Tillbridge Solar

Tillbridge Solar Project

EN010142

Volume 6
Environmental Statement
Appendix 9-9: Baseline Report for Bats
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Regulation 5(2)(a)
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tillbridgesolar.com

@: info@tillbridgesolar.com T: 0800 046 9643

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Executive Summary

ES-1. In July 2022, AECOM (on behalf of Tillbridge Solar Limited) undertook a Preliminary Ecological Appraisal (PEA) for the proposed Tillbridge Solar Project (hereafter referred to as the Scheme). This PEA identified features such as trees, woodlands and buildings within and around the Order limits, and surveys were therefore undertaken to determine the suitability of these features as potential bat roosts and to establish the activity of bats using the habitat within the Scheme.

ES-2. All bat species and their roosts are legally protected in the UK under the Conservation of Habitats and Species Regulations 2017 (as amended), which implements the EC Directive 92/43/EEC (the Habitats Directive). In addition, Barbastelle *Barbastella barbastellus*, Lesser and Greater Horseshoe Bats *Rhinolophus hipposideros* and *Rhinolophus ferrumequinum* and Bechstein's Bat *Myotis bechsteinii* are listed in Annex II of the Habitats Directive, which requires sites to be designated in member states for their protection. Bats and their roosts are also protected under the Wildlife and Countryside Act 1981 (as amended).

ES-3. Field surveys were supported by a desk study of existing records for the Order limits and surrounding area. Furthermore, as set out in **Chapter 3: Scheme Description** of the ES [**EN010142/APP/6.1]**, the Scheme has worked collaboratively with Gate Burton Energy Park, Cottam Solar Project and West Burton Solar Project to minimise environmental impacts along the Cable Route Corridor by using a shared route, where practicable. Therefore, wider ecological survey data for these schemes was reviewed as part of the desk study and informed the assessment of bat presence in the wider landscape.

ES-4. The Order limits was assessed to determine the potential suitability of features for roosting bats (a Preliminary Roost Assessment or Daytime Bat Walkover) and surveys for bat activity, comprising bat activity transect and static detector surveys in accordance with good practice guidelines (Ref 15, Ref 16).

ES-5. There were 112 desk study records of bats within 2km of the Order limits, comprising the following species: Brown Long-eared Bat *Plecotus auritus*, Common Pipistrelle *Pipistrellus pipistrellus*, Noctule *Nyctalus noctula*, Brandt's bat Myotis brandtii, Natterer's bat Myotis nattereri, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius' Pipistrelle Pipistrellus nathusii and Daubenton's bat Myotis daubentonii. Bat activity surveys recorded comprised at least nine species: Common Pipistrelle, Nathusius' Pipistrelle, Soprano Pipistrelle, Noctule, Leisler's bat Nyctalus leisleri, unknown Myotis species (Daubenton's Bat, Whiskered bat Myotis mystacinus and/or other species), Serotine Eptesicus serotinus, Barbastelle and Brown Long-eared bat.

ES-6. Advance Level Bat Survey Techniques (ALBST) was undertaken to gather additional information on cryptic bat species and detail on breeding status of bats using Harpswell Wood within the Order limits. Species caught and released comprised Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared bat, Noctule, Whiskered and Natterer's bat. Adult male bats were

mainly captured, with a few female bats, with previous breeding evidence of Soprano Pipistrelle, Brown Long-eared bat and Noctule.

ES-7. Following an assessment, all roosts and potential roost features identified are outside the current footprint of the Scheme (due to avoidance of potential roosting features). As such no detailed roost presence/absence or characterisation has been undertaken to determine roost importance and therefore an estimated biodiversity importance to individual species has been assigned based on desk study data and activity surveys. As a precautionary approach, based on the limited data collected, bat roosts have been assigned of either District or Country Importance depending on the species.

ES-8. There was high reliance on habitats by foraging and commuting Soprano and Common Pipistrelles (widespread species) as demonstrated by regular use by larger numbers of bats. There was moderate reliance on habitats by foraging/commuting Brown Long-eared bat (widespread species) Noctule (widespread in many geographies but not as abundant in all) as demonstrated by regular use by smaller numbers of bats, or less-regular use by larger numbers of bats.

ES-9. There was limited evidence or low reliance on habitats for all other species; Daubenton's bat, Natterer's bat, Whiskered other potential Myotis species (e.g. Brandts), Barbastelle, Leisler's bat, Nathusius' Pipistrelle and Serotine based on limited evidence or irregular use and generally by small numbers of bats.

ES-10. The small pockets of woodland across and around the Order limits form a relatively rare resource for foraging bats, along with some irrigation reservoirs. Hedges and wider field margins (where present) provide habitat connectivity to habitats within and adjacent to the Order limits. Woodlands and other habitats of value are connected via hedges, but relatively few regularly used commuting routes are apparent with most activity recorded at woodland locations.

ES-11. Breeding roosts are likely to be present (e.g. Common and Soprano Pipistrelle, Noctule and Brown Long-eared bat) in woodland and buildings within and adjacent to the Order limits. Some of the larger woodlands and mature trees are likely to support hibernating tree-roosting bats, thus providing a winter foraging resource.

ES-12. Taking the above into account, the mosaic of habitats within the Survey Area is considered to be of County Importance for Commuting and Foraging bats. However, the area to be developed comprises largely arable areas which are of lower value (up to District Importance).

1. Introduction

1.1.1 This report forms a technical appendix to the Environmental Statement (ES), specifically to accompany **Chapter 9: Ecology and Nature Conservation** of this ES **[EN010142/APP/6.2]** reporting on surveys for bats undertaken within (and up to 50 metres (m) from) the Order limits of the Tillbridge Solar project, hereafter referred to as the Scheme.

1.2 Site Description

1.2.1 The Scheme is located approximately 5 kilometres (km) to the east of Gainsborough and approximately 13km to the north of Lincoln. The Scheme comprises two distinct parcels, which are:

a. 'the Principal Site', which is the location where ground mounted solar PV panels, electrical sub-stations, and BESS will be installed; and

b. 'the Cable Route Corridor', which will comprise the underground electrical infrastructure required to connect the Principal Site to National Grid Cottam Substation.

1.2.2 The Principal Site is located within the administrative district of West Lindsey. The Cable Route Corridor tracks south of the Principal Site, to the east of Willingham by Stow before tracking west towards the River Trent and to the south of Gate Burton. The Cable Route Corridor crosses into Nottinghamshire (within the administrative district of Bassetlaw) before connecting to the Cottam Power Station.

1.2.3 This report recognises that whilst the Scheme is based in the administrative county of Lincolnshire, key aspects of biodiversity are coordinated and managed within the geography of Greater Lincolnshire, for example the Nature Strategy for the Greater Lincolnshire Nature Partnership.

1.2.4 The Order limits covers an area of approximately 1,670 hectares (ha) and is dominated by arable fields (minimum 80% of the Order limits). There are numerous mature trees and hedges within the Order limits, with woodlands and small wooded copses. It is surrounded by mainly arable and improved grassland livestock fields.

1.2.5 The location of the Scheme is presented in **Figure 9-9-1**, included in **Annex A** of this survey report.

1.3 Aims and Objectives

1.3.1 The aim of the desk study and survey for bats, reported in this document, is to determine the presence and distribution of roosting, commuting and foraging bats within the Zone of Influence (ZoI) (see **Section 3.1**) and identify any potential mitigation that may be required to enable the Scheme to proceed without breach of legislation with regards to bats.

1.3.2 The objectives, therefore, are to:

a. review existing ecological data to identify any records of bats occurring within the Study Area (see **Section 3.1**); and

b. undertake surveys to determine the presence, assemblage and distribution of bat species within the Order limits.

1.3.3 Combined, this is being used to:

a. assess potential for roosting bats within the Scheme;

b. assign a biodiversity importance to bat roosts, foraging and commuting habitat; and

c. identify the potential impacts of the Scheme on bats and any required mitigation.

2. Relevant Legislation, Policy and Guidance

2.1 Legislation

2.1.1 The following legislation is relevant to bats and in relation to the Scheme:

a. Wildlife and Countryside Act 1981 (as amended) (the WCA) (Ref 1);

b. Countryside and Rights of Way (CRoW) Act 2000 (Ref 2);

c. Natural Environment and Rural Communities (NERC) Act 2006 (Ref 3);

d. Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 4); and

e. Environment Act 2021 (Ref 5).

2.1.2 The above legislation has been considered when planning and undertaking the commissioned bat survey work, using the methods described in Section 3; when identifying potential constraints to the Scheme; and when making recommendations for further survey, design options and mitigation, as discussed in **Chapter 9: Ecology and Nature Conservation** of the ES **[EN010142/APP/6.1]**. Where bats or their roosts are impacted, compliance with legislation may require the attainment of a bat mitigation licence/s prior to the implementation of the Scheme (see **Section 2.2**).

2.1.3 All bat species and their roosts are legally protected in the UK under the Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 4), which implements the EC Directive 92/43/EEC (the Habitats Directive) (Ref 6). In addition, Barbastelle, Lesser and Greater Horseshoe bats and Bechstein's bat are listed in Annex II of the Habitats Directive (Ref 6), which requires sites to be designated in member states for their protection. Bats and their roosts are also protected under the WCA.

2.1.4 Taken together, the Conservation of Habitats and Species Regulations 2017 (Ref 4) and the WCA (Ref 1) make it illegal to:

a. deliberately capture or intentionally take a bat;

b. deliberately or intentionally kill or injure a bat;

c. be in possession or control of any live or dead bat or any part of, or anything derived from a bat;

d. damage or destroy a breeding site or resting place of a bat;

e. intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection;

f. intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection; or

g. deliberately disturb bats, in particular any disturbance which is likely to:

(i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or

(ii) affect significantly the local distribution or abundance of the species to which they belong.

2.1.5 A bat roost is defined as any structure or tree a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected regardless of whether or not the bats are present at a specific point in time.

2.2 European Protected Species Mitigation Licences

2.2.1 Although the law provides strict protection for bats, it also allows this protection to be set aside (derogated) under Regulation 55 of the Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 4) through the issuing of European Protected Species Mitigation Licences (EPSMLs). The three "derogation tests" are that:

a. "*the development must be either for public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment";*

b. *"that there is no satisfactory alternative"; and*

c. *"that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range"*.

2.2.2 In accordance with the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 4) a licence can only be issued where the following requirements are satisfied:

a. *"there is no satisfactory alternative"; and*

b. *"the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range".*

2.2.3 Favourable conservation status is defined in Article 1(i) of the Habitats Directive (Ref 6) as when:

a. *"population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats";*

b. *"the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future"; and*

c. *"there is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long-term basis".*

2.3 Priority Species

2.3.1 The NERC list of Species of Principal Importance (SPI) (Ref 3) is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act (in this context, the Secretary of State). Section 40 of the NERC Act (Ref 3) and updated by the Environment Act 2021 (Ref 5) places a legal obligation on

public bodies in England to have a proactive duty to consider what action the authority can properly take, consistently with the proper exercise of its functions, to further the general biodiversity objective and for particular living organisms and types of habitat which are of the greatest conservation importance (*e.g.* SPI). Section 41 of the NERC Act (Ref 3) lists seven bat species: Barbastelle, Bechstein's bat, Noctule *Nyctalus noctula*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared bat *Plecotus auritus*, Lesser and Greater Horseshoe bats as SPI for the purpose of conserving biodiversity.

2.4 Local Biodiversity Action Plan

2.4.1 The Scheme is located within the counties of Lincolnshire and Nottinghamshire. Formerly, the Lincolnshire Biodiversity Action Plan (3rd edition) (Lincolnshire BAP) (Ref 7) provided context to inform identification of threatened or uncommon species of local relevance, alongside priorities for conservation and enhancement targeted at a local level in Lincolnshire. However, under the Environment Act 2021 (Ref 5), these are being replaced by Local Nature Recovery Strategies (LNRSs), which are a system of spatial strategies for nature which will support delivery of biodiversity net gain (BNG) and provide more focussed action for nature recovery. Whilst this is still being developed for Lincolnshire and with no specific habitat or species plans currently in place, this report references the generic action plans in the Lincolnshire BAP.

2.4.2 The Nottinghamshire Biodiversity Action Plan (Nottinghamshire BAP) (Ref 8) continues to provide context to inform identification of threatened or uncommon species of local relevance and identifies priorities for conservation and enhancement. It is a mechanism for enabling national targets at a local level, however it confers no particular legislative or policy protection to the species identified, although in some cases, this is provided through related legislation and local planning policy.

2.4.3 Both the Lincolnshire BAP (Ref 7) and Nottinghamshire BAP (Ref 8) have produced generic action plans for all species of bats.

2.4.4 The Lincolnshire BAP (Ref 7) lists the following threats to bat species within the county:

a. loss of breeding and winter hibernation sites in buildings, old trees and farmyard features, especially old stone farmyard buildings; through decay;

b. demolition or conversion of buildings to other uses; or felling trees without suitable mitigation;

c. disturbance and destruction of roosts e.g. due to building work;

d. reduction in insect prey due to widespread pesticide use and deterioration of water quality has also been shown to affect food supply: contamination from a range of sources including pesticides, oil and fertilisers can affect invertebrate populations;

e. loss of feeding and commuting habitats – through reduction in the quality and quantity of hedgerows, mature trees, ditches, drains, ponds and

riverside habitats. Continuing loss of permanent pasture is especially concerning for some species;

f. widespread confusion over/ ignorance of/ flouting of the law regarding bats; and

g. floodlighting of churches and other buildings causing disturbance.

2.4.5 The Nottinghamshire BAP (Ref 8) lists the following threats to bat species within the county:

a. loss and fragmentation of suitable insect-rich feeding habitats such as wetlands and deciduous woodland;

b. loss of linear features such as tree-lines and hedgerows, depriving bats of commuting routes between roosts and feeding areas;

c. loss of and damage to roosting sites, including buildings, hollow trees, and underground structures (mines, tunnels, ice-houses, cellars, etc);

d. ignorance or deliberate avoidance of consultation procedures legally required to protect bats, resulting in the loss of many roosts through demolition, inappropriate building practices, use of toxic timber treatment chemicals, intolerance by roost owners, and tree-felling; and

e. reduction in the abundance and diversity of insect prey due to intensive agriculture, particularly over-grazing and the use of pesticides.

3. Methods

3.1 Characterising the baseline

3.1.1 Within this report, the baseline for bats was characterised using the following terminology, which is used when referring to the geographic areas within which assessments were made:

a. Study Area – the area within the Order limits and a 2km radius which was subject to collection of background information *e.g.* desk study records for bats;

b. Zone of Influence (ZoI) – the area over which bats may be affected by the Scheme which, using the criteria below and proportionate to the project's impacts, is likely to typically be less than 50m around the Order limits but kept through review of likely impacts of the Scheme and results of the desk study, which was then used to define the scope of field surveys; and

c. Survey Area – this is the area within which the field survey work for bats was undertaken (the Order limits).

3.1.2 The ZoI is based on:

a. the nature of the project (a solar farm scheme), project activities, and the potential for effects at all development stages (construction, operation and decommissioning);

b. the nature of the land use (minimum 80% arable) and habitats in the vicinity (majority being arable), their connectivity (e.g through hedgerows or grassland margins), and how they may be used by bats;

c. the assemblage of bat species which may be in the area based on the location of the Order limits and desk study data; and

d. the different habits, behaviours and preferences of different bat species that could be affected, and how these vary both spatially and seasonally.

Desk Study

3.1.3 A desk study was undertaken as part of the Preliminary Ecological Appraisal (PEA) in March and July 2022 (Ref 9). This desk study obtained records of bats within the preceding ten years and within a 2km radius of the Order limits from Greater Lincolnshire Nature Partnership (GLNP) (July 2022) and Nottinghamshire Biological and Geological Records Centre (NBGRC) (March 2022).

3.1.4 A search was also undertaken of freely available online resources, including 'MAGIC' (Ref 10), for Special Areas of Conservation (SACs) within 30km of the Order limits where bats are cited as one of the qualifying features; and also for granted licences (EPSMLs) in relation to bats within 2km of the Order limits.

3.1.5 The Nottinghamshire bat group website (Ref 11) was reviewed for species information/distribution in the county.

Collaborative Dataset

3.1.6 As set out in **Chapter 3: Scheme Description** of the ES **[EN010142/APP/6.1]**, the Scheme has worked collaboratively with Gate Burton Energy Park, Cottam Solar Project and West Burton Solar Project to minimise environmental impacts along the Cable Route Corridor by using a shared route, where practicable. As a result, a wealth of ecological information has been collected along this corridor. To minimise disturbance to wildlife and landowners, through repeated access by multiple schemes, where relevant, the Applicant has collaborated with the other proposed developments to 'share' data. Where this has been the case, it is clearly described in this report. In addition, the Applicant has undertaken surveys to ground truth these data, where relevant.

3.1.7 Wider ecological survey data for these schemes was reviewed as part of the desk study and informed the assessment of bats in the wider landscape (Gate Burton Energy Park (Ref 12), Cottam Solar Project (Ref 13) and West Burton Solar Project (Ref 14)).

Field Survey

3.1.8 All field surveys were led by competent ecologists, familiar with bat ecology and surveying, with the relevant Natural England bat survey class licences for the survey type and are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) at their appropriate level.

3.1.9 Prior to the start of the surveys, a daytime site visit was undertaken for each location by the lead surveyor in order to plan the works, assess any health and safety issues within the Order limits, and record the context of the survey locations.

3.1.10 To assess features within the Order limits, a preliminary roost assessment was originally used to capture suitability of these features, this applies to the Principal Site and following updated guidance, a daytime bat walkover was used to complete the assessment of features within the Order limits and therefore was applied to the Cable Route Corridor.

Preliminary Roost Assessment

3.1.11 A preliminary roost assessment (PRA) was carried out on all relevant features identified within the Principal Site, and up to a maximum of 50m from the Principal Site (where suitable habitat was identified and there was access to such areas or, where areas outside of the Principal Site were viewable from within the Order limits) (see **Figure 9-9-1** in **Annex A**). This assessment of relevant buildings/ structures, woodland blocks and trees was undertaken externally at ground level for their suitability for roosting bats in January to February 2023.

3.1.12 The aim of the survey was to undertake a rapid assessment to identify:

a. the presence of bats or their roost(s); and/ or

b. features that were suitable for roosting bats, but for which the presence/ absence of bats or their roosts could not be determined.

3.1.13 The PRA was undertaken in accordance with guidance in the Bat Surveys: Good Practice Guidelines for Professional Ecologists 3rd Edition (Ref 15). A global positioning system (GPS) was made to accurately record the location of individual trees, tree-lines, woodlands and building/structures along with photographs and notes on each feature. Detailed methods for the PRA survey are presented in Annex B. Where any signs of bats, such as staining and droppings were found, then these were also recorded.

3.1.14 Based on the overall suitability for use as a bat roost, each tree, woodland or structure was classified as negligible, low, moderate or high roost suitability, or as a confirmed roost, in accordance with best practice guidelines (Ref 15) and methods in **Annex B**.

3.1.15 The results helped to inform the layout of the Scheme and any requirement for more detailed survey work to confirm the presence or likely absence of bat roosts, if roost features are likely to impacted. It is important to note that none of these features are anticipated to be impacted by the Scheme due to the embedded mitigation, that includes the retention and buffer zones provided around buildings, trees and woodlands to avoid and therefore avoid potential roosting features or any significant disturbance. As such these assessments were carried out on a precautionary basis to inform any future amendments to the Scheme that may require further surveys where potential roost disturbance or loss may occur.

Daytime Bat Walkover

3.1.16 Following the publication of Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition in September 2023 (Ref 16) the methods of a daytime bat walkover (DBW) were adopted in replacement of the PRA. The DBW method was implemented within the Cable Route Corridor to complete the assessment of features within the Order limits. Where access was permitted, this assessment of relevant trees, woodlands and buildings/structures was undertaken between September, October and November 2023.

3.1.17 The DBW was undertaken in accordance with guidance in the Bat Surveys: Good Practice Guidelines for Professional Ecologists 4th Edition (Ref 16). A global positioning system (GPS) was made to accurately record the location of individual trees, treelines, woodlands and buildings/structures along with photographs and notes on each feature.

3.1.18 Based on the overall suitability for use as a bat roost, each tree and woodland was classified as no features or highly unlikely to be any (None), further assessment required (FAR), or potential roost feature (PRF), with buildings/structures classified as none, negligible, low, moderate or high roost suitability, or as a confirmed roost in accordance with best practice guidelines (Ref 16).

3.1.19 The results helped to inform the layout of the Scheme and any requirement for more detailed survey work to confirm the feature's suitability for bats and presence or likely absence of bat roosts, if roost features are likely to impacted. It is important to note that none of these features will be impacted by the Scheme due to the embedded mitigation, on the basis of habitats being retained and a suitable buffer zone provided around potential roosting

features to avoid roost loss or any significant disturbance. As such these assessments were carried out on a precautionary basis to inform any future amendments to the Scheme that may require further survey where potential roost disturbance or loss may occur.

Bat Activity Surveys

3.1.20 The surveys for bat activity were undertaken within the Principal Site, which comprises mostly low value suitability habitats for foraging and commuting bats, including large open intensively managed arable farmland, including smaller areas set-aside and improved / semi-improved grassland. Woodland, individual trees, ponds and hedges that are normally more frequently used by foraging and commuting bats will be retained and buffered as part of the Scheme. In accordance with the bat survey guidelines (Ref 15), habitats assessed as being of low value for foraging and commuting bats require three activity transects surveys within a year capturing spring, summer and autumn.

3.1.21 Bat activity surveys, following a transect methodology (Ref 15) were undertaken in spring, summer and autumn (May, July and September/October) 2022 using three transect routes (A, B and C, see **Figure 9-9-2** in **Annex A**) covering representative habitats across the Principal Site. Note that two seasons of data collected from a fourth transect D was omitted owing to changes in the Order limits and an additional transect (transect E) was added in 2023 and surveyed in spring (April), summer (June) and autumn (September) 2023. The survey routes were designed to include potential flight paths or foraging areas within the Principal Site and between such areas and potential roost sites. The transects, therefore, included sampling representative habitats within the Scheme, comprising hedges/ tree lines, woodland edge, roadside verges and arable field margins.

3.1.22 Each activity survey involved two surveyors walking a transect route which included a series of counts at pre-determined points along the transect (presented as ‘stopping’ points on the figures in **Annex A**). These stopping points were located at potentially higher value features with regards to foraging and, or, commuting bats and included woodland edges and hedgerows. At each point, surveyors stopped and recorded bat activity for three minutes using bat echolocation detectors. All bat activity encountered whilst walking between points was also noted. The direction of the transects was varied during each survey visit in order to ensure different areas of the transect were walked at different times.

3.1.23 Surveyors carried full spectrum bat echolocation detectors (Batlogger M) to determine which species were present. In accordance with survey guidelines (Ref 15), dusk surveys were carried out from sunset to at least two hours after sunset. The time, location, numbers, species (where possible) and direction of flight were recorded for each bat pass (a discrete burst of echolocation heard, or bat activity observed) during the survey. Echolocation calls detected were analysed with specialist software comprising Bat Explorer, Kaleidoscope and Analook W to verify bat calls. Survey visits were conducted in this way where weather conditions allowed, with surveys scheduled to avoid nights with cold (<7°C), wet or windy conditions.

3.1.24 In addition to the transect surveys, eight automated static bat detectors (two on each transect (A, B, C and E), comprising Anabat Express detectors with the same standard microphones and settings) were deployed in representative habitats to record bat activity over a longer period of time (*i.e*. a minimum of five nights per season). This is double the recommended number of detectors required (normally one per transect for low value habitat) (Ref 15) and ensured better coverage of bat activity within the Principal Site due to the large geographic spread and the ability to consider small areas of higher value habitat (such as adjacent woodland) within each transect location. The locations of the static bat detectors are presented on **Figure 9-9-2** in **Annex A**.

3.1.25 All microphones were located at least one metre above the ground on trees, and with clear of vegetation between the adjacent habitats and the microphone. All detectors were set on default settings to record in zero-crossing format. The static bat detectors were set up to record bat calls from sunset to sunrise for the recommended minimum of five consecutive nights per season in spring, summer and autumn (see deployment dates and weather conditions in **Annex D**).

3.1.26 Weather conditions were recorded, using the temperate log files on each static bat detector and rain/wind conditions recorded at the nearest weather station using online resources (Ref 17). Weather data were taken into consideration in the analysis. Where any prolonged period of strong wind >25mph or rain was experienced, the static detectors were left for longer on site to obtain sufficient data during optimum weather conditions for bat activity.

3.1.27 Advanced level bat licence survey techniques (ALBST) were used in Harpswell Wood to determine the presence of and identify rare/cryptic bat species (e.g. Barbastelle and *Myotis* species). This is a relatively large broad-leaved semi-natural woodland with mature Oak and Ash, where a relatively high number of bat passes were recorded during transect and static detector surveys here that included unidentified *Myotis* species.

3.1.28 The survey comprised three separate surveys using mist nets, harp traps and acoustic lures to temporarily capture bats between May and September 2023 (avoiding mid-June to July when bats may have dependant young). This information supplemented the activity and static detector surveys by providing more clarity on any potentially rare/cryptic species that may occur within the Survey Area, including details on their breeding status and assessing the potential for roosting on site.

3.2 Bat Data Analyses

Activity Surveys

3.2.1 The transect data were described in relation to species, number of passes (and where possible number of bats), observed behaviour, temporal and spatial trends. The static bat detector data collected were analysed to determine the total number of bat passes for each species or species group (depending on the level of identification possible from the recordings made)

and then used to derive a metric - the Bat Activity Index (BAI) for the bat activity at each survey location.

3.2.2 These analyses provide an indication of:

a. seasonal variation in species activity and composition at each survey location;

b. relative levels of bat activity across the Survey Area; and

c. potential roosting sites, important foraging areas and commuting routes.

Bat Activity Index (BAI)

3.2.3 BAI values were calculated by averaging the total number of bat passes per hour for each static bat detector unit at each location per survey period. The term 'pass' is defined as a single file made up of bat pulses of a single species *i.e.* this may be one bat in a recorded sound file or many bats in a single file.

3.2.4 Limited guidance is available on what constitutes low to high bat activity on a Site based on number of passes. As such, a relative scale is used by AECOM that follows the protocol used by Ecobat (Ref 18) in this report where:

a. low activity: 0-20th percentiles;

b. low to moderate activity: 21st-40th percentiles;

c. moderate activity: 41st-60th percentiles;

d. moderate to high activity: 61st-80th percentiles; and

e. high activity: 81st-100th percentiles.

3.2.5 For transect data relative bat activity levels were categorised to aid the description of activity within the results/discussion. No guidance is available on what constitutes low, moderate or high bat activity based on number of passes during a transect (based on a transect survey time of two to three hours). As such a relative scale is used by AECOM in this report where:

a. very low activity is up to five passes per survey;

b. low activity is six to 25 passes per survey;

c. moderate activity is 26 to 99 passes per survey; and

d. high activity is 100 passes per survey.

3.2.6 Reference to surveyor observations, including numbers of individual bats seen, flight routes and behaviour and detectability of individual species are also made to inform the overall evaluation.

Biodiversity Importance

3.2.7 An essential prerequisite step to allow ecological impact assessment of the Scheme was an evaluation of the relative biodiversity importance of the Survey Area for bats. This is necessary to set the terms of reference for the subsequent ecological impact assessment.

3.2.8 The method of evaluation that was utilised to assign biodiversity importance (i.e., sensitivity) of any bat roosts, foraging and commuting habitat has been developed with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines (Ref 19). This gives guidance on scoping and carrying out environmental assessments and places appraisal in the context of relevant policies and at a geographical scale at which feature matters (i.e., international, national, regional, county, district, local or site). Data received through desk study and field-based surveys were used to identify the importance of the species addressed in this report. Professional judgement was also applied, where necessary. Relevant published national and local guidance and criteria can be used, where available, to inform the assessment of biodiversity importance and to assist consistency in evaluation.

3.2.9 For further details on the methodology used to determine biodiversity importance, please refer to the Tables presented in **Annex C**.

3.2.10 Reference has also been made, where required, to:

a. CIEEM Bat Mitigation Guidelines (Ref 20);

b. Natural England Joint Publication JP025: A Review of the Population and Conservation Status of British Mammals (Ref 21);

c. NERC Act Section 41 list of species of principal importance (Ref 3);

d. Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-Care and Ecology Professionals (Ref 22); and

e. The State of the UK's Bats 2017: National Bat Monitoring Programme Populations Trends (Ref 23).

3.3 Assumptions and Limitations

Desk Study

3.3.1 The aim of the desk study was to help characterise the baseline context of the Scheme and provide valuable background information that would not be captured by site surveys alone. Information obtained during the course of the desk study was dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular species does not necessarily mean that the species does not occur in the study area. Likewise, the presence of records of species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Scheme.

Bat Activity Field Survey

3.3.2 Survey areas were chosen to provide a representative sample of bat activity, based on the best quality areas in terms of potential for supporting bat roosting/foraging/commuting habitat which could be impacted as a result of the Scheme (*i.e.* mainly arable fields). As such, not all habitats were surveyed in detail, with woodlands, wetland, and hedgerows retained and buffered from the Scheme as part of the embedded mitigation (see **Chapter 9: Ecology and Nature Conservation** of the ES **[EN010142/APP/6.2]**. In

2022, Transect D was included for survey as this area formed part of the Order limits, however it is no longer within the Order limits and therefore data from this area has been removed from the assessment unless it was considered to be relevant to the Scheme (such as the presence of roosts or identification of rare species). Furthermore, part of Transect C is outside of the Order limits, although due to its close proximity and coverage of representative habitats the results of the Transect have been included within this assessment.

3.3.3 The Bat Survey Good Practice Guidelines were updated to a 4th edition in September 2023 (Ref 16). However, the surveys described in this report were scoped in early 2023 and therefore were mostly carried out in accordance with the previous 3rd edition guidelines (Ref 15). They are robust in context with the framework of published guidance at the time they were carried out and are comparable with survey methods in the 4th edition. Additional daytime bat walkover survey carried out between September and December 2023 followed the 4th edition guidelines.

3.3.4 No activity surveys were undertaken along the Cable Route Corridor, with any impacts in relation to construction works in this area predicted to be temporary, with only minor habitat changes and of limited extent and therefore, using professional judgement and based on assessments on similar scale Schemes, bat activity surveys in the Cable Route Corridor were not undertaken.

3.3.5 One static bat detector on Transect A, failed to record during the spring survey due to microphone damage by birds. Additional data was collected at this location during the summer with a total of 13 nights of data, (above the minimum of five nights per static). In addition, there were two statics used on each transect, which was double the minimum required. As such this is not a limitation to the results.

Data Interpretation Limitations

3.3.6 It is accepted that *Myotis* bat species are difficult to identify with any degree of certainty from echolocation alone, therefore these species are often aggregated as '*Myotis* species'. This aggregation, where undertaken, is widely accepted and does not affect the evaluation of the results of activity surveys. Further details on *Myotis* species have been provided from the ALBST that identifies these species with certainty. Noctule and Leisler's *Nyctalus leisleri*, and Common Pipistrelle *Pipistrellus pipistrellus* and Soprano Pipistrelle can be difficult to separate, therefore *Nyctalus* species and *Pipistrellus* species are used respectively unless identification is certain.

3.3.7 The PRA surveys undertaken were aimed at determining the presence or likely absence of roosts, therefore there would be a need for further surveys on potential roosts if they are likely to be impacted by the Scheme. Whilst the Scheme parameters being sought in the DCO should enable impacts to be avoided, should at detailed design stage, future impacts be unavoidable, then sufficiently robust roost survey data will need to be collected for any future licence application (EPSML) for roost loss.

3.3.8 Bats are highly mobile and may roost in different locations each year where suitable roost features are present. Where required, a precautionary approach for mitigation has been proposed for trees or structures assessed with roost suitability but where roosts were not found.

3.3.9 These limitations did not significantly limit this report and assessment. Ecological data in relation to these species are valid for 18 months to 3 years, depending on the survey type, based on best practice guidance (CIEEM, 2019) (Ref 24). All data are valid at the point of submission, however, after this time a review of habitats within the Order Limits, current bat distribution data and potentially update surveys may be required.

4. Results

4.1 Desk Study

4.1.1 There are no international statutory sites designated for bats within 30km of the Order limits. There are no national statutory sites designated for bats within 10km of the Order limits or relevant non-statutory sites within 2km of the Order limits.

4.1.2 The combined data search results from GLNP and NBGRC returned 112 bat records within 2km of the Order limits and from within the preceding ten years (from 2012 to 2022). The data search returned records of at least eight bat species: Brown Long-eared Bat, Common Pipistrelle, Noctule, Brandt's bat, Natterer's Bat, Soprano Pipistrelle, Nathusius' Pipistrelle, Daubenton's Bat, unknown Pipistrelle species and *Myotis* species. Most of these were field observations, so these could either be roosting or foraging/commuting records.

4.1.3 Several records were received of confirmed roosts, although the grid references supplied were mainly at a resolution of 1km. However, all records of roosting bats (at their closest point from the Order limits) were from outside the Order limits within settlements and comprised:

a. an unknown bat species roost in [redacted] of the Order limits);

b. an unknown [redacted] species roost at Heapham (c.[redacted]t of the Order limits;

c. a Brown Long-eared Bat roost in [redacted] of the Order limits);

d. a Natterer's roost at [redacted] of the Order limits);

e. an unknown [redacted] at [redacted] of the Order limits); and

f. a [redacted] ([redacted] south of the Order limits).

4.1.4 A review of MAGIC (Ref 10) did not identify any bat mitigation licences within 2km of the Order limits.

4.2 Collaborative Dataset

4.2.1 Datasets received from Gate Burton Energy Park (Ref 12), Cottam Solar Project (Ref 13) and West Burton Solar Project (Ref 14) provided information on the suitability of trees and buildings within the Cable Route Corridor (and up to 50 metres (m) from the Cable Route Corridor, where access allowed) using a preliminary roost assessment. Gate Burton Energy Park (Ref 12), provided data for 66 features numbered GB# and Cottam Solar Project (Ref 13) and West Burton Solar Project (Ref 14) provided data for 54 features numbered IPG# (see Figure 9-9-1).

4.2.2 **Table 1** presents a summary of the data received by the collaborative datasets for the Cable Route Corridor.

Table 1. Summary of PRA results received the collaborative dataset

Feature Type	Suitability for Roosting Bats			
	Negligible	**Low**	**Moderate**	**High**
Tree (including individual trees and small groups of trees)	31	29	26	2
Line of trees	21	1	-	-
Woodland	7	2	-	-
Buildings	-	1	-	-

4.3 Field Survey

Preliminary Roost Assessment

4.3.1 There were 303 individual trees recorded within the Principal Site comprising 11 tree species, dominated by Ash *Fraxinus excelsior*, with some Pedunculate Oak *Quercus robur*, Sycamore *Acer pseudoplatanus*, Horse Chestnut *Aesculus hippocastanum* and Willow (*Salix* species). These trees were mainly located along hedges, roadsides and field boundaries with a few in the middle of fields.

4.3.2 Of the 303 trees surveyed, 121 had Low to High roost suitability with 182 of Negligible roost suitability. Eleven trees assessed as High roost suitability also had features suitable for hibernating bats, such as deep cavities, crevices that provided suitable environmental conditions to support bats during the winter.

4.3.3 Additionally, there were 51 groups of trees and tree lines, including lines of trees along hedges. Sixteen features had Low to High roost suitability with the remaining 35 of Negligible roost suitability. Thirty-five woodlands were identified, comprising broad-leaved semi-natural woodland (*e.g.* Harpswell Wood, ref. 1788 on **Figure 9-9-1**), broad-leaved and mixed plantation. The

majority (30) had an overall Low to High roost suitability with five young plantations of Negligible roost suitability.

4.3.4 There were numerous veteran trees, a group of mature Dutch Elm *Ulmus x hollandica*, (notable from a landscape/conservation aspect), and trees with other wildlife habitat importance. Further details of all trees within the Scheme are provided in the **Arboriculture Impact Assessment** (see **Appendix 12-7** of the ES **[EN010142/APP/6.2])**

4.3.5 Three buildings were recorded comprising a disused open single storey brick building 10 x 3m with concrete base and flat concrete roof with Low roost suitability and two small open sided concrete sheds with Negligible suitability.

4.3.6 Detailed results of the PRA survey are presented in **Annex D**. The locations of all features surveyed are presented in **Figure 9-9-1** (**Annex A**).

4.3.7 As summarised in **Table 2**, the PRA identified:

a. 55 features with high suitability bat roosting habitat;

b. 40 features with moderate suitability;

c. 73 features with low suitability; and

d. 224 features with negligible suitability.

4.3.8 Some of these features and most woodlands, particularly those with moderate to high suitability, are likely to contain roosting bats. However, none of the features identified are expected to be directly or indirectly impacted by the Scheme due to retention of these features, and buffers around them.

Table 2. Summary of PRA results

Feature Type	Suitability for Roosting Bats			
	Negligible	Low	Moderate	High
Individual Tree	182	55	30	36
Group or line of trees	35	7	4	5
Woodland	5	10	6	14
Buildings	2	1	-	-

Daytime Bat Walkover

4.3.9 In summary, this initial assessment of 201 trees and structures found that:

a. 68 were recorded as having no features suitable for roosting bats (None/N);

b. 46 were classified as further assessment required (FAR);

c. 85 trees that have potential roost features (PRF) that could be suitable for roosting bats; and

d. two structures are assessed as Low suitability for roosting bats.

4.3.10 Detailed results of the DBW survey are presented in **Annex D**, **Table 15**. The locations of all features surveyed are presented in **Figure 9-9-1** (**Annex A**).

4.3.11 Some of these features may contain roosting bats, however none of the features identified are currently likely to be directly or indirectly impacted by the Scheme due to retention of these features, and buffers around them.

Bat Activity Surveys

4.3.12 The results of these surveys and the Bat Activity Index (BAI) (as per the method in **Section 3.3**) are summarised below, with full results presented in **Annex D**. Transect mapping and static bat detector locations are presented in **Figure 9-9-2** (**Annex A**).

Transect Surveys

4.3.13 Transect surveys were undertaken in 2022 and 2023 to provide a representative coverage of the habitats within the Order limits. This comprised walking three transect routes (A, B and C as presented in **Figure 9-9-2** (**Annex A**)), each surveyed in the spring, summer and autumn of 2022 and Transect E that was surveyed in the spring, summer and autumn of 2023.

4.3.14 Species recorded during the bat transect surveys comprised at least six species: Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Brown Long-eared Bat, Noctule, Daubenton's Bat, *Myotis* species (Daubenton's, Whiskered, Natterer's and/ or other unknown *Myotis* species), *Nyctalus* species (Noctule and/or Leisler's Bat).

Spring

4.3.15 Three transects (A, B and C) were surveyed between 23rd and 30th May 2022 during similar weather conditions, 10 to 13°C at sunset with a light to gentle breeze and partly cloudy to overcast. Transect E was surveyed on 19th April 2023 with weather conditions of 11 to 8°C at sunset with no wind or cloud.

4.3.16 Transect A had moderate activity (78 passes), dominated by Common Pipistrelle with Natterer's Bat and potentially other *Myotis* species mainly around Harpswell Wood at connected woodland to the north and south of these woods.

4.3.17 Transect B had moderate activity (31 passes) of Common Pipistrelle adjacent to hedges and plantation woodland. The location and timing of activity indicates potential roost/s at Harpswell Grange Farm.

4.3.18 Transect C had moderate activity (50 passes) of Common and [redacted], along hedges, tree lines and close to the oil well and reservoir.

4.3.19 Transect E had low activity (ten passes) of [redacted] and [redacted] (four passes) located along hedges and close to woodland.

Summer

4.3.20 Three transects (A, B and C) were surveyed between 20th July and 25th August 2022, with weather conditions 15 to 19°C at sunset with a light to gentle breeze and overcast. Transect E was surveyed on 7th June 2023 with weather conditions of 12 to 11°C at sunset, a light breeze and overcast conditions.

4.3.21 Transect A had low activity (16 passes) of Common and [redacted], mainly around Harpswell Wood. Transect B had low activity (23 passes) of Common Pipistrelle and a single pass of an unknown *Myotis* species along hedges to the north of the transect. sTransect C had high activity (100 passes) of Common and [redacted], with lower numbers of Noctule, *Myotis* species and single passes of Daubenton's Bat and Nathusius' Pipistrelle. Activity was spread across the whole transect with relatively higher activity close at the two reservoirs adjacent to the transect route. Transect E had low activity (16 passes) of Common Pipistrelle and a single *Myotis* species along woodland edge and hedges.

Autumn

4.3.22 Three transects (A, B and C) were surveyed between 26th September and 3rd October 2022 during similar weather conditions, 10 to 11°C at sunset with a light to gentle breeze and partly cloudy. Transect E was surveyed on 18th September 2023 with weather conditions of 15 to 11°C at sunset, a gentle breeze and partly cloudy conditions.

4.3.23 Transect A had low activity (20 passes) dominated by [redacted], with [redacted], Common and [redacted] and a single Natterer's Bat pass, located mainly around Harpswell Wood. Transect B had very low activity, comprising a single [redacted]. Transect C had low activity (15 passes) of Common and [redacted] scattered along hedges/tree lines. Transect E recorded low activity (<10 passes) of Common and [redacted] and [redacted] mainly around woodland to the south.

Static Bat Detector Survey

4.3.24 Full results of the static detector surveys, undertaken within the Principal Site between May and October 2022 (along transects A, B and C); and between April and September 2023 (Transect E) are provided in **Annex D** with static detector locations presented on **Figure 9-9-2** (**Annex A**). A total of 166 nights of data were analysed from eight statics located across the Principal Site, resulting in 8442 records of bats. Species recorded on the static bat detectors comprised at least nine species; Common Pipistrelle, Nathusius' Pipistrelle, Soprano Pipistrelle, Noctule, Leisler's Bat, unknown *Myotis* species (Daubenton's Bat, Whiskered Bat and/or other species), Serotine, Barbastelle and Brown Long-eared Bat.

4.3.25 A summary of the BAI from static bat detector surveys is presented in Table 3, Charts 1 and 2. Static A2, located just south of Harpswell Wood had the highest activity in the spring, with high activity also recorded in the autumn at this location. Static B1, located in a small copse and static B2 along a hedge also had high activity. The lowest activity was from static A1 (located along a hedgerow in farmland) in the summer and autumn, static C2 (located on a

woodland/field edge) during spring and autumn and static E1 (located along a hedge on open farmland to the north of the Principal Site).

4.3.26 Common Pipistrelle had the highest number of passes, with a total of 5282 passes (see Chart 1), followed by [redacted] (1520 passes), Myotis species (997 passes) and then [redacted] (438 passes). Lower number of passes were recorded of Leisler's Bat (82 passes), [redacted] (48 passes), [redacted] (33 passes), Common or [redacted] (28 passes), Barbastelle (six passes), Nathusius' Pipistrelle (five passes) and Serotine (three passes),

Table 3. Summary of Bat Activity Index (BAI) from static bat detector survey

Location	BAI* per hr	Activity Level	BAI* per hr	Activity Level	BAI* per hr	Activity Level
	Spring		**Summer**		**Autumn**	
A1	-	No Data[#]	0.1	Low Activity	0.6	Low Activity
A2	27.4	High Activity	7.8	Moderate-high Activity	13.9	High Activity
B1	4	Moderate-high Activity	3.4	Moderate Activity	13.9	High Activity
B2	1.5	Low-moderate Activity	15.4	High Activity	2.2	Moderate Activity
C1	1.5	Low-moderate Activity	6.2	Moderate-high Activity	2.2	Moderate Activity
C2	0.7	Low Activity	7.5	Moderate-high Activity	1.5	Low-moderate Activity
E1	0.1	Low Activity	1.7	Low-moderate Activity	1.3	Low-moderate Activity
E2	2.3	Moderate Activity	12.4	Moderate-high Activity	2.2	Moderate Activity

*BAI = Bat Activity Index (overall number of bat passes per hour)

[#] Detector failed - see limitations (**Section 3.3**)

Chart 1: Total number of passes per species

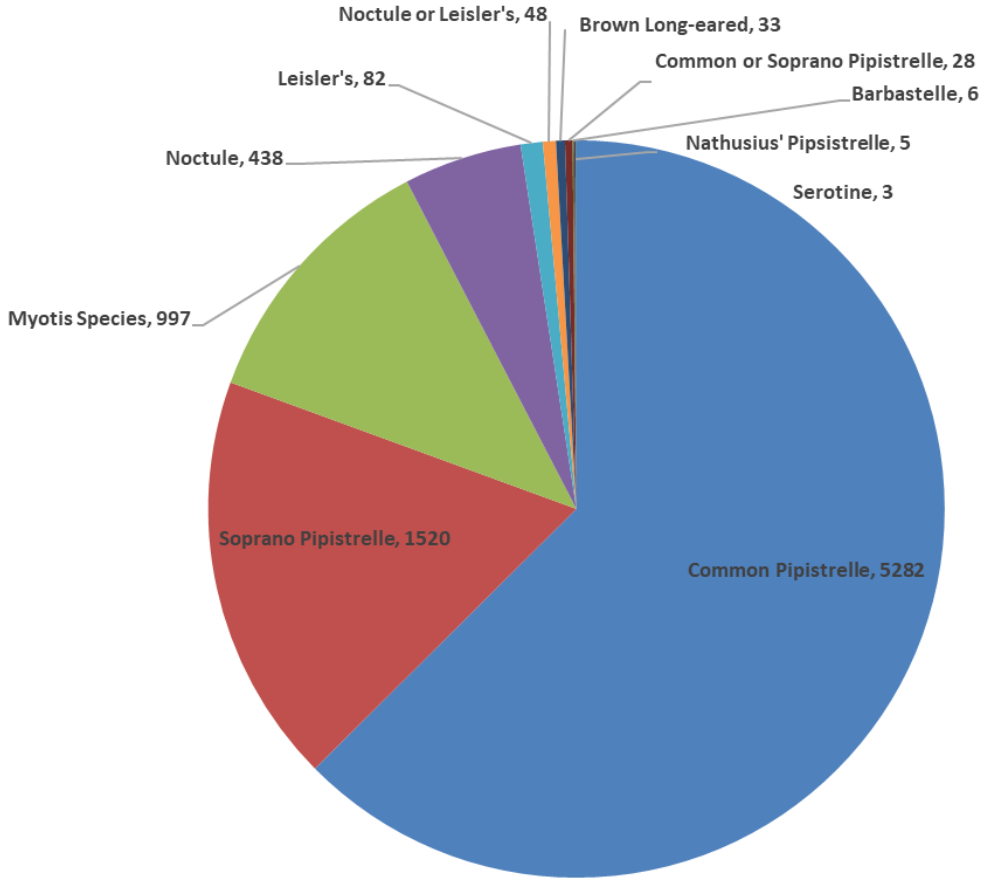
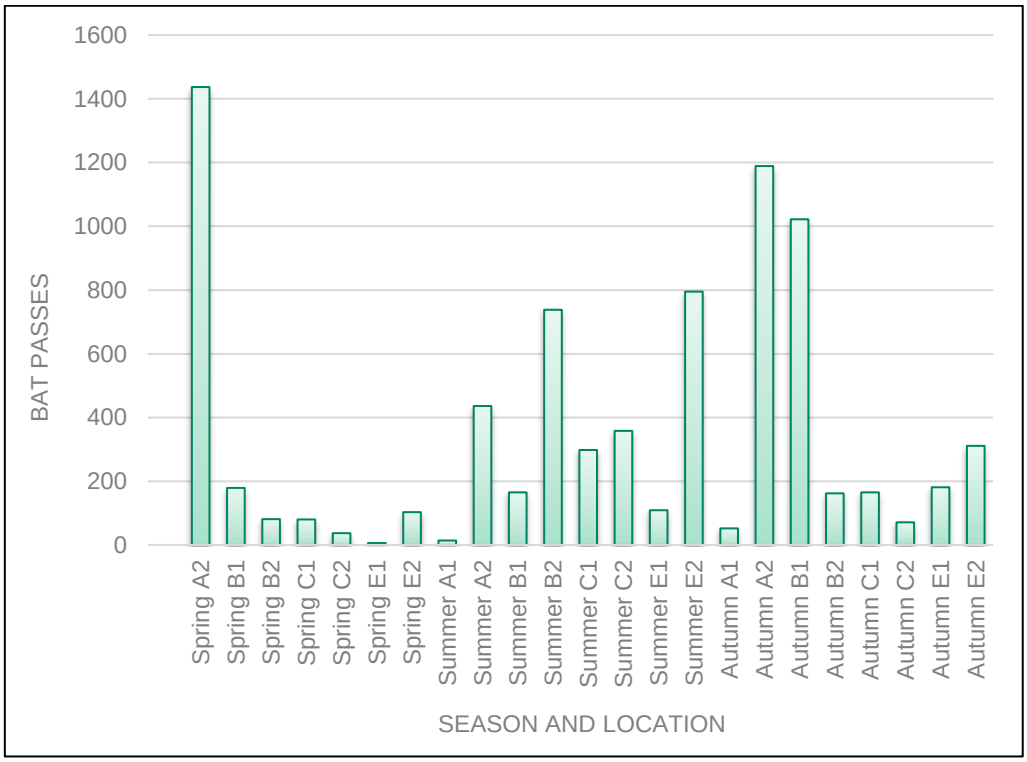


Chart 2: Number of Bat Passes per Season and Location



Advanced Level Bat Survey Techniques (ALBST)

4.3.27 The full results are presented in **Annex D**, **Table 20**. In summary over the three nights of trapping, 32 individual bats of six species were recorded comprising Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared Bat, Noctule, Whiskered and Natterer's Bat. Adult male bats were mainly captured, with a few female bats, with previous breeding evidence of Soprano Pipistrelle, Brown Long-eared Bat and Noctule.

4.3.28 Evidence from the surveys suggested likely breeding roosts within the woodland for three bat species: Soprano Pipistrelle, Brown Long-eared Bat, and Noctule, with possible non-breeding roosts and/or other nearby roosts of Common Pipistrelle, Whiskered and Natterer's Bat.

5. Evaluation

Introduction

5.1.1 An evaluation of the biodiversity importance of bat species in relation to the Scheme in terms of potential roosts, foraging and commuting habitats is described below.

Designated Sites

5.1.2 No designated sites of relevance to bats were identified within 30km of the Order limits or are likely to be impacted by the Scheme.

Roosts

5.1.3 The data search returned records of at least eight bat species (Brown Long-eared Bat, Common Pipistrelle, Noctule, Brandt's bat, Natterer's bat, Soprano Pipistrelle, Nathusius' Pipistrelle, Daubenton's Bat, unknown Pipistrelle species and *Myotis* species). Most of these were field observations so could either be roosting or foraging/commuting records.

5.1.4 There are no relevant roosts in the Study Area identified in the desk study that are within the Order limits. The nearest roost comprised an unknown bat species [redacted] of the Order limits) and there is likely to be other roosts in Glentworth and within other settlements, in suitable buildings, structures, woodlands and trees.

5.1.5 Most of the adjacent roosts identified in the Study Area are of lower conservation value, as they mainly comprise maternity or non-breeding roosts of more widespread species, (Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared Bat). The Natterer's roost located 1.4km away (if a maternity roost) is potentially more significant but at this distance is unlikely to be impacted by the Scheme. Bats from these and other adjacent roosts are likely to use the habitats within the Order limits for foraging and commuting and potentially roosting.

5.1.6 Based on the field data collected from the PRA / DBW survey and bat activity surveys, there are likely to be roosts within or close to the Order limits of Common and Soprano Pipistrelle, Noctule, Leisler's Bat, *Myotis* species (*e.g.* Whiskered Bat, Daubenton's Bat and Natterer's Bat) and Brown Long-eared Bat. This is based on suitable habitat features such as suitable trees and buildings for roosting and the timing of observations in relation to expected emergence times (from static and transect data). Harpswell Wood (within the Order limits and buffered from the Scheme), is likely to contain roosts based high activity of multiple species during the transect and static surveys and the results from the ALBST survey, with likely breeding roosts within the woodland for three bat species: Soprano Pipistrelle, Brown Long-eared Bat, and Noctule, with possible non-breeding roosts and/or other nearby roosts of Common Pipistrelle, Whiskered Bat and Natterer's Bat.

5.1.7 All roosts and potential roost features identified are outside the current footprint of the Scheme (due to avoidance of potential roosting features). As such no detailed roost presence/absence or characterisation has been

undertaken to determine roost importance and therefore an estimated biodiversity importance to individual species has been assigned based on desk study data and activity surveys. As a precautionary approach, based on the limited data collected, bat roosts have been assigned of either **District** or **Country Importance** depending on the species (see **Table 4**).

Commuting Routes and Foraging Habitats

5.1.8 Species recorded on the activity surveys (combined activity transects, static bat detectors and ALBST) in 2022 and 2023 comprised at least eleven species: Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Noctule, Leisler's Bat, Natterer's Bat, Daubenton's Bat, Whiskered, unknown Myotis species (Daubenton's Bat, Whiskered, Natterer's Bat as identified or potentially other species such as Brandt's), Serotine, Barbastelle and Brown Long-eared Bat.

5.1.9 Biodiversity importance of foraging and commuting bats is based on species rarity, activity, presence of nearby roosts and habitat type/complexity of community/foraging features (see also **Annex C**). This also considers the lower detectability on bat detectors of species such as Brown Long-eared Bat and *Myotis* bats compared to species such as Common and Soprano Pipistrelle and Noctule (Ref 25). It is not possible to adopt the same matrix-based approach for valuing commuting routes and foraging areas. It is inherently more difficult to assess them and requires a higher degree of professional judgement. For example, some routes may be used only at certain times of year, and hence show low numbers of bat passes, but they may be critical routes to hibernation sites. As such the importance of commuting and foraging areas are not interpreted in isolation and is judged on the overall knowledge of bat activity in the area using the desk study and survey data collected.

5.1.10 The surveys identified a range of activity (including foraging around features such as woodland, commuting along linear features) with multiple bats often recorded.

5.1.11 Foraging and commuting habitat with the highest relative bat activity, were present in the following locations (see **Figure 9-9-1** in **Annex A**):

a. Harpswell Wood, (transect A and static A2) including connected woodlands to the north and south;

b. Two irrigation reservoirs (transect C), west of Glentworth;

c. The oil well west of Glentworth (transect C, static C1); and

d. Hedges/tree lines east of Harpswell Grange Farm (transect B, static B1, B2).

e. Big Wood (transect E, static E2)

5.1.12 Most of these areas with highest activity were located along linear features such as hedgerows/tree lines, woodland edges and close to irrigation reservoirs, with very limited foraging and commuting observed over open fields or crops.

5.1.13 There was high reliance on habitats by foraging and commuting Soprano and Common Pipistrelles (widespread species) as demonstrated by regular use by larger numbers of bats. There was moderate reliance on habitats by foraging/commuting Brown Long-eared Bat (widespread species) Noctule (Widespread in many geographies but not as abundant in all) as demonstrated by regular use by smaller numbers of bats, or less-regular use by larger numbers of bats.

5.1.14 There was limited evidence or low reliance on habitats for all other species; Daubenton's Bat, Natterer's Bat, Whiskered other potential Myotis species (*e.g.* Brandts), Barbastelle, Leisler's Bat, Nathusius' Pipistrelle and Serotine (widespread in many geographies but not as abundant in all, rarer or restricted distribution and rarest Annex II species) based on as demonstrated by limited evidence or irregular use and generally by small numbers of bats.

5.1.15 The small pockets of woodland across and around the Order limits form a relatively rare resource for foraging bats, along with some irrigation reservoirs. Hedges and wider field margins (where present) provide habitat connectivity to habitats within and adjacent to the Order limits. Woodlands and other habitats of value are connected via hedges, but relatively few regularly used commuting routes are apparent with most activity recorded at woodland locations.

5.1.16 Breeding roosts are likely to be present (e.g., Common and Soprano pipistrelle, Noctule and Brown Long-eared bat) in woodland and buildings within and adjacent to the Order limits. Some of the larger woodlands and mature trees are likely to support hibernating tree-roosting bats, thus providing a winter foraging resource.

5.1.17 Taking the above into account, the mosaic of habitats within the Survey Area is considered to be of **County Importance** for Commuting and Foraging. However, the area to be developed comprises largely arable areas which are of lower value (up to **District Importance**).

5.1.18 The overall assemblage score meets the threshold for National importance. Note that, as per the method (Ref 20), assigning a level of importance to an assemblage provides contextual information only; it is not expected that the assemblage as a whole would be assessed as a single Importance Ecological Feature (IEF) (or receptor). Each individual bat species / IEF is assessed within **Chapter 9: Ecology and Nature Conservation** of the ES **[EN010142/APP/6.1]**.

Table 4. Summary of Conservation Importance of Bats

Species	Importance of Roosts	Importance of Commuting and Foraging Habitat (summary of justification)	Importance of Assemblage
Widespread: Common Pipistrelle Soprano Pipistrelle Brown Long-eared Bat	Evidence of roosts for all these species including breeding roosts and other non-breeding roosts within the Order limits. Does not exceed **District importance** for each species.	There is foraging and commuting activity by diverse assemblage of bats with high reliance on habitats by Soprano and Common Pipistrelle as demonstrated by regular use by larger numbers of bats; moderate reliance on habitats by Brown Long-eared Bat and Noctule as showed by regular use by smaller numbers of bats; and low reliance on habitats by all other species, including the rarest Annex II species Barbastelle as demonstrated by limited evidence or irregular use and generally by small numbers of bats. Woodland is an uncommon feature in Lincolnshire, and the small pockets of woodland across and around the Order limits form a relatively rare resource for foraging bats, along with some irrigation reservoirs. aHedges and wider field margins provide habitat connectivity to habitats within and outside of Order limits. Breeding roosts are likely to be present (e.g. Common and Soprano pipistrelle, Noctule and Brown Long-eared bat) in woodland and buildings within Study Area. Woodlands and other habitats of value are connected via hedges, but relatively few regularly used commuting routes are apparent.	(1 point per species) Score 3 for this part of the assemblage (of a maximum of 3)
Widespread in many geographies but not as abundant in all: Daubenton's Bat Natterer's Bat Noctule Whiskered Bat	Possible breeding and non-breeding roosts of Whiskered Bat and Daubenton's Bat within the Order limits. Does not exceed **County importance**. Natterer's roost within wider Study Area and potentially within the Order limits. Does not exceed **County importance**. Evidence of likely breeding and non-breeding roost/s of Noctule. Does not exceed **County importance.**		(2 points per species) Score 8 for this part of the assemblage (of a maximum of 10)

Species	Importance of Roosts	Importance of Commuting and Foraging Habitat (summary of justification)	Importance of Assemblage
Rarer or restricted distribution: Leisler's Bat Nathusius' pipistrelle Serotine	No evidence of roosts of these species, an unlikely with the Order limits, though possible within wider Study Area. Note serotine is on the edge of its range. For all these species if present, unlikely to exceed **District importance**.	Some of the larger woodlands and mature trees are likely to support hibernating tree-roosting bats, thus providing a winter foraging resource. Taking the above into account, the mosaic of habitats within the Study Area is considered to be of **County Importance**. However, the area to be developed comprises largely arable areas which are of lower value (up to **District Importance**).	(3 points per species) Score 9 for this part of the assemblage (of a maximum of 15)
Rarest Annex II species and very rare: Barbastelle	No evidence of roosts of these species, and based on lack of roost records and very low activity of this wide ranging species roosting is unlikely within Order limits but possible in wider Study Area. If present, unlikely to exceed **District importance.**		(4 points per species) Score 4 for this part of the assemblage (of a maximum of 4)
Overall score: Assemblage score 24/28 = 85.7%; meets threshold for **National importance***.			
*Note that as stated in paragraph 5.1.18 the assemblage score is not assessed and the importance for individual species is used in any future assessment.			

6. Conclusions

6.1.1 The objective of the desk study and bat surveys, reported in this document, is to determine the presence, assemblage and distribution of bat species, within the Order limits and assign a biodiversity importance to these.

6.1.2 All roosts and potential roost features identified are outside the current footprint of the Scheme (due to avoidance of potential roosting features). As such, no detailed roost presence/ absence or characterisation has been undertaken to determine roost importance and therefore no specific biodiversity importance has been assigned. As a precautionary approach, based on the data collected, bat roosts have been assigned of either **District** or **County Importance** depending on the species (see **Table 4**).

6.1.3 Prior to construction, the PRA / DBW should be updated to affirm the status of roost features. If any trees, woodlands, or buildings which are identified as being suitable for bat roosts are impacted as a result of the Scheme, then these should be surveyed in more detail through a Ground Level Tree Assessment (GLTA), aerial survey, detailed internal / external building PRA and emergence surveys (as applicable) to determine roost presence or likely absence and, where required, to characterise the roost/s.

6.1.4 The commuting routes and foraging habitat for individual bat species is considered to be of **County Importance**. However, the area to be developed comprises largely arable areas which are of lower value (up to **District Importance**).

7. References

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Ref 8 Nottinghamshire Biodiversity Action Group (2008) Local Biodiversity Action Plan.
Ref 9 AECOM (2022). Tillbridge Solar: Preliminary Ecological Appraisal.
Ref 10 Defra, Multi-Agency geographical information for the countryside (MAGIC) map. Available at: https://magic.defra.gov.uk/MagicMap.aspx
Ref 11 Nottinghamshire Bat Group Website: https://nottsbatgroup.org.uk/bats-in-nottingham/ [Accessed July 2023]
Ref 12 PINS website: Gate Burton Energy Park https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/gate-burton-energy-park/
Ref 13 PINS website: Cottam Solar Project https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/cottam-solar-project/
Ref 14 PINS website: West Burton Solar Project https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/west-burton-solar-project/
Ref 15 Collins, J. (editor) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd Edition. The Bat Conservation Trust, London
Ref 16 Collins, J. (editor) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines. 4th edition. Bat Conservation Trust. London
Ref 17 Weather data: [redacted]/
Ref 18 Ecobat [Available at [redacted]
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Ref 20 Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.
Ref 21 Matthews, F., Kubasiewicz, L. M., Gurnell, J., Harrower, C. A., McDonald, R. A. and Shore, R. F. 2018. Natural England Joint Publication JP025: A Review of the Population and Conservation Status of British Mammals. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage.
Ref 22 Andrews, H. 2018. Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-Care and Ecology Professionals.
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Ref 24 CIEEM (2019) Advice Note on the Lifespan of Ecological Reports and Surveys.
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Annex A Figures

Figure 9-9-1. Bat PRA / DBW results

Revision: 0 Drawn: BF Checked: MC Approved: -- Date: 2024-02-06

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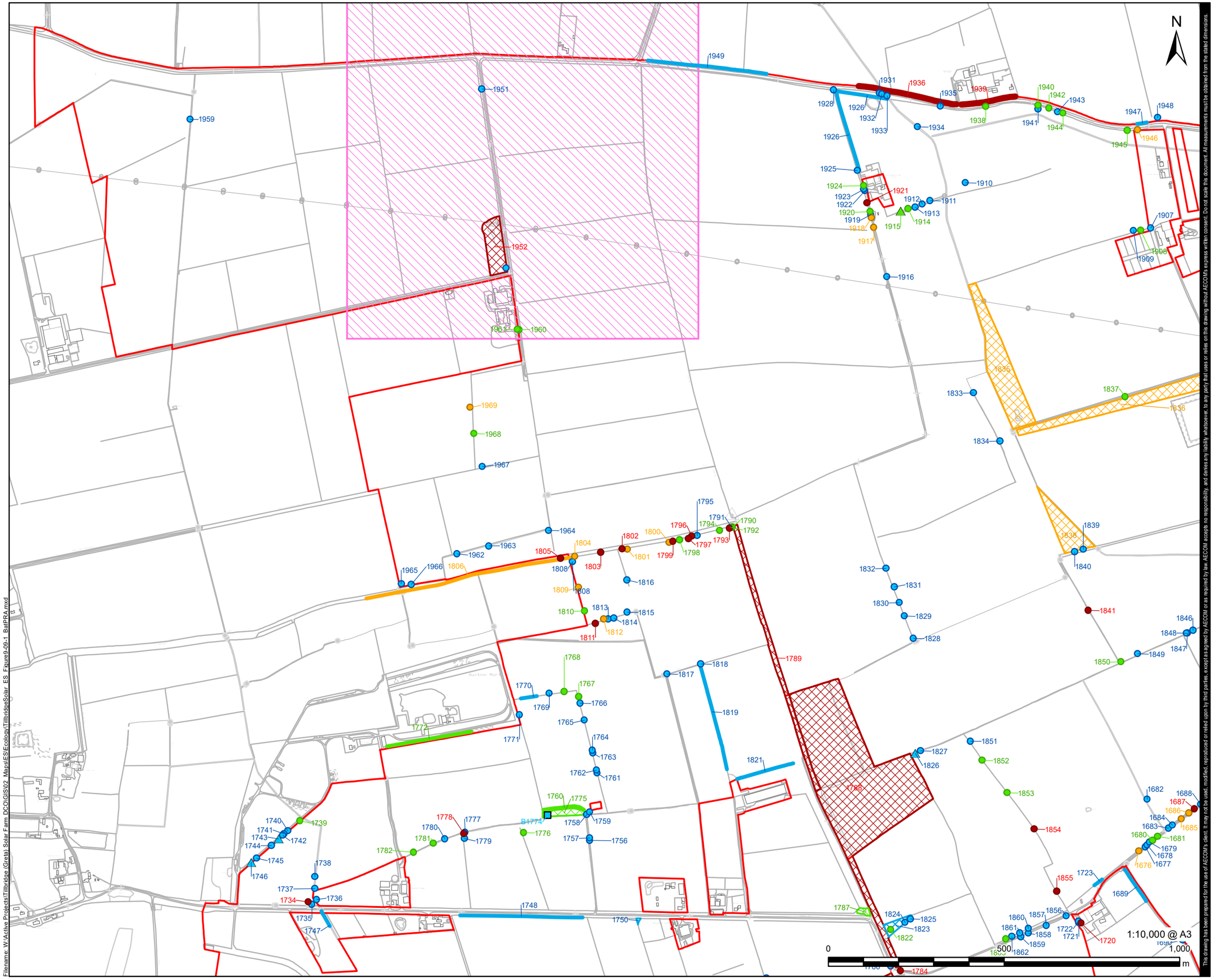

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London, E1 8FA
United Kingdom
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LEGEND

- Order Limits

Tree Roost Suitability
- High
- Moderate
- Low
- Negligible

Group of Trees Roost Suitability
- Low
- Negligible

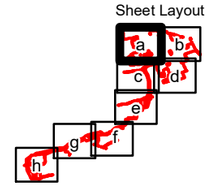
Structure Roost Suitability
- Negligible

Tree Line / Hedgerow with Trees Roost Suitability
- High
- Moderate
- Low
- Negligible

Woodland Roost Suitability
- High
- Moderate
- Low
- Negligible

Bat Roost Presence from County Wildlife Centre Records

Sheet Layout



NOTES

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FIGURE TITLE

Bat PRA / DBW Results

FIGURE NUMBER

Figure 9-9-1a

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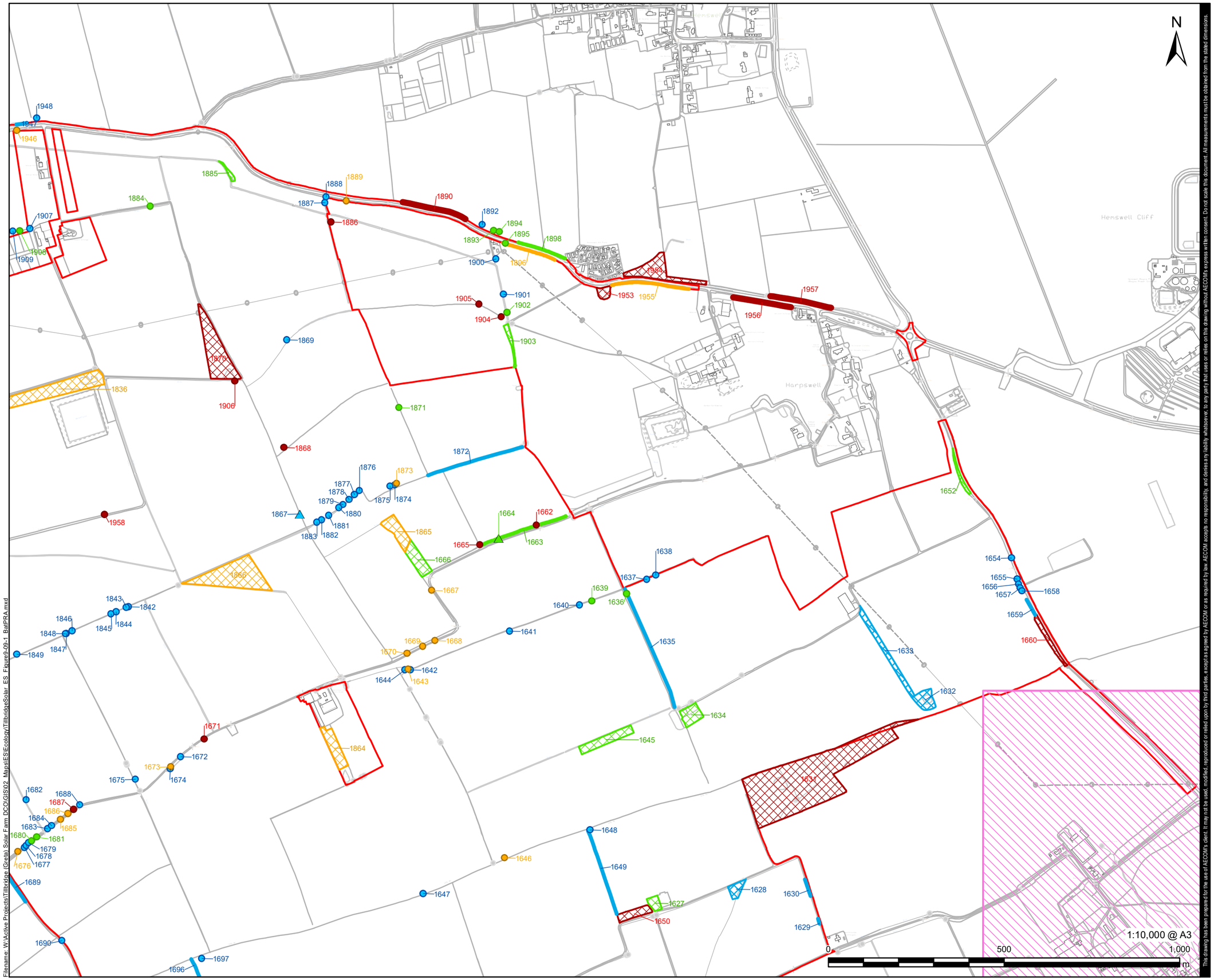

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LEGEND

- Order Limits

Tree Roost Suitability
- High
- Moderate
- Low
- Negligible

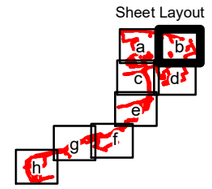
Group of Trees Roost Suitability
- Low
- Negligible

Tree Line / Hedgerow with Trees Roost Suitability
- High
- Moderate
- Low
- Negligible

Woodland Roost Suitability
- High
- Moderate
- Low
- Negligible

Bat Roost Presence from County Wildlife Centre Records

Sheet Layout



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60677969

FIGURE TITLE

Bat PRA / DBW Results

FIGURE NUMBER

Figure 9-9-1b

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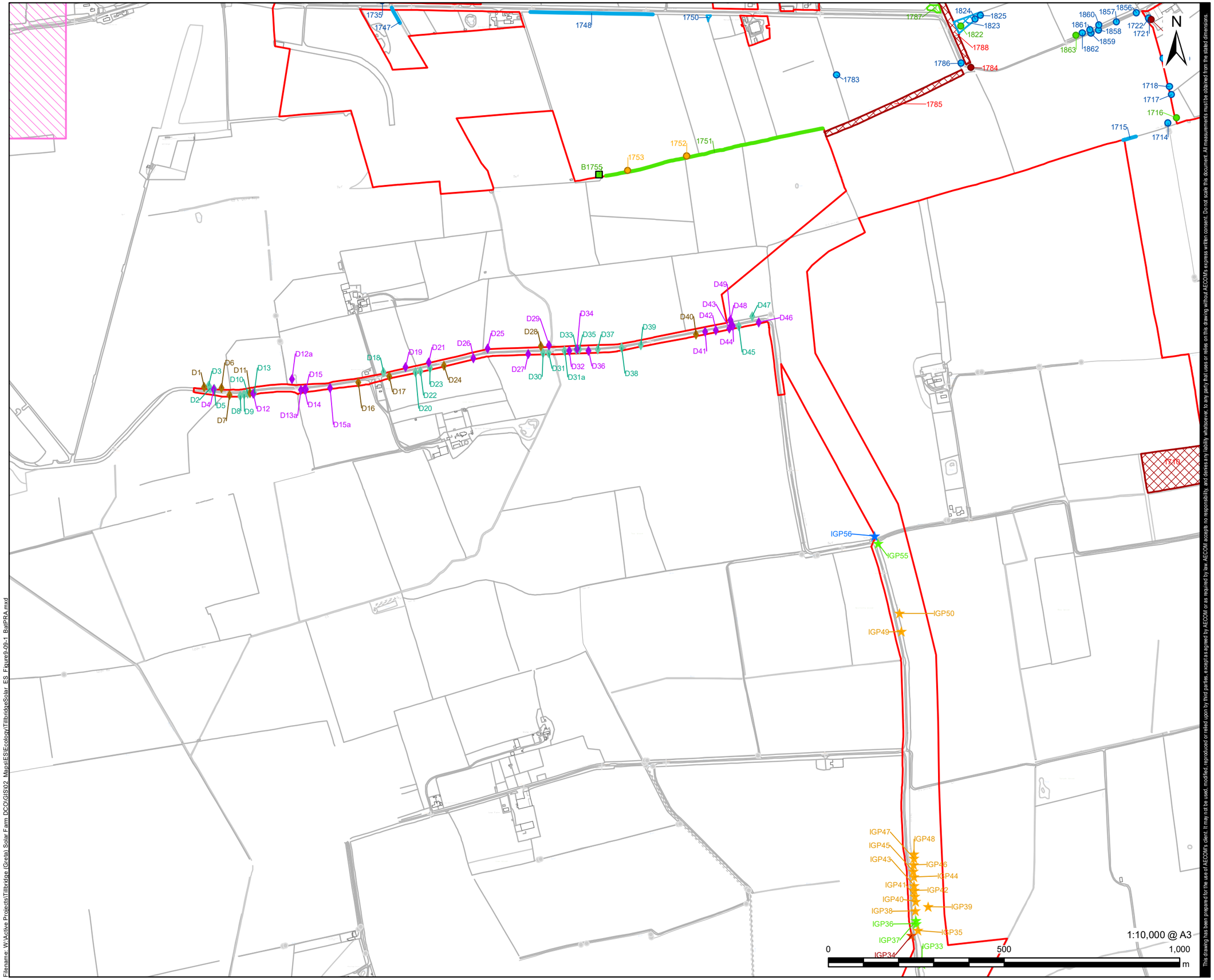

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LEGEND

- Order Limits

Tree Roost Suitability
- High
- Moderate
- Low
- Negligible

Structure Roost Suitability
- Low

Tree Line / Hedgerow with Trees Roost Suitability
- Low
- Negligible

Woodland Roost Suitability
- High
- Low
- Negligible

Daytime Bat Walkover (DBW) [D#]

Bat Roost Potential Suitability
- (PRF) - At Least One Potential Roost Feature Present
- (FAR) - Further Assesment Required to Establish if Potential Roost Features are Present
- (N) - Either No Potential Roost Features Present or Highly Unlikely to be any

Bat Roost Potential Assesment Survey For Cottam and West Burton (Clarkeson Wood) [IGP#]

Tree Roost Suitability
- High
- Moderate
- Low
- Negligible
- Bat Roost Presence from County Wildlife Centre Records

Sheet Layout

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PROJECT NUMBER

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FIGURE TITLE

Bat PRA / DBW Results

FIGURE NUMBER

Figure 9-9-1c

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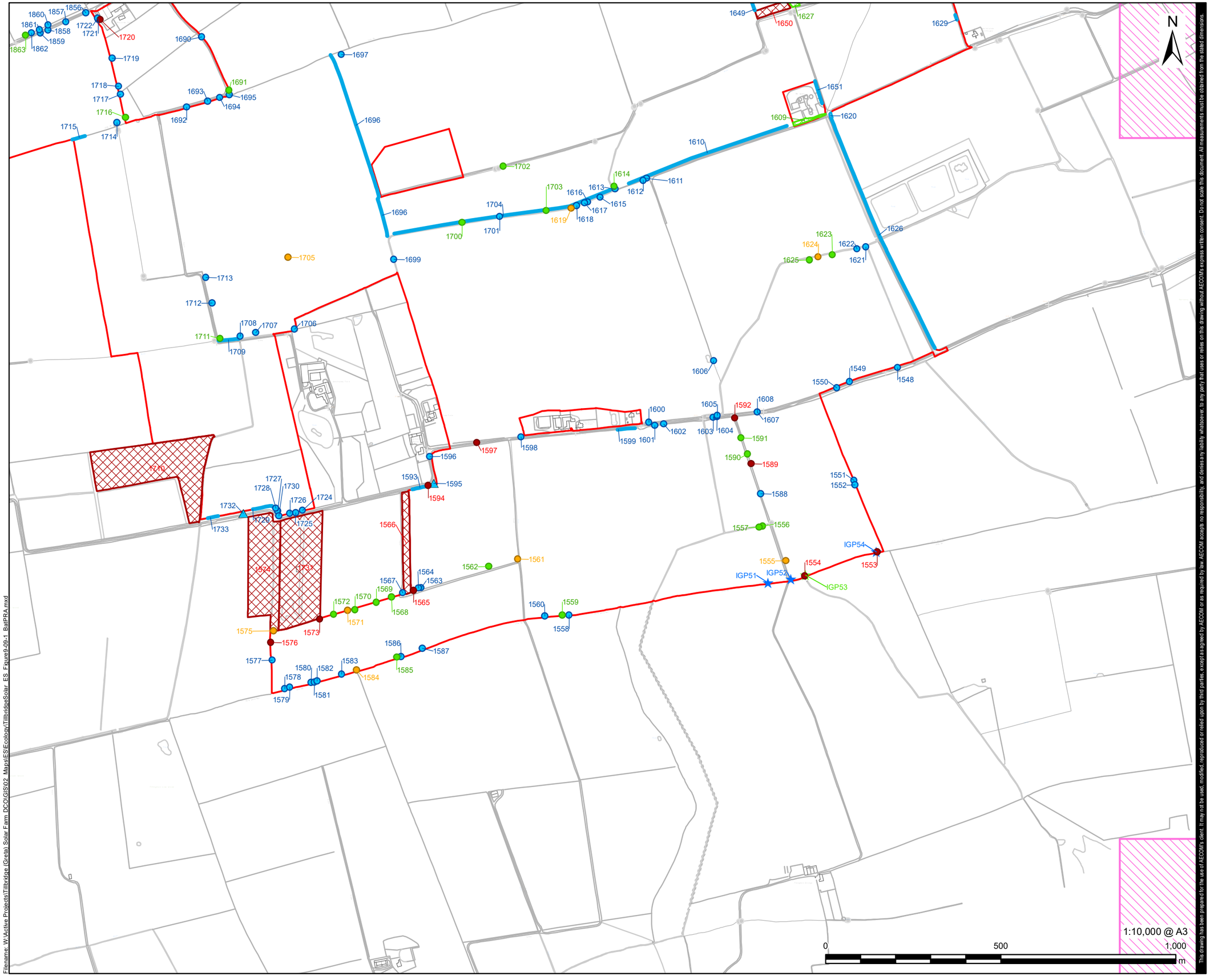

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United Kingdom
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LEGEND

- Order Limits

Tree Roost Suitability
- High
- Moderate
- Low
- Negligible

Group of Trees Roost Suitability
- Negligible

Tree Line / Hedgerow with Trees Roost Suitability
- Negligible

Woodland Roost Suitability
- High
- Low
- Negligible

Bat Roost Potential Assesment Survey For Cottam and West Burton (Clarkeson Wood) [IGP#]

Tree Roost Suitability
- Low
- Negligible

Bat Roost Presence from County Wildlife Centre Records

Sheet Layout

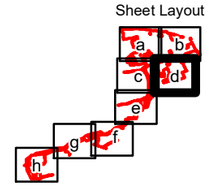

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FIGURE TITLE

Bat PRA / DBW Results

FIGURE NUMBER

Figure 9-9-1d

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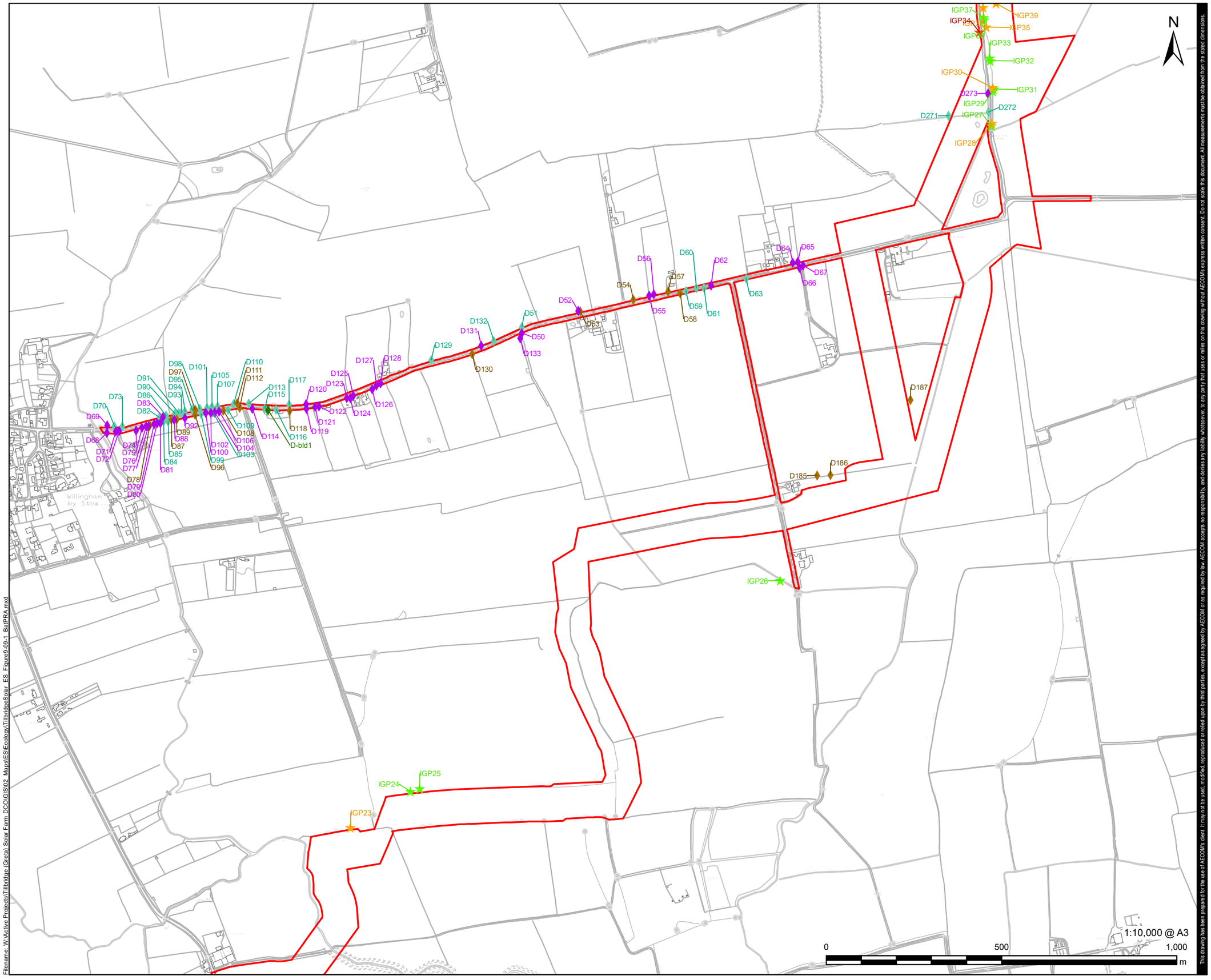

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LEGEND

- Order Limits

Daytime Bat Walkover (DBW) [D#]

Bat Roost Potential Suitability

- (PRF) - At Least One Potential Roost Feature Present
- (FAR) - Further Assesment Required to Establish if Potential Roost Features are Present
- (N) - Either No Potential Roost Features Present or Highly Unlikely to be any

Strucutre Roost Suitability

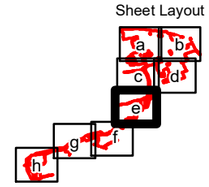
- Low

Bat Roost Potential Assesment Survey For Cottam and West Burton (Clarkeson Wood) [IGP#]

Tree Roost Suitability

- High
- Moderate
- Low

Sheet Layout



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60677969

FIGURE TITLE

Bat PRA / DBW Results

FIGURE NUMBER

Figure 9-9-1e

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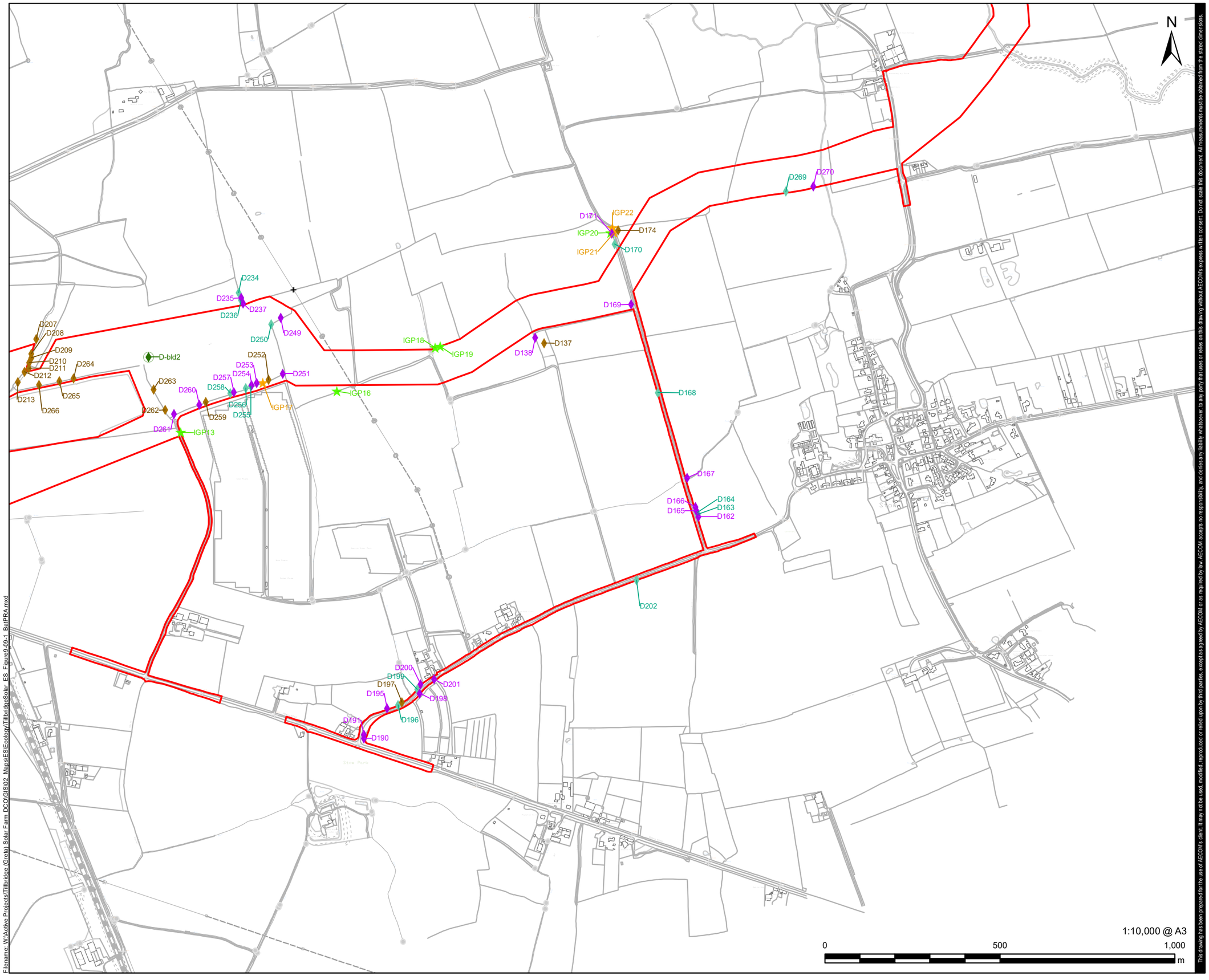

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LEGEND

- Order Limits

Daytime Bat Walkover (DBW) [D#]

Bat Roost Potential Suitability

- (PRF) - At Least One Potential Roost Feature Present
- (FAR) - Further Assesment Required to Establish if Potential Roost Features are Present
- (N) - Either No Potential Roost Features Present or Highly Unlikely to be any

Strucutre Roost Suitability

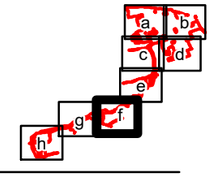
- Low

Bat Roost Potential Assesment Survey For Cottam and West Burton (Clarkeson Wood) [IGP#]

Tree Roost Suitability

- Moderate
- Low

Sheet Layout



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60677969

FIGURE TITLE

Bat PRA / DBW Results

FIGURE NUMBER

Figure 9-9-1f

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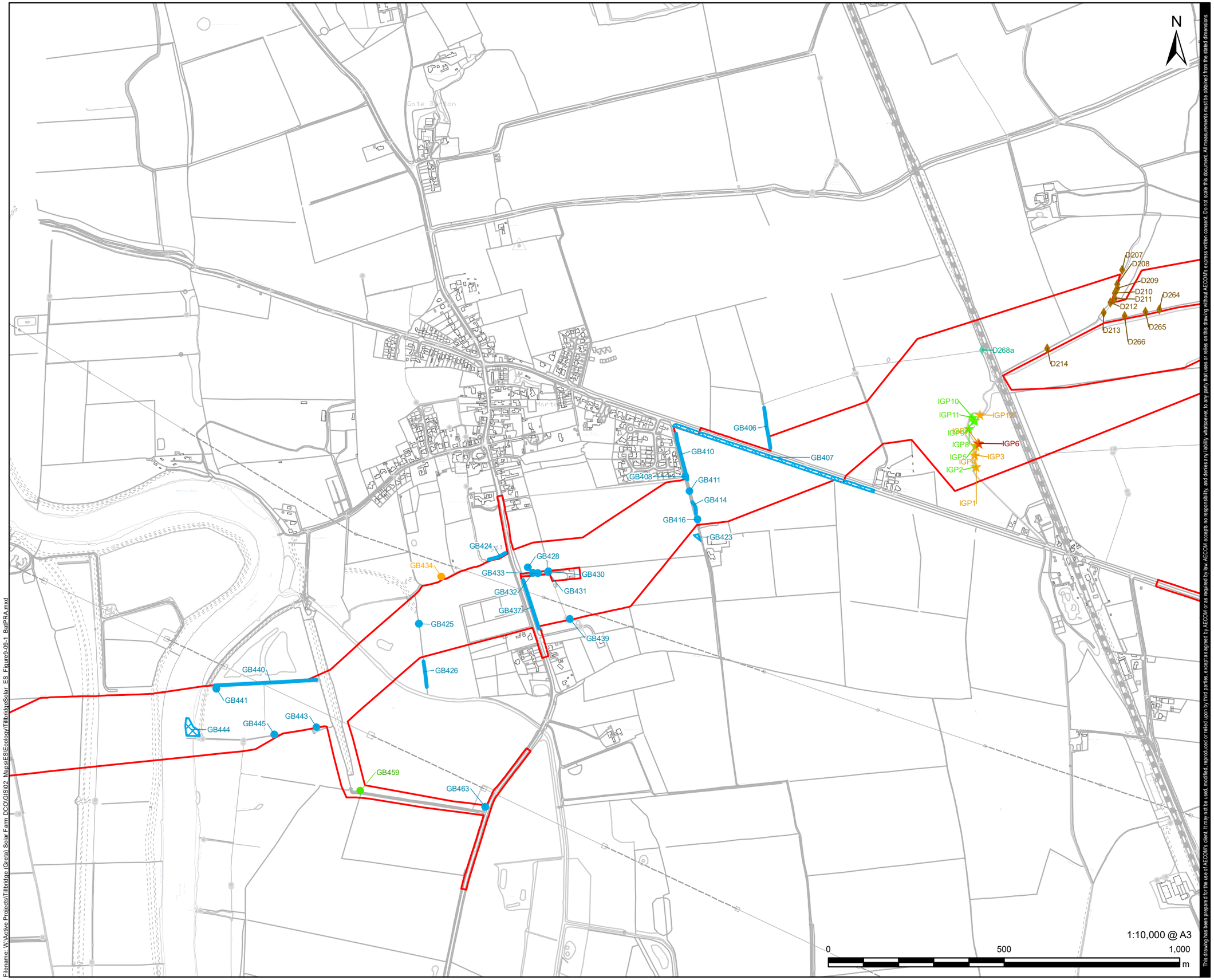

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LEGEND

- Order Limits

Daytime Bat Walkover (DBW) [D#]

Bat Roost Potential Suitability

- (FAR) - Further Assesment Required to Establish if Potential Roost Features are Present
- (N) - Either No Potential Roost Features Present or Highly Unlikely to be any

Bat Roost Potential Assesment Survey For Gate Burton (AECOM) [GB#]

Tree Roost Suitability

- Moderate
- Low
- Negligible

Tree Line Roost Suitability

- Negligible

Woodland/Tree Group Roost Suitability

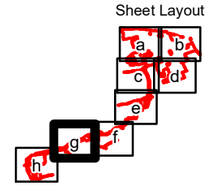
- Negligible

Bat Roost Potential Assesment Survey For Cottam and West Burton (Clarkeson Wood) [IGP#]

Tree Roost Suitability

- High
- Moderate
- Low

Sheet Layout



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ISSUE PURPOSE

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PROJECT NUMBER

60677969

FIGURE TITLE

Bat PRA / DBW Results

FIGURE NUMBER

Figure 9-9-1g

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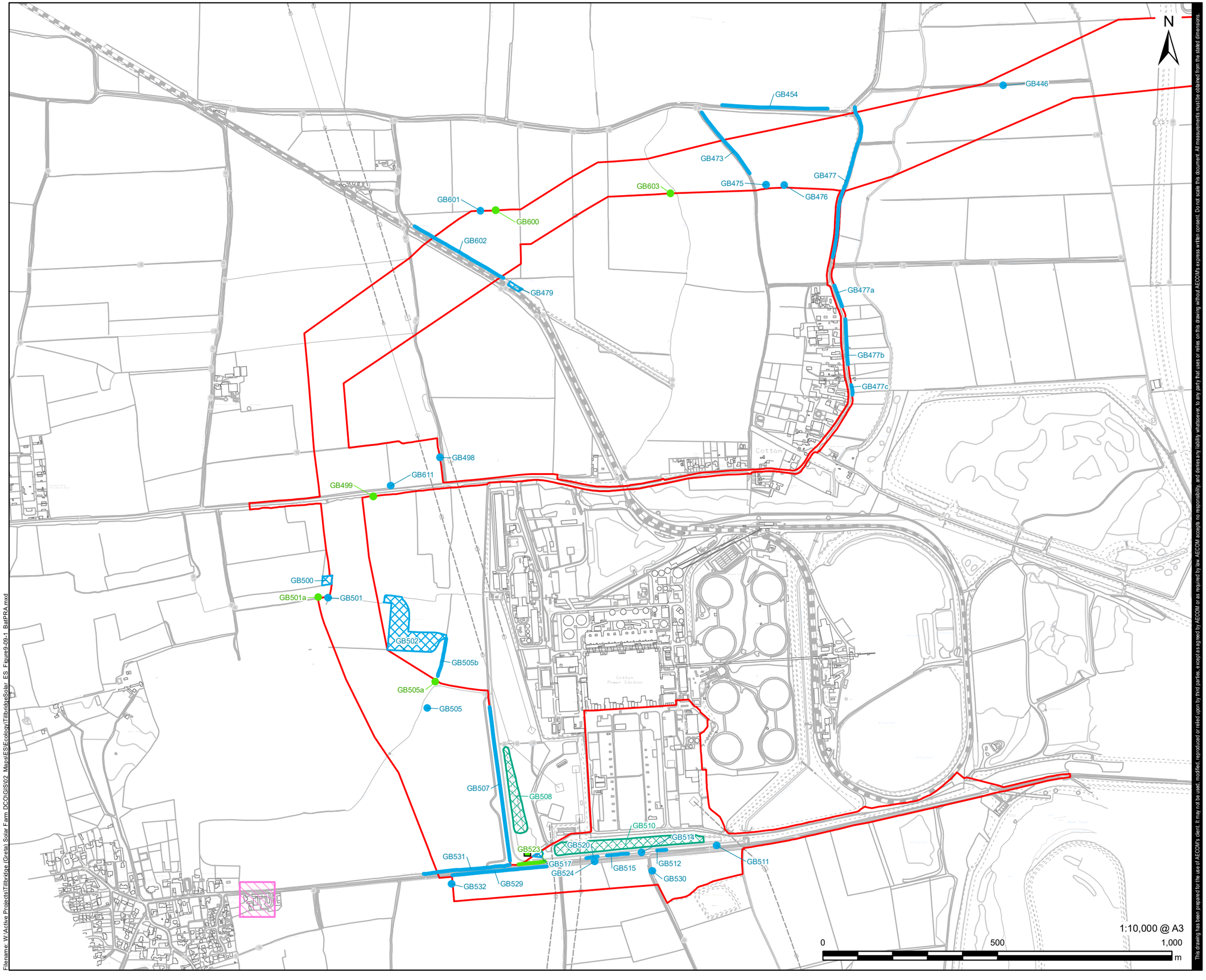

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LEGEND

- Order Limits

Bat Roost Potential Assesment Survey For Gate Burton (AECOM) [GB#]

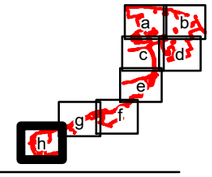
Tree Roost Suitability
- Low
- Negligible

Structure Roost Ruitability
- Low

Tree Line Roost Suitability
- Low
- Negligible

Woodland/Tree Group Roost Suitability
- Negligible to Low
- Negligible
- Bat Roost Presence from County Wildlife Centre Records

Sheet Layout



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ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat PRA / DBW Results

FIGURE NUMBER

Figure 9-9-1h

Figure 9-9-2. Bat Transect Results and Static Detector Locations

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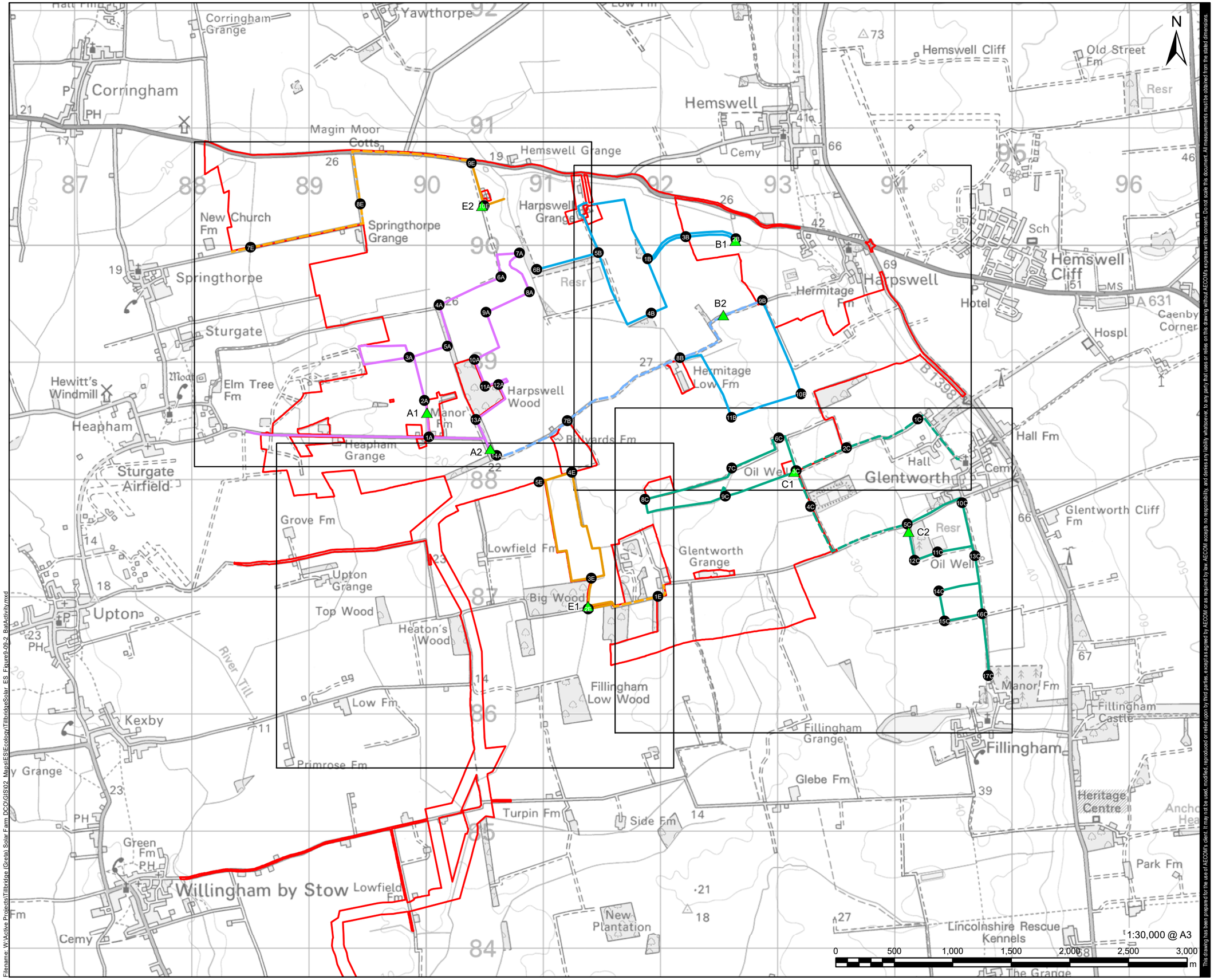

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United Kingdom
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LEGEND

- Order Limits
- Transect A
- Transect B
- Transect B (Driven)
- Transect C
- Transect C (Driven)
- Transect E
- Transect E (Driven)
- Location of Stopping Point
- Location of Static Detector

SHEET LAYOUT

NOTES

ISSUE PURPOSE

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PROJECT NUMBER

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FIGURE TITLE

Bat Transect Results and Static Detector Locations, Overview

FIGURE NUMBER

Figure 9-9-2a

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E2

A1

A2

Figure 9.9.2c

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0 500 1,000 m

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LEGEND

- Order Limits
- Transect A
- Transect B
- Transect B (Driven)
- Transect E
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- High
- No Data
- Unknown

Bat Record
- Myotis nattereri
- Myotis species
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT

2c 2b 2d 2e 2f

NOTES

ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Spring (1 of 5)

FIGURE NUMBER

Figure 9-9-2b

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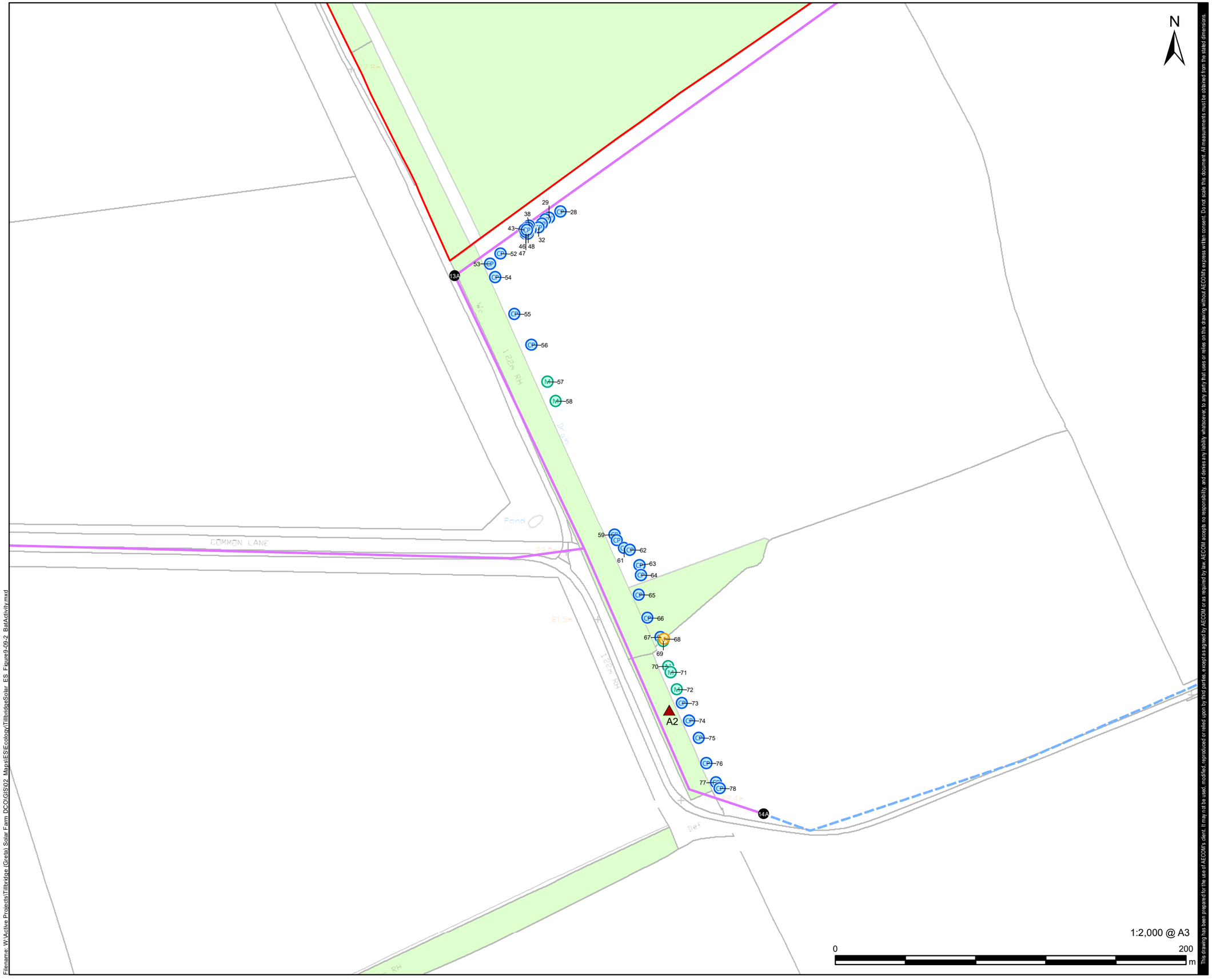

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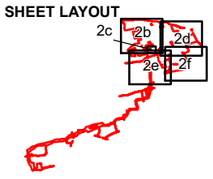
LEGEND

- Order Limits
- Transect A
- Transect B (Driven)
- Location of Stopping Point

Static Detector, Activity
- High

Bat Record
- Myotis nattereri
- Myotis species
- Pipistrellus pipistrellus
- Woodland

SHEET LAYOUT



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ISSUE PURPOSE

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PROJECT NUMBER

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FIGURE TITLE

Bat Transect Results and Static Detector Locations, Spring (2 of 5)

FIGURE NUMBER

Figure 9-9-2c

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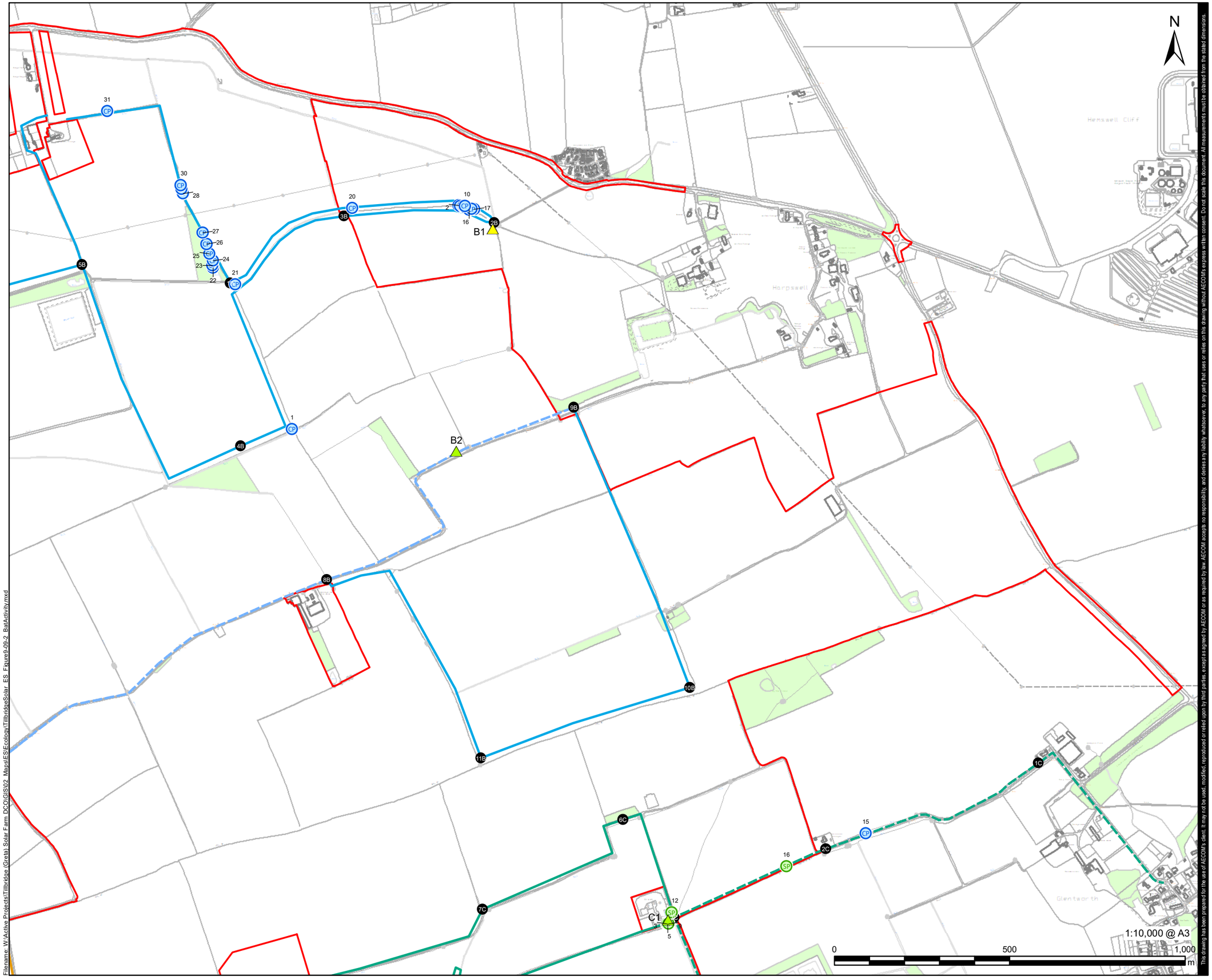

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PROJECT

Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

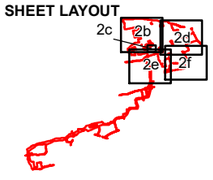
LEGEND

- Order Limits
- Transect B
- Transect B (Driven)
- Transect C
- Transect C (Driven)
- Transect E
- Location of Stopping Point

Static Detector, Activity
- Moderate
- Low-Moderate

Bat Record
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT



NOTES

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PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Spring (3 of 5)

FIGURE NUMBER

Figure 9-9-2d

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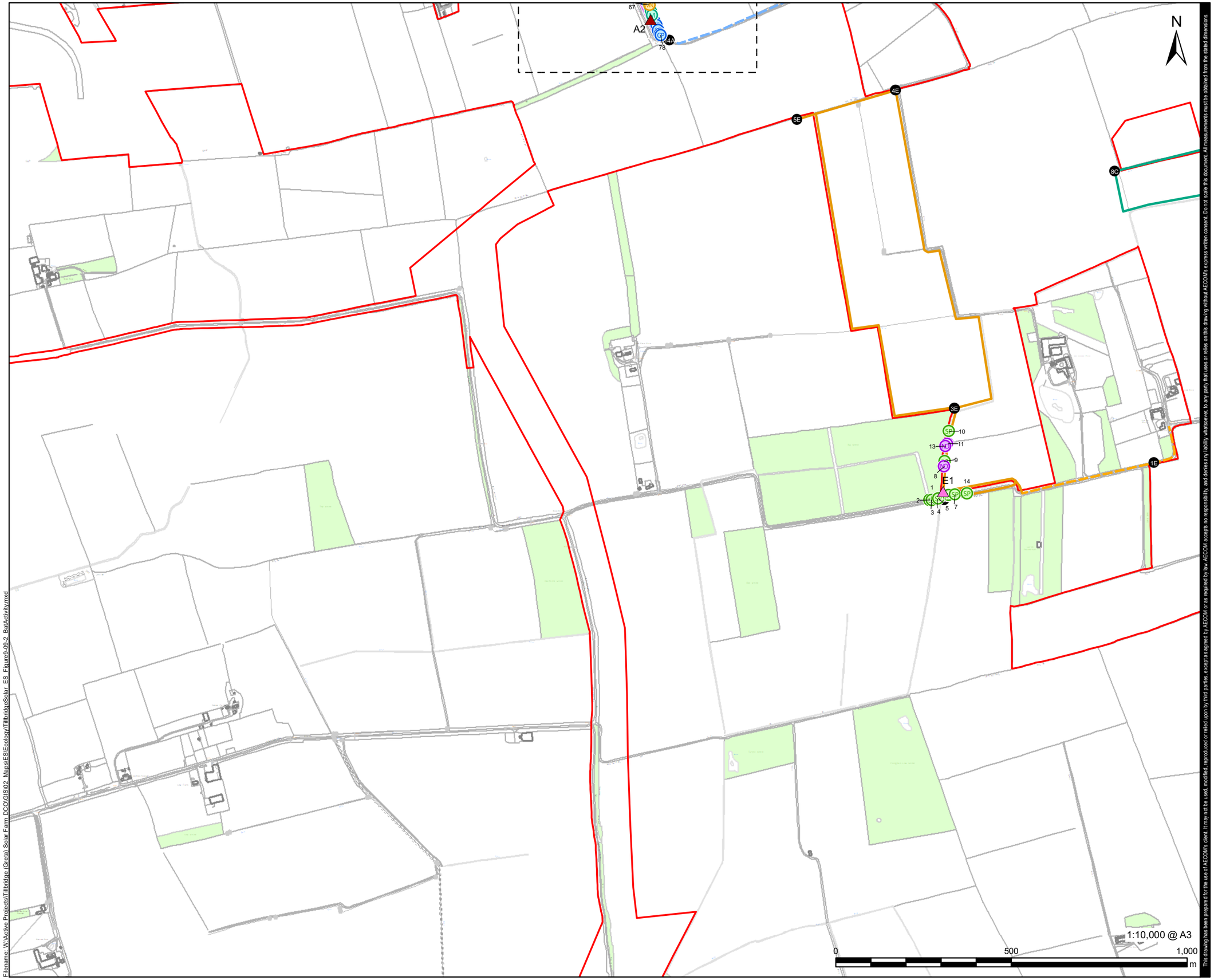

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Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

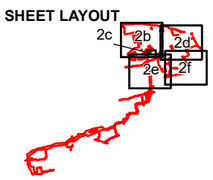
LEGEND

- Order Limits
- Transect A
- Transect B (Driven)
- Transect C
- Transect E
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- High
- Unknown

Bat Record
- Myotis nattereri
- Myotis species
- Nyctalus noctula
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT



NOTES

ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Spring (4 of 5)

FIGURE NUMBER

Figure 9-9-2e

Revision: 0 Drawn: BF Checked: MC Approved: -- Date: 2024-02-06

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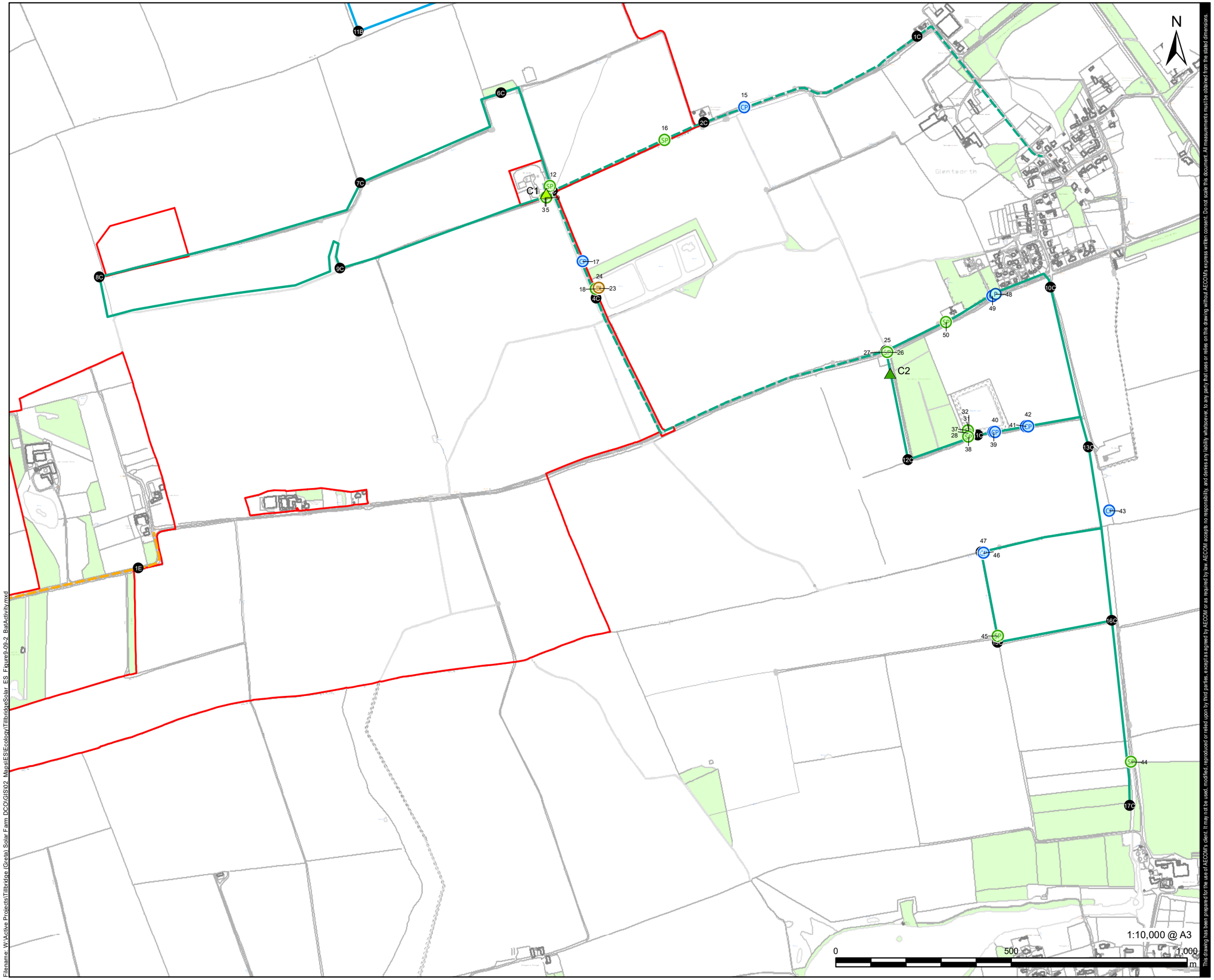

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Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

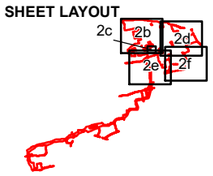
LEGEND

- Order Limits
- Transect B
- Transect C
- Transect C (Driven)
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- Low-Moderate
- Low

Bat Record
- CP Pipistrellus pipistrellus
- SP Pipistrellus pygmaeus
- P Pipistrellus species
- BL Plecotus auritus
- Woodland

SHEET LAYOUT



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ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Spring (5 of 5)

FIGURE NUMBER

Figure 9-9-2f

Revision: 0 Drawn: BF Checked: MC Approved: -- Date: 2024-02-06

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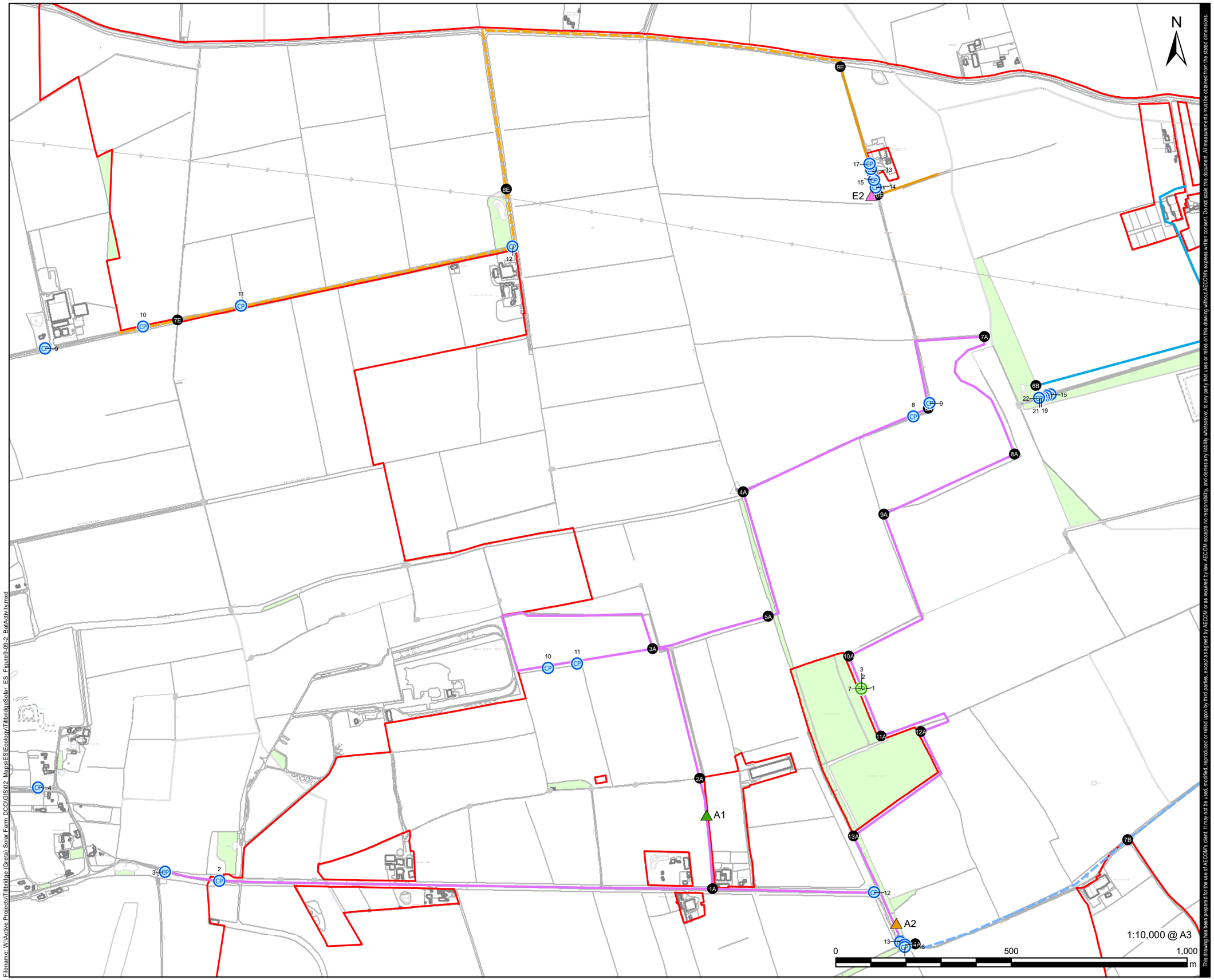

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Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

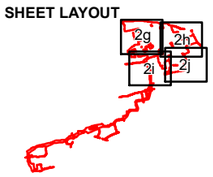
LEGEND

- Order Limits
- Transect A
- Transect B
- Transect B (Driven)
- Transect E
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- Moderate-High
- Low
- Unknown

Bat Record
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT



NOTES

ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

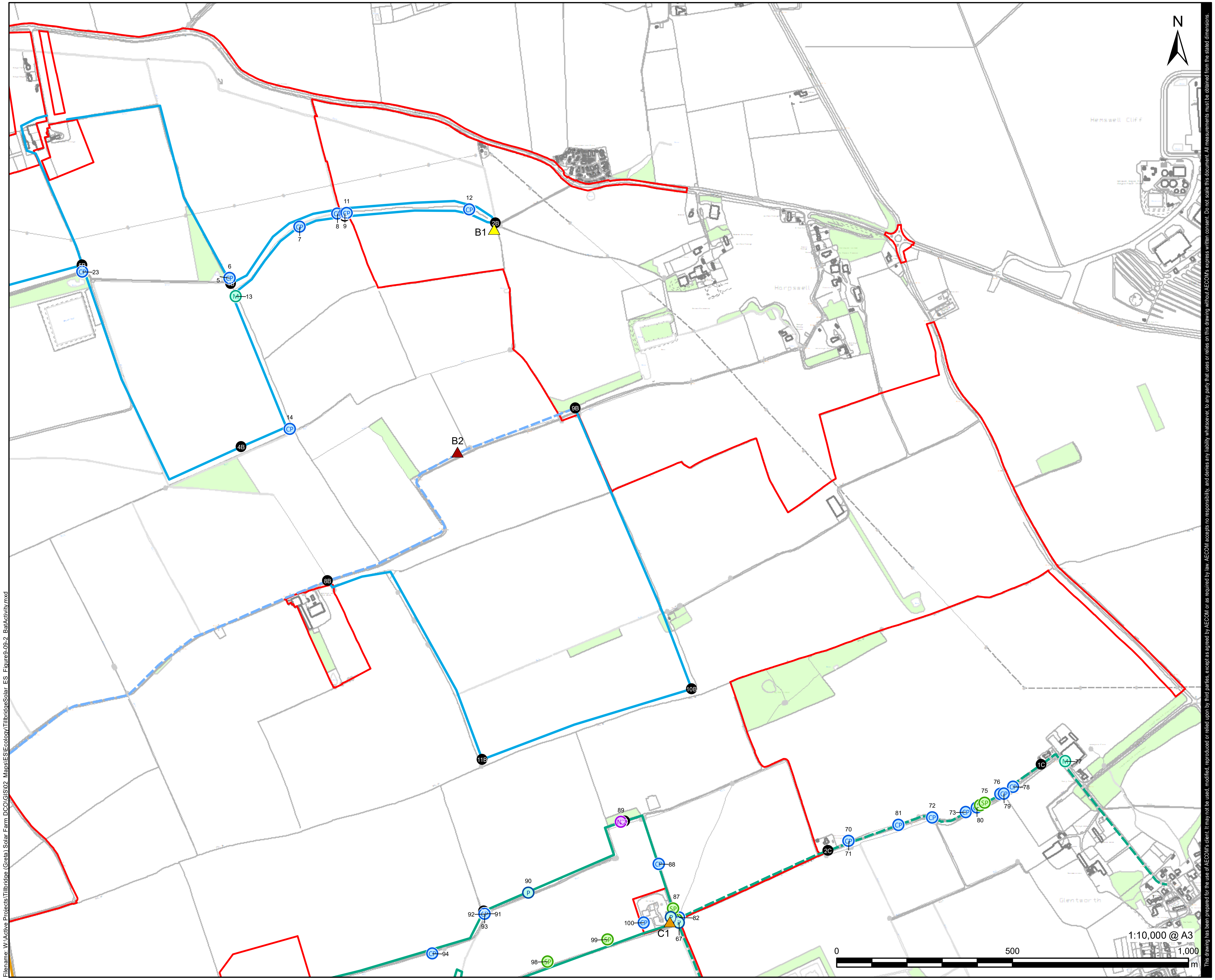
FIGURE TITLE

Bat Transect Results and Static Detector Locations, Summer (1 of 4)

FIGURE NUMBER

Figure 9-9-2g

Revision: 0 Drawn: BF Checked: MC Approved: -- Date: 2024-02-06



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Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

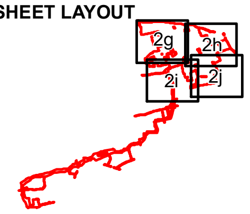
LEGEND

- Order Limits
- Transect B
- Transect B (Driven)
- Transect C
- Transect C (Driven)
- Transect E
- Location of Stopping Point

Static Detector, Activity
- High
- Moderate-High
- Moderate

Bat Record
- Myotis species
- Nyctalus noctula
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Pipistrellus species
- Woodland

SHEET LAYOUT



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ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Summer (2 of 4)

FIGURE NUMBER

Figure 9-9-2h

Filename: W:\Active Projects\Tillbridge (Greta) Solar Farm DCO\GIS\02 Maps\ES\Ecology\TillbridgeSolar_ES_Figure9-09-2_BatActivity.mxd

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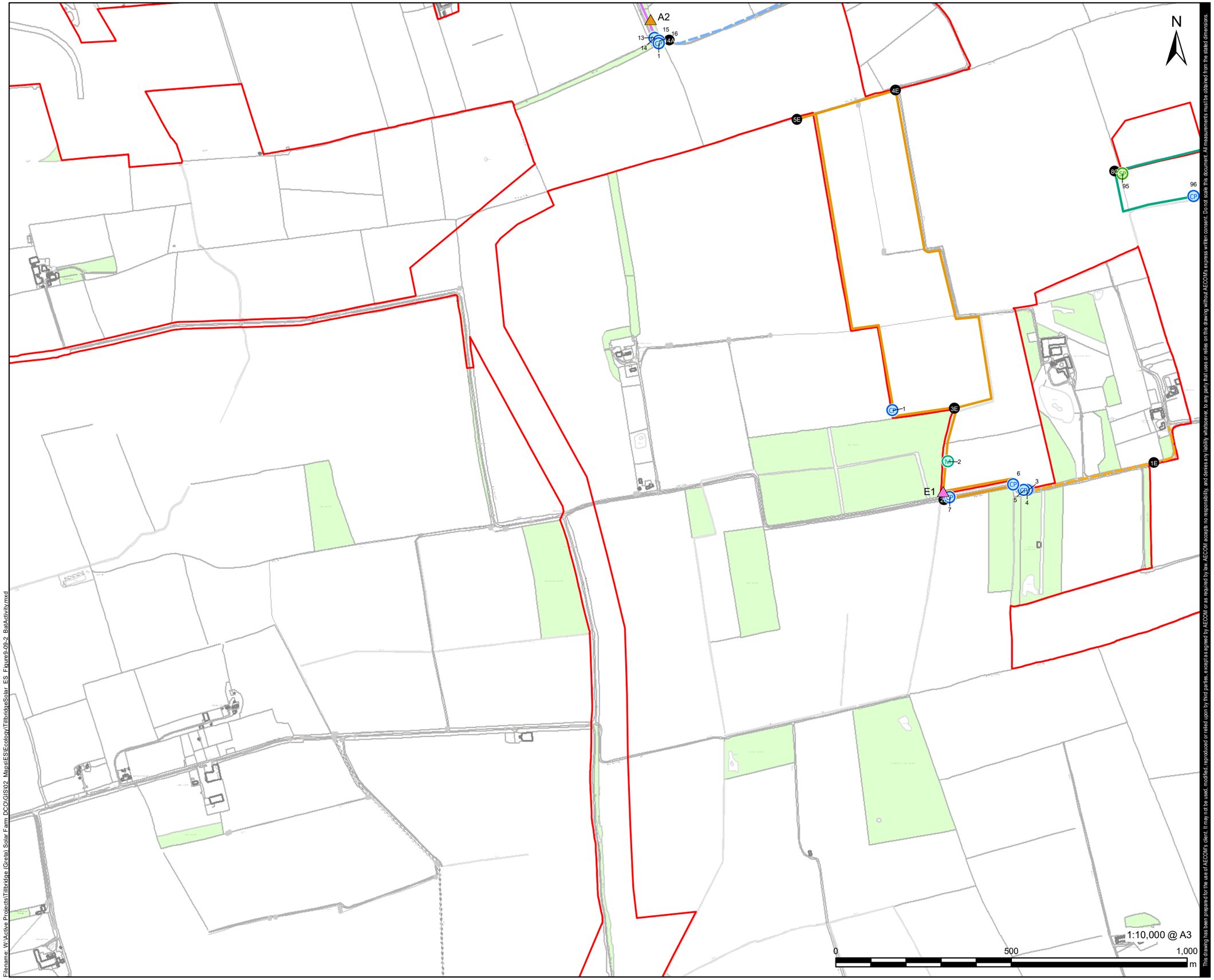

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Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

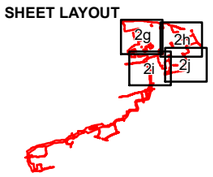
LEGEND

- Order Limits
- Transect A
- Transect B (Driven)
- Transect C
- Transect E
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- Moderate-High
- Unknown

Bat Record
- Myotis species
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT



NOTES

ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Summer (3 of 4)

FIGURE NUMBER

Figure 9-9-2i

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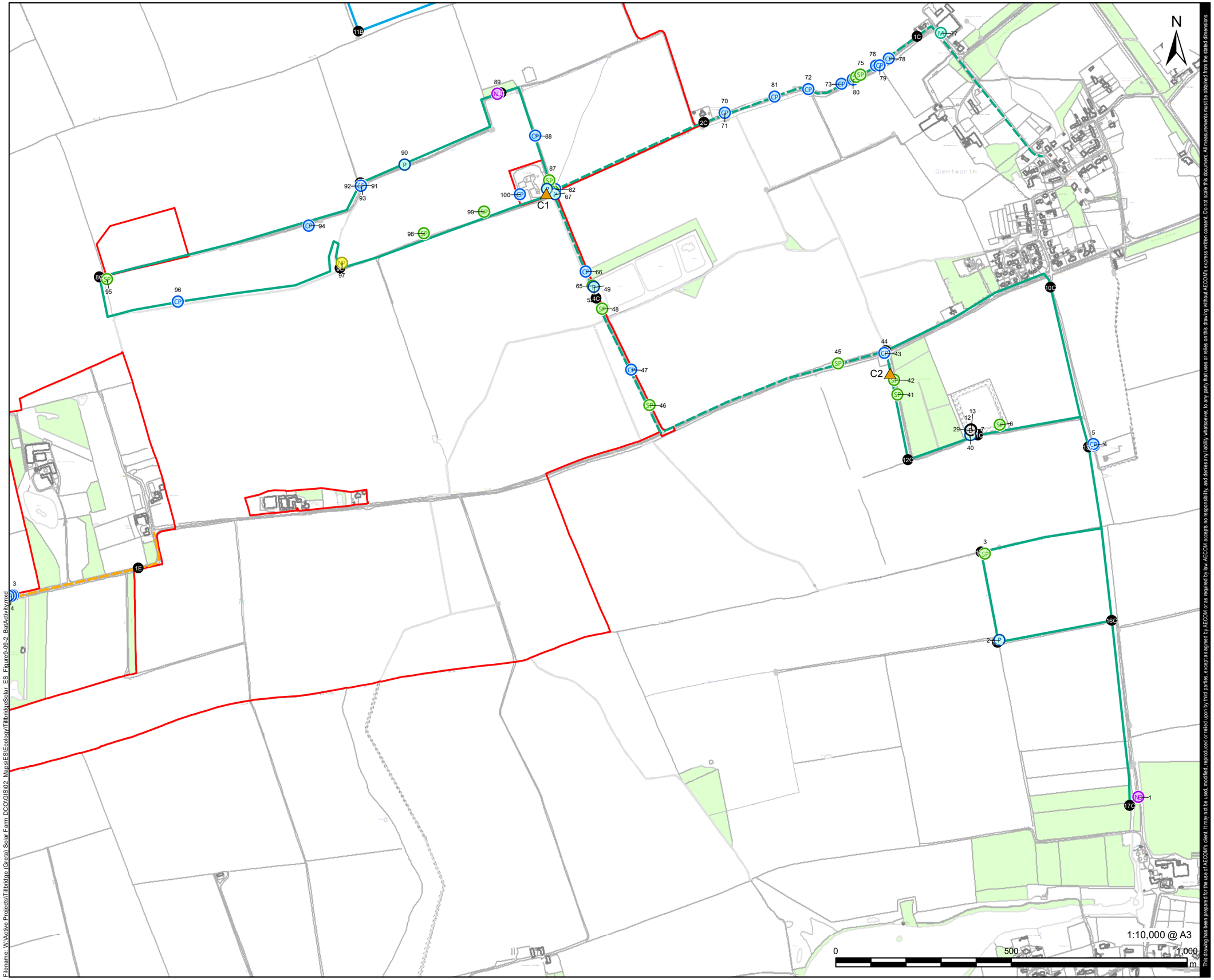

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Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

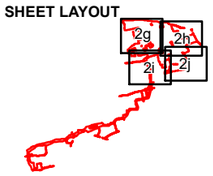
LEGEND

- Order Limits
- Transect B
- Transect C
- Transect C (Driven)
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- Moderate-High

Bat Record
- Myotis daubentonii
- Myotis species
- Nyctalus noctula
- Pipistrellus nathusii
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Pipistrellus species
- Woodland

SHEET LAYOUT



NOTES

ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Summer (4 of 4)

FIGURE NUMBER

Figure 9-9-2j

Revision: 0 Drawn: BF Checked: MC Approved: -- Date: 2024-02-06

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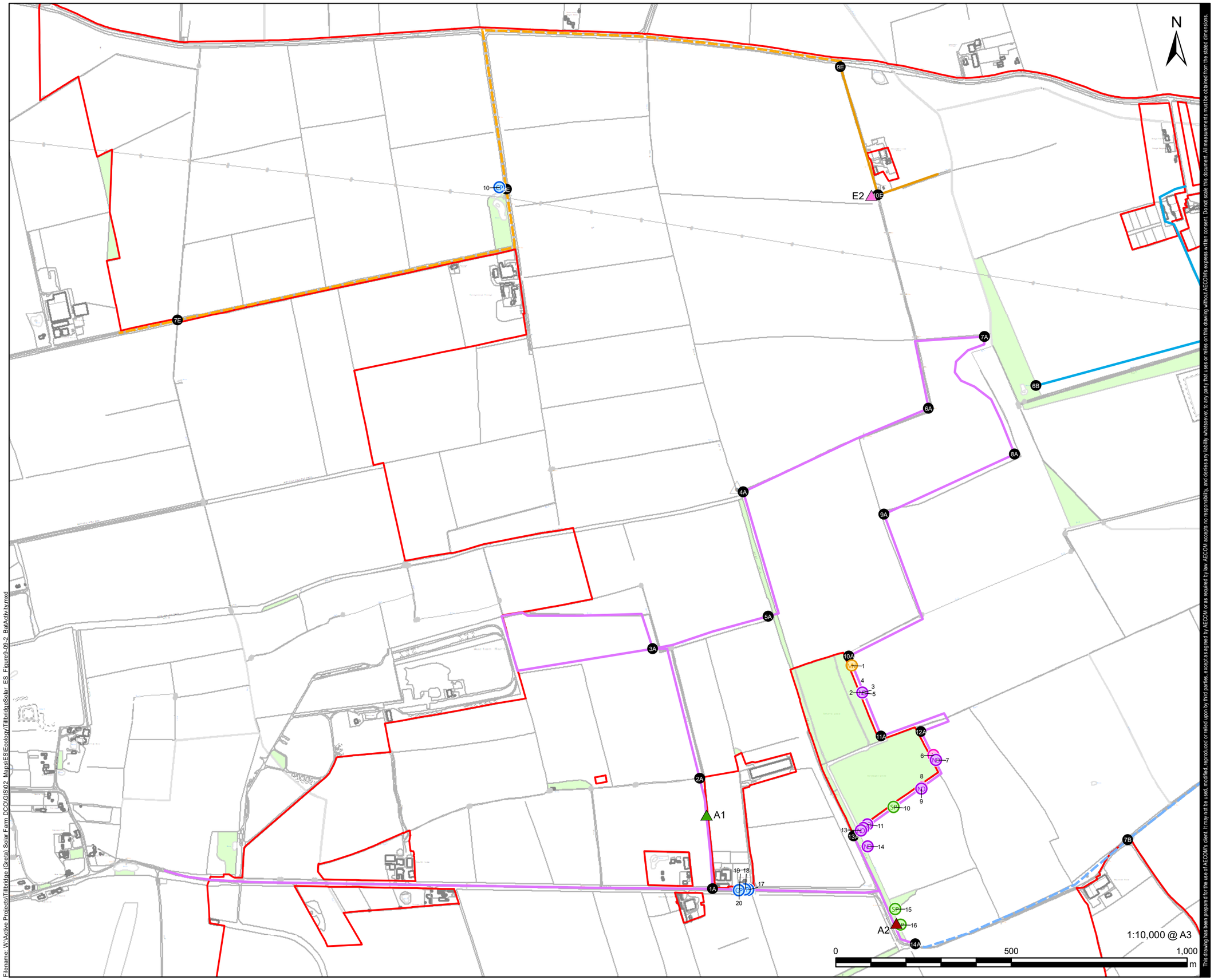

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Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

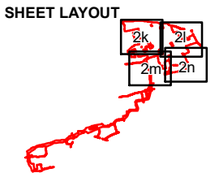
LEGEND

- Order Limits
- Transect A
- Transect B
- Transect B (Driven)
- Transect E
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- High
- Low
- Unknown

Bat Record
- Myotis nattereri
- Nyctalus noctula
- Nyctalus species
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT



NOTES

ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Autumn (1 of 4)

FIGURE NUMBER

Figure 9-9-2k

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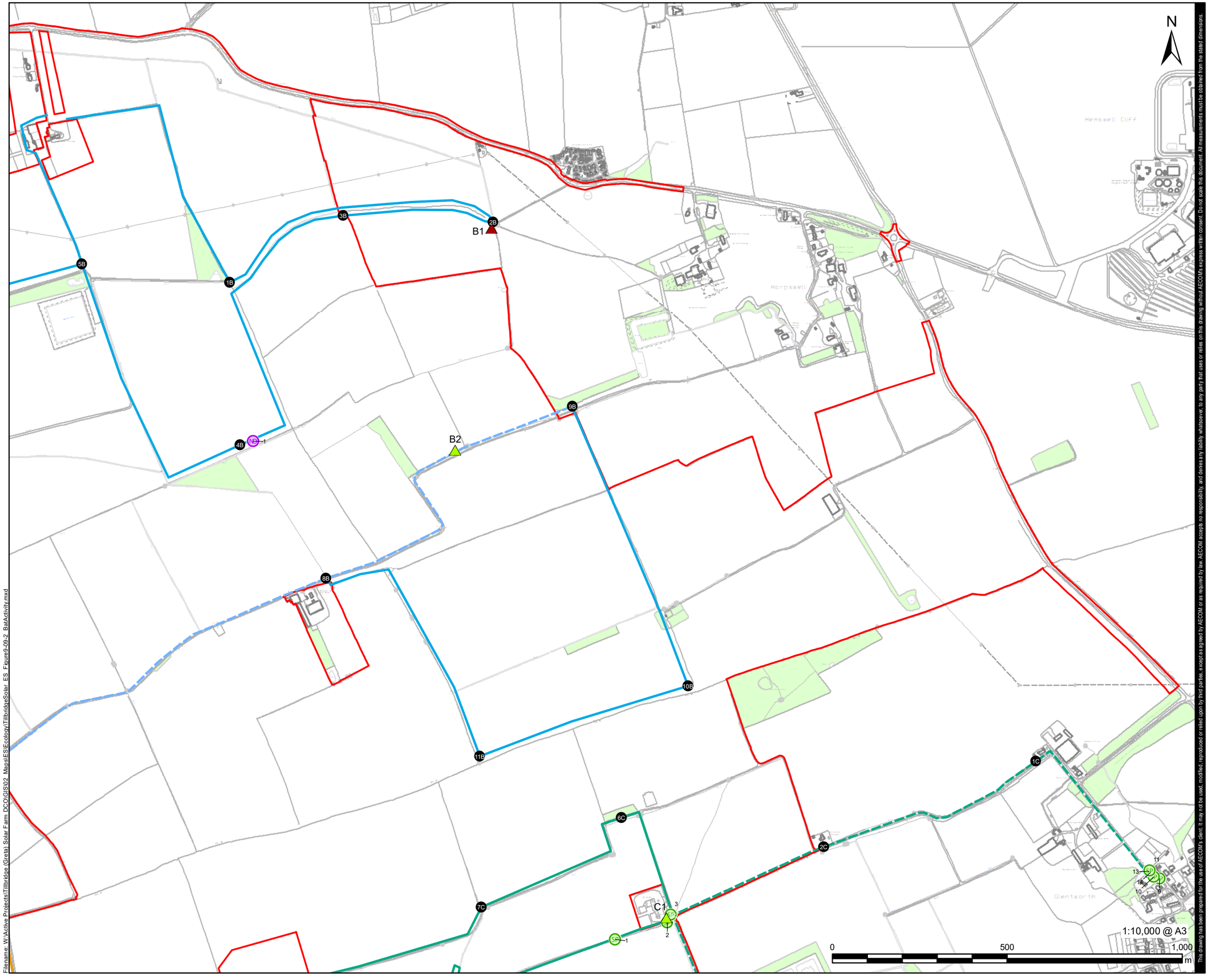

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Tillbridge Solar Project

CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

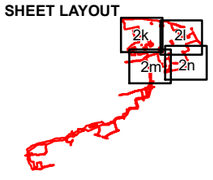
LEGEND

- Order Limits
- Transect B
- Transect B (Driven)
- Transect C
- Transect C (Driven)
- Transect E
- Location of Stopping Point

Static Detector, Activity
- High
- Low-Moderate

Bat Record
- Nyctalus noctula
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT



NOTES

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PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Autumn (2 of 4)

FIGURE NUMBER

Figure 9-9-2l

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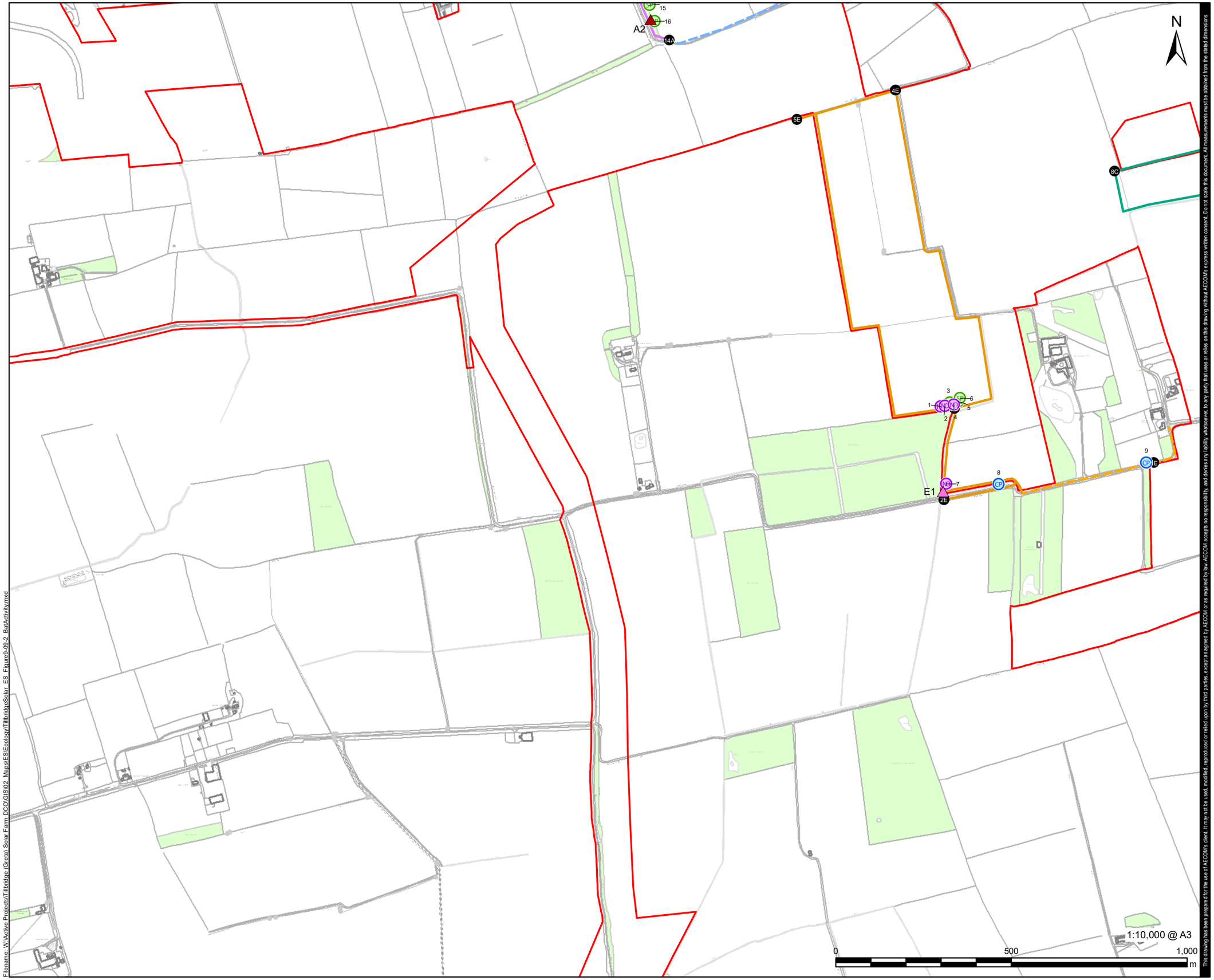

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CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

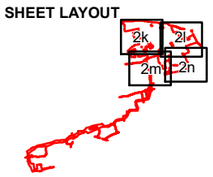
LEGEND

- Order Limits
- Transect A
- Transect B (Driven)
- Transect C
- Transect E
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- High
- Unknown

Bat Record
- Nyctalus noctula
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT



NOTES

ISSUE PURPOSE

DCO Submission

PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Autumn (3 of 4)

FIGURE NUMBER

Figure 9-9-2m

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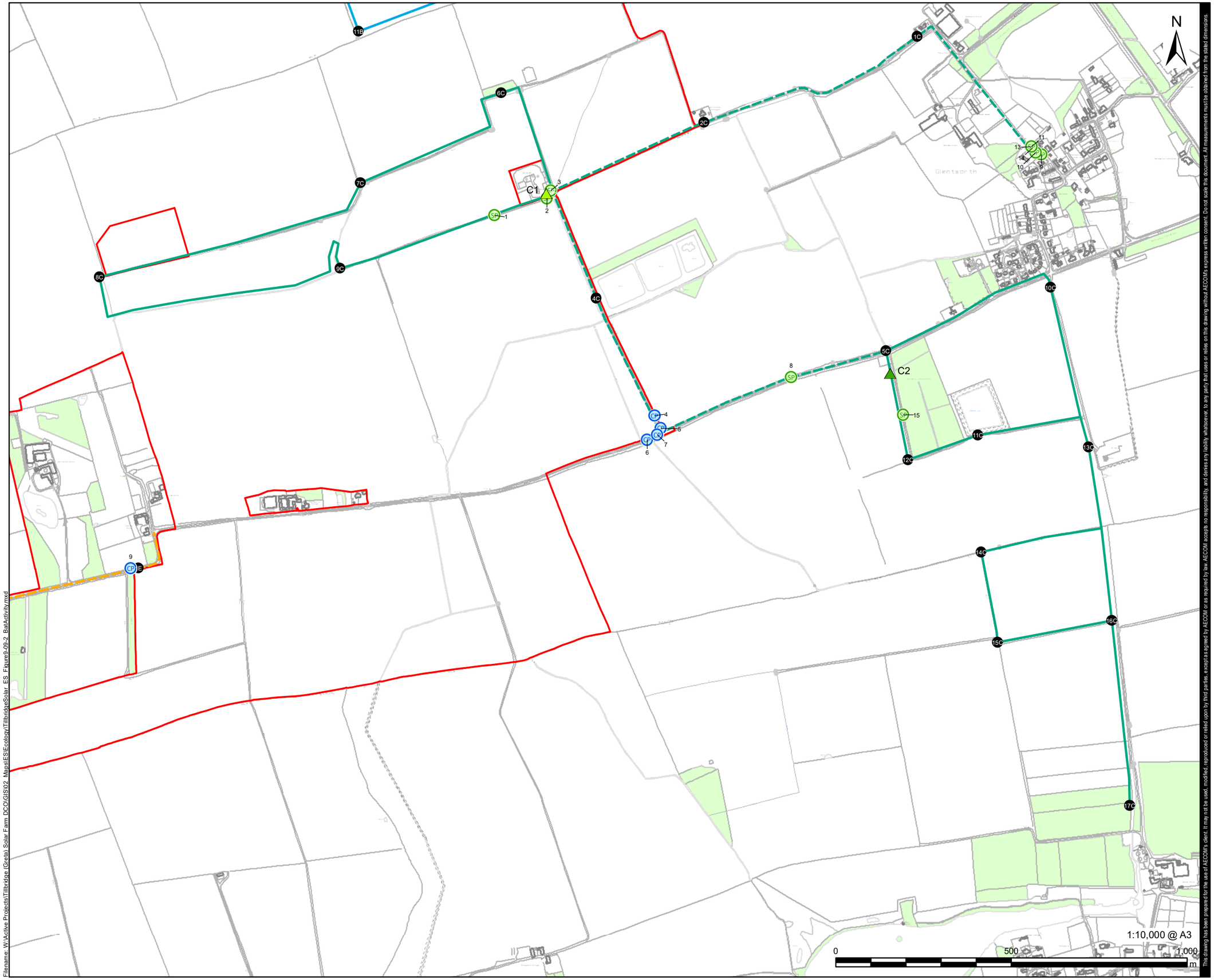

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CLIENT

Tillbridge Solar Limited

CONSULTANT

Aldgate Tower
2, Leman Street
London, E1 8FA
United Kingdom
T +44-0207-645-2000

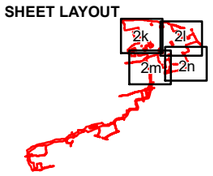
LEGEND

- Order Limits
- Transect B
- Transect C
- Transect C (Driven)
- Transect E (Driven)
- Location of Stopping Point

Static Detector, Activity
- Low-Moderate
- Low

Bat Record
- Pipistrellus pipistrellus
- Pipistrellus pygmaeus
- Woodland

SHEET LAYOUT



NOTES

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PROJECT NUMBER

60677969

FIGURE TITLE

Bat Transect Results and Static Detector Locations, Autumn (4 of 4)

FIGURE NUMBER

Figure 9-9-2n

Annex B Survey methods of PRA and DBW

PRA survey methods

Table 5. Survey Methodology for Assessing for the Potential Roost Features (PRFs) of Trees and Buildings

Trees

Surveys can be undertaken at any time of year but should preferably be carried out when the trees are not in full leaf, to aid the viewing of PRFs. Any constraints to surveys should always be noted. The scoping survey (PRA) to identify the existence of PRFs included checks for the presence of the following features that bats might be able to use to determine features with the potential to support bats in accordance with criteria in the bat survey guidelines (Ref 15):

- natural holes (*e.g.* knot holes) arising from naturally shed branches, or branches previously pruned back to the branch collar;
- man-made holes (*e.g*. cavities that have developed from flush cuts) or cavities created by branches tearing out from parent stems;
- woodpecker holes;
- cracks/splits in stems or branches (both vertical and horizontal);
- partially detached or loose, platy bark;
- cankers (caused by localized bark death) in which cavities have developed;
- other hollows or cavities, including butt rots;
- compression forks with included bark, forming potential cavities;
- crossing stems or branches with suitable space between for roosting;
- Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where a roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk); and
- bird and bat boxes on trees; or other features that offer a place of shelter.

Note: Roosts of some species can occur very low on trees so PRFs can be found at all heights. Generally young trees under 150mm diameter are scoped out of the surveys.

Buildings

Bats utilise many different features in buildings for places of shelter and roosting. Features associated with each building are visually inspected for their suitability for use by roosting bats. Equipment included close focusing binoculars to study the walls, eaves and roofs of the buildings.

Features that should be observed, noted and graded (in accordance with criteria in the bat survey guidelines (Ref 15) during the survey of buildings includes:

- small gaps at least 20mm wide, however bats usually also require an area to land that is adjacent to the entrance hole and has a rough surface. Such features are looked for during the inspection.

- gaps in ridge tiles (where mortar is missing), gaps under roof tiles or slates, lead flashing around chimney stacks and around dormer windows, gaps under the fascias and soffits, weatherboarding, missing mortar from joints in stone/ brickwork, roof valleys and hips.
- the presence of their droppings. Bats deposit droppings in both roost and social areas, but the use of such sites by bats can change due to prevailing weather conditions or the time of year. Special attention was paid to the areas directly below any potential access/ egress point in an attempt to identify any accumulation of bat droppings.

No work involving multi-sectional ladders over 5m in height was undertaken as part of the survey and no access inside properties was undertaken (where relevant and required).

Table 6. Criteria used to describe the level of suitability of a Potential Roost Feature (PRF) to support roosting bats (note the method was amended in September 2023 to that described in Annex B)

Roost Suitability	Description of Roosting Habitats
NEGLIGIBLE	Structure or tree with no or very limited roosting opportunities for bats. Feature may be isolated from foraging habitat.
LOW	Structure or tree one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (*i.e*. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRF(s) but with none seen from the ground or features seen with only very limited roosting potential with a limited number of roosting opportunities. Low proximity and connectivity to low or moderate quality foraging habitat.
MODERATE	Structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed). Often will have some connectivity and proximity to moderate or high quality foraging habitat.
HIGH	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially longer periods of time due to their size, shelter one or more species of bat. With good connectivity to high quality foraging habitat.
CONFIRMED ROOST	Presence of bats or evidence of bats. Confirmation of roost status may require further Roost Classification Survey.

Notes: The NEGLIGIBLE category is used where a feature has been inspected and found not to contain any features of use to bats, and hence provides confirmation that a feature has been inspected or considered.

For building/structures PRFs that are assessed at LOW to HIGH suitability and where impacts are predicted, further surveys are likely to be required (in accordance with standard survey guidance (Ref 15) to attempt to determine roost presence/absence).

For tree PRFs that are assessed at MODERATE to HIGH suitability and where impacts are predicted, further surveys are likely to be required to attempt to determine roost presence/absence.

CONFIRMED ROOSTS would require Roost Characterisation Surveys to inform planning/mitigation requirements if impacts are predicted.

DBW survey methods

Table 7. Survey method for undertaking the daytime bat walkover (DBW) from September 2023.

Trees
Surveys can be undertaken at any time of year. Any constraints to surveys should always be noted. The scoping survey (DBW) aim is to identify and record any habitats that are suitable for bats to roost, commute and/or forage and to help inform whether additional bat surveys may be required for a proposed development in accordance with criteria in the bat survey guidelines (Ref 16)
Buildings
Bats utilise many different features in buildings for places of shelter and roosting. Features associated with each building are visually inspected for their suitability for use by roosting bats. Equipment included close focusing binoculars to study the walls, eaves and roofs of the buildings. • Features that should be observed, noted and graded (in accordance with criteria in the bat survey guidelines (Ref 16) • small gaps at least 20mm wide, however bats usually also require an area to land that is adjacent to the entrance hole and has a rough surface. Such features are looked for during the inspection. • gaps in ridge tiles (where mortar is missing), gaps under roof tiles or slates, lead flashing around chimney stacks and around dormer windows, gaps under the fascias and soffits, weatherboarding, missing mortar from joints in stone/ brickwork, roof valleys and hips. • the presence of their droppings. Bats deposit droppings in both roost and social areas, but the use of such sites by bats can change due to prevailing weather conditions or the time of year. Special attention was paid to the areas directly below any potential access/ egress point in an attempt to identify any accumulation of bat droppings. No work involving multi-sectional ladders over 5m in height was undertaken as part of the survey. No access inside properties was undertaken.

Table 8. Criteria used to describe the potential suitability of buildings and structures to support roosting bats

Potential Suitability	Description of Roosting Habitats
NONE	No habitat features on site likely to be used by any roosting bats at any time of the year.
NEGLIGIBLE	No obvious habitat features on site likely to be used by roosting bats; however a small element of uncertainty remains as bats can used small and apparently unsuitable features on occasion.

LOW	A structure or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
MODERATE	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed). Often will have some connectivity and proximity to moderate or high quality foraging habitat.
HIGH	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially longer periods of time due to their size, shelter one or more species of bat. With good connectivity to high quality foraging habitat. These structures have the potential to support a roost of high conservation status.
CONFIRMED ROOST	Presence of bats or evidence of bats. Confirmation of roost status may require further Roost Classification Survey.

Table 9. Criteria used to assess the suitability of trees on proposed development sites for bats.

Suitability	Description
NONE (N)	Either no PRFs in the tree or highly unlikely to be any
FURTHER ASSESSMENT REQUIRED (FAR)	Further assessment required to establish if PRFs are present in th tree
POTENTIAL ROOST FEATURE (PRF)	A tree with at least one PRF present

Annex C Valuing Bat Roosts Foraging and Commuting Habitats in Ecological Impact Assessment

The conservation importance of the roosting, foraging and commuting bats present on site is based on the rarity of individual bat species, importance of their roosts, commuting and foraging habitats and overall importance of the bat assemblages (see Tables below) based on the analysis framework in Chartered Institute for Ecological and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment (Ref 19), and in the CIEEM Bat Mitigation Guidelines (Ref 20) and using professional judgement.

Table 10. Rarity category (Central England/Midlands)

Rarity category	Species
Widespread	• Common pipistrelle • Soprano pipistrelle • Brown long-eared bat
Widespread in many geographies but not as abundant in all	• Daubenton's bat • Natterer's bat • Noctule • Brandt's bat • Whiskered bat
Rarer or restricted distribution	• Leisler's bat • Nathusius' pipistrelle • Serotine
Rarest Annex II species and very rare	• Barbastelle

Note, this excludes other UK bat species that are unlikely to occur within the Order limits based on their current distribution.

Table 11. Assessing conservation importance of bat roosts[1]

Rarity category (species in each category are determined by region)	Roost category						
	Feeding perches; night-roosts **Individual or very small occasional/ transitional / opportunistic roosts**	**Non-breeding day roosts** **(small numbers of species)**	**Mating sites (excluding individual trees)** **Small numbers of hibernating bats**	**Larger transitional roosts**	**Hibernation sites[4]**	**Autumn Swarming sites**	**Maternity sites[3]**
Widespread	Site	Site	Site	Site/Local	District/County [larger hibernation sites rare in the UK]	District/County (very large pipistrelle swarming sites as yet unknown in the UK)	Unlikely to exceed District importance unless colonies are atypically large; importance increased for assemblages.
Widespread in many geographies but not as	Site	Site	Site, dependent on local distribution [for Myotis, see	District	District/County importance dependent on size[2] and	County/Regional importance dependent on size[2] importance increased for	County/Regional importance on size[2] and local distribution; increased value

abundant in all			swarming site column]		number of species.	larger sites that serve larger numbers/species.	for assemblages.
Rarer or restricted distribution	Site (very well-used night roosts may be of District importance for some species)	Site/Local/District, dependent on local distribution	Site/Local/District, dependent on local distribution	District	District/County importance on size[2] and local distribution; increased value for assemblages.	County/Regional importance on size[2] and local distribution; increased value for assemblages.	County/Regional importance on size[2] and local distribution; increased value for assemblages.
Rarest Annex II species and very rare	Site (very well-used night roosts may be of District importance for some species)	Site/Local/District, dependent on local distribution	Site/Local/District, dependent on local distribution	District	County/Regional importance on size[2] and local distribution; increased value for assemblages.	County/Regional importance on size[2] and local distribution; increased value for assemblages.	County/Regional importance on size[2] and local distribution; increased value for assemblages.

[1] Sites within or functionally-linked to SACs are of International importance for Qualifying Species. Sites that *could* be functionally-linked to SACs may or may not have that level of importance (e.g. a barbastelle maternity roost from a multi-component 'bat' SAC may be too far away to be a direct satellite of a maternity roost within the SAC, but may be part of the same population through intermediate unidentified roosts). Sites meeting SSSI guidelines are of National importance (though note that many SSSI citations do not reflect the 'bat' importance of the sites they describe).

[2] In all cases, 'size' needs to be interpreted as 'relative to typical sizes for the species'.

[3] Satellite roosts (i.e. alternative roosts found in close proximity to the main nursery colony) should be considered with the associated main colony.

[4] For tree-roosting bats that are likely to hibernate in small numbers (which means individual hibernation sites are difficult to detect and many may be missed), the importance of the roost resource (i.e. the extent of woodland which contains trees suitable for hibernation) rather than individual confirmed roosts, should be assessed.

Table 12. Assessing the importance of a bat assemblage

Sites of importance to bats often support several species, and it can be helpful to consider the importance of the assemblage as a whole after the individual bat species have been assessed. Assigning a level of importance to an assemblage provides contextual information only; it is not expected that the assemblage as a whole would be assessed as a single receptor.

Rarity category	Species and Score	
Widespread	• Common pipistrelle • Soprano pipistrelle • Brown long-eared bat	1 point each
Widespread in many geographies but not as abundant in all	• Daubenton's bat • Natterer's bat • Noctule • Brandt's bat • Whiskered bat	2 points each
Rarer or restricted distribution	• Leisler's bat • Nathusius' pipistrelle • Serotine	3 points each
Rarest Annex II species and very rare	• Barbastelle	4 points
Maximum score		26
45%	County	12
55%	Regional	14
70%	National	18

Table 13. Importance of Ecological Features

Importance of Ecological Features	Typical descriptors and examples of criteria
International or European	An internationally designated site or candidate site including Special Area of Conservation (SAC), candidate or possible SACs (cSACs or pSACs[1]) where bats are cited as a qualifying feature. Resident or regularly occurring populations of species which may be considered at an international or European level[2] where: the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; the population forms a critical part[3] of a wider population at this scale; or the species is at a critical phase[4] of its life cycle at this scale.
UK or National	Sites designated at UK or national level e.g. Site of Special Scientific Interest (SSSI), where bats are included as an interest feature. Resident or regularly occurring populations of species which may be considered at a UK or a national level[5] where: the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; the population forms a critical part of a wider population at this scale; or the species is at a critical phase of its life cycle at this scale.
Regional	Populations of species of value at a regional level (i.e. East Midlands). Resident or regularly occurring populations of species which may be considered at a regional level[6] where: the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; the population forms a critical part of a wider population at this scale; or the species is at a critical phase of its life cycle at this scale.
County or Unitary Authority or District	Populations of species of value at a County (Lincolnshire) level or District (West Lindsey). Resident or regularly occurring populations of species which may be considered at a County (or District) level where: the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; the population forms a critical part of a wider population at this scale; or, the species is at a critical phase of its life cycle at this scale.
Local	Species populations of value in a local (i.e. within ~ 5km of the site) context.

Importance of Ecological Features	Typical descriptors and examples of criteria
	Areas of habitat or populations and, or communities of species considered to appreciably enrich the habitat resource within the local context (such as veteran trees), including features of value for migration, dispersal or genetic exchange.
Site	Habitat that is of value in the context of the site only. Populations of common and widespread species.

1 pSACs are sites which have been formally advised by to UK Government but have not yet been submitted to the European Commission. These sites should be valued at an international (European) level on the basis that they meet the relevant selection criteria for a SAC but are not yet designated as such.
2 Such species include those listed within Council Directive 92/43/EEC on the Conservation of natural habitats and of wild flora and fauna (i.e., Habitats Directive).
3 Such populations include sub-populations that are essential to maintenance of metapopulation dynamics e.g., critical emigration/ immigration links between otherwise discrete populations.
4 Seasonal activity or behaviour upon which survival or reproduction depends.
5 Species which may be considered at the UK or national level means; other animals which receive legal protection in the basis of their conservation interest (those listed within the Wildlife and Countryside Act 1981 (as amended) Schedule 5 and 8); species listed for their principal importance for biodiversity (in accordance with the Natural Environment and Communities Act 2006 Section 41 England); priority species listed within the UK Post 2010 Biodiversity Framework (i.e., UKBAP); or species listed within the Red Data Book.
6 Such species include those listed in the appropriate Natural Character Area and key/ priority species listed on the 2002 HABAP.

As well as assigning importance there is also a need to identify all legally protected species that could be affected by the Scheme in order that measures can be taken to ensure that adherence to the relevant legislation is observed. This may include the adoption of mitigation and appropriate licensing which is acceptable to Natural England.

Annex D Survey Results

Table 14. Preliminary Roost Assessment

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1548	Ash (*Fraxinus excelsior*)	standard tree	none	none	N	N
1549	Ash	standard tree	none	none	N	N
1550	Ash	standard tree	none	none	N	N
1551	Ash	multi-stem tree	none	none	N	N
1552	Oak (*Quercus robur*)	multi-stem tree	none	none	N	N
1553	Ash	standard tree	Large central hollow at top of trunk	none	H	N
1554	Ash	standard tree	Tear out on north facing bough. Central decay with hollow trunk	none	H	Y
1555	Oak	standard tree	Transverse split on south side 10m up	none	M	N
1556	Crack Willow (*Salix fragilis*)	standard tree	Hazard beam, minor holes central trunk. Minor split in pruning cut	none	L	N
1557	Crack Willow	standard tree	Small hole 1m, vertical split 10m up	none	L	N
1558	Ash	Multi-stem tree	none	none	N	N
1559	Ash	multi-stem tree	Small cavity, 2 holes 1m up on main trunk	none	L	N
1560	Ash	multi-stem tree	Shallow hole, no signs unlikely to be used	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1561	Ash	twin-stem tree	Cavity at base, pruning cut with decay at 3m up	none	M	Y
1562	Oak	standard tree	Central trunk cavity open top and exposed	none	L	N
1563	Ash	standard tree	none	none	N	N
1564	Ash	multi-stem tree	none	none	N	N
1565	Oak	standard tree	Lifted bark, pruning cut and holes on trunk	none	H	N
1566	Woodland	c.100 Oaks	Not surveyed	n/a	H	N
1567	Ash	twin-stem tree	None	none	N	N
1568	Oak	standard tree	Small gap under south-west branch	none	L	N
1569	Oak	standard tree	Minor lifted bark	none	L	N
1570	Oak	standard tree	Lightening dead heart wood on N side, overlapping bark	none	L	N
1571	Oak	standard tree	Collar around dead branch/pruning cut 10m east	none	M	N
1572	Oak	standard tree	Lifted bark	none	L	N
1573	Oak	standard tree	Numerous holes, lifted bark	none	H	N
1574	Woodland	Broad-leaved semi-natural woodland	Not surveyed	n/a	H	Y
1575	Oak	decaying standard tree	Large open split in trunk	none	M	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1576	Ash	standard tree	Woodpecker hole north side and hollow decayed section of trunk	none	H	Y
1577	Ash	standard tree	None	none	N	N
1578	Ash	multi-stem tree	None	none	N	N
1579	Ash	multi-stem tree	None	none	N	N
1580	Ash	multi-stem tree	None	none	N	N
1581	Ash	multi-stem tree	None	none	N	N
1582	Ash	multi-stem tree	None	none	N	N
1583	Ash	multi-stem tree	None	none	N	N
1584	Field Maple (*Acer campestre*)	standard tree	Hole in north-east branch 4m up	none	M	N
1585	Goat Willow (*Salix caprea*)	standard tree	split in trunk 3m up	none	L	N
1586	Ash	multi-stem tree	None	none	N	N
1587	Ash	standard tree	None	none	N	N
1588	Ash	multi-stem tree	None	none	N	N
1589	Oak	standard tree	Central cavity decay	none	H	N
1590	Oak	standard tree	Minor decay around dead branch	none	L	N
1591	Oak	standard tree	Minor decay around dead branch	none	L	N
1592	Ash	standard tree	2x woodpecker holes S side of trunk, traverse split SW side	none	H	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1593	Line of trees	5 similar age/condition Ash trees along a 40m section of hedge	None	none	N	N
1594	Ash	standard tree	Vertical split with hollow	none	H	N
1595	Ash	4 Ash trees along a 20m length	None	none	N	N
1596	Ash	standard tree	None	none	N	N
1597	Ash	standard tree	Large hollow cavity, numerous holes	none	H	N
1598	Ash	multi-stem tree	None	none	N	N
1599	Trees	c.10 Ash in hedge (50m length)	None	none	N	N
1600	Ash	standard tree	None	none	N	N
1601	Ash	standard tree	None	none	N	N
1602	Ash	standard tree	None	none	N	N
1603	Ash	standard tree	None	none	N	N
1604	Ash	standard tree	None	none	N	N
1605	Trees	2 standard Ash trees	None	none	N	N
1606	Ash	standard tree	None	none	N	N
1607	Ash	multi-stem tree	None	none	N	N
1608	Ash	multi-stem tree	None	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1609	Woodland	20 Ash young/semi-mature	Minor flaky/lifted bark only.	none	L	N
1610	Line of trees	25 young/semi-mature Ash, Sycamore, Lime and Field Maple	None	none	N	N
1611	Lime (*Tilia* species)	standard tree	None	none	N	N
1612	Ash	standard tree	None	none	N	N
1613	Sycamore (*Acer pseudoplatanus*)	standard tree	None	none	N	N
1614	Ash	standard tree	Hole at the top of the trunk, exposed, open cavity low down	none	L	N
1615	Ash	standard tree	None	none	N	N
1616	Sycamore	multi-stem tree	None	none	N	N
1617	Ash	standard tree	None	none	N	N
1618	Ash	standard tree	None	none	N	N
1619	Oak	standard tree	Hole 5m up main trunk. Minor hole SW bough	none	M	N
1620	Line of trees	15 pollarded Sycamore and Ash along east side of road	None	none	N	N
1621	Crack Willow (*Salix fragilis*)	multi-stem tree	None	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1622	Line of trees	4 Crack Willow (25m line)	None	none	N	N
1623	Line of trees	2 Crack Willow	1 hazard beam, providing limited shelter	none	L	N
1624	Crack Willow	standard tree	Vertical stress fissure SE bough	none	M	N
1625	Crack Willow	standard tree	Shallow hole and hazard beam	none	L	N
1626	Line of trees	26 young/semi-mature trees, Lime, Ash, Field Maple	None	none	N	N
1627	Woodland (plantation)	c.100 young/semi-mature Ash	None	none	L	N
1628	Woodland (triangle plantation)	20 trees, Ash and Oak	None	none	N	N
1629	Line of trees	3 multi-stem Ash along a 10m line	None	none	N	N
1630	Line of trees	10 multi-stem Ash along a 50m line	None	none	N	N
1631	Woodland	>200 trees Oak/Ash/Beech	Not surveyed	none	H	N
1632	Woodland	Small copse 8x30m	None	none	N	N
1633	Woodland	Plantation, with Field Maple, Oak, Willow, Hazel and Ash 2-300 trees (30-40 years)	None	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1634	Woodland	Plantation, Oak, Field Maple and Beech, 70-80 trees (up to 50 yrs)	Minor holes	none	L	N
1635	Hedge with trees	Ash, Oak and Field Maple (young trees)	None	none	N	N
1636	Field Maple	Standard tree	Small hole	none	L	N
1637	Ash	standard tree	None	none	N	N
1638	Ash	standard tree	None	none	N	N
1639	Ash	standard tree	Small hole 6m south	none	L	N
1640	Ash	multi-stem tree	None	none	N	N
1641	Ash	multi-stem tree	None	none	N	N
1642	Ash	2 multi-stem tree	None	none	N	N
1643	Oak	Mature standard tree	None	none	M	N
1644	Hawthorn (*Crataegus monogyna*)	multi-stem tree	Large trunk cavity 1m up and small decay hole 8m up on S side	none	N	N
1645	Woods	Young plantation 10-30 yrs	Not surveyed in detail, no obvious features	none	L	N
1646	Ash	standard tree	Hole east side 5m up	none	M	N
1647	Ash	standard tree	None	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1648	Ash	multi-stem tree	None	none	N	N
1649	Line of trees	15 Ash trees	None	none	N	N
1650	Woodland	Plantation, Ash, Oak and Field Maple x 100 trees	Not surveyed in detail, some trees with suitable cavities, others with no features	none	H	Y
1651	Line of trees	Ash, Oak and Field Maple x10 trees	None	none	N	N
1652	Woodland	Young and mature Sycamore in a strip by road (from GPS east) 5-20m wide x 100m length	3 minor knot holes in trees	none	L	N
1653	GPS location for end of woods					
1654	Sycamore	standard tree	None	none	N	N
1655	Sycamore	standard tree	None	none	N	N
1656	Sycamore	standard tree	None	none	N	N
1657	Sycamore	standard tree	None	none	N	N
1658	Sycamore	standard tree	None	none	N	N
1659	Line of trees	4 Sycamore, 6 Common Hawthorn	None	none	N	N
1660	Woodland	c. 30 trees, Ash and Sycamore	Numerous decay holes and splits	none	H	Y

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1661	GPS location end of woods					
1662	Ash	standard tree	Numerous decay holes 10m up S side, thick Ivy cover	none	H	N
1663	Hedge with tree	8 Hawthorn, Ash and Blackthorn	minor holes in Ash	none	L	N
1664	Line of trees and hedge	7 Ash and Hawthorn (10m either side of pond)	minor holes in Ash	none	L	N
1665	Ash	standard tree	4 decay cavities W side 6m up and butt rot hollow at base of trunk	none	H	Y
1666	Woodland	plantation with c.100 ash trees	minor decay holes in 3 trees	none	L	N
1667	Ash	standard tree	3 small holes in S bough 10m up	none	M	N
1668	Ash	standard tree	hole in S bough 6m up	none	M	N
1669	Ash	standard tree	2 holes in south bough 6m up	none	M	N
1670	Ash	standard tree	minor holes, 1 large hole SW bough, dead Ivy cover	none	M	N
1671	Ash	standard tree	large trunk cavity 5m N side	none	H	N
1672	Ash	standard tree	None	none	N	N
1673	Ash	standard tree	cavity in SW bough and hazard beam N side	none	M	N
1674	Elm (agg.)	standard tree	None	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1675	Ash	standard tree	None	none	N	N
1676	Ash	standard tree	Tear out and decay hole S side, 5m up	none	M	N
1677	Ash	2 Ash (1 multi-stem)	None	none	N	N
1678	Ash	multi-stem tree	None	none	N	N
1679	Ash	standard tree	None	none	N	N
1680	Ash	standard tree	1 small hole W	none	L	N
1681	Ash	standard tree	1 small hole NW side, 4m up	none	L	N
1682	Ash	standard tree	None	none	N	N
1683	Ash	standard tree	None	none	N	N
1684	Ash	standard tree	None	none	N	N
1685	Ash	standard tree	Hollow 4m up, E side	none	M	N
1686	Ash	standard tree	2 holes NW and SE sides, 6m up	none	M	N
1687	Ash	standard tree	Woodpecker hole 10m up	none	H	N
1688	Ash	standard tree	None	none	N	N
1689	Hedge with trees	10 Ash and Field Maple (from GPS 100m south)	None	none	N	N
1690	Ash	multi-stem tree	None	none	N	N
1691	Ash	standard tree	Small hole NE side, 8m up	none	L	N
1692	Ash	standard tree	none	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1693	Ash	standard tree	none	none	N	N
1694	Ash	standard tree	none	none	N	N
1695	Ash	twin-stem tree	none	none	N	N
1696	Hedge	overgrown hedge, Field Maple (from GPS south)	none	none	N	N
1697	Ash	standard tree	Decay open hollow trunk	none	N	N
1698	End of '1696' hedge					
1699	Ash	3 multi-stem Ash	none	none	N	N
1700	Oak	Mature standard tree	Minor gap around dead bough, SE, 10m up	none	L	N
1701	Ash	Mature standard tree	none	none	N	N
1702	Ash	standard tree	Minor wound, base rot	none	L	N
1703	Oak	standard tree	Minor splits, broken limbs off trunk	none	L	N
1704	Tree line	c.50 Sycamore, Ash, Oak and Field Maple (from GPS west to '1696')	none	none	N	N
1705	Sessile Oak (*Quercus petraea*)	Mature standard tree in field centre	Hole to north 10m up and damp gap around dead stem	none	M	N
1706	Oak	standard tree	none	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1707	Ash	Coppice multi-stem	none	none	N	N
1708	Ash	standard tree	none	none	N	N
1709	Hedge and trees	Ash (from GPS 30m and 30m north)	none	none	N	N
1710	Woodland		Not surveyed outside site	none	H	Y
1711	Ash	standard tree	Large central hollow exposed and minor hole	none	L	N
1712	Ash	multi-stem tree	none	none	N	N
1713	Field Maple	standard tree	none	none	N	N
1714	Ash	2 multi-stem trees	none	none	N	N
1715	Ash	6 multi stem Ash and 1 Field Maple (from GPS 30m east)	none	none	N	N
1716	Ash	standard tree	2 minor holes 8m up	none	L	N
1717	Field Maple	standard tree	none	none	N	N
1718	Ash	standard tree	none	none	N	N
1719	Ash	standard tree	none	none	N	N
1720	Hybrid Black Poplar	standard tree	Large central cavity N side in trunk	none	H	Y
1721	Hybrid Black Poplar	standard tree	none	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1722	Hybrid Black Poplar	standard tree	none	none	N	N
1723	Tree line	6 trees, Ash and Elm (20m tree line)	none	none	N	N
1724	Ash	standard tree	none	none	N	N
1725	Field Maple	standard tree	none	none	N	N
1726	Ash	standard tree	none	none	N	N
1727	Field Maple	standard tree	none	none	N	N
1728	Ash	standard tree	none	none	N	N
1729	Hedge with trees	c.20 trees, Ash and (30m from GPS west)	none	none	N	N
1730	Ash	standard tree	none	none	N	N
1731	Woods	Old broad-leaved semi-natural woodland, c.300-400 trees	Not surveyed	none	H	Y
1732	Tree line	2 Ash trees	none	none	N	N
1733	Tree line	Line of 4 trees, immature Ash and Field Maple (30m east from GPS)	none	none	N	N
1734	Crack Willow	Veteran pollard	Large central cavity with transverse splits, pruning wounds	none	H	Y

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1735	Ash	standard tree	none	none	N	N
1736	Field Maple	standard tree	none	none	N	N
1737	Ash	multi-stem tree	none	none	N	N
1738	Ash	standard tree	none	none	N	N
1739	Lombardy poplar (*Populus nigra* 'Italica')	standard tree	Minor bark cracks/fissures	none	L	N
1740	Hawthorn	standard tree	none	none	N	N
1741	Hawthorn	standard tree	none	none	N	N
1742	Hawthorn	standard tree	none	none	N	N
1743	Trees	2 Hawthorn and an Ash tree	none	none	N	N
1744	Hawthorn	standard tree	none	none	N	N
1745	Hawthorn	standard tree	none	none	N	N
1746	Trees	3 Hawthorn	none	none	N	N
1747	Tree line and hedge	10 Hawthorn along hedge and stream	none	none	N	N
1748	Tree line and hedge	11 Ash trees along hedge	none	none	N	N
1749	GPS marking end of tree line 1748					
1750	Woodland	young plantation 10-30 years with	none	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
		Field Maple, Oak and Sycamore				
1751	Tree line and hedge	c15 trees including semi-mature Hawthorn, Ash, Oak	Minor shallow decay holes	none	L	N
1752	Ash	multi-stem tree	Small wound hollow on N side, 7m up.	none	M	N
1753	Oak	standard tree	Hollow on N side, 4 up and minor lifted bark	none	M	N
1754	GPS marking end of tree line 1751					
1755	Building	Old open single storey brick building 10 x 3m with concrete base and flat concrete roof	Some cracks in the SE corner, no cavity wall, open, surrounded by scrub, young trees	none	L	N
1756	Ash	standard tree	none	none	N	N
1757	Ash	standard tree	none	none	N	N
1758	Ash	standard tree	none	none	N	N
1759	Ash	multi-stem tree	none	none	N	N
1760	Tree line	22 Lombardy Poplar trees	Minor decay in the crown of some trees	none	L	N
1761	Oak	standard tree	none	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1762	Oak	standard tree	none	none	N	N
1763	Oak	standard tree	none	none	N	N
1764	Oak	standard tree	none	none	N	N
1765	Oak	standard tree	none	none	N	N
1766	Oak	standard tree	none	none	N	N
1767	Oak	standard tree	Small decay hole under dead twisted bough SW side, 3m up	none	L	N
1768	Oak	standard tree	Minor lifted bark of SW side, 6m up	none	L	N
1769	Ash	Dying standard tree	none	none	N	N
1770	Tree line	3 Ash trees	none	none	N	N
1771	Field Maple	standard tree	none	none	N	N
1772	Tree line	c.60 to 70 adjacent Poplars and Willows	Not surveyed	none	L	N
1773	GPS marking end of 1772					
1774	Building	Two small concrete sheds	none	none	N	N
1775	Woodland	c.20 to 30 Ash and Elder tree	Not surveyed in detail, some minor holes visible	none	L	N
1776	Ash	Dying standard tree	Small decay holes and hollow at top of trunk	none	L	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1777	Ash	standard tree	none	none	N	N
1778	Ash	standard tree	Woodpecker hole and top of trunk, 9m up. Decay cavity SW bough, 8m up	none	H	N
1779	Ash	Dying standard tree	none	none	N	N
1780	Ash	standard tree	none	none	N	N
1781	Ash	standard tree	2 decay/knot S side, 3m and 5m up.	none	L	N
1782	Ash	standard tree	Ivy cover and other minor decay holes	none	L	N
1783	Ash	standard tree	none	none	N	N
1784	Oak	standard tree	4 decay holes and larger cavities, N and SW sides, 5 to 6m up	none	H	N
1785	Woodland	Broad-leaved semi-natural woodland with Ash and Oak	Not surveyed outside site	none	H	Y
1786	Apple (*Malus domestica*)	standard tree	none	none	N	N
1787	Woodland	copse with 4 Ash trees and a few Hawthorn around a pond	Ash with a few minor decay holes	none	L	N
1788	Woodland	Broad-leaved semi-natural woodland with Ash and Oak	Not surveyed, retained/outside of site	none	H	Y

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1789	Woodland	Broad-leaved semi-natural woodland with Hawthorn, Ash and Oak	Not surveyed, retained/outside of site	none	H	Y
1790	Ash	Dying standard tree	Minor exposed hole in dead wood	none	L	N
1791	Ash	standard tree	none	none	N	N
1792	Ash	twin-stem tree	Small decay hole S side, 6m up	none	L	N
1793	Ash	twin-stem tree	Two large decay cavities	none	H	Y
1794	Oak	veteran	Split in bough SW side, 5m up	none	L	N
1795	Ash	standard tree	none	none	N	N
1796	Ash	twin-stem tree	Two wound holes S side, 4m up	none	H	N
1797	Ash	standard tree	Decay cavities on trunk, 4m up	none	H	N
1798	Ash	standard tree	Shallow cavity, S side, 3m up	none	L	N
1799	Ash	standard tree	3 cavities and holes, SW bough, 5 to 6m up	none	H	N
1800	Ash	standard tree	1 small knot hole S side, 4m up	none	M	N
1801	Ash	standard tree	2 minor wound holes, S side of trunk, 6m up	none	M	N
1802	Ash	standard tree	Large tear out cavity, E side, 5m up	none	H	N
1803	Sessile Oak (*Quercus petraea*)	standard tree	Butt rot cavity, hole near the ground, split boughs and 2 rot holes	none	H	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1804	Oak	standard tree	Vertical desiccation split, hole on SW bough at 6m up	none	M	N
1805	Ash	standard tree	Numerous woodpecker and decay holes	none	H	N
1806	Tree line and hedge	Multiple trees along hedge	Adjacent not survey in detail	none	M	N
1807	GPS marking end of 1806					
1808	Oak	standard tree	none	none	N	N
1809	Oak	standard tree	Small hole in pruning cut, SE side, 4m up	none	M	N
1810	Ash	twin-stem tree	Shallow hole NE side, 7m up	none	L	N
1811	Ash	standard tree	2 holes at top of trunk and large hollow in trunk	none	H	N
1812	Oak	standard tree	Hazard beam 5m up and split in broken bough	none	M	N
1813	Ash	multi-stem tree	none	none	N	N
1814	Ash	multi-stem tree	none	none	N	N
1815	Oak	standard tree	none	none	N	N
1816	Oak	standard tree	none	none	N	N
1817	Ash	multi-stem tree	none	none	N	N
1818	Ash	standard tree	none	none	N	N
1819	Tree line and hedge	5 Ash trees along hedge	none	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1820	GPS marking end of 1819 and 1821					
1821	Tree line and hedge	5 Ash trees along hedge	none	none	N	N
1822	Ash	standard tree	Shallow wound hole on NE side of trunk	none	L	N
1823	Woodland	Young Ash, Blackthorn scrub 80m^2	none	none	N	N
1824	Ash	standard tree	none	none	N	N
1825	Crack Willow	Pollarded standard	none	none	N	N
1826	Tree line and hedge	3 Ash and 1 Hawthorn in hedge	none	none	N	N
1827	Ash	standard tree	none	none	N	N
1828	Hawthorn	multi-stem tree	none	none	N	N
1829	Ash	multi-stem tree	none	none	N	N
1830	Ash	standard tree	none	none	N	N
1831	Hawthorn	multi-stem tree	none	none	N	N
1832	Ash	multi-stem tree	none	none	N	N
1833	Ash	dead	none	none	N	N
1834	Apple	standard tree	none	none	N	N
1835	Woodland	Broad-leaved plantation<50yrs with Ash, Poplar,	Not surveyed in detail	none	M	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
		Oak and Field Maple				
1836	Woodland	Mixed plantation with Oak, Ash, Larch, Norway Spruce and Scot's Pine	Not surveyed in detail	none	M	N
1837	Ash	standard tree	One minor decay/knot hole	none	L	N
1838	Oak	veteran	Decay hollows in N side, lifted bark, butt rot, overlapping callus fold	none	H	Y
1839	Woodland	Mixed plantation with Oak, Ash, Scot's Pine, Lawson's Cypress	Not surveyed in detail, but major hollow in a mature pine	none	M	N
1840	Ash	multi-stem tree	none	none	N	N
1841	Ash	multi-stem tree	none	none	N	N
1842	Oak	standard tree	Dead heartwood with numerous hollows and splits. Barn owl box also present so not recommended to climb	none	H	Y
1843	Ash	standard tree	none	none	N	N
1844	Ash	standard tree	none	none	N	N
1845	Oak	standard tree	none	none	N	N
1846	Ash	standard tree	none	none	N	N
1847	Oak	standard tree	none	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1848	Ash	standard tree	none	none	N	N
1849	Ash	standard tree	none	none	N	N
1850	Oak	standard tree	Minor butt rot but doesn't extend very high and no signs of bats	none	L	N
1851	Ash	Pollarded standard	none	none	N	N
1852	Ash	standard tree	Minor decay holes, open to weather	none	L	N
1853	Ash	standard tree	Small knot hole and tear out S bough, 5m up	none	L	N
1854	Ash	standard tree	Vertical split on SW side with hollow up to 2m, minor wound S side, 7m up	none	H	Y
1855	Apple	standard tree	Central hollow on N side, 1m up	none	H	Y
1856	Ash	standard tree	none	none	N	N
1857	Ash	standard tree	none	none	N	N
1858	Ash	standard tree	none	none	N	N
1859	Ash	standard tree	none	none	N	N
1860	Ash	standard tree	none	none	N	N
1861	Ash	standard tree	none	none	N	N
1862	Ash	multi-stem tree	none	none	N	N
1863	Field Maple	multi-stem tree	Small hazard beam and decay holes, one hole with limited suitability S side, 1.5m up.	none	L	N
1864	Woodland	Mixed plantation	Adjacent land, some limited roosting features, not surveyed	none	M	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1865	Woodland	Plantation with Ash dominant and hedge to W (20 years old)	Some limited roosting features, not surveyed in detail	none	M	N
1866	Woodland	Mixed plantation (20 years old)	Not surveyed in detail	none	M	N
1867	Trees	3 multi-stem Ash trees	none	none	N	N
1868	Ash	standard tree	decay hollow in trunk 6m up and a few small holes	none	H	N
1869	Ash	dead tree	none	none	N	N
1870	Mixed plantation	Pine, Cypress, Ash, Oak	Adjacent land, not surveyed in detail	none	H	N
1871	Crack Willow	standard tree	Small hole 6m up in S bough	none	L	N
1872	Hedge with trees	Hawthorn and young Ash, c.200m in length	none	none	N	N
1873	Ash	multi-stem tree	2 decay holes N side, 5m up	none	M	N
1874	Ash	twin-stem tree	none	none	N	N
1875	Field Maple	twin-stem tree	none	none	N	N
1876	Ash	standard tree	none	none	N	N
1877	Ash	standard tree	none	none	N	N
1878	Ash	standard tree	none	none	N	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1879	Ash	standard tree	none	none	N	N
1880	Ash	standard tree	none	none	N	N
1881	Field Maple	multi-stem tree	none	none	N	N
1882	Field Maple	multi-stem tree	none	none	N	N
1883	Field Maple	multi-stem tree	none	none	N	N
1884	Ash	standard tree	Minor hole on W bough, 6m up	none	L	N
1885	Woodland	1 large crack Willow coppice, 1 Ash, 3 Hawthorn	Minor splits in willow	none	L	N
1886	Oak	veteran	Gap in base, dead branch S side, 5m up and lifted bark	none	H	N
1887	Oak	standard tree	none	none	N	N
1888	Ash	standard tree	none	none	N	N
1889	Ash	tree over hanging road	5 wound hole mostly shallow, on the SW side	none	M	N
1890	Tree line	15 Ash trees, semi-mature	numerous holes, no access adjacent field	none	H	N
1891	End of tree line	10m north of the road				
1892	Ash	standard tree, N of the road	none	none	N	N
1893	Ash	standard tree	none	none	L	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1894	Ash	standard tree	none	none	L	N
1895	Horse Chesnut (*Aesculus hippocastanum*)	none	Ivy stems providing limited roosting suitability	none	L	N
1896	Tree line	8 mature horse chestnut/ash/Oak	Minor holes, Ivy covered	none	M	N
1897	GPS marking end of tree line					
1898	Tree line	12 semi mature/young ash trees	Various minor decay holes in trunks and main branches	none	M	N
1899	GPS marking end of tree line					
1900	Common Hawthorn	standard tree	none	none	N	N
1901	Oak	standard tree	Dead Ivy	none	N	N
1902	Ash	multi-stem veteran tree	A couple minor holes SE side, 6m up	none	L	N
1903	Woodland	Ash, Oak, Sycamore, Crack Willow, Wild Cherry (40 trees)	A few minor holes, adjacent land not surveyed in detail	none	L	N
1904	Crack Willow	Veteran pollard	Hole in central cavity, W side, 1m up	none	H	Y
1905	Oak	Veteran tree	2 large holes SE side at 10m up, 1 hole W side at 6m up, hazard beam S side at 6m up and butt rott	none	H	Y

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1906	Ash	Veteran tree along hedge	Large split vertical 2m up west side, 3 deep holes S facing. Associations - Jackdaw nest	none	H	Y
1907	Ash	standard tree	none	none	N	N
1908	Ash	standard tree	Small hole east side at 8m up	none	L	N
1909	Ash	standard tree	none	none	N	N
1910	Ash	standard tree on hedge (check location)	none	none	N	N
1911	Oak	standard tree	none	none	N	N
1912	Ash	standard tree	none	none	N	N
1913	Oak	standard tree	none	none	N	N
1914	Ash	standard tree	none	none	L	N
1915	Line of trees	3 mature and 1 young Dutch Elm (*Ulmus* x *hollandica*) and an Ash tree	1 hole on ash tree, E side, 6m up	none	L	N
1916	Ash	standard tree	none	none	N	N
1917	Crab Apple (*Malus sylvestris*)	standard tree	3 holes on south side, 2-3m up	none	M	N
1918	Sycamore	standard tree	hole on trunk extending upwards, 2m up on S side	none	M	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1919	Sycamore	standard tree	none	none	N	N
1920	Sycamore	standard tree	Minor shallow hole at 1.5m east and split on upper bough at 10m on NE bough (potentially too exposed for roosting)	none	L	N
1921	Hybrid black poplar (*Populus* x *canadensis*)	veteran tree	Large central cavity, numerous holes and lifted bark	none	H	N
1922	Sycamore	standard tree	none	none	N	N
1923	Hybrid black poplar (*Populus* x *canadensis*)	standard tree	none	none	N	N
1924	Oak	veteran tree	Large trunk cavity, open at top and quite exposed to rain	none	L	N
1925	Sycamore	none	none	none	N	N
1926	Tree line	13 Norway Maple (*Acer plantanoides*) east of track	none	none	N	N
1927	GPS marking end of tree line					
1928	Ash	standard tree	none	none	N	N
1929	Tree line	12 Sycamore (10m South of road)	none	none	N	N
1930	GPS marking end of tree line					

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1931	Aspen (*Populus tremuloides*)	standard tree	none	none	N	N
1932	Aspen	standard tree	none	none	N	N
1933	Ash	standard tree	none	none	N	N
1934	Ash	standard tree	none	none	N	N
1935	Ash	standard tree	none	none	N	N
1936	Tree line	15 trees 10m N of road	Adjacent land, not surveyed in detail	none	H	N
1937	End of tree line					
1938	Ash	standard tree	Minor gaps around pruning cut, 7m up on S side	none	L	N
1939	Tree line	12 trees, Ash/Oak/Poplar	Not surveyed in detail	none	H	N
1940	Oak	standard tree	Minor gaps around pruning cuts on E side	none	L	N
1941	Ash	standard tree	none	none	N	N
1942	Ash	standard tree	Thick Ivy covered	none	L	N
1943	Ash	standard tree	none	none	N	N
1944	Ash	standard tree	One hole south side at 5m up	none	L	N
1945	Ash	standard tree	One hole on south bough at 7m up	none	L	N
1946	Ash	standard tree	Two holes W side, 5-6m up	none	M	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1947	Tree line (hedge with young trees to west)	3 Ash tree north of road	none	none	N	N
1948	Ash	standard tree, north of road	none	none	N	N
1949	Trees in hedge	4 Ash trees north of road (+ 1 to east and 2 to west)	none	none	N	N
1950	GPS marking end of tree line	Hedge continues to the east				
1951	Ash	standard tree	none	none	N	N
1952	Woodland	Hawthorn, Ash and Willow	Not accessed	none	H	N
1953	Woodland	Copse on south of bend, two mature Ash trees recently felled to west of track beside road	Not surveyed in detail	none	H	N
1954	Woodland	North of road	Not surveyed in detail	none	H	N
1955	Tree line	5 Horse Chestnut trees (*Aesculus hippocastanum*) south of road in hedge	Ivy covered, thick stems suitable for roosting and lifted bark, no obvious cavities but dense Ivy obscures further assessment	none	M	N

Feature Ref.	Feature Type/tree species	Description	Potential Roost Feature Description	Bat signs	Roost Suitability	Suitable for hibernation?
1956	Tree line	Four Horse Chestnut south of the road	Not surveyed as adjacent to site	none	H	N
1957	Tree line	Mature Ash, 15 trees and hedge north of road	Not surveyed as adjacent to site	none	H	N
1958	Sessile Oak	veteran tree	Large sections of deadwood. Numerous wounds cavities.	none	H	Y

Table 15. Daytime Bat Walkover

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D1	Field Maple	-	FAR
D2	Sycamore	3 single stemmed sycamore trees. No features present	N
D3	Field Maple	No features present	N
D4	Field Maple	Tree in scrubland, with cavity in trunk	PRF
D5	Sycamore	No features present	N
D6	Multiple trees within scrub habitat	Multiple trees that require further assessment	FAR

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D7	Field Maple and Ash trees within scrub habitat	Multiple trees that require further assessment	FAR
D8	Ash	No features present	N
D9	Ash	No features present	N
D10	Ash	No features present	N
D11	Ash	Ash tree in hedgerow with possible upward facing hole on trunk, further assessment required	FAR
D12	Oak	Oak in hedgerow with lifted bark	PRF
D12a	Broadleaved woodland	Splits in trees with lifted barks and Ivy cover	PRF
D13	Oak	No features present	N
D13a	Ash	Ash with Ivy cover	PRF
D14	Ash	Ash with Ivy cover	PRF
D15	Ash	Line of 9 ash trees with Ivy cover and small holes	PRF
D15a	Ash	Two ash trees with Ivy cover	PRF
D16	Ash	Five ash trees in scrub, that require further assessment	FAR
D17	Ash	Six ash trees in hedgerow with concealed trunks that will require further	FAR

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
		assessment. No obvious features above the hedgerow	
D18	Field Maple	No features present	N
D19	Ash	Ash with cavity in the trunk	PRF
D20	Oak	No features present	N
D21	Ash	Ash with cavity in stem	PRF
D22	Oak	No features present	N
D23	Oak	No features present	N
D24	Oak	Oak which will require further assessment	FAR
D25	Field Maple	Field Maple with Ivy cover	PRF
D26	Oak	Oak with Ivy cover and loose bark	PRF
D27	Ash	Ash with Ivy cover on trunk and woodpecker holes	PRF
D28	Ash	Ash with a couple of small holes, however depth requires further assessment for suitability	FAR
D29	Willow sp.	Willow with multiple features, including large central cavity in trunk, lifted bark and splits within boughs	PRF
D30	Ash	No features present	N

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D31	Ash	No features present	N
D31a	Ash	Three ash trees with no features	N
D32	Ash	Ash with lifted bark	PRF
D33	Ash	No features present	N
D34	Ash	Ash with knot hole and small cavity in trunk	PRF
D35	Ash	No features present	N
D36	Ash	Ash with cavity in trunk	PRF
D37	Ash	No features present	N
D38	Ash	No features present	N
D39	Oak	No features present	N
D40	Oak	Tall oak tree, unable to fully assess, further assessment required	FAR
D41	Oak	Oak with splits in branches	PRF
D42	Oak	Oak with hazard beams	PRF
D43	Oak	Oak with bough featuring a split	PRF
D44	Oak	Oak with split in bough and possible holes, higher up the tree	PRF
D45	Oak	No features present	N

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D46	Oak	Oak with woodpecker holes and splits in branches	PRF
D47	Ash	No features present	N
D48	Ash	Ash with hazard beam	PRF
D49	Ash	Ash with knot hole and lifted bark	PRF
D50	Ash	Ash with split in bough	PRF
D51	Ash	No features present	N
D52	Horse chestnut	Horse chestnut with lifted bark on the trunk	PRF
D53	Horse chestnut	Horse chestnut with minor lifted bark that need further assessment	FAR
D54	Ash	Ash with knot hole that will require further assessment for depth	FAR
D55	Ash	Ash with Ivy cover and knot hole	PRF
D56	Ash	Ash with holes created from fallen / pruning	PRF
D57	Unknown	Tree at entrance of driveway, will require further assessment	FAR
D58	Ash	Ash with small hole on branch which requires further assessment for depth	FAR
D59	Sycamore	No features present	N

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D60	Ash	No features present	N
D61	Ash	No features present	N
D62	Ash	Ash with hazard beam	PRF
D63	Ash	No features present	N
D64	Small leaved Lime	Small leaved Lime with knot hole, inside gardens	PRF
D65	Ash	Ash with small tear out	PRF
D66	Horse chestnut	Horse chestnut with Ivy cover and knot holes in the trunk	PRF
D67	Horse chestnut	Horse chestnut with hazard beam and trunk indentation	PRF
D68	Ash	Ash with Ivy cover	PRF
D69	Ash	Ash with cavity in the trunk	PRF
D70	Sycamore	No features present	N
D71	Small leaved Lime	Small leaved Lime with cavity in the trunk	PRF
D72	Willow sp.	Willow with hazard beam and lifted bark	PRF
D73	Ash	No features present	N
D74	Ash	Ash with hole in canker	PRF
D75	Ash	Ash with Ivy cover	PRF

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D76	Ash	Ash with cavity in the trunk	PRF
D77	Ash	Ash with split bough	PRF
D78	Ash	Ash, will require further assessment due to cavity in the trunk	FAR
D79	Ash	Ash with tear out, knot hole and bough cavity	PRF
D80	Ash	Ash with woodpecker hole on cut bough	PRF
D81	Ash	Ash with Ivy cover	PRF
D82	Ash	No features present	N
D83	Field Maple	Ash with cavity in trunk	PRF
D84	Ash	No features present	N
D85	Ash	No features present	N
D86	Field Maple	No features present	N
D87	Ash	Ash with cavity on high south bough that will require further assessment	FAR
D88	Ash	Ash with tear out in the trunk	PRF
D89	Ash	Ash which will require further assessment due to potential holes on the south side of the trunk where there was no access	FAR
D90	Oak	No features present	N

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D91	Ash	No features present	N
D92	Ash	Four ash trees in hedgerow with features, including woodpecker holes, knot holes and small cavities	PRF
D93	Small leaved Lime	No features present	N
D94	Oak	No features present	N
D95	Sycamore	No features present	N
D96	Ash	Ash with minor lifted bark around pruning cut which will require further assessment	FAR
D97	Sycamore	Sycamore with potential roost feature in hazard beam with require further assessment	FAR
D98	Sycamore	No features present	N
D99	Ash	No features present	N
D100	Ash	Ash with cavities and lifted bark	PRF
D101	Sycamore	No features present	N
D102	Ash	Ash with small hole on southern branch	PRF
D103	Ash	No features present	N
D104	Ash	Ash with woodpecker hole and shallow cavities in trunk	PRF

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D105	Swedish White Beam	No features present	N
D106	Ash	Ash with knot holes and lifted bark	PRF
D107	Sycamore	No features present	N
D108	Ash	Ash with potential high features on south side, requiring further assessment	FAR
D109	Ash	No features present	N
D110	Field Maple	No features present	N
D111	Field Maple	Further assessment required for depth of hazard beam	FAR
D112	Ash	Further assessment of shallow cavity in trunk	FAR
D113	Ash	No features present	N
D114	Ash	Ash with cavity in bough, tear out underneath pruning cut and lifted bark	PRF
D115	Ash	No features present	N
D116	Ash	Three ash trees with no features present	N
D117	Ash	No features present	N
D118	Yellow Cypress	No features present	N
D119	Ash	Ash with small cavity in trunk	PRF

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D120	Ash	Ash with large cavity in trunk and hazard beam	PRF
D121	Ash	Ash with Ivy cover	PRF
D122	Ash	Ash with Ivy cover	PRF
D123	Ash	Ash with cavities in boughs	PRF
D124	Ash	Ash with knot holes and cavity in trunk	PRF
D125	Ash	Ash with hole from missing branch and split bark	PRF
D126	Ash	Ash with Ivy cover, split in the trunk, gaps around pruning cuts and cavity on upper bough	PRF
D127	Ash	Ash with Ivy cover and knot hole	PRF
D128	Ash	Ash with large central cavity in the trunk and Ivy cover	PRF
D129	Sycamore	No features present	N
D130	Field Maple	Minor lifted bark which will require further assessment	FAR
D131	Ash	Ash with lifted bark and small cavities on trunk	PRF
D132	Ash	No features present	N
D133	Ash	Ash with cavity in north bough	PRF

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D137	Broadleaved woodland	Further assessment required, some trees supporting potential roost features	FAR
D138	Ash	Ash with knot holes	PRF
D162	Ash	Ash with dead Ivy cover and lifted bark	PRF
D163	Ash	No features present	N
D164	Ash	No features present	N
D165	Ash	Multi-stem Ash with lifted bark and cavity around rotting branch	PRF
D166	Ash	Ash with two knot holes on southern side of tree and a cavity from pruning cut on northern side	PRF
D167	Ash	Ash with cavity on southern side of trunk and three knot holes higher in tree	PRF
D168	Ash	No features present	N
D169	Ash	Multi-stem ash with tear out on western side	PRF
D170	Ash	No features present	N
D171	Ash	Ash with knot hole on eastern side, approximately 7m up	PRF
D174	Broadleaved woodland	Further assessment required	FAR
D185	Ash	Further assessment required	FAR

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D186	Sycamore	Further assessment required	FAR
D187	Ash	Three ash trees which will require further assessment due to flooding at the time of survey	FAR
D190	Field Maple	Field Maple with Ivy cover	PRF
D191	Field Maple	Field Maple with Ivy cover	PRF
D195	Ash	Ash with Ivy cover	PRF
D196	Ash	No features present	N
D197	Ash	Multi-stem ash with a possible hazard beam on northern side which will require further assessment	FAR
D198	Ash	Line of five ash trees, all with Ivy cover	PRF
D199	Ash	No features present	N
D200	Ash	Ash with lifted bark on south side of the trunk and small hole on southern bough and cavity in pruning cut on eastern side	PRF
D201	Ash	Ash with Ivy cover	PRF
D202	Ash	No features present	N
D207	Ash	Line of ash trees which will require further assessment as it wasn’t possible to fully assess	FAR

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D208	Field Maple	Field Maple which will require further assessment as it wasn't possible to fully assess	FAR
D209	Ash	Multi-stem Ash which will require further assessment as it wasn't possible to fully assess	FAR
D210	Ash	Ash which will require further assessment as it wasn't possible to fully assess	FAR
D211	Field Maple	Field Maple which will require further assessment as it wasn't possible to fully assess	FAR
D212	Ash	Ash which will require further assessment as it wasn't possible to fully assess	FAR
D213	Ash	Line of ash trees which will require further assessment as it wasn't possible to fully assess	FAR
D214	Ash	Ash which will require further assessment as it wasn't possible to fully assess	FAR
D234	Crab apple	No features present	N

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D235	Ash	Ash with lifted bark on western side of trunk, decay holes in south western side of trunk and in southern bough	PRF
D236	Field Maple	No features present	N
D237	Field Maple	Field Maple with butt rot	PRF
D249	Ash	Multi-stem ash with hazard beam at the base of the trunk	PRF
D250	Hawthorn	No features present	N
D251	Field Maple	Three multi-stem trees with lifted bar and small cavities	PRF
D252	Field Maple and ash	Line of trees which will require further assessment	FAR
D253	Ash	Multi-stem ash with holes on northern side of trunk	PRF
D254	Ash	Multi-stem ash with cavity on the trunk and a barn owl box of south side	PRF
D255	Ash	No features present	N
D256	Hawthorn	No features present	N
D257	Field Maple	Field Maple with hazard beam	PRF
D258	Hawthorn	No features present	N

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D259	Field Maple	Field Maple which will require further assessment as unable to fully assess	FAR
D260	Field Maple	Multi stem field Maple with cavity on eastern side of trunk	PRF
D261	Field Maple	Field Maple with lifted bark at the base of the trunk	PRF
D262	Field Maple	Field Maple which will require further assessment as it wasn't possible to fully assess	FAR
D263	Oak	Tall mature oak tree will require further assessment	FAR
D264	Hawthorn	Hawthorn which will require further assessment	FAR
D265	Hawthorn	Hawthorn which will require further assessment	FAR
D266	Hawthorn	Four hawthorn trees which will required further assessment	FAR
D268a	Ash	No features present	N
D269	Ash	No features present	N
D270	Ash	Ash with woodpecker hole	PRF
D271	Oak	No features present	N
D272	Field Maple	No features present	N

Feature Ref.	Feature type / Tree species	Description	Categorisation: (No PRFs or highly unlikely to be any (N), Further Assessment Required (FAR) or Potential Roost Feature (PRF)
D273	Field Maple	Field Maple with knot hole and lifted bark	PRF
D-bld1	Small brick outbuilding	Some features, minor gaps/crevices	Low
D-bld2	Old brick wall	Gaps within bricks	Low

Key

Beaufort wind force scale: 0 = No wind, 1 = Light air *smoke drifts*, 2 = Light Breeze *leaves rustle*, 3 = Gentle Breeze *small twigs move*, 4 = Mod Breeze *small branches move,* 5 = Fresh Breeze *small trees sway*, 6 = Strong Breeze *large branches move*, 7 = Mod Gale *whole trees in motion*
Rain Scale: 0-none, 1-drizzle 2-shower 3-rain 4-downpour 5-flood.
Oktas cloud scale: 0 = complete absence of cloud (fine), 1 = cloud amount of 1 eighth or less, but not zero (fine), 2 = 2/8 of sky covered (fine), 3 = 3/8 of sky covered (partly cloudy), 4 = 4/8 of sky covered (partly cloudy), 5 = 5/8 of sky covered (partly cloudy), 6 = 6/8 of sky covered (cloudy), 7 = 7/8 of sky covered (cloudy), 8 = sky completely covered (overcast**).**

Table 16. Bat Activity Survey Results 2022 and 2023

Spring

Surveyor:	MP, RT	**Temp C:**	10
Site:	**Transect A**	**Wind:**	2 to 3
Date:	23/05/2022	**Rain:**	0
Sunset:	21:07	**Cloud:**	8
Start/end:	21:00 to 23:45		
Figure ref.	**Timestamp**	**Species**	
1	22:03	*Pipistrellus pygmaeus*	
2	22:09	*Pipistrellus pipistrellus*	
3	22:10	*Pipistrellus pipistrellus*	
4	22:10	*Pipistrellus pipistrellus*	
5	22:10	*Pipistrellus pipistrellus*	
6	22:11	*Pipistrellus pipistrellus*	
7	22:11	*Pipistrellus pipistrellus*	
8	22:11	*Pipistrellus pipistrellus*	
9	22:11	*Pipistrellus pipistrellus*	
10	22:12	*Pipistrellus pipistrellus*	
11	22:12	*Pipistrellus pipistrellus*	
12	22:12	*Pipistrellus pipistrellus*	
13	22:13	*Pipistrellus pipistrellus*	
14	22:13	*Pipistrellus pipistrellus*	
15	22:13	*Pipistrellus pipistrellus*	
16	22:13	*Pipistrellus pipistrellus*	
17	22:28	*Pipistrellus pipistrellus*	

18	22:42	*Pipistrellus pipistrellus*
19	22:43	*Pipistrellus pipistrellus*
20	22:47	*Pipistrellus pipistrellus*
21	22:47	*Pipistrellus pipistrellus*
22	23:02	*Pipistrellus pipistrellus*
23	23:02	*Pipistrellus pipistrellus*
24	23:02	*Pipistrellus pipistrellus*
25	23:03	*Pipistrellus pipistrellus*
26	23:03	*Pipistrellus pipistrellus*
27	23:03	*Pipistrellus pipistrellus*
28	23:20	*Pipistrellus pipistrellus*
29	23:20	*Pipistrellus pipistrellus*
30	23:20	*Pipistrellus pipistrellus*
31	23:20	*Pipistrellus pipistrellus*
32	23:20	*Pipistrellus pipistrellus*
33	23:20	*Pipistrellus pipistrellus*
34	23:21	*Pipistrellus pipistrellus*
35	23:21	*Pipistrellus pipistrellus*
36	23:21	*Pipistrellus pipistrellus*
37	23:21	*Pipistrellus pipistrellus*
38	23:21	*Pipistrellus pipistrellus*
39	23:21	*Pipistrellus pipistrellus*
40	23:21	*Pipistrellus pipistrellus*
41	23:22	*Pipistrellus pipistrellus*
42	23:22	*Pipistrellus pipistrellus*
43	23:22	*Pipistrellus pipistrellus*
44	23:22	*Pipistrellus pipistrellus*
45	23:22	*Pipistrellus pipistrellus*
46	23:22	*Pipistrellus pipistrellus*
47	23:22	*Pipistrellus pipistrellus*
48	23:23	*Pipistrellus pipistrellus*
49	23:23	*Pipistrellus pipistrellus*
50	23:23	*Pipistrellus pipistrellus*
51	23:23	*Pipistrellus pipistrellus*
52	23:23	*Pipistrellus pipistrellus*
53	23:24	*Pipistrellus pipistrellus*
54	23:24	*Pipistrellus pipistrellus*
55	23:24	*Pipistrellus pipistrellus*
56	23:25	*Pipistrellus pipistrellus*
57	23:25	*Myotis species*

58	23:25	*Myotis species*
59	23:27	*Pipistrellus pipistrellus*
60	23:27	*Pipistrellus pipistrellus*
61	23:27	*Pipistrellus pipistrellus*
62	23:27	*Pipistrellus pipistrellus*
63	23:27	*Pipistrellus pipistrellus*
64	23:27	*Pipistrellus pipistrellus*
65	23:28	*Pipistrellus pipistrellus*
66	23:28	*Pipistrellus pipistrellus*
67	23:28	*Pipistrellus pipistrellus*
68	23:29	*Myotis nattereri*
69	23:29	*Myotis species*
70	23:31	*Myotis species*
71	23:31	*Myotis species*
72	23:31	*Myotis species*
73	23:31	*Pipistrellus pipistrellus*
74	23:31	*Pipistrellus pipistrellus*
75	23:32	*Pipistrellus pipistrellus*
76	23:32	*Pipistrellus pipistrellus*
77	23:32	*Pipistrellus pipistrellus*
78	23:32	*Pipistrellus pipistrellus*

Surveyor:	TC, MR	**Temp C:**	13 to 12
Site:	**Transect B**	**Wind:**	2
Date:	25/05/2022	**Rain:**	0
Sunset:	21:09	**Cloud:**	2
Start/end:	21:09 to 23:10		

Figure ref.	**Timestamp**	**Species**
1	22:00	*Pipistrellus pipistrellus*
2	22:31	*Pipistrellus pipistrellus*
3	22:31	*Pipistrellus pipistrellus*
4	22:31	*Pipistrellus pipistrellus*
5	22:31	*Pipistrellus pipistrellus*
6	22:31	*Pipistrellus pipistrellus*
7	22:32	*Pipistrellus pipistrellus*
8	22:32	*Pipistrellus pipistrellus*
9	22:32	*Pipistrellus pipistrellus*
10	22:33	*Pipistrellus pipistrellus*
11	22:33	*Pipistrellus pipistrellus*
12	22:33	*Pipistrellus pipistrellus*

13	22:33	*Pipistrellus pipistrellus*
14	22:34	*Pipistrellus pipistrellus*
15	22:34	*Pipistrellus pipistrellus*
16	22:34	*Pipistrellus pipistrellus*
17	22:38	*Pipistrellus pipistrellus*
18	22:38	*Pipistrellus pipistrellus*
19	22:38	*Pipistrellus pipistrellus*
20	22:44	*Pipistrellus pipistrellus*
21	22:52	*Pipistrellus pipistrellus*
22	22:55	*Pipistrellus pipistrellus*
23	22:55	*Pipistrellus pipistrellus*
24	22:56	*Pipistrellus pipistrellus*
25	22:56	*Pipistrellus pipistrellus*
26	22:57	*Pipistrellus pipistrellus*
27	22:57	*Pipistrellus pipistrellus*
28	22:59	*Pipistrellus pipistrellus*
29	22:59	*Pipistrellus pipistrellus*
30	23:00	*Pipistrellus pipistrellus*
31	23:05	*Pipistrellus pipistrellus*

Surveyor:	MP, RT	**Temp C:**	13 to 11
Site:	**Transect C**	**Wind:**	3 to 2
Date:	25/05/2022	**Rain:**	0
Sunset:	21:09	**Cloud:**	3 to 0
Start/end:	21:09 to 00:05		
Figure ref.	**Timestamp**	**Species**	
1	22:12	*Pipistrellus pygmaeus*	
2	22:12	*Pipistrellus pygmaeus*	
3	22:12	*Pipistrellus pygmaeus*	
4	22:12	*Pipistrellus pygmaeus*	
5	22:13	*Pipistrellus pygmaeus*	
6	22:13	*Pipistrellus pygmaeus*	
7	22:13	*Pipistrellus pygmaeus*	
8	22:13	*Pipistrellus pygmaeus*	
9	22:13	*Pipistrellus pipistrellus*	
10	22:13	*Pipistrellus pygmaeus*	
11	22:13	*Pipistrellus pygmaeus*	
12	22:15	*Pipistrellus pygmaeus*	
13	22:16	*Pipistrellus pipistrellus*	
14	22:16	*Pipistrellus pipistrellus*	

15	22:21	*Pipistrellus pipistrellus*
16	22:22	*Pipistrellus pygmaeus*
17	22:25	*Pipistrellus pipistrellus*
18	22:26	*Pipistrellus pygmaeus*
19	22:26	*Pipistrellus pygmaeus*
20	22:26	*Plecotus auritus*
21	22:26	*Pipistrellus pygmaeus*
22	22:26	*Plecotus auritus*
23	22:26	*Pipistrellus pipistrellus*
24	22:27	*Pipistrellus pygmaeus*
25	22:32	*Pipistrellus pipistrellus*
26	22:33	*Pipistrellus pygmaeus*
27	22:33	*Pipistrellus pygmaeus*
28	22:47	*Pipistrellus pipistrellus*
29	22:47	*Pipistrellus pipistrellus*
30	22:47	*Pipistrellus pygmaeus*
31	22:47	*Pipistrellus pygmaeus*
32	22:47	*Pipistrellus pygmaeus*
33	22:48	*Pipistrellus pygmaeus*
34	22:48	*Pipistrellus pygmaeus*
35	22:48	*Pipistrellus pipistrellus*
36	22:48	*Pipistrellus pygmaeus*
37	22:49	*Pipistrellus pygmaeus*
38	22:49	*Pipistrellus pygmaeus*
39	22:51	*Pipistrellus pipistrellus*
40	22:52	*Pipistrellus pipistrellus*
41	22:54	*Pipistrellus pipistrellus*
42	22:54	*Pipistrellus pipistrellus*
43	23:01	*Pipistrellus pipistrellus*
44	23:13	*Pipistrellus pygmaeus*
45	23:29	*Pipistrellus pygmaeus*
46	23:33	*Pipistrellus pipistrellus*
47	23:33	*Pipistrellus pipistrellus*
48	00:00	*Pipistrellus species*
49	00:00	*Pipistrellus pipistrellus*
50	00:02	*Pipistrellus pygmaeus*

Surveyor:	**MP/MC**	**Temp C:**	**11 to 8**
Site:	**Transect E**	**Wind:**	0
Date:	19/04/2023	**Rain:**	0
Sunset:	20:09	**Cloud:**	0

Start/end:	20:05 to 22:15	
Figure ref.	**Timestamp**	**Species**
1	20:46	*Pipistrellus pygmaeus*
2	20:46	*Pipistrellus pygmaeus*
3	20:46	*Pipistrellus pygmaeus*
4	20:47	*Pipistrellus pygmaeus*
5	20:47	*Pipistrellus pygmaeus*
6	20:47	*Pipistrellus pygmaeus*
7	20:47	*Pipistrellus pygmaeus*
8	20:55	*Nyctalus noctula*
9	20:55	*Pipistrellus pygmaeus*
10	20:56	*Pipistrellus pygmaeus*
11	21:31	*Nyctalus noctula*
12	21:31	*Nyctalus noctula*
13	21:31	*Nyctalus noctula*
14	21:46	*Pipistrellus pygmaeus*

Summer

Surveyor:	MP/DP	**Temp C:**	19
Site:	**Transect A**	**Wind:**	2
Date:	20/07/2022	**Rain:**	0
Sunset:	21:17	**Cloud:**	8
Start/end:	21:10 to 22:19		
Recording	**Timestamp**	**Species**	
1	21:33	*Pipistrellus pygmaeus*	
2	21:33	*Pipistrellus pygmaeus*	
3	21:33	*Pipistrellus pygmaeus*	
4	21:33	*Pipistrellus pygmaeus*	
5	21:33	*Pipistrellus pygmaeus*	
6	21:33	*Pipistrellus pygmaeus*	
7	21:33	*Pipistrellus pygmaeus*	
8	21:51	*Pipistrellus pipistrellus*	
9	21:52	*Pipistrellus pipistrellus*	
10	22:38	*Pipistrellus pipistrellus*	
11	22:39	*Pipistrellus pipistrellus*	
12	23:07	*Pipistrellus pipistrellus*	
13	23:08	*Pipistrellus pipistrellus*	
14	23:08	*Pipistrellus pipistrellus*	

15	23:09	*Pipistrellus pipistrellus*
16	23:09	*Pipistrellus pipistrellus*

Surveyor:	TC/LS	**Temp C:**	15 to 14
Site:	**Transect B**	**Wind:**	2
Date:	25/07/2022	**Rain:**	0
Sunset:	21:10	**Cloud:**	8
Start/end:	21:10 to 23:59		

Figure ref.	**Timestamp**	**Species**
1	22:16	*Pipistrellus pipistrellus*
2	22:19	*Pipistrellus pipistrellus*
3	22:19	*Pipistrellus pipistrellus*
4	22:20	*Pipistrellus pipistrellus*
5	22:45	*Pipistrellus pipistrellus*
6	22:47	*Pipistrellus pipistrellus*
7	22:52	*Pipistrellus pipistrellus*
8	22:54	*Pipistrellus pipistrellus*
9	22:54	*Pipistrellus pipistrellus*
10	22:54	*Pipistrellus pipistrellus*
11	22:56	*Pipistrellus pipistrellus*
12	23:01	*Pipistrellus pipistrellus*
13	23:15	*Myotis species*
14	23:21	*Pipistrellus pipistrellus*
15	23:49	*Pipistrellus pipistrellus*
16	23:49	*Pipistrellus pipistrellus*
17	23:49	*Pipistrellus pipistrellus*
18	23:49	*Pipistrellus pipistrellus*
19	23:50	*Pipistrellus pipistrellus*
20	23:50	*Pipistrellus pipistrellus*
21	23:50	*Pipistrellus pipistrellus*
22	23:51	*Pipistrellus pipistrellus*
23	23:57	*Pipistrellus pipistrellus*

Surveyor:	DP/MC	**Temp C:**	17 to 16
Site:	**Transect C**	**Wind:**	3
Date:	21/07/2022	**Rain:**	0
Sunset:	21:16	**Cloud:**	8
Start/end:	21:15 to 00:20		

Figure ref.	**Timestamp**	**Species**
1	21:48	*Nyctalus noctula*
2	22:05	*Pipistrellus species*
3	22:14	*Pipistrellus pygmaeus*

4	22:22	*Pipistrellus pipistrellus*
5	22:22	*Pipistrellus pipistrellus*
6	22:28	*Pipistrellus pygmaeus*
7	22:30	*Pipistrellus pygmaeus*
8	22:30	*Pipistrellus pygmaeus*
9	22:30	*Pipistrellus pygmaeus*
10	22:31	*Pipistrellus pygmaeus*
11	22:31	*Pipistrellus pygmaeus*
12	22:31	*Pipistrellus pipistrellus*
13	22:31	*Pipistrellus pygmaeus*
14	22:31	*Pipistrellus pygmaeus*
15	22:31	*Pipistrellus pipistrellus*
16	22:31	*Pipistrellus pipistrellus*
17	22:32	*Myotis daubentonii*
18	22:32	*Myotis species*
19	22:32	*Myotis species*
20	22:32	*Myotis species*
21	22:32	*Myotis daubentonii*
22	22:32	*Pipistrellus pygmaeus*
23	22:32	*Pipistrellus pygmaeus*
24	22:32	*Pipistrellus pygmaeus*
25	22:33	*Pipistrellus pygmaeus*
26	22:33	*Myotis species*
27	22:33	*Myotis species*
28	22:33	*Pipistrellus pipistrellus*
29	22:33	*Pipistrellus pipistrellus*
30	22:34	*Pipistrellus pipistrellus*
31	22:34	*Myotis species*
32	22:34	*Pipistrellus pipistrellus*
33	22:34	*Pipistrellus species*
34	22:34	*Pipistrellus pipistrellus*
35	22:35	*Pipistrellus pipistrellus*
36	22:35	*Pipistrellus pygmaeus*
37	22:35	*Pipistrellus pygmaeus*
38	22:35	*Pipistrellus pygmaeus*
39	22:35	*Pipistrellus pygmaeus*
40	22:36	*Pipistrellus species*
41	22:43	*Pipistrellus pygmaeus*
42	22:44	*Pipistrellus pygmaeus*
43	22:47	*Pipistrellus pipistrellus*

44	22:47	*Pipistrellus pipistrellus*
45	22:47	*Pipistrellus pygmaeus*
46	22:50	*Pipistrellus pygmaeus*
47	22:50	*Pipistrellus pipistrellus*
48	22:51	*Pipistrellus pygmaeus*
49	22:51	*Pipistrellus pygmaeus*
50	22:51	*Pipistrellus pygmaeus*
51	22:51	*Pipistrellus pipistrellus*
52	22:52	*Pipistrellus pipistrellus*
53	22:52	*Pipistrellus pygmaeus*
54	22:52	*Pipistrellus pygmaeus*
55	22:52	*Pipistrellus pipistrellus*
56	22:52	*Pipistrellus pygmaeus*
57	22:52	*Pipistrellus pygmaeus*
58	22:52	*Pipistrellus species*
59	22:52	*Pipistrellus pipistrellus*
60	22:52	*Pipistrellus pygmaeus*
61	22:52	*Pipistrellus pygmaeus*
62	22:53	*Pipistrellus pygmaeus*
63	22:53	*Pipistrellus pygmaeus*
64	22:53	*Pipistrellus pygmaeus*
65	22:54	*Pipistrellus pygmaeus*
66	22:54	*Pipistrellus pipistrellus*
67	22:55	*Pipistrellus species*
68	22:55	*Pipistrellus pygmaeus*
69	22:56	*Pipistrellus pygmaeus*
70	23:00	*Pipistrellus pipistrellus*
71	23:00	*Pipistrellus pipistrellus*
72	23:02	*Pipistrellus pipistrellus*
73	23:02	*Pipistrellus pipistrellus*
74	23:03	*Pipistrellus pygmaeus*
75	23:03	*Pipistrellus pygmaeus*
76	23:03	*Pipistrellus pipistrellus*
77	23:05	*Myotis species*
78	23:08	*Pipistrellus pipistrellus*
79	23:08	*Pipistrellus pipistrellus*
80	23:09	*Pipistrellus pipistrellus*
81	23:09	*Pipistrellus pipistrellus*
82	23:12	*Pipistrellus pipistrellus*
83	23:13	*Pipistrellus pygmaeus*

84	23:13	*Pipistrellus pygmaeus*
85	23:13	*Pipistrellus pipistrellus*
86	23:13	*Pipistrellus species*
87	23:15	*Pipistrellus pygmaeus*
88	23:17	*Pipistrellus pipistrellus*
89	23:22	*Nyctalus noctula*
90	23:27	*Pipistrellus species*
91	23:29	*Pipistrellus pipistrellus*
92	23:30	*Pipistrellus pipistrellus*
93	23:30	*Pipistrellus pipistrellus*
94	23:35	*Pipistrellus pipistrellus*
95	23:45	*Pipistrellus pygmaeus*
96	23:53	*Pipistrellus pipistrellus*
97	00:07	*Pipistrellus nathusii*
98	00:11	*Pipistrellus pygmaeus*
99	00:15	*Pipistrellus pygmaeus*
100	00:17	*Pipistrellus pipistrellus*

Surveyor:	**MP/MC**	**Temp C:**	**12 to 11**
Site:	**Transect E**	**Wind:**	2
Date:	07/06/2023	**Rain:**	0
Sunset:	21:25	**Cloud:**	8
Start/end:	21:20 to 23:30		
Figure ref.	**Timestamp**	**Species**	
1	22:09	*Pipistrellus pipistrellus*	
2	22:31	*Myotis species*	
3	22:38	*Pipistrellus pipistrellus*	
4	22:38	*Pipistrellus pipistrellus*	
5	22:38	*Pipistrellus pipistrellus*	
6	22:39	*Pipistrellus pipistrellus*	
7	22:42	*Pipistrellus pipistrellus*	
8	22:57	*Pipistrellus pipistrellus*	
9	22:58	*Pipistrellus pipistrellus*	
10	22:59	*Pipistrellus pipistrellus*	
11	23:00	*Pipistrellus pipistrellus*	
12	23:04	*Pipistrellus pipistrellus*	
13	23:16	*Pipistrellus pipistrellus*	
14	23:21	*Pipistrellus pipistrellus*	
15	23:21	*Pipistrellus pipistrellus*	

16	23:21	*Pipistrellus pipistrellus*
17	23:21	*Pipistrellus pipistrellus*

Autumn

Surveyor:	MP/MC	**Temp C:**	10 to 9
Site:	**Transect A**	**Wind:**	3
Date:	26/09/2022	**Rain:**	0
Sunset:	18:51	**Cloud:**	3
Start/end:	18:51 to 21:05		

Figure ref.	**Timestamp**	**Species**
1	20:02	*Myotis nattereri*
2	20:06	*Nyctalus noctula*
3	20:06	*Nyctalus noctula*
4	20:06	*Nyctalus noctula*
5	20:06	*Nyctalus noctula*
6	20:16	*Nyctalus species*
7	20:16	*Nyctalus noctula*
8	20:18	*Nyctalus species*
9	20:18	*Nyctalus noctula*
10	20:20	*Pipistrellus pygmaeus*
11	20:22	*Nyctalus noctula*
12	20:22	*Nyctalus noctula*
13	20:22	*Nyctalus noctula*
14	20:23	*Nyctalus noctula*
15	20:28	*Pipistrellus pygmaeus*
16	20:29	*Pipistrellus pygmaeus*
17	20:38	*Pipistrellus pipistrellus*
18	20:38	*Pipistrellus pipistrellus*
19	20:38	*Pipistrellus pipistrellus*
20	20:49	*Pipistrellus pipistrellus*

Surveyor:	TC/KW	**Temp C:**	10 to 9
Site:	**Transect B**	**Wind:**	3
Date:	26/09/2022	**Rain:**	0
Sunset:	18:51	**Cloud:**	3
Start/end:	18:51 to 21:32		

Figure ref.	**Timestamp**	**Species**
1	19:32	*Nyctalus noctula*

Surveyor:	MP/MC	**Temp C:**	11 to 10
Site:	**Transect C**	**Wind:**	2
Date:	27/09/2022	**Rain:**	0
Sunset:	18:48	**Cloud:**	3
Start/end:	18:45 to 21:00		
Figure ref.	**Timestamp**	**Species**	
1	19:27	*Pipistrellus pygmaeus*	
2	19:29	*Pipistrellus pygmaeus*	
3	19:31	*Pipistrellus pygmaeus*	
4	19:36	*Pipistrellus pipistrellus*	
5	19:37	*Pipistrellus pipistrellus*	
6	19:48	*Pipistrellus pipistrellus*	
7	19:49	*Pipistrellus pipistrellus*	
8	19:50	*Pipistrellus pygmaeus*	
9	19:56	*Pipistrellus pygmaeus*	
10	19:56	*Pipistrellus pygmaeus*	
11	19:56	*Pipistrellus pygmaeus*	
12	19:56	*Pipistrellus pipistrellus*	
13	19:56	*Pipistrellus pipistrellus*	
14	19:56	*Pipistrellus pipistrellus*	
15	20:18	*Pipistrellus pygmaeus*	

Surveyor:	**MP/MC**	**Temp C:**	**15 to 11**
Site:	**Transect E**	**Wind:**	3
Date:	18/09/2023	**Rain:**	0
Sunset:	19:10	**Cloud:**	4
Start/end:	19:10 to 21:20		
Figure ref.	**Timestamp**	**Species**	
1	19:55	*Nyctalus noctula*	
2	19:56	*Nyctalus noctula*	
3	19:57	*Pipistrellus pygmaeus*	
4	19:57	*Nyctalus noctula*	
5	19:58	*Pipistrellus pygmaeus*	
5	19:58	*Pipistrellus pygmaeus*	
6	19:58	*Pipistrellus pygmaeus*	
7	20:25	*Nyctalus noctula*	
8	20:27	*Pipistrellus pipistrellus*	
9	20:29	*Pipistrellus pipistrellus*	
10	20:51	*Pipistrellus pipistrellus*	

Table 17. Static Detector Results 2022 and 2023

Season	Location	Dates	PIPI	PINA	PIPY	PISP	NYNO	NYLE	NYSP	MYSP	EPSE	BABA	PLAU	Total	Nights	BAI per hr	Activity Level
Spring	A1	No Data (mic damage)															
Spring	A2	23/05/22-30/05/22	1095	1	10	0	0	0	0	330	1	0	0	1437	7	27.37	High Activity
Spring	B1	23/05/22-29/05/22	73	0	101	0	5	0	0	0	0	0	0	179	6	3.98	Moderate-high Activity
Spring	B2	23/05/22-30/05/22	44	0	20	0	0	0	0	12	0	0	5	81	7	1.54	Low-moderate Activity
Spring	C1	23/05/22-30/05/22	20	0	51	2	1	1	0	3	0	0	2	80	7	1.52	Low-moderate Activity
Spring	C2	23/05/22-30/05/22	28	0	0	0	3	1	0	4	0	0	1	37	7	0.70	Low Activity
Spring	E1	19/04/23-27/04/23	4	0	0	0	1	0	0	1	0	0	0	6	6	0.13	Low Activity
Spring	E2	19/04/23-28/04/23	3	0	0	0	75	15	9	1	0	0	0	103	6	2.29	Moderate Activity
Summer	A1	11/08/22-24/08/22	411	0	16	5	6	6	4	17	0	0	2	467	13	0.11	Low Activity
Summer	A2	20/07/22-27/07/22	238	0	114	0	2	7	1	74	0	0	0	436	7	7.79	Moderate-high Activity

Season	Location	Dates	PIPI	PINA	PIPY	PISP	NYNO	NYLE	NYSP	MYSP	EPSE	BABA	PLAU	Total	Nights	BAI per hr	Activity Level
Summer	B1	21/07/22-27/07/22	116	0	44	0	0	0	1	4	0	0	0	165	6	3.44	Moderate Activity
Summer	B2	21/07/22-27/07/22	590	1	86	1	0	0	0	53	0	0	7	738	6	15.38	High Activity
Summer	C1	21/07/22-27/07/22	140	0	119	1	31	2	0	4	0	0	1	298	6	6.21	Moderate-high Activity
Summer	C2	21/07/22-27/07/22	37	0	146	1	111	7	17	35	0	0	4	358	6	7.46	Moderate-high Activity
Summer	E1	07/06/23-14/06/23	96	0	0	0	1	0	0	12	0	0	0	109	8	1.70	Low-moderate Activity
Summer	E2	07/06/23-14/06/23	455	0	191	0	36	19	5	84	0	0	5	795	8	12.42	Moderate-high Activity
Autumn	A1	26/09/22-03/10/22	41	0	3	0	1	4	2	0	1	0	0	52	7	0.61	Low Activity
Autumn	A2	26/09/22-03/10/22	834	1	247	12	0	3	1	89	0	0	2	1189	7	13.87	High Activity
Autumn	B1	27/09/22-03/10/22	746	0	109	0	0	0	0	167	0	0	0	1022	6	13.90	High Activity
Autumn	B2	27/09/22-03/10/22	120	1	33	0	4	0	0	3	0	0	1	162	6	2.20	Moderate Activity
Autumn	C1	27/09/22-03/10/22	52	0	88	0	8	4	0	11	0	1	1	165	6	2.24	Moderate Activity

Season	Location	Dates	PIPI	PINA	PIPY	PISP	NYNO	NYLE	NYSP	MYSP	EPSE	BABA	PLAU	Total	Nights	BAI per hr	Activity Level
Autumn	C2	25/09/22-29/09/22	11	1	25	4	15	3	0	10	0	0	2	71	4	1.45	Low-moderate Activity
Autumn	E1	06/09/23-17/09/23	75	0	30	0	44	3	1	26	1	1	0	181	12	1.28	Low-moderate Activity
Autumn	E2	06/09/23-17/09/23	53	0	87	2	94	7	7	57	0	4	0	311	12	2.21	Moderate Activity
TOTALS			**5282**	**5**	**1520**	**28**	**438**	**82**	**48**	**997**	**3**	**6**	**33**	**8442**	**166**		

Species abbreviations: PIPI - Common Pipistrelle, PIPY - Soprano Pipistrelle, PINA – Nathusius' Pipistrelle, PISP – Common or Soprano Pipistrelle, NYNO - Noctule, NYLE –, NYSP - Noctule or Leisler's, MYSP - Myotis species, EPSE – Serotine, BABA – Barbastelle, PLAU - Brown Long-eared

Static Detector Locations are provided on **Figure 9-8-2, Annex 1**. Photos of the habitats at the deployment locations are included below.

Table 18. Static Detector Habitat Photos

A1

A2

B1

B2

C1

C2

E1

E2

Table 19. Weather Data

Month	Date	Minimum temperature (°C)	Maximum Temperature (°C)	Minimum wind mph	Maximum Wind mph	Rain*
Spring 2022	23-May	11	17	9	15	0
	24-May	7	16	7	24	0
	25-May	8	17	17	41	0
	26-May	9	18	9	39	0
	27-May	7	17	9	41	0
	28-May	6	15	11	24	0
	29-May	4	13	6	26	0
	30-May	5	14	2	20	0
Summer 2022	20-Jul	19	27	4	22	0
	21-Jul	16	20	9	19	0
	22-Jul	15	18	7	17	0
	23-Jul	15	24	7	28	0
	24-Jul	17	26	20	35	0
	25-Jul	13	22	11	37	0
	26-Jul	12	19	4	20	2
	27-Jul	13	22	2	17	1
	11-Aug	12	30	4	17	0
	12-Aug	14	29	4	24	0
	13-Aug	14	30	9	24	0
	14-Aug	14	31	6	17	0
	15-Aug	16	30	6	19	0
	16-Aug	15	23	2	28	1
	17-Aug	15	19	11	30	0
	18-Aug	14	23	0	28	0
	19-Aug	12	22	9	28	0
	20-Aug	12	24	11	35	0
	21-Aug	13	22	19	6	0
	22-Aug	14	24	0	22	0
	23-Aug	18	25	9	19	0
	24-Aug	18	24	7	24	0
	25-Aug	18	11	2	19	0
Autumn 2022	26-Sep	7	14	0	0	0
	27-Sep	2	14	9	26	0
	28-Sep	4	15	11	24	0
	29-Sep	8	16	7	22	0
	30-Sep	3	13	6	35	0

	01-Oct	10	18	13	33	0
	02-Oct	8	17	7	19	0
	03-Oct	6	17	4	17	0
Spring 2023	19-Apr	6	14	9	23	0
	20-Apr	4	14	8	23	0
	24-Apr	3	9	9	16	1
	25-Apr	0	11	5	13	0
	26-Apr	3	12	5	12	0
	27-Apr	2	12	3	17	2
	28-Apr	6	11	1	17	1
Summer 2023	07-Jun	10	15	5	13	1
	08-Jun	10	16	7	14	0
	09-Jun	10	18	9	16	0
	10-Jun	10	28	9	17	0
	11-Jun	12	29	3	15	0
	12-Jun	15	28	2	15	0
	13-Jun	12	27	6	20	0
	14-Jun	10	23	6	16	0
Autumn 2023	06-Sep	13	27	0	8	0
	07-Sep	16	30	2	13	0
	08-Sep	14	27	0	7	0
	09-Sep	18	30	0	7	0
	10-Sep	18	29	0	9	2
	11-Sep	17	23	2	15	3
	12-Sep	13	17	0	17	4
	13-Sep	9	18	3	10	2
	14-Sep	13	17	2	13	2
	15-Sep	12	22	3	9	0
	16-Sep	14	21	2	14	0
	17-Sep	14	20	6	17	0

Table 20. ALBST Results

Date: 10th May 2023, Sunset = 20:47, Start 20:30 end 24:00,

Weather: 17 to 12 C, 4/5 cloud, 1 to 0 wind

Time	Species	Location / Notes
		(All adults)
21:08	brown long-eared	Male captured in net 1: SK9039988739
21:10	soprano pipistrelle	Male captured in net 3: SK9035488708
21:15	soprano pipistrelle	Male captured in net 2: SK9037988741
21:30	soprano pipistrelle	Female captured in net 1: SK9039988739
21:40	common pipistrelle	Male captured in net 2: SK9037988741
22:00	soprano pipistrelle	Male captured in Harp trap: SK9038688621
22:05	common pipistrelle	Male captured in net 2: SK9037988741 (lure)
22:12	common pipistrelle	Male captured in net 2: SK9037988741 (lure)
22:15	brown long-eared	Female captured in net 2: SK9037988741 (lure)
23:05	common pipistrelle	Female captured in net 1: SK9039988739

Date: 14th June 2023, Sunset = 21:32, Start 21:00 end 24:00
Weather: 18 to 12 C, 1/5 cloud, 1 to 0 wind

Time	Species	Location / Notes
22:55	soprano pipistrelle	Male captured in net 1: SK9039988739 (lure)
23:00	soprano pipistrelle	Male captured in net 3: SK9035488708 (lure)
23:10	whiskered	Female captured in net 1: SK9039988739 (lure)
23:30	soprano pipistrelle	Male captured in net 2: SK9037988741 (lure)
23:30	soprano pipistrelle	Male captured in net 2: SK9037988741 (lure)
23:30	natterer's	Male captured in net 2: SK9037988741 (lure)
23:45	soprano pipistrelle	Male captured in net 1: SK9039988739 (lure)
23:45	soprano pipistrelle	Female captured in net 1: SK9039988739 (lure)

Date: 6th September 2023, Sunset = 19:41, Start 19:30 end 23:30
Weather: 22 to 19 C, 0/5 cloud, 0 wind

Time	Species	Location / Notes
20:05	soprano pipistrelle	Male captured in net 1: SK9039988739 (lure)
20:50	brown long-eared	Male captured in net 1: SK9039988739 (lure)
20:52	brown long-eared	Male captured in net 1: SK9039988739 (lure)
21:07	brown long-eared	Female (bred) captured in net 1: SK9039988739 (lure)
21:09	soprano pipistrelle	Male captured in net 1: SK9039988739 (lure)
21:20	brown long-eared	Female captured in net 1: SK9039988739 (lure)
21:22	soprano pipistrelle	Male captured in net 1: SK9035088750 (lure)
21:25	brown long-eared	Male captured in net 1: SK9039988739 (lure)
21:45	common pipistrelle	Male captured in net 1: SK9039988739 (lure)

22:05	noctule	Male captured in net 1: SK9039988739 (lure)
22:05	noctule	Female (bred) captured in net 1: SK9039988739 (lure)
22:25	soprano pipistrelle	Male captured in net 1: SK9039988739 (lure)
22:35	soprano pipistrelle	Female (bred) captured in net 1: SK9039988739 (lure)
22:51	brown long-eared	Male captured in net 1: SK9035088750 (lure)