	4
11/08/15	3	7	-	-	-	-	-	-	2
12/08/15	-	-	-	-	-	-	-	-	-
13/08/15	34	42	-	22	23	1	-	-	2
11/09/15	26	28	-	6	-	-	-	-	-
12/09/15	506	257	15	163	-	-	-	-	1
13/09/15	15	18	2	2	-	-	-	-	-
14/09/15	-	-	-	-	-	-	-	-	-
15/09/15	-	-	-	-	-	-	-	-	-
16/09/15	-	-	1	-	-	-	-	-	-
<b>TOTAL</b>	782	479	19	306	35	35	2	3	15

Table 6: SM2BAT+ monitoring results - location C.

Date (Night commencing)	Observation								
	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle bat	Serotine	Noctule	Nyctalus/Eptesicus sp.	Myotis sp.	Brown long-eared
03/07/15	120	96	-	93	-	-	-	-	-
04/07/15	1	39	-	27	-	-	-	1	-
05/07/15	1	54	-	45	-	-	-	5	-
06/07/15	5	41	-	31	-	-	-	1	-

10/08/15	-	-	-	-	-	-	-	-	-
11/08/15	-	4	-	-	-	-	-	-	-
12/08/15	-	43	-	-	-	-	-	-	-
13/08/15	-	-	-	-	-	-	-	-	-
11/09/15	118	448	1	354	1	-	-	26	1
12/09/15	107	664	2	12	-	-	1	7	-
13/09/15	3	237	-	91	-	5	-	3	-
14/09/15	7	913	4	2	-	-	-	-	-
15/09/15	25	151	1	12	1	-	-	7	-
16/09/15	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	387	2690	8	667	2	5	1	50	1

Table 7: SM2BAT+ monitoring results - location D.

Date (Night commencing)	Observation							
	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle bat	Noctule	Serotine	Myotis sp.	Leisler's
25/06/15	6	-	-	5	-	-	-	-
26/06/15	-	5	-	1	-	-	-	-
27/06/15	24	14	-	19	-	-	-	-
28/06/15	-	2	-	3	-	-	1	-
10/08/15	14	68	-	8	-	-	1	-
11/08/15	4	147	-	2	-	-	1	-
12/08/15	-	1	-	-	-	-	-	-
13/08/15	16	36	-	9	1	1	-	1
11/09/15	151	68	-	6	-	-	1	-
12/09/15	24	38	3	2	3	-	-	-
13/09/15	-	46	-	-	-	-	-	-
14/09/15	-	14	-	-	-	-	-	-
15/09/15	60	87	1	6	-	-	1	-

16/09/15	5	29	4	-	-	-	-	-
<b>TOTAL</b>	304	555	8	61	4	1	5	1

Table 8: SM2BAT+ monitoring results - location E.

Date (Night commencing)	Observation								
	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle bat	Noctule	Serotine	Brown long-eared bat	<i>Myotis</i> sp.	<i>Nyctalus/Eptesicus</i> sp.
25/06/15	2	6	-	2	1	-	-	1	-
26/06/15	6	5	-	5	1	-	-	-	1
27/06/15	4	5	-	7	3	-	1	1	-
28/06/15	14	8	-	-	1	-	-	-	-
10/08/15	39	77	-	10	-	-	1	5	-
11/08/15	29	350	-	5	1	3	-	-	-
12/08/15	20	620	-	3	-	1	-	3	-
13/08/15	5	15	-	-	-	14	-	-	-
11/09/15	243	74	1	12	1	-	-	-	-
12/09/15	-	1	1	1	-	-	-	-	-
13/09/15	1	17	1	1	-	-	-	-	-
14/09/15	1	-	-	-	-	-	-	1	-
15/09/15	29	19	-	1	-	-	-	1	-
16/09/15	19	33	-	2	-	-	-	-	-
<b>TOTAL</b>	412	1230	3	49	8	18	2	12	1

Table 9: SM2BAT+ monitoring results - location F.

Date (Night commencing)	Observation									
	Common pipistrelle	Soprano pipistrelle	Nathusius' pipistrelle	Pipistrelle bat	Noctule	Serotine	<i>Nyctalus/Eptesicus</i> sp.	Daubenton's bat	Leisler's bat	<i>Myotis</i> sp.
25/06/15	1	7	-	7	-	-	-	-	-	-
26/06/15	-	7	-	8	-	-	-	-	-	-
27/06/15	6	14	-	5	-	-	-	1	-	2
28/06/15	4	8	-	5	-	-	-	-	1	-
10/08/15	9	14	-	1	-	3	-	-	-	3
11/08/15	1	11	-	-	1	3	-	-	-	-
12/08/15	1	-	-	-	-	-	-	-	-	-
13/08/15	1	14	-	-	-	2	-	-	-	-
11/09/15	28	8	-	4	-	-	-	-	-	-
12/09/15	2	5	1	1	-	-	-	-	-	-
13/09/15	7	5	1	3	-	-	-	-	-	1
14/09/15	-	2	-	-	-	-	-	-	-	-
15/09/15	3	14	-	2	-	-	1	-	-	-
16/09/15	-	1	-	-	-	-	-	-	1	1
<b>TOTAL</b>	63	110	2	36	1	8	1	1	2	7

## 6 Discussion and recommendations

All UK native bat species and their roosts (whether bats are present or not) are protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and under the Wildlife and Countryside Act 1981 (as amended). Taken together, under this legislation it is an offence to deliberately or recklessly damage, destroy or obstruct access to a bat roost or to deliberately kill, damage, take or disturb bats.

The Site is considered to offer foraging and commuting habitat for nine species of bat as follows: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, serotine, brown long-eared bat, Leisler's, Daubenton's and *Myotis* bat species. Key areas utilised for foraging and commuting comprised the ditch network, and in particular the large ditch to the west of the Site, the sea wall zone adjacent to the north of the Site, and along the tree lines adjacent to the south of the Site. Activity recorded within the arable fields was limited. No habitat suitable to support roosting bats was recorded within the Site and therefore it is considered that the site provides a foraging resource only within the wider area, utilised by bats commuting into the Site from offsite roosting locations.

High levels of common pipistrelle and soprano pipistrelle bat activity were recorded across the Site during the walked activity transects and static automated detector surveys. Notwithstanding their legal protection, common pipistrelle and, soprano pipistrelle bats are common and widespread across the UK (Bat Conservation Trust, 2010a; 2010b). The survey results indicate that the Site offers a foraging resource for these species.

Moderate levels of noctule and serotine activity were recorded on both the walked activity transects and static automated detector surveys. Whilst these species were recorded across the Site, activity was concentrated in the north and north-east in particular corresponding with the highest quality foraging habitat (cattle grazed pasture adjacent to the east of the site). The serotine bat is relatively uncommon with a restricted distribution in southern England and south Wales (Bat Conservation Trust, 2010c). Noctule bat is relatively widespread, but scarce in areas with intensive agriculture (Bat Conservation Trust, 2010d), and the survey results indicate that habitats within the north of the Site offer a foraging resource for these species.

Brown long-eared bats were recorded in low numbers during the walked activity transects and static automated detector survey. Although the Site does not offer ideal foraging habitat for this species (woodland and hedgerows) it is likely that this species has been under-recorded due to the low amplitude calls it produces. Notwithstanding their legal protection brown long-eared bats are common and widespread across the UK (Bat Conservation Trust, 2010e). The survey results indicate that the Site offers a foraging resource for this species.

Low levels of *Myotis* bats, considered most likely to be Daubenton's bat, were recorded on both the walked activity transects and static automated detector surveys. Daubenton's bat is fairly widespread in the UK and is most often found near water (Bat Conservation Trust, 2010f). The survey results indicate that the Site is used as a foraging habitat for Daubenton's bat.

Nathusius's pipistrelle and Leisler's bat were recorded in low numbers during the static automated detector surveys only. A total of 50 registrations of Nathusius' pipistrelle were recorded across all months and automated static detector locations. Nathusius' pipistrelle is a rare bat in the UK, though records have increased in recent years. It is a migratory species, with higher numbers recorded in autumn, but is now considered to breed in the UK (Bat Conservation Trust, 2010g). The survey results indicate that the Site is used as foraging habitat for Nathusius' pipistrelle.

A total of six registrations of Leisler's bat were recorded across all months and automated static detector locations, in addition to one registration during the September walked activity transect. Leisler's bat is relatively rare in Britain, although can be found throughout the British Isles (Bat Conservation Trust, 2010h). The survey results indicate that the Site is used as foraging habitat for Leisler's bat.

## 7 References

Bat Conservation Trust (2010a) *Common pipistrelle*

Bat Conservation Trust (2010b) *Soprano pipistrelle*

Bat Conservation Trust (2010c) *Serotine bat*

Bat Conservation Trust (2010d) *Noctule bat*

Bat Conservation Trust (2010e) *Brown long-eared bat*

Bat Conservation Trust (2010f) *Daubenton's bat*

Bat Conservation Trust (2010g), *Nathusius' pipistrelle*

Bat Conservation Trust (2010h), *Leisler's bat*

Conservation of Habitats and Species Regulations 2010 (as amended). London: HMSO

Hundt, L. (2012). *Bat Surveys – Good Practice Guidelines*. London: Bat Conservation Trust

Russ, J., 2012. *British Bat Calls: A Guide to Species Identification*. Exeter: Pelagic Publishing

## Appendix A. Full bat activity survey data

### A.1 Transect A

#### A.1.1 Dusk 25/06/2015

Project Name	Cleve Farm		Surveyors	EC & CL
Survey Location	Cleve Transect A		Rain (0-5)	0
Date	25/06/15		Wind (Beaufort 0-7)	2
Start	21:02		Temperature	19°C at start, reducing to 17°C
Sunset	21:17		Weather description	Mild, calm, dry
Finish	23:53		Weather previous evening	As above
Cloud Cover	40%			
Time	Transect Point	Species	No. of bats	Description of behaviour
22:04	7	Pipistrelle sp.	1	Brief pass, heard not seen
22:20	8	Soprano pipistrelle	1	Brief pass, heard not seen
22:29	9-10	Soprano pipistrelle	1	Brief pass, heard not seen, along treeline
23:00 – 23:01	2	Common pipistrelle	1	Foraging, heard not seen
23:05 – 23:09	2-3	Common pipistrelle & soprano pipistrelle	2 (1 of each species)	Foraging, heard and seen
23:11 – 23:18	2-3	Common pipistrelle	2	Foraging, heard and seen, sporadic activity
23:24 – 23:25	3-4	Common pipistrelle	1	Brief pass, seen not heard
23:32	4	Common pipistrelle	1	Brief pass, heard not seen
23:35 – 23:39	4-5	Soprano pipistrelle	2	Foraging, heard and seen
23:44	4-5	Serotine	1	Brief pass, heard not seen
23:44 – 23:46	4-5	Soprano pipistrelle & common pipistrelle	2 (1 of each species)	Foraging, heard not seen
23:53	5	Common pipistrelle	1	Commuting, heard not seen

#### A.1.2 Dusk 10/08/2015

Project Name	Cleve Farm		Surveyors	EC & GL
Survey Location	Cleve Transect A		Rain (0-5)	0
Date	10/08/15		Wind (Beaufort 0-7)	3
Start	20:23		Temperature	20°C
Sunset	20:38		Weather description	Cloudy, light breeze
Finish	22:50		Weather previous evening	As above
Cloud Cover	60%			
Time	Transect Point	Species	No. of bats	Description of behaviour

Project Name	Cleve Farm		Surveyors	EC & GL
21:19	6	Common pipistrelle	1	Heard not seen, commuting
21:22	6-5	Common pipistrelle	1	Heard not seen, brief pass
21:24	6-5	Common pipistrelle	1	Heard not seen, distant, brief pass
21:26	6-5	Common pipistrelle	1	Heard not seen, distant, brief pass
21:28 – 21:29	6-5	Common pipistrelle	1	Heard not seen, foraging
21:30	6-5	Common pipistrelle	1	Heard not seen, brief pass
21:34 – 21:35	6-5	Soprano pipistrelle	1	Heard not seen, foraging
21:35	5	Soprano pipistrelle	1	Heard not seen, foraging
21:40	5-4	Soprano pipistrelle	1	Heard not seen, very faint, brief pass
21:43	5-4	Soprano pipistrelle	1	Heard not seen
21:44 – 21:46	5-4	Soprano pipistrelle	1	Heard not seen, foraging
21:48	5-4	Common pipistrelle	1	Heard not seen, brief pass
21:55	4-3	Soprano pipistrelle	1	Heard not seen
22:00	4-3	Soprano pipistrelle	1	Heard not seen, foraging over creek
22:02 – 22:03	3-2	Soprano pipistrelle	1	Heard not seen, foraging
22:03	3-2	Soprano pipistrelle	1	Heard not seen, brief pass, 3 passes in and out of detector range
22:05	3-2	Daubenton's bat	1	Heard not seen, brief pass
22:06 – 22:07	2	Common pipistrelle	1	Heard not seen, foraging in and out of detector range
22:08	2	Common pipistrelle	1	Heard not seen, brief pass
22:09	2-1	Common pipistrelle	1	Heard not seen, brief pass
22:16	1	Soprano pipistrelle	1	Heard not seen, foraging
22:16	1	Noctule	1	Heard not seen, brief pass, very faint
22:44	8	Common pipistrelle	1	Heard not seen, foraging
22:50	8-7	Soprano pipistrelle	1	Heard not seen, faint, brief pass

#### A.1.3 Dawn 11/08/2015

Project Name	Cleve Farm		Surveyors	EC & GL
Survey Location	Cleve Transect A		Rain (0-5)	0
Date	11/08/15		Wind (Beaufort 0-7)	2
Start	03:39		Temperature	15°C
Sunrise	05:39		Weather description	Dry, overcast, light breeze
Finish	05:39		Weather previous evening	Cloudy, light breeze
Cloud Cover	60%			

Project Name	Cleve Farm		Surveyors	EC & GL
Time	Transect Point	Species	No. of bats	Description of behaviour
03:48	10	Common pipistrelle	1	Heard not seen, brief pass
03:59	9-8	Soprano pipistrelle	1	Heard not seen, brief pass
04:00	9-8	Common pipistrelle	1	Heard not seen, commuting
04:03	9-8	Common pipistrelle	1	Heard not seen, foraging
04:05	9-8	Soprano pipistrelle	1	Heard not seen
04:06	9-8	Common pipistrelle	1	Heard not seen, brief pass
04:07	9-8	Noctule	1	Heard not seen, brief pass
04:09	8	Common pipistrelle	1	Heard not seen, foraging, faint
04:20	7	Common pipistrelle	1	Heard not seen, brief pass
04:22	7	Soprano pipistrelle	1	Heard not seen, foraging overhead
04:23	7-6	Common pipistrelle	1	Heard not seen, brief pass
04:28	7-6	Common pipistrelle	1	Heard not seen, brief pass
04:31	6	Common pipistrelle	1	Heard not seen, brief pass
04:32	6	Common pipistrelle	1	Heard not seen, 2 brief passes
04:35	6-5	Soprano pipistrelle	1	Heard not seen, commuting
04:35	6-5	Soprano pipistrelle	1	Heard not seen, brief pass
04:36	6-5	Pipistrelle sp.	1	Heard not seen, brief pass
04:39	6-5	Common pipistrelle	1	Heard not seen, foraging
04:40	6-5	Soprano pipistrelle	2	Heard not seen, foraging
04:46	5	Common pipistrelle	1	Heard not seen, commuting
04:50	5-4	Pipistrelle sp.	1	Heard not seen, brief pass
04:55	5-4	Common pipistrelle	1	Heard not seen, brief pass
04:58	4	Common pipistrelle	1	Heard not seen, brief pass

#### A.1.4 Dusk 10/09/2015

Project Name	Cleve Farm		Surveyors	EC & RR
Survey Location	Cleve Transect A		Rain (0-5)	0
Date	10/09/15		Wind (Beaufort 0-7)	2
Start	19:08		Temperature	15°C
Sunset	19:23		Weather description	Clear, dry, still
Finish	21:26		Weather previous evening	As above
Cloud Cover	0%			
Time	Transect Point	Species	No. of bats	Description of behaviour

Project Name	Cleve Farm		Surveyors	EC & RR
20:06	6-7	Common pipistrelle	1	Heard not seen, foraging
20:08	6-7	Common pipistrelle	1	Heard not seen, foraging
20:15 – 20:16	7-8	Soprano pipistrelle	1	Heard not seen, foraging
20:17-20:19	7-8	Soprano pipistrelle	1	Heard not seen, foraging
20:20	7-8	Common pipistrelle	1	Heard not seen, brief pass
20:21	7-8	Soprano pipistrelle	1	Heard not seen, brief pass
20:24	7-8	Soprano pipistrelle	1	Heard not seen, brief pass
20:25	7-8	Pipistrelle sp.	1	Heard not seen, brief pass
20:28	7-8	Common pipistrelle	2	Heard not seen, brief pass
20:31	8	<i>Myotis</i> sp.	1	Heard not seen, brief pass
20:33	8-9	Pipistrelle sp.	1	Heard not seen, brief pass
20:35	8-9	Common pipistrelle	1	Heard not seen, brief pass
20:46	9-10	Soprano pipistrelle	1	Heard not seen, brief pass
20:48-20:53	9-10	Soprano pipistrelle	2	Heard not seen, foraging and social calling
20:53	10-1	Common pipistrelle	1	Heard not seen, brief pass
20:56	10-1	Common pipistrelle	1	Heard not seen, brief pass
21:04	10	Common pipistrelle	1	Heard not seen, foraging
21:19	1-2	Common pipistrelle	1	Heard not seen, brief pass
21:26	2-3	Common pipistrelle	1	Heard not seen, foraging

## A.2 Transect B

### A.2.1 Dusk 25/06/2015

Project Name	Cleve Farm		Surveyors	LJ & PW
Survey Location	Cleve Transect B		Rain (0-5)	0
Date	25/06/15		Wind (Beaufort 0-7)	2
Start	21:02		Temperature	19°C at start, reducing to 17°C
Sunset	21:17		Weather description	Mild, calm, dry
Finish	23:53		Weather previous evening	As above
Cloud Cover	40%			
Time	Transect Point	Species	No. of bats	Description of behaviour
22:27	9	Soprano pipistrelle	1	Brief pass, heard not seen
22:31	9-10	Common pipistrelle	1	Brief pass, heard not seen
22:39	10	Soprano pipistrelle	1	Brief pass, heard not seen
22:47	1	Soprano	1	Commuting, heard not seen

Project Name	Cleve Farm		Surveyors	LJ & PW
23:12	6-7	pipistrelle	1	Commuting, heard not seen
23:16	9	Soprano pipistrelle	1	Brief pass, heard not seen

### A.2.2 Dusk 10/08/2015

Project Name	Cleve Farm		Surveyors	AK & PW
Survey Location	Cleve Transect B		Rain (0-5)	0
Date	10/08/15		Wind (Beaufort 0-7)	3
Start	20:23		Temperature	20°C
Sunset	20:38		Weather description	Cloudy, light breeze
Finish	22:50		Weather previous evening	As above
Cloud Cover	60%			
Time	Transect Point	Species	No. of bats	Description of behaviour
20:54	6	Noctule	1	Heard not seen, brief pass
21:06 – 21:07	9-10	Noctule	1	Foraging
21:07 – 21:08	9-10	Noctule	1	Heard and seen, foraging
21:14	9-10	Noctule	1	Heard and seen, foraging
21:18	9-10	Noctule	1	Heard not seen, foraging
21:19	9-10	Soprano pipistrelle	2	Heard not seen, brief pass
21:20	9-10	Common pipistrelle	1	Heard and seen, foraging
21:21	9-10	Noctule	1	Foraging
21:20 – 21:21	9-10	Soprano pipistrelle	1	Heard and seen, foraging
21:21 – 21:23	9-10	Nyctalus sp.	1	Foraging
21:22	9-10	Soprano pipistrelle	1	Foraging
21:26 – 21:28	10	Serotine	2	Heard and seen, foraging
21:26 – 21:35	10	Noctule	1	Foraging
21:26 – 21:27	10	Brown long-eared bat	1	Foraging
21:27 – 21:29	10	Soprano pipistrelle	3	Heard and seen, foraging
21:33 – 21:36	10-1	Soprano pipistrelle	2	Heard and seen, foraging
21:36	10-1	Serotine	1	Heard not seen, brief pass
21:40	10-1	Soprano pipistrelle	1	Heard not seen, brief pass
21:50 – 21:51	1-2	Common pipistrelle	1	Heard not seen, foraging
21:53 – 21:54	2	Noctule	1	Heard not seen, foraging
22:21	5	Common pipistrelle	1	Heard not seen, commuting
22:32	6	Leisler's bat	1	Heard not seen, commuting
22:39	6-7	Common pipistrelle	1	Heard not seen, commuting
22:48	7	Soprano pipistrelle	1	Heard not seen, commuting

### A.2.3 Dawn 11/08/2015

Project Name	Cleve Farm		Surveyors	AK & PW
Survey Location	Cleve Transect B		Rain (0-5)	0
Date	11/08/15		Wind (Beaufort 0-7)	2
Start	03:39		Temperature	15°C
Sunrise	05:39		Weather description	Dry, overcast, light breeze
Finish	05:39		Weather previous evening	Cloudy, light breeze
Cloud Cover	60%			
Time	Transect Point	Species	No. of bats	Description of behaviour
03:54	9	Common pipistrelle	1	Heard not seen, brief pass
03:59	9-10	Pipistrelle sp.	1	Heard not seen, brief pass
04:03	9-10	Common pipistrelle	1	Heard not seen, foraging
04:03	9-10	Soprano pipistrelle	1	Heard not seen, foraging
04:08	9-10	Soprano pipistrelle	1	Heard not seen, commuting
04:11	9-10	Soprano pipistrelle	1	Heard not seen, commuting
04:13	10	Common pipistrelle	1	Heard not seen, commuting
04:14	10	Soprano pipistrelle	1	Heard not seen, commuting
04:18	10-1	Soprano pipistrelle	1	Heard not seen, foraging
04:20	10-1	Common pipistrelle	1	Heard not seen, foraging
04:22	10-1	Soprano pipistrelle	1	Heard not seen, foraging
04:22	10-1	Common pipistrelle	1	Heard and seen, foraging
04:24	10-1	Common pipistrelle	1	Heard not seen, foraging
04:25	10-1	Soprano pipistrelle	1	Heard not seen, foraging
04:29	10-1	Soprano pipistrelle	1	Heard not seen, foraging
04:33	10-1	Soprano pipistrelle	1	Heard not seen, foraging
04:35	1	Soprano pipistrelle	2	Heard not seen, foraging
04:36	10-1	Serotine	1	Heard not seen, foraging
04:36	1	Soprano pipistrelle	2	Heard and seen, foraging
04:39	1-2	Soprano pipistrelle	1	Heard and seen, foraging
04:44	2	Soprano pipistrelle	1	Heard and seen, foraging
04:47	2	Soprano pipistrelle	1	Heard and seen, foraging
04:53	2-3	Soprano pipistrelle	1	Heard and seen, foraging

#### A.2.4 Dusk 10/09/2015

<b>Project Name</b>	<b>Cleve Farm</b>		<b>Surveyors</b>	<b>LJ &amp; AK</b>
<b>Survey Location</b>	Cleve Transect B		<b>Rain (0-5)</b>	0
<b>Date</b>	10/09/15		<b>Wind (Beaufort 0-7)</b>	2
<b>Start</b>	19:08		<b>Temperature</b>	15°C
<b>Sunset</b>	19:23		<b>Weather description</b>	Clear, dry, still
<b>Finish</b>	21:26		<b>Weather previous evening</b>	As above
<b>Cloud Cover</b>	0%			
<b>Time</b>	<b>Transect Point</b>	<b>Species</b>	<b>No. of bats</b>	<b>Description of behaviour</b>
20:04	10-1	Noctule	1	Heard not seen, brief pass
20:12	1	Common pipistrelle	1	Heard not seen, brief pass
20:18	2	Common pipistrelle	1	Heard not seen, brief pass
20:20	2	Common pipistrelle	1	Heard not seen, brief pass
20:22	2	Soprano pipistrelle	2	Heard and seen, commuting
20:24	2	Common pipistrelle	1	Heard not seen, commuting
20:27	3-4	Common pipistrelle	1	Heard not seen, commuting
20:35	2-3	Common pipistrelle	1	Heard not seen, foraging
20:53	3-4	Common pipistrelle	1	Heard not seen, brief pass
20:54	3-4	Common pipistrelle	1	Heard not seen, brief pass
21:22	6-7	Soprano pipistrelle	1	Heard not seen, brief pass

### A.3 Transect C

#### A.3.1 Dusk 25/06/2015

<b>Project Name</b>	<b>Cleve Farm</b>		<b>Surveyors</b>	<b>CF &amp; GD</b>
<b>Survey Location</b>	Cleve Transect C		<b>Rain (0-5)</b>	0
<b>Date</b>	25/06/15		<b>Wind (Beaufort 0-7)</b>	2
<b>Start</b>	21:02		<b>Temperature</b>	19°C at start, reducing to 17°C
<b>Sunset</b>	21:17		<b>Weather description</b>	Mild, calm, dry
<b>Finish</b>	23:53		<b>Weather previous evening</b>	As above
<b>Cloud Cover</b>	40%			
<b>Time</b>	<b>Transect Point</b>	<b>Species</b>	<b>No. of bats</b>	<b>Description of behaviour</b>
21:34	3	Soprano pipistrelle	2	Foraging, seen not heard, seen at ditch, possibly using pond
21:43	3-5	Soprano pipistrelle	1	Foraging, heard not seen
21:49	4-5	Pipistrelle sp.	1	Commuting, seen not heard, flying along ditch to north
21:58	4-5	Pipistrelle sp.	1	Brief pass, heard not seen
22:03	5-6	Soprano pipistrelle	1	Foraging, seen not heard

<b>Project Name</b>	<b>Cleve Farm</b>		<b>Surveyors</b>	<b>CF &amp; GD</b>
22:21	8-9	Pipistrelle sp.	1	Brief pass, heard not seen
22:28	8-9	Soprano pipistrelle	1	Commuting, seen not heard, along grassy verge
22:43	9-10	Common pipistrelle	1	Foraging, heard not seen
22:56	11	Pipistrelle sp.	1	Brief pass, heard not seen
23:03	11-1	Soprano pipistrelle	1	Brief pass, heard not seen
23:23	2-3	Soprano pipistrelle	1	Foraging, heard not seen
23:32	2-11	Soprano pipistrelle	1	Foraging off transect
23:39	11	Soprano pipistrelle	1	Commuting along hedge line at road, heard not seen.
23:50	11-1	Soprano pipistrelle	1	Foraging, heard not seen

#### A.3.2 Dusk 10/08/2015

<b>Project Name</b>	<b>Cleve Farm</b>		<b>Surveyors</b>	<b>GD &amp; RM</b>
<b>Survey Location</b>	Cleve Transect C		<b>Rain (0-5)</b>	0
<b>Date</b>	10/08/15		<b>Wind (Beaufort 0-7)</b>	3
<b>Start</b>	20:23		<b>Temperature</b>	20°C
<b>Sunset</b>	20:38		<b>Weather description</b>	Cloudy, light breeze
<b>Finish</b>	22:50		<b>Weather previous evening</b>	As above
<b>Cloud Cover</b>	60%			
<b>Time</b>	<b>Transect Point</b>	<b>Species</b>	<b>No. of bats</b>	<b>Description of behaviour</b>
21:07 – 21:12	6	Soprano pipistrelle	2	Heard and seen, foraging
21:13	6-5	Pipistrelle sp.	1	Heard not seen, commuting
21:23	5	Pipistrelle sp.	1	Heard not seen, brief pass
21:25	5	Pipistrelle sp.	1	Heard not seen, commuting
21:28 – 21:29	5-4	Common pipistrelle	1	Heard and seen, foraging
21:31 – 21:34	5-4	Pipistrelle sp.	1	Heard not seen, foraging
21:35	4	Soprano pipistrelle	3	Heard not seen, foraging possibly along tree line
21:42	3	Pipistrelle sp.	1	Heard not seen, brief pass
21:51	3-2	Pipistrelle sp.	1	Heard not seen, commuting
22:06	1-11	Pipistrelle sp.	1	Heard not seen, brief pass
22:08	1-11	Common pipistrelle	1	Heard not seen, brief pass
22:17	11-10	Pipistrelle sp.	1	Heard not seen, very faint brief pass
22:26	10-9	Pipistrelle sp.	1	Heard not seen, very faint brief pass
22:44	9-8	Pipistrelle sp.	1	Heard not seen, very faint brief pass



## A.3.3 Dawn 11/08/2015

Project Name	Cleve Farm		Surveyors	GD & RM
Survey Location	Cleve Transect C		Rain (0-5)	0
Date	11/08/15		Wind (Beaufort 0-7)	2
Start	03:39		Temperature	15°C
Sunrise	05:39		Weather description	Dry, overcast, light breeze
Finish	05:39		Weather previous evening	Cloudy, light breeze
Cloud Cover	60%			
Time	Transect Point	Species	No. of bats	Description of behaviour
03:22	11-1	Common pipistrelle	1	Heard not seen, foraging
03:25	11-1	Common pipistrelle	1	Heard not seen, brief pass
03:36	1-2	Soprano pipistrelle	1	Heard not seen, brief pass
03:43	2	Soprano pipistrelle	1	Heard not seen, brief pass
04:01	3-4	Common pipistrelle	1	Heard not seen, brief pass
04:06	4	Common pipistrelle	1	Heard not seen, commuting, very faint
04:08	4-5	Soprano pipistrelle	1	Heard not seen, foraging
04:11	4-5	Soprano pipistrelle	1	Heard not seen, foraging
04:40	6-5	Soprano pipistrelle	2	Heard and seen, foraging
04:44	8	Pipistrelle sp.	1	Seen not heard, brief pass
05:04	9	Common pipistrelle	1	Heard not seen, foraging

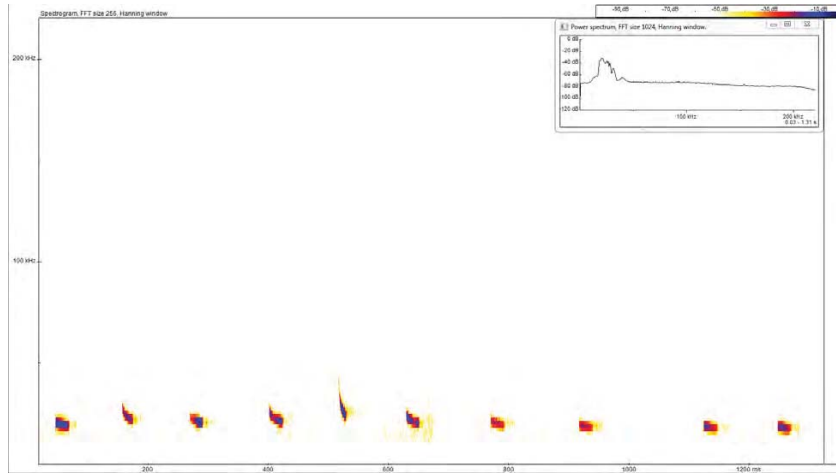
## A.3.4 Dusk 10/09/2015

Project Name	Cleve Farm		Surveyors	GL & RM
Survey Location	Cleve Transect C		Rain (0-5)	0
Date	10/09/15		Wind (Beaufort 0-7)	2
Start	19:08		Temperature	15°C
Sunset	19:23		Weather description	Clear, dry, still
Finish	21:26		Weather previous evening	As above
Cloud Cover	0%			
Time	Transect Point	Species	No. of bats	Description of behaviour
19:30	4	Noctule	1	Heard not seen
19:41	4-5	Common pipistrelle	1	Heard and seen, commuting east
20:09	6-7	Common pipistrelle	1	Heard not seen, brief pass
20:13	6-7	Soprano pipistrelle	2	Heard not seen, commuting, very faint, social calling
20:18	7	Common pipistrelle	1	Heard not see, brief pass, very faint
20:21	7-8	Common pipistrelle	1	Heard not seen, very brief pass
20:28	8	Soprano pipistrelle	1	Heard not seen, brief pass

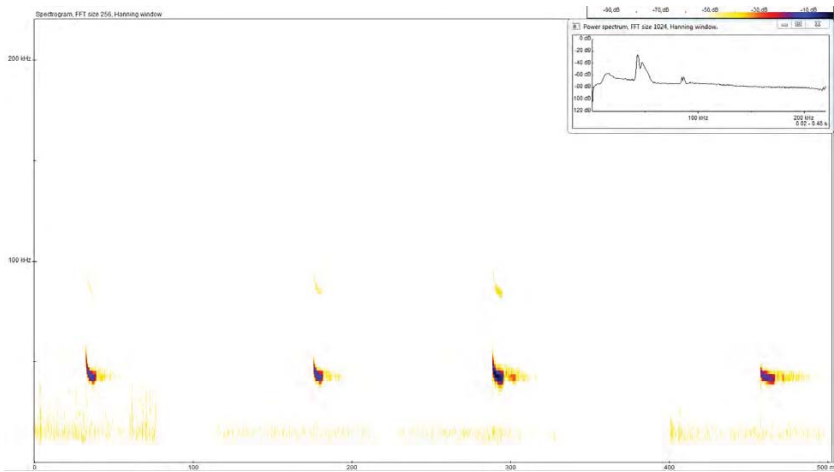
Project Name	Cleve Farm		Surveyors	GL & RM
20:47	9-10	Common pipistrelle	1	Heard not seen, foraging
21:11	1-2	Common pipistrelle	1	Heard and seen, briefly foraging
21:14	1-2	Common pipistrelle	1	Heard and seen, foraging overhead

## Appendix B. Bat activity survey echolocation sonograms

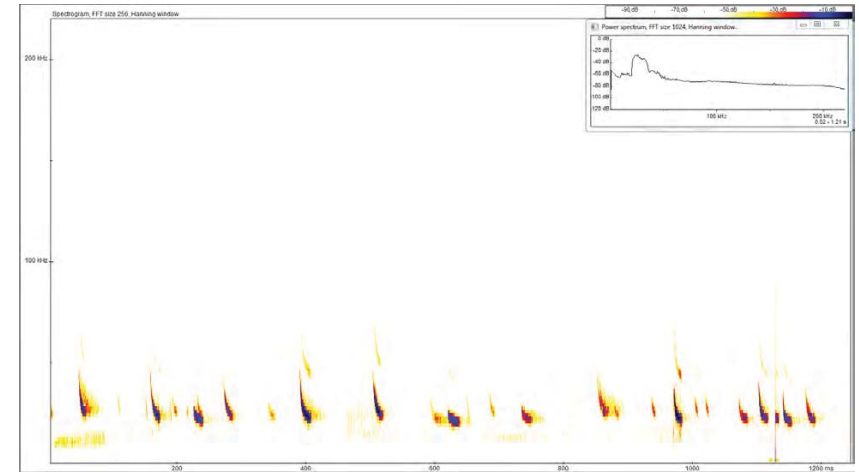
### B.1 Noctule recorded at 21:08 on 10/08/15



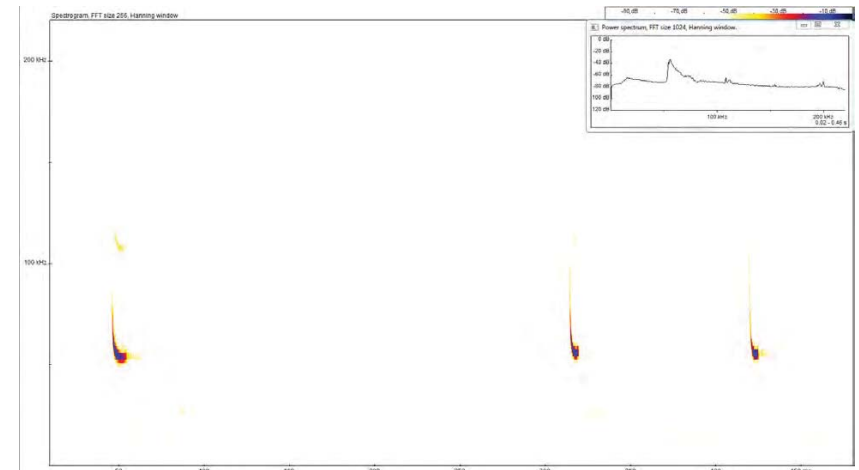
### B.2 Common pipistrelle recorded at 04:20 on 11/08/15



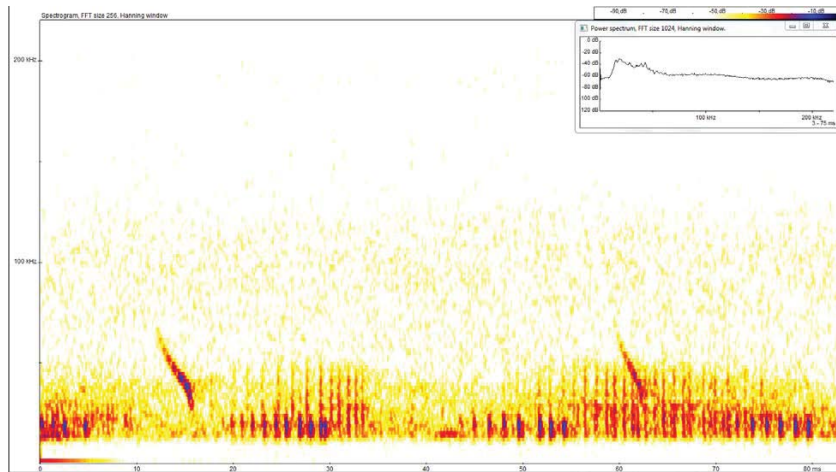
### B.3 Serotine recorded at 21:26 on 10/08/15



### B.4 Soprano pipistrelle recorded at 21:27 on 10/08/15

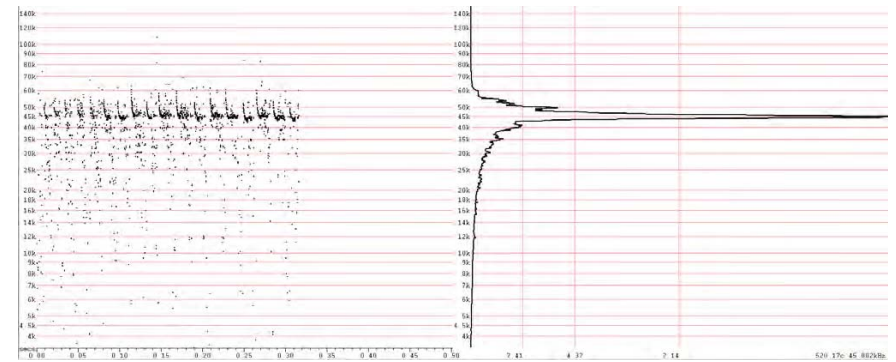


### B.5 Daubenton's bat recorded at 22:05 on 10/08/15

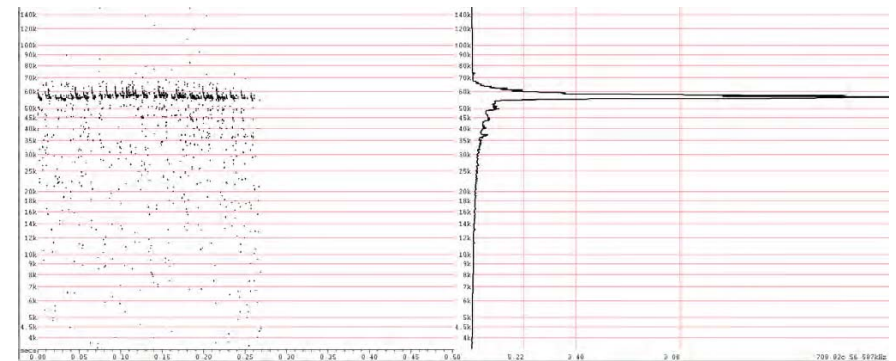


## Appendix C. Automated detector survey echolocation sonogram

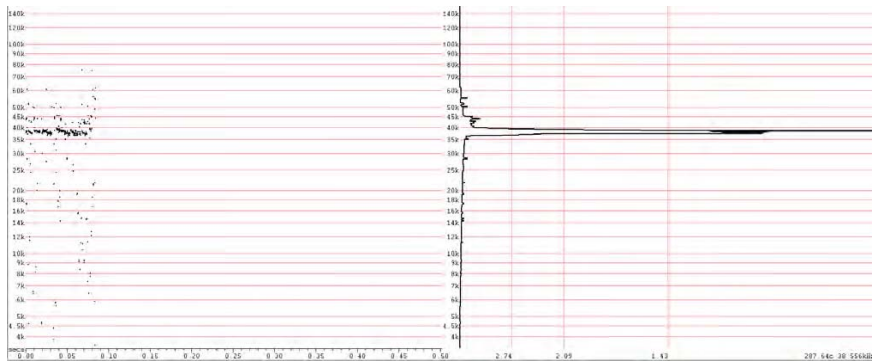
### C.1 Common pipistrelle recorded at 21:12 on 11/09/15, F6 compression



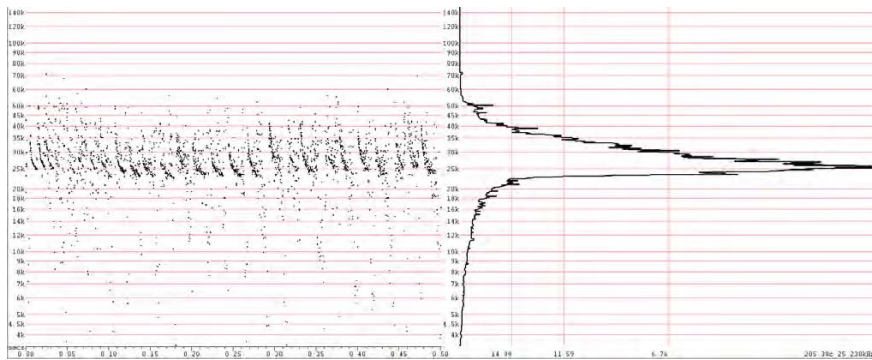
### C.2 Soprano pipistrelle recorded at 21:24 on 10/08/15, F6 compression



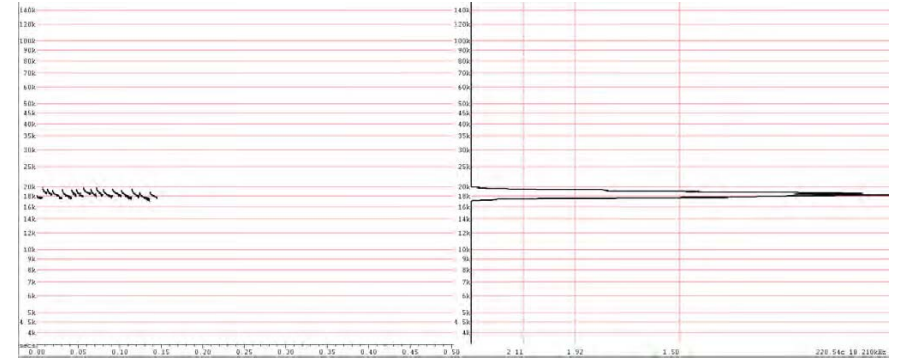
**C.3 Nathusius' pipistrelle recorded at 01:14 on 13/09/15, F6 compression**



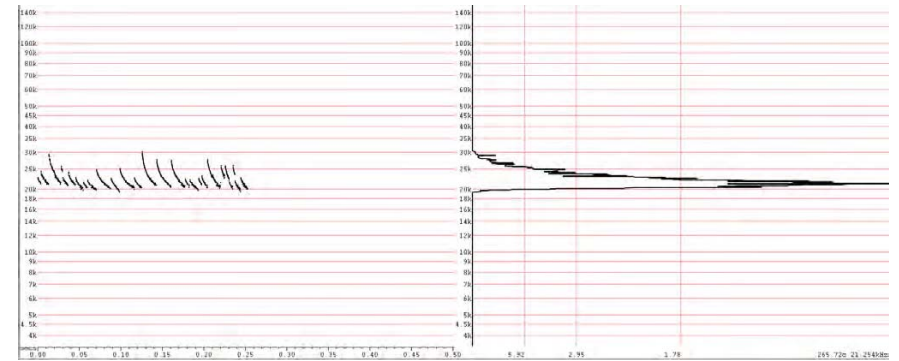
**C.4 Serotine recorded at 21:44 on 10/08/15, F6 compression**



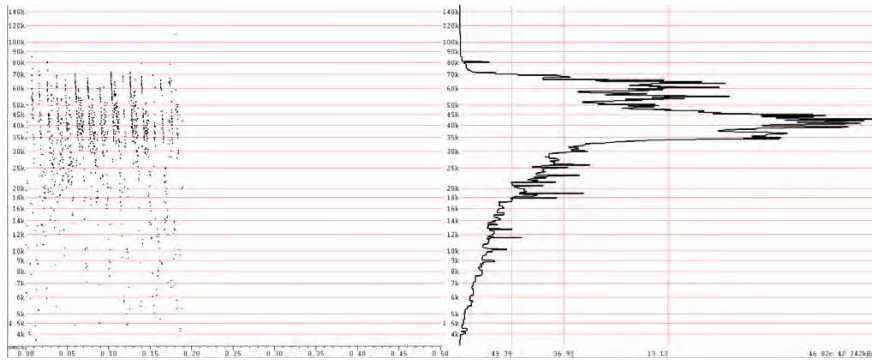
**C.5 Noctule recorded at 22:18 on 25/06/15, F6 compression**



**C.6 Leisler's bat recorded at 22:18 on 25/06/15, F6 compression**

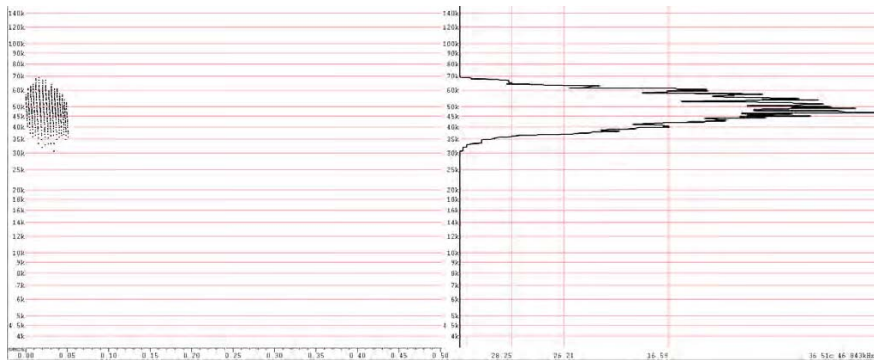


**C.7 Brown long-eared bat recorded at 22:08 on 12/09/15, F6 compression**



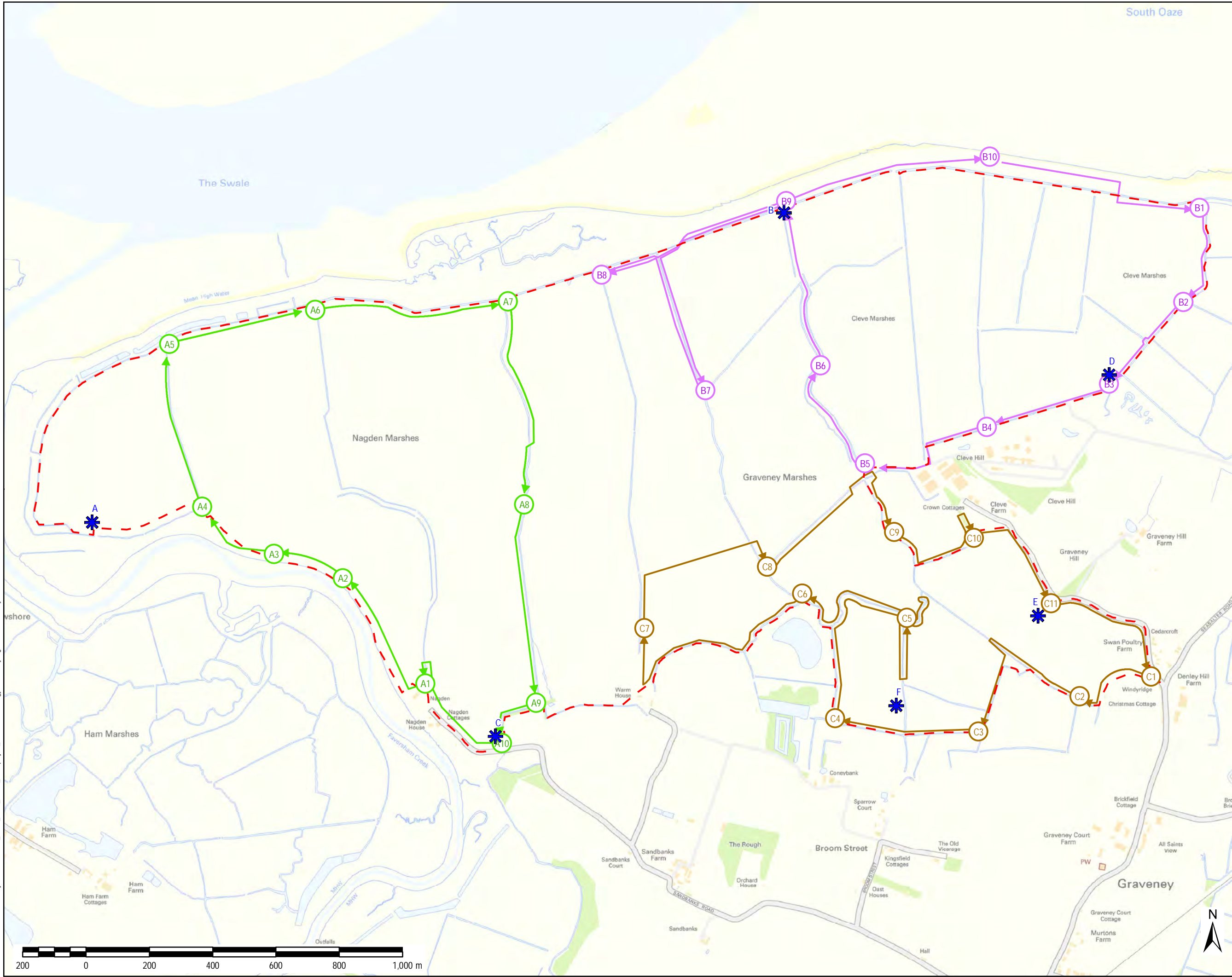
Figures 1-5.

**C.8 Daubenton's bat recorded at 01:02 on 26/06/15, F6 compression**





File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 1 - Bat Activity Transect Routes.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

Site boundary

SM2BAT+ detector location

Transect point

Transect A

Transect B

Transect C

Transect route

Transect A

Transect B

Transect C

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence  
number 0100031673.

Contains Ordnance Survey Data © Crown Copyright  
and database right 2015

Purpose of Issue	FINAL		
Client	CLEVE HILL SOLAR PARK LIMITED		
Project Title	CLEVE FARM		
Drawing Title	BAT ACTIVITY SURVEY TRANSECT ROUTES		
Drawn	Checked	Approved	Date
SJ	AH	RM	26/07/2016
URS Internal Project No. 47069809		Scale @ A3 1:11,000	
THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.			
AECOM South House Alconon Link, Basingstoke Hampshire, RG21 7PP Telephone (01256) 310200 Fax (01256) 310201 www.AECOM.com			
Drawing Number	FIGURE 1		
Rev			



File Name: I:\5004 - Information Systems\7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 2 - Bat Activity Survey Results\_250615.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

- LEGEND**
- Site boundary
  - Bat activity
  - Bat activity flight line
  - Transect point
  - Transect A
  - Transect B
  - Transect C
  - Transect route
  - Transect A
  - Transect B
  - Transect C

CP - Common pipistrelle  
PS - Pipistrelle species  
Ser - Serotine  
SP - Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence  
number 0100031673.  
Contains Ordnance Survey Data © Crown  
Copyright and database right 2015

Purpose of Issue  
**FINAL**

Client  
**CLEVE HILL SOLAR PARK  
LIMITED**

Project Title  
**CLEVE FARM**

Drawing Title  
**BAT ACTIVITY SURVEY  
25/06/15 (DUSK)  
OVERVIEW**

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
URS Internal Project No. 47069809		Scale @ A3 1:12,000	

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND IS SUBJECT TO THE  
TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY  
FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR  
FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE  
PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

AECOM  
South House  
Alconon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

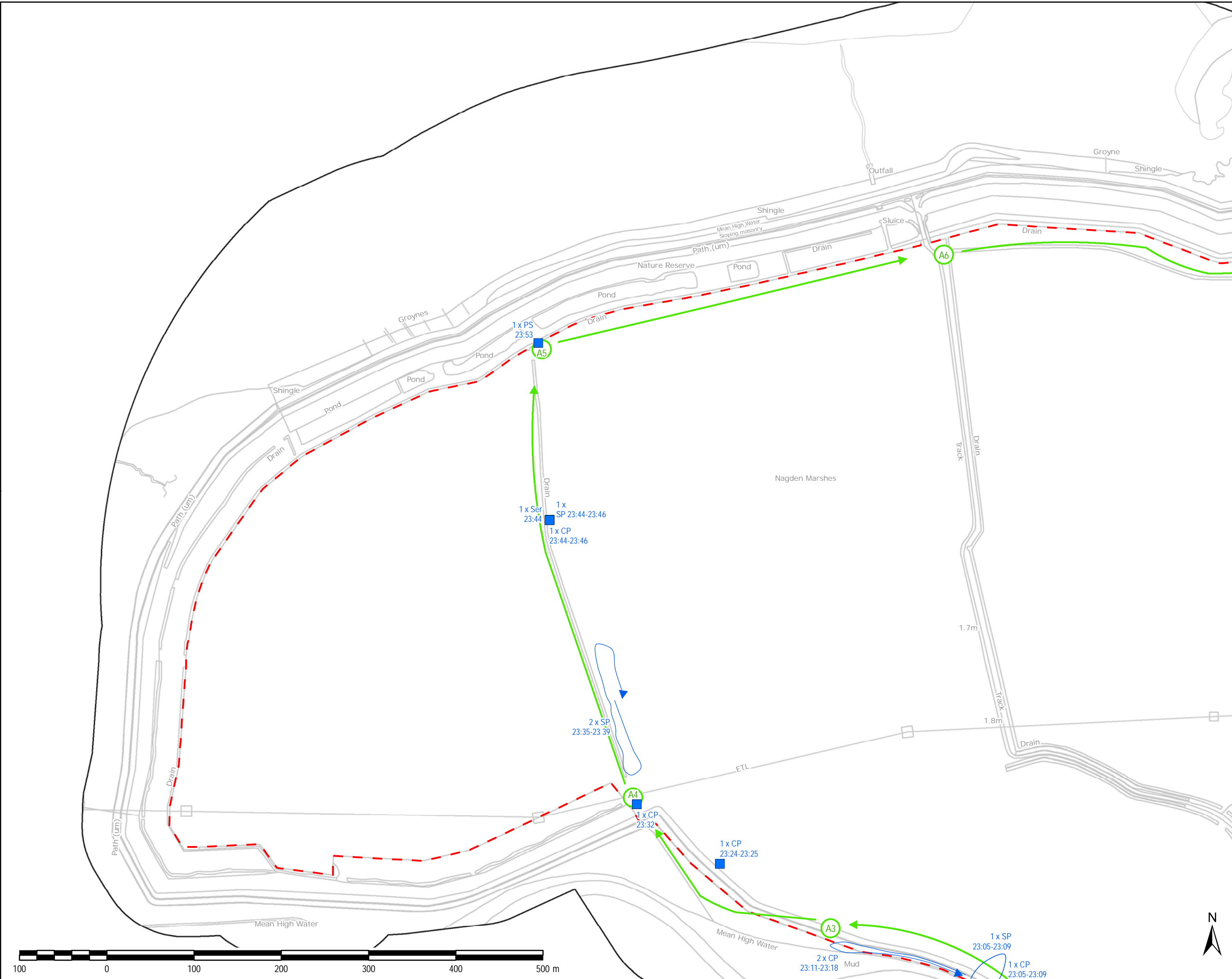
Drawing Number  
**FIGURE 2**

Rev





File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 2 - Bat Activity Survey Results\_250615.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

CP - Common pipistrelle  
 PS - Pipistrelle species  
 Ser - Serotine  
 SP - Soprano pipistrelle

Copyright  
 Reproduced from Ordnance Survey digital map data  
 © Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue  
 FINAL

Client  
 CLEVE HILL SOLAR PARK LIMITED

Project Title  
 CLEVE FARM

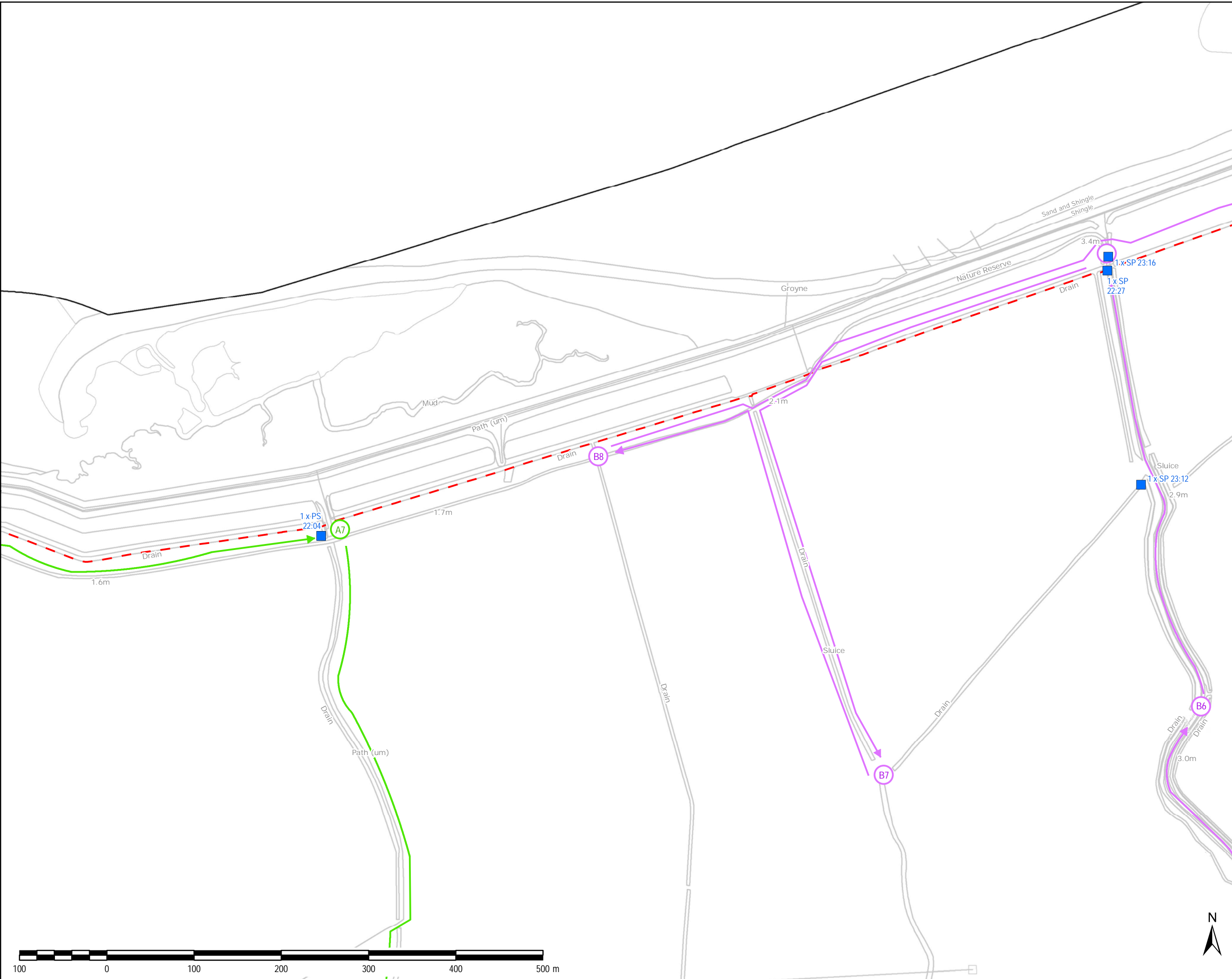
Drawing Title  
 BAT ACTIVITY SURVEY  
 25/06/15 (DUSK)  
 MAP 1

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
URS Internal Project No. 47069809		Scale @ A3 1:4,000	

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

AECOM South House Alençon Link, Basingstoke Hampshire, RG21 7PP Telephone (01256) 310200 Fax (01256) 310201 www.AECOM.com	
Drawing Number FIGURE 2	Rev

File Name: I:\5004 - Information Systems\7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 2 - Bat Activity Survey Results\_250615.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

CP - Common pipistrelle  
PS - Pipistrelle species  
Ser - Serotine  
SP - Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue	FINAL		
Client	CLEVE HILL SOLAR PARK LIMITED		
Project Title	CLEVE FARM		
Drawing Title	BAT ACTIVITY SURVEY 25/06/15 (DUSK) MAP 2		
Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
URS Internal Project No. 47069809		Scale @ A3 1:4,000	
THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.			
AECOM South House Alençon Link, Basingstoke Hampshire, RG21 7PP Telephone (01256) 310200 Fax (01256) 310201 www.AECOM.com			<b>AECOM</b>
Drawing Number FIGURE 2			Rev

File Name: I:\5004 - Information Systems\7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 2 - Bat Activity Survey Results\_250615.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

- LEGEND**
- Site boundary
  - Bat activity
  - Bat activity flight line
  - Transect point
    - Transect A
    - Transect B
    - Transect C
  - Transect route
    - Transect A
    - Transect B
    - Transect C

CP - Common pipistrelle  
PS - Pipistrelle species  
Ser - Serotine  
SP - Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue  
FINAL

Client  
CLEVE HILL SOLAR PARK LIMITED

Project Title  
CLEVE FARM

Drawing Title  
BAT ACTIVITY SURVEY  
25/06/15 (DUSK)  
MAP 3

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
URS Internal Project No. 47069809		Scale @ A3 1:4,000	

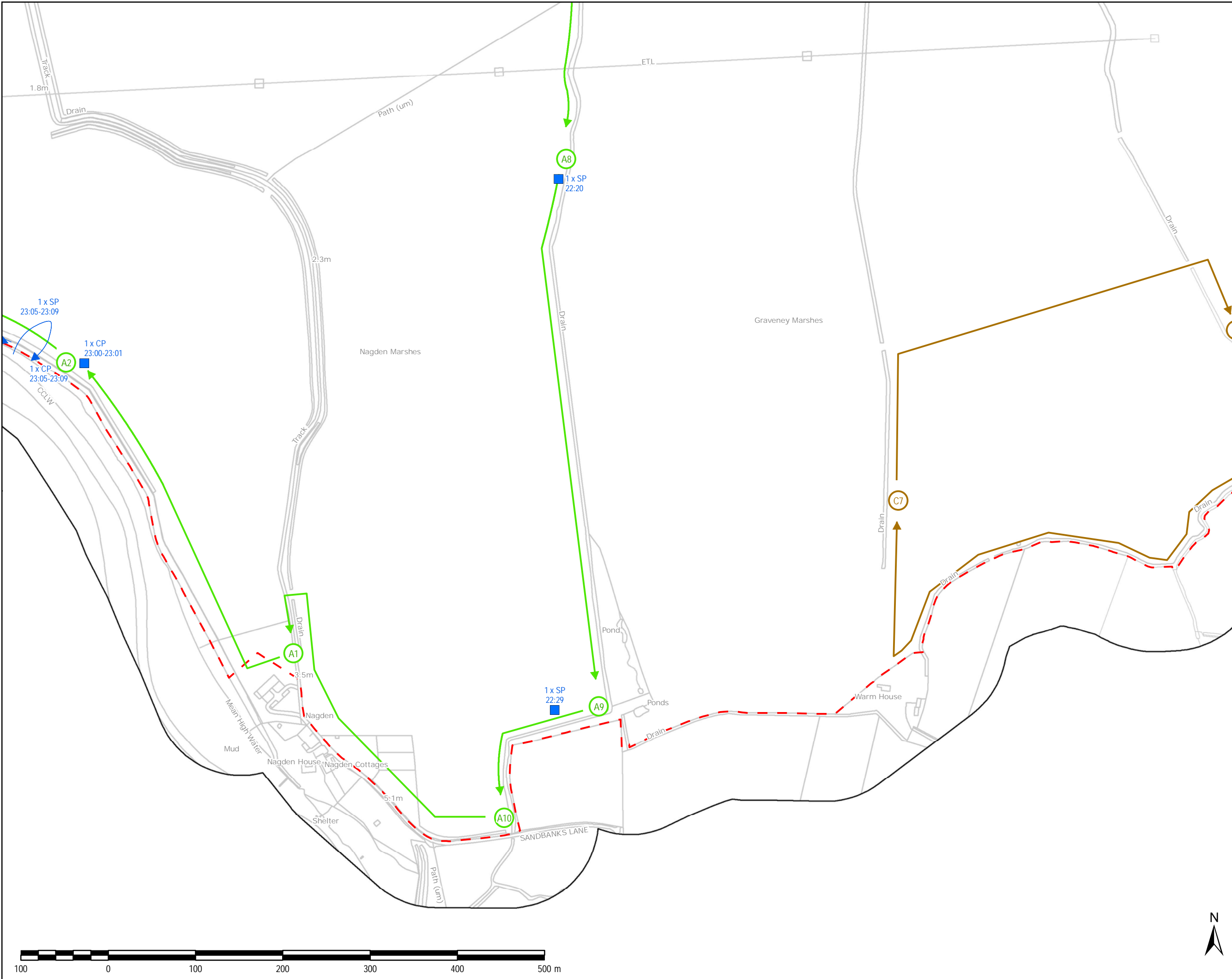
THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com



Drawing Number FIGURE 2	Rev
----------------------------	-----

File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 2 - Bat Activity Survey Results\_250615.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

CP - Common pipistrelle  
PS - Pipistrelle species  
Ser - Serotine  
SP - Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue: **FINAL**

Client: **CLEVE HILL SOLAR PARK LIMITED**

Project Title: **CLEVE FARM**

Drawing Title: **BAT ACTIVITY SURVEY  
25/06/15 (DUSK)  
MAP 4**

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
-------------	---------------	----------------	--------------------

URS Internal Project No. **47069809**

Scale @ A3  
**1:4,000**

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

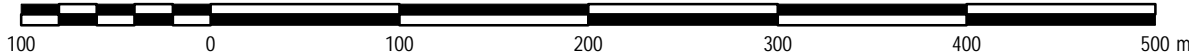
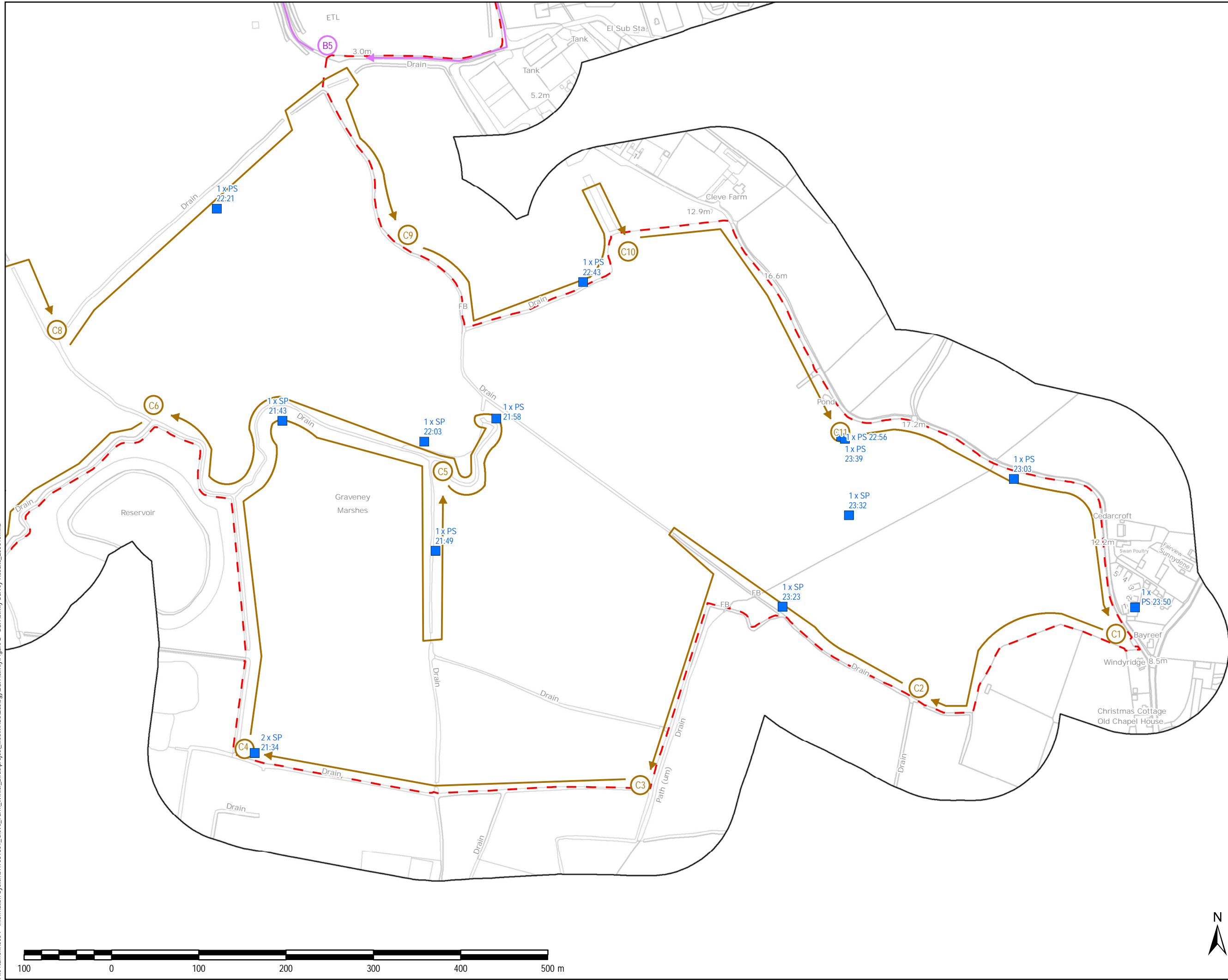
AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

Drawing Number: **FIGURE 2**

Rev



File Name: I:\5004 - Information Systems\7069809\_Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 2 - Bat Activity Survey Results\_250615.mxd



File Name: I:\5004 - Information Systems\7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 3 - Bat Activity Survey Results\_100815.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

- LEGEND**
- Site boundary
  - Bat activity
  - Bat activity flight line
  - Transect point
  - Transect A
  - Transect B
  - Transect C
  - Transect route
  - Transect A
  - Transect B
  - Transect C

**Bat species key**

Code	Name
BLE	Brown long-eared
CP	Common pipistrelle
Daub	Daubenton
Leis	Leisler's
MS	<i>Myotis</i> species
Noc	Noctule
Nyct	<i>Nyctalus</i> species
PS	Pipistrelle species
Ser	Serotine
SP	Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence  
number 0100031673.  
Contains Ordnance Survey Data © Crown  
Copyright and database right 2015

Purpose of Issue  
**FINAL**

Client  
**CLEVE HILL SOLAR PARK  
LIMITED**

Project Title  
**CLEVE FARM**

Drawing Title  
**BAT ACTIVITY SURVEY  
10-11/08/15 (DUSK/DAWN)  
OVERVIEW**

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
AECOM Internal Project No. 47069809		Scale @ A3 1:12,000	

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE  
TERMS OF URS' APPOINTMENT BY ITS CLIENT. URS ACCEPTS NO LIABILITY FOR  
ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR  
FOLLOWING URS' EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE  
PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

AECOM  
South House  
Alconon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

**AECOM**

Drawing Number  
**FIGURE 3**

Rev



File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 3 - Bat Activity Survey Results\_100815.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

**Bat species key**

Code	Name
BLE -	Brown long-eared
CP -	Common pipistrelle
Daub -	Daubenton
Leis -	Leisler's
MS -	<i>Myotis</i> species
Noc -	Noctule
Nyct -	<i>Nyctalus</i> species
PS -	Pipistrelle species
Ser -	Serotine
SP -	Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence  
number 0100031673.

Purpose of Issue  
**FINAL**

Client  
**CLEVE HILL SOLAR PARK  
LIMITED**

Project Title  
**CLEVE FARM**

Drawing Title  
**BAT ACTIVITY SURVEY  
10-11/08/15 (DUSK/DAWN)  
MAP 1**

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
AECOM Internal Project No. 47069809		Scale @ A3 1:4,000	

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND IS SUBJECT TO THE  
TERMS OF URS' APPOINTMENT BY ITS CLIENT. URS ACCEPTS NO LIABILITY FOR  
ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR  
FOLLOWING URS' EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE  
PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

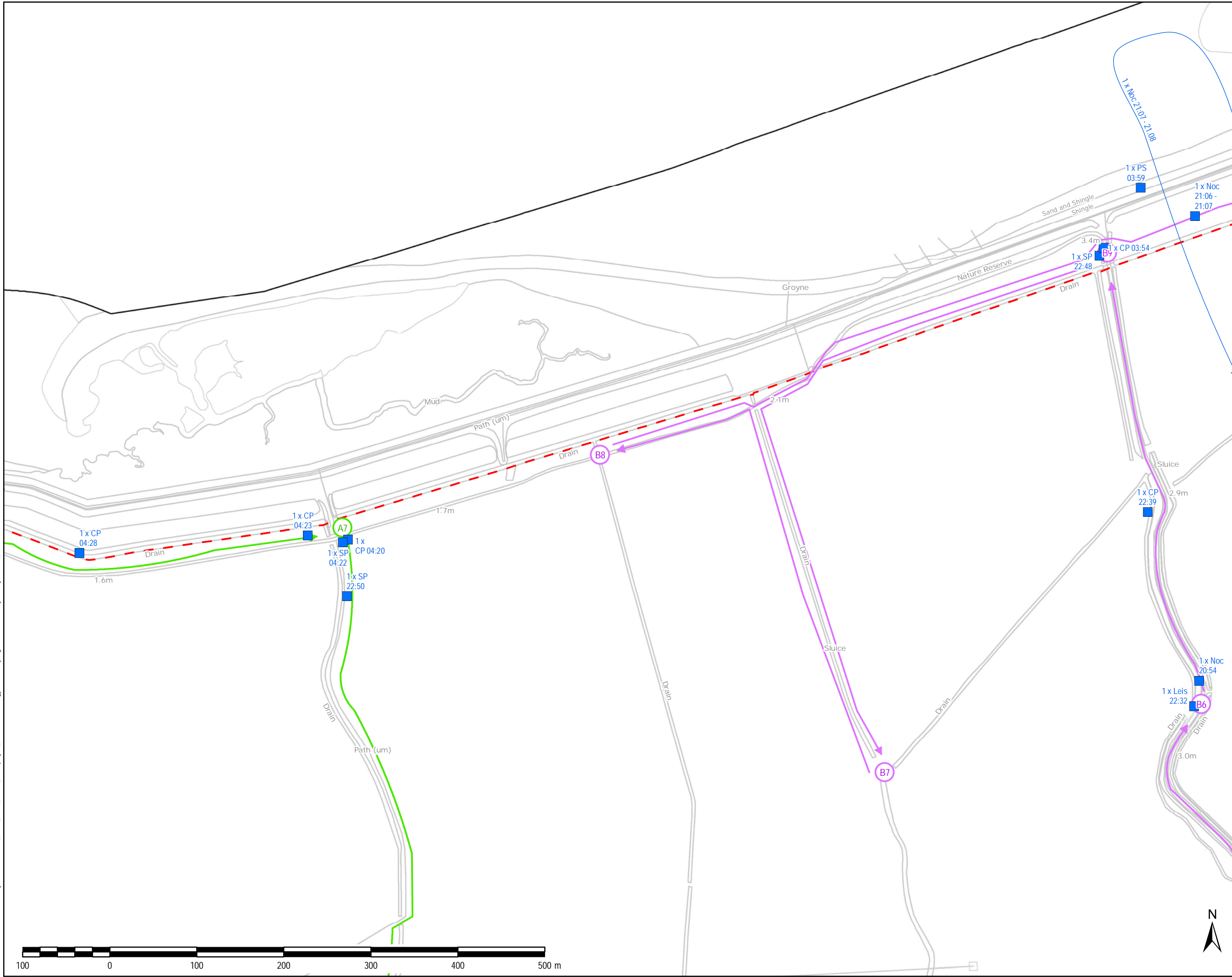
AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com



Drawing Number <b>FIGURE 3</b>	Rev
-----------------------------------	-----



File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 3 - Bat Activity Survey Results\_100815.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

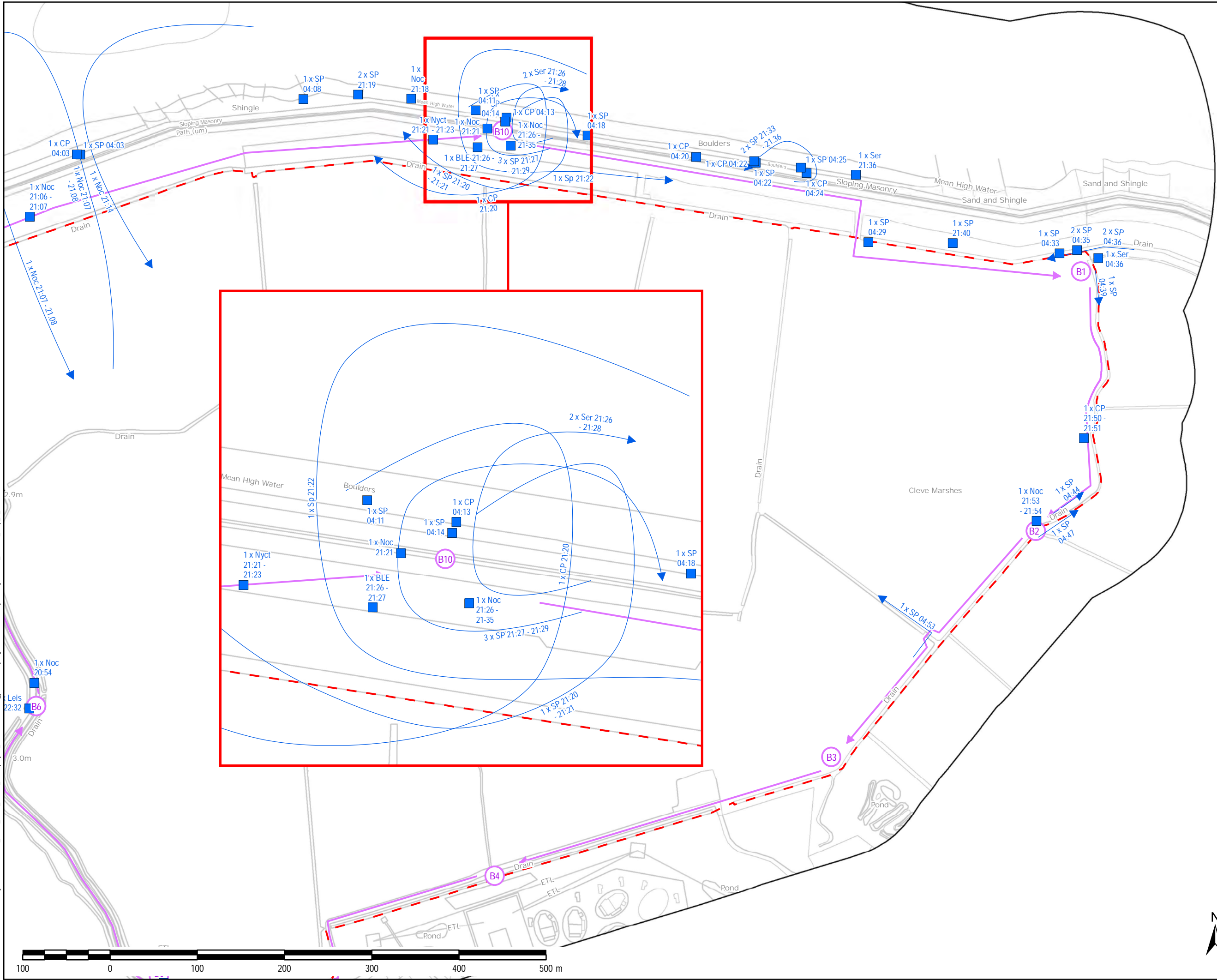
**Bat species key**

Code	Name
BLE -	Brown long-eared
CP -	Common pipistrelle
Daub -	Daubenton
Leis -	Leisler's
MS -	<i>Myotis</i> species
Noc -	Noctule
Nyct -	<i>Nyctalus</i> species
PS -	Pipistrelle species
Ser -	Serotine
SP -	Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue	FINAL		
Client	CLEVE HILL SOLAR PARK LIMITED		
Project Title	CLEVE FARM		
Drawing Title	BAT ACTIVITY SURVEY 10-11/08/15 (DUSK/DAWN) MAP 2		
Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
AECOM Internal Project No. 47069809		Scale @ A3 1:4,000	
THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF URS' APPOINTMENT BY ITS CLIENT. URS ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING URS' EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.			
AECOM South House Alençon Link, Basingstoke Hampshire, RG21 7PP Telephone (01256) 310200 Fax (01256) 310201 www.AECOM.com			<b>AECOM</b>
Drawing Number FIGURE 3			Rev

File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 3 - Bat Activity Survey Results\_100815\_Map\_3\_inset.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

Site boundary  
Bat activity  
Bat activity flight line  
Transect point  
Transect A  
Transect B  
Transect C  
Transect route  
Transect A  
Transect B  
Transect C

**Bat species key**

Code	Name
BLE	Brown long-eared
CP	Common pipistrelle
Daub	Daubenton
Leis	Leisler's
MS	<i>Myotis</i> species
Noc	Noctule
Nyct	<i>Nyctalus</i> species
PS	Pipistrelle species
Ser	Serotine
SP	Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence  
number 0100031673.

Purpose of Issue  
FINAL

Client  
CLEVE HILL SOLAR PARK  
LIMITED

Project Title  
CLEVE FARM

Drawing Title  
BAT ACTIVITY SURVEY  
10-11/08/15 (DUSK/DAWN)  
MAP 3

Drawn SJ	Checked AH	Approved RM	Date 22/12/2015
AECOM Internal Project No. 47069809		Scale @ A3 1:4,000	

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND IS SUBJECT TO THE  
TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY  
FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR  
FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE  
PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

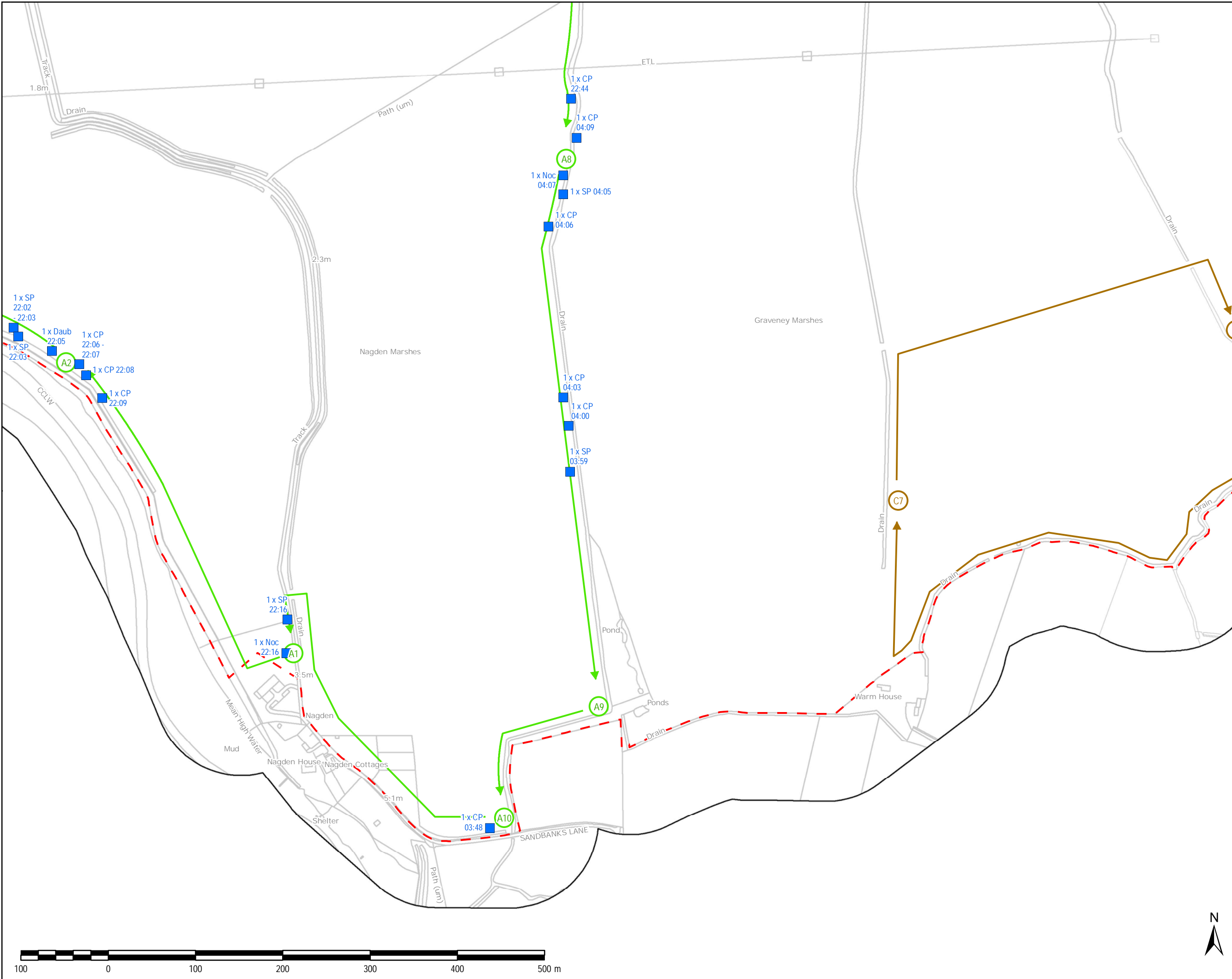
AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

Drawing Number  
FIGURE 3

Rev



File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 3 - Bat Activity Survey Results\_100815.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

**Bat species key**

Code	Name
BLE	Brown long-eared
CP	Common pipistrelle
Daub	Daubenton
Leis	Leisler's
MS	<i>Myotis</i> species
Noc	Noctule
Nyct	<i>Nyctalus</i> species
PS	Pipistrelle species
Ser	Serotine
SP	Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue  
**FINAL**

Client  
**CLEVE HILL SOLAR PARK LIMITED**

Project Title  
**CLEVE FARM**

Drawing Title  
**BAT ACTIVITY SURVEY  
10-11/08/15 (DUSK/DAWN)  
MAP 4**

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
-------------	---------------	----------------	--------------------

AECOM Internal Project No.  
**47069809**

Scale @ A3  
**1:4,000**

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF URS' APPOINTMENT BY ITS CLIENT. URS ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING URS' EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

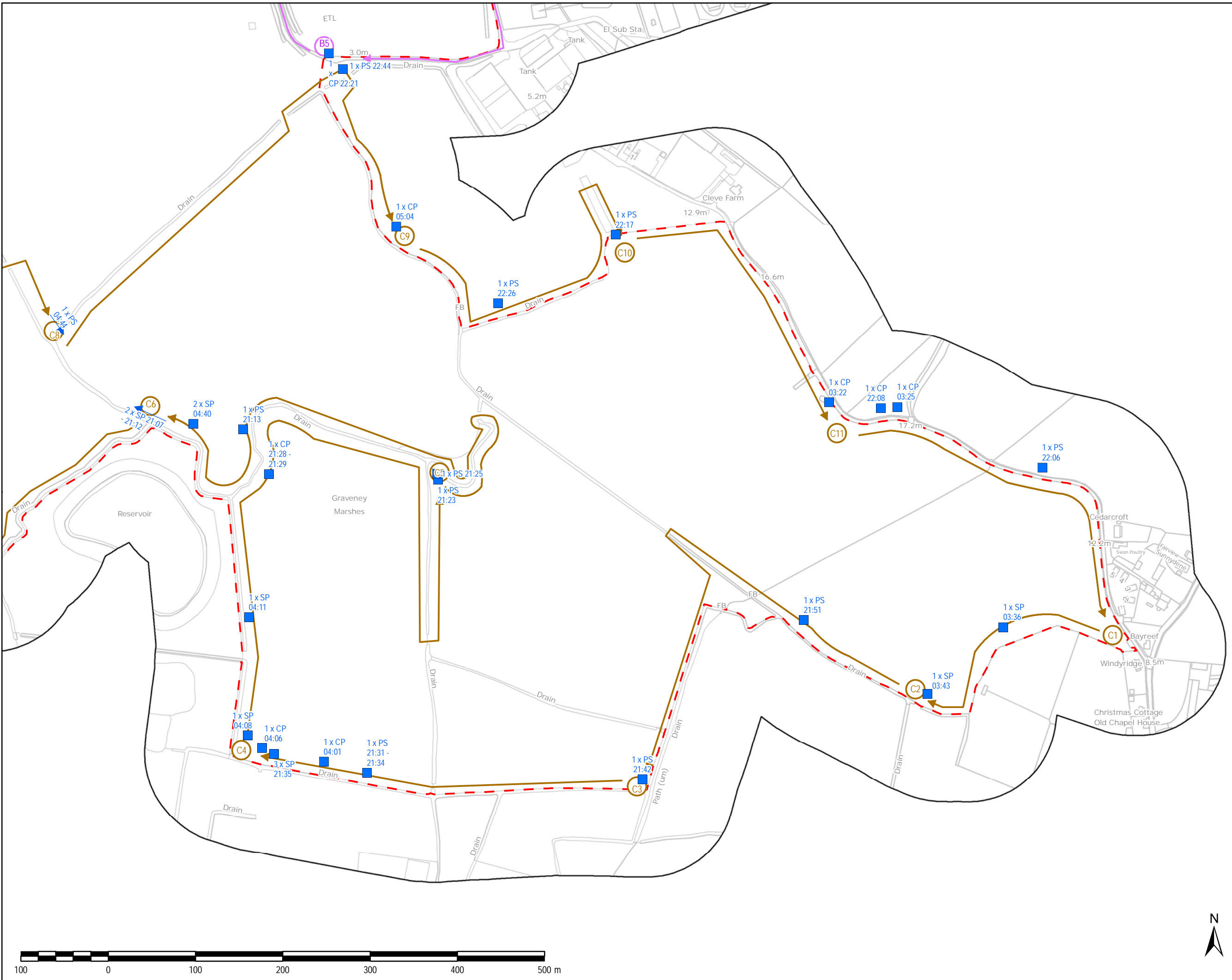
AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

Drawing Number  
**FIGURE 3**

Rev



File Name: I:\5004 - Information Systems\7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 3 - Bat Activity Survey Results\_100815.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

**Bat species key**

Code	Name
BLE	Brown long-eared
CP	Common pipistrelle
Daub	Daubenton
Leis	Leisler's
MS	<i>Myotis</i> species
Noc	Noctule
Nyct	<i>Nyctalus</i> species
PS	Pipistrelle species
Ser	Serotine
SP	Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue  
**FINAL**

Client  
**CLEVE HILL SOLAR PARK LIMITED**

Project Title  
**CLEVE FARM**

Drawing Title  
**BAT ACTIVITY SURVEY  
10-11/08/15 (DUSK/DAWN)  
MAP 5**

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
-------------	---------------	----------------	--------------------

AECOM Internal Project No.  
**47069809**

Scale @ A3  
**1:4,000**

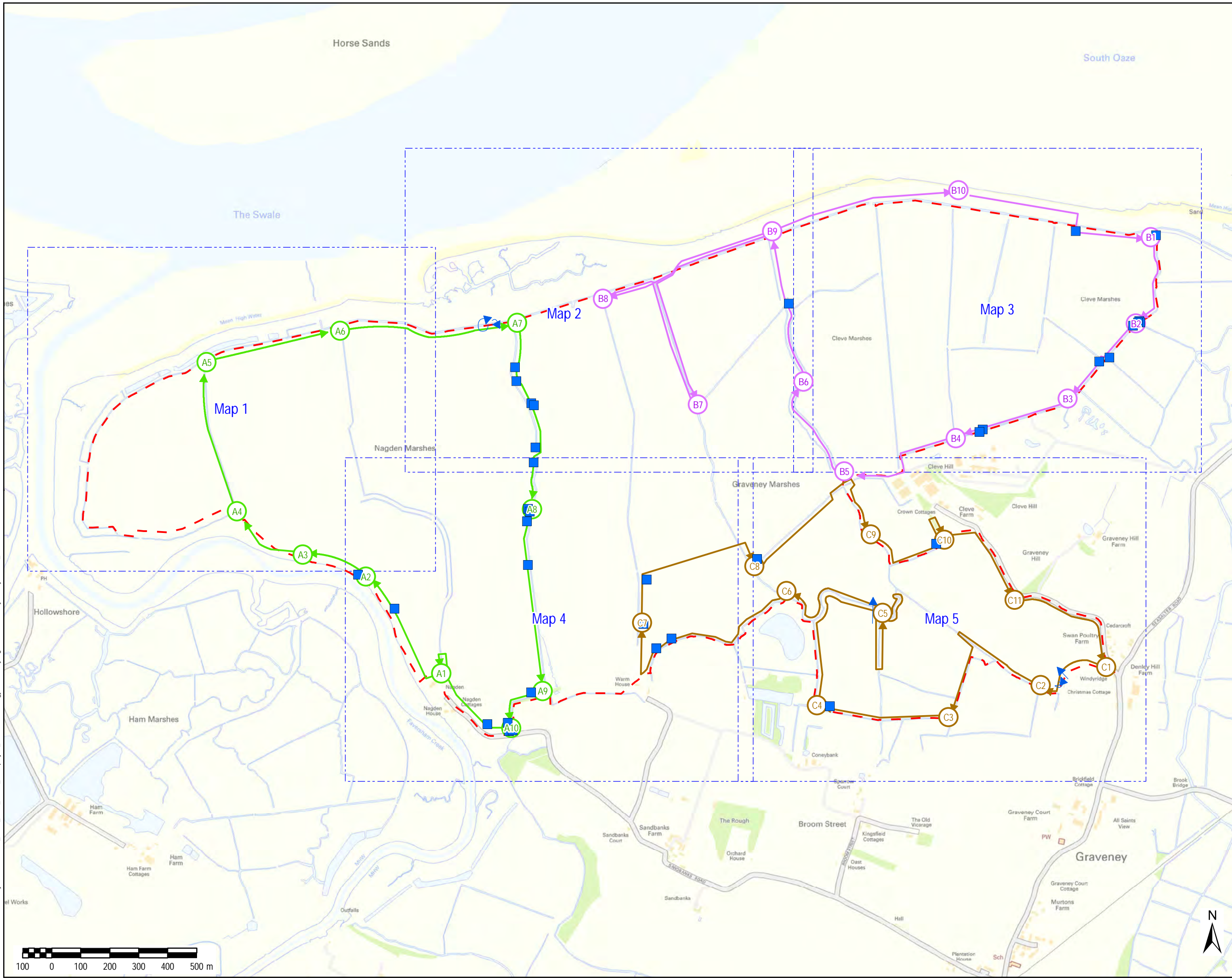
THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF URS' APPOINTMENT BY ITS CLIENT. URS ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING URS' EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

Drawing Number  
**FIGURE 3**

Rev

File Name: I:\5004 - Information Systems\7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 4 - Bat Activity Survey Results\_100915.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
  - Transect A
  - Transect B
  - Transect C
- Transect route
  - Transect A
  - Transect B
  - Transect C

CP - Common pipistrelle  
MS - Myotis species  
Noc - Noctule  
PS - Pipistrelle species  
SP - Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data © Crown copyright 2015. All rights reserved. Licence number 0100031673.  
Contains Ordnance Survey Data © Crown Copyright and database right 2015

Purpose of Issue	FINAL		
Client	CLEVE HILL SOLAR PARK LIMITED		
Project Title	CLEVE FARM		
Drawing Title	BAT ACTIVITY SURVEY 10/09/15 (DUSK) OVERVIEW		
Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
URS Internal Project No. 47069809		Scale @ A3 1:12,000	
THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND IS SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.			
AECOM South House Alconon Link, Basingstoke Hampshire, RG21 7PP Telephone (01256) 310200 Fax (01256) 310201 www.AECOM.com			<b>AECOM</b>
Drawing Number FIGURE 4			Rev



File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 4 - Bat Activity Survey Results\_100915.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

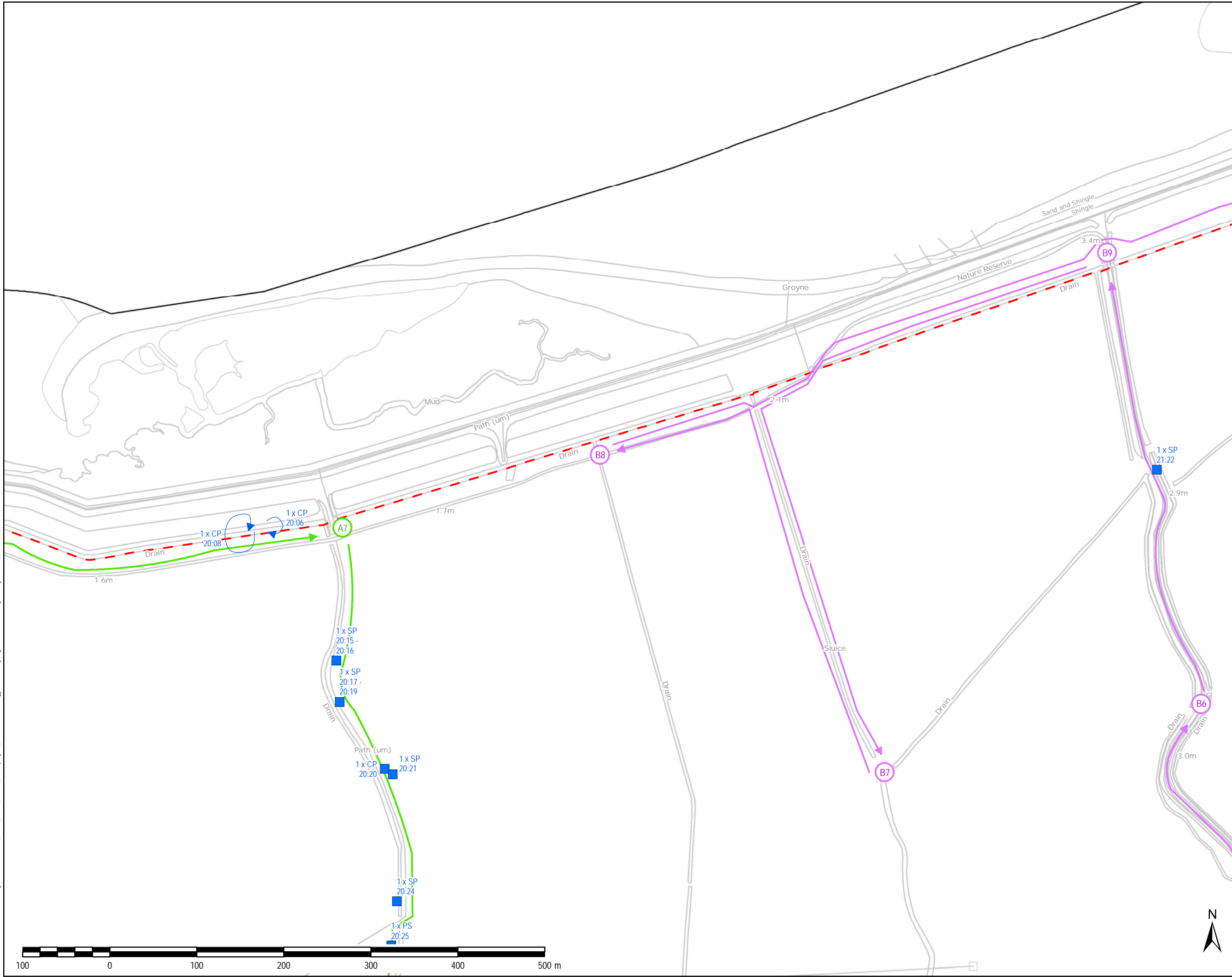
- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

CP - Common pipistrelle  
 MS - Myotis species  
 Noc - Noctule  
 PS - Pipistrelle species  
 SP - Soprano pipistrelle

Copyright  
 Reproduced from Ordnance Survey digital map data  
 © Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue	FINAL		
Client	CLEVE HILL SOLAR PARK LIMITED		
Project Title	CLEVE FARM		
Drawing Title	BAT ACTIVITY SURVEY 10/09/15 (DUSK) MAP 1		
Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
URS Internal Project No. 47069809		Scale @ A3 1:4,000	
THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.			
AECOM South House Alençon Link, Basingstoke Hampshire, RG21 7PP Telephone (01256) 310200 Fax (01256) 310201 www.AECOM.com			
Drawing Number FIGURE 4		Rev	

File Name: I:\5004 - Information Systems\7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 4 - Bat Activity Survey Results\_100915.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

CP - Common pipistrelle  
MS - Myotis species  
Noc - Noctule  
PS - Pipistrelle species  
SP - Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue  
**FINAL**

Client  
**CLEVE HILL SOLAR PARK LIMITED**

Project Title  
**CLEVE FARM**

Drawing Title  
**BAT ACTIVITY SURVEY  
10/09/15 (DUSK)  
MAP 2**

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
-------------	---------------	----------------	--------------------

URS Internal Project No.  
**47069809**

Scale @ A3  
**1:4,000**

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

Drawing Number  
**FIGURE 4**

Rev

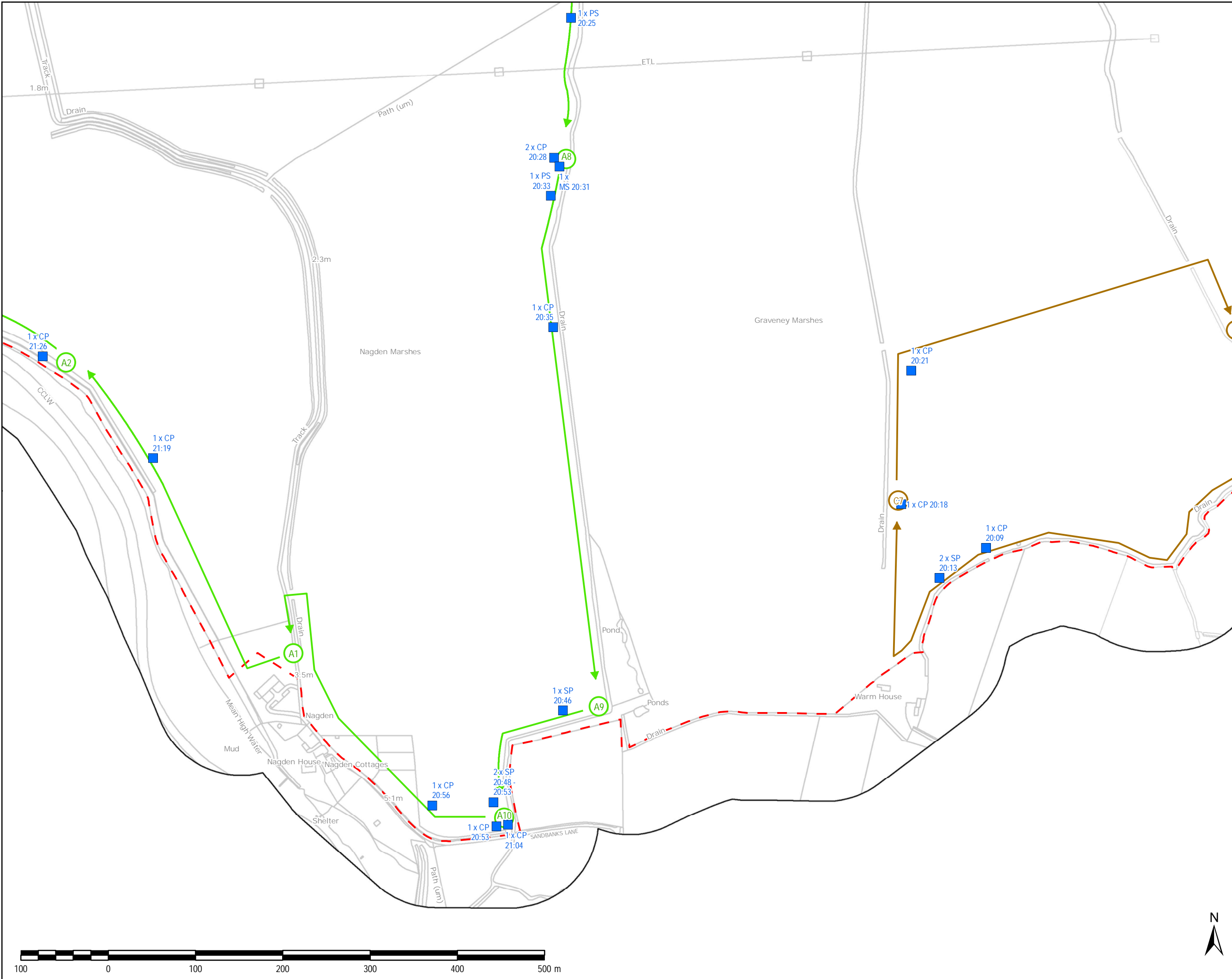
**AECOM**



File Name: I:\5004 - Information Systems\7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 4 - Bat Activity Survey Results\_100915.mxd



File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 4 - Bat Activity Survey Results\_100915.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

CP - Common pipistrelle  
MS - Myotis species  
Noc - Noctule  
PS - Pipistrelle species  
SP - Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue	FINAL
Client	CLEVE HILL SOLAR PARK LIMITED
Project Title	CLEVE FARM
Drawing Title	BAT ACTIVITY SURVEY 10/09/15 (DUSK) MAP 4
Drawn	SJ
Checked	AH
Approved	RM
Date	02/02/2016
URS Internal Project No.	47069809
Scale @ A3	1:4,000

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

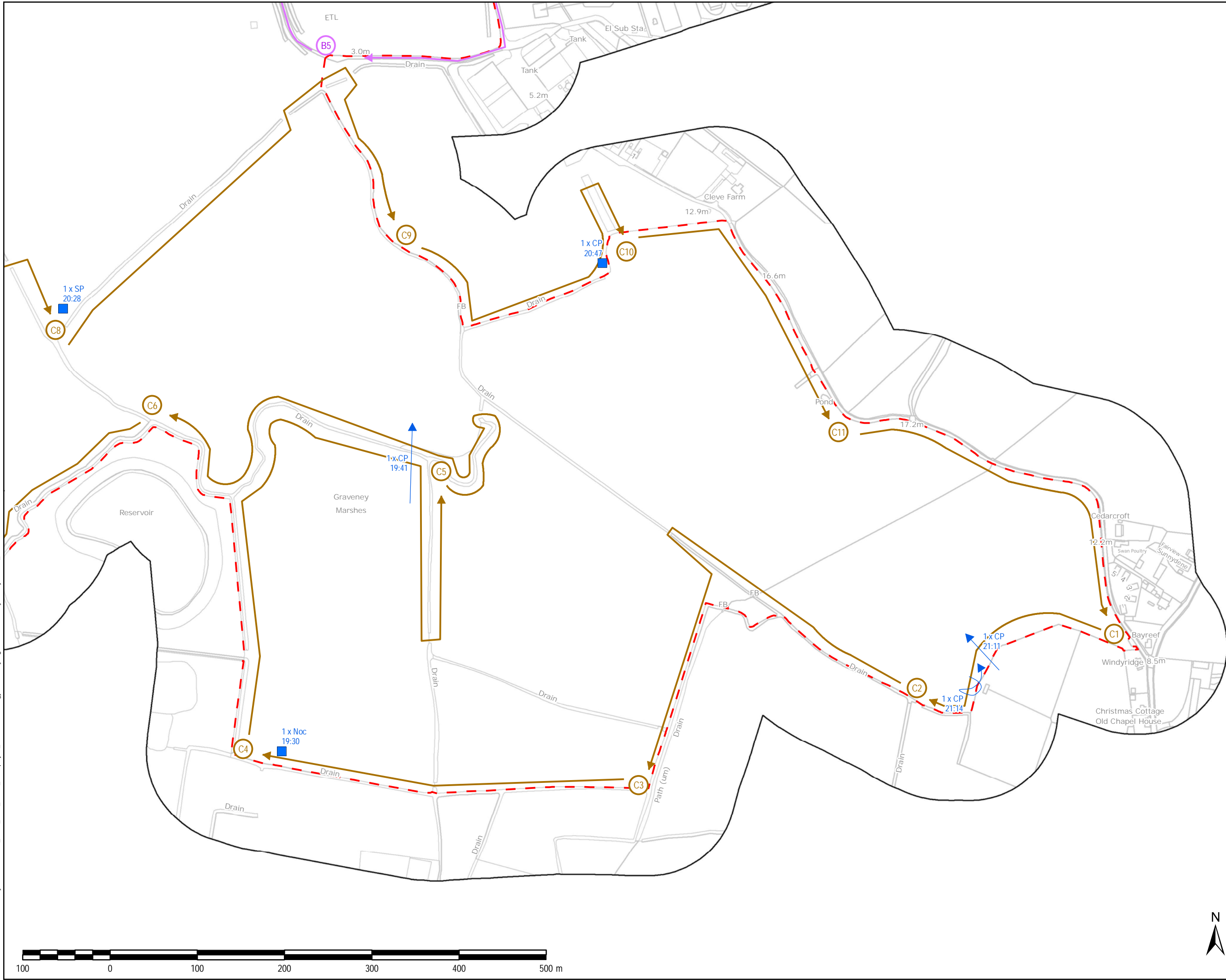
AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

Drawing Number

FIGURE 4

Rev

File Name: I:\5004 - Information Systems\K7069809 - Cleve\_Farm\_Winter\_Birds\project\_files\MXDs\Ecology\Bat Activity\Figure 4 - Bat Activity Survey Results\_100915.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

**LEGEND**

- Site boundary
- Bat activity
- Bat activity flight line
- Transect point
- Transect A
- Transect B
- Transect C
- Transect route
- Transect A
- Transect B
- Transect C

CP - Common pipistrelle  
MS - Myotis species  
Noc - Noctule  
PS - Pipistrelle species  
SP - Soprano pipistrelle

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence number 0100031673.

Purpose of Issue  
**FINAL**

Client  
**CLEVE HILL SOLAR PARK LIMITED**

Project Title  
**CLEVE FARM**

Drawing Title  
**BAT ACTIVITY SURVEY  
10/09/15 (DUSK)  
MAP 5**

Drawn SJ	Checked AH	Approved RM	Date 02/02/2016
-------------	---------------	----------------	--------------------

URS Internal Project No.  
**47069809**

Scale @ A3  
**1:4,000**

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

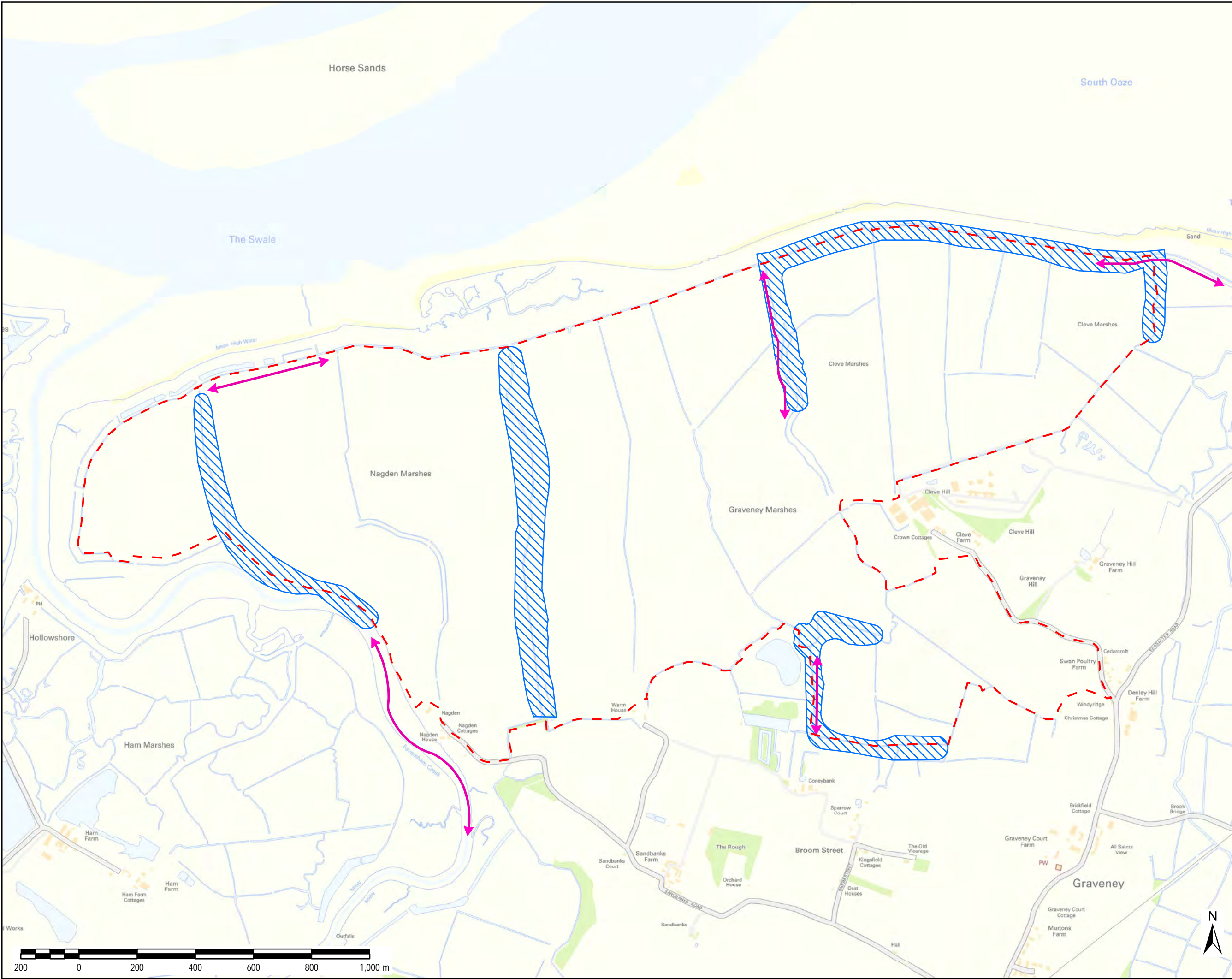
AECOM  
South House  
Alençon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

Drawing Number  
**FIGURE 4**

Rev



File Name: I:\5004 - Information Systems\K7069809\_Cleve\_Farm\_Winter\_Birds\project\_files\MMXD\Ecology\Bat Activity\Figure 5 - Bat Key Areas.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

- LEGEND**
- Site boundary
  - Key foraging areas
  - Key bat commuting routes

Copyright  
Reproduced from Ordnance Survey digital map data  
© Crown copyright 2015. All rights reserved. Licence  
number 0100031673.

Contains Ordnance Survey Data © Crown Copyright  
and database right 2015

Purpose of Issue  
**FINAL**

Client  
**CLEVE HILL SOLAR PARK  
LIMITED**

Project Title  
**CLEVE FARM**

Drawing Title  
**KEY AREAS OF  
BAT HABITAT**

Drawn SJ	Checked AH	Approved RM	Date 18/12/2015
URS Internal Project No. 47069809		Scale @ A3 1:12,000	

THIS DOCUMENT HAS BEEN PREPARED PURSUANT TO AND SUBJECT TO THE  
TERMS OF AECOM'S APPOINTMENT BY ITS CLIENT. AECOM ACCEPTS NO LIABILITY  
FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS ORIGINAL CLIENT OR  
FOLLOWING AECOM'S EXPRESS AGREEMENT TO SUCH USE, AND ONLY FOR THE  
PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED.

AECOM  
South House  
Alconon Link, Basingstoke  
Hampshire, RG21 7PP  
Telephone (01256) 310200  
Fax (01256) 310201  
www.AECOM.com

Drawing Number <b>FIGURE 5</b>	Rev
-----------------------------------	-----

**AECOM**