

# Scotland England Green Link 2 - English Onshore Scheme

Environmental Statement  
Volume 3

Appendix 7B: Bat Survey Report

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For: National Grid Electricity Transmission

## Quality information

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## Table of Contents

Appendix 7B Bat Survey Report.....	5
7B.1 Introduction .....	5
7B.1.1 The Scheme.....	5
7B.1.2 Survey Scope.....	5
7B.1.3 Defining the Study and Survey Areas.....	6
7B.1.4 Study and Survey Aims and Objectives.....	6
7B.2 Methodology.....	7
7B.2.1 Desk Study.....	7
7B.2.2 Field Survey .....	7
7B.2.2.1 Bat Roost Potential (BRP) Assessment .....	7
7B.2.2.2 Bat Activity Surveys.....	7
7B.2.2.2.1 Walked Transect Survey.....	8
7B.2.2.2.2 Static Monitoring Survey.....	8
7B.2.2.3 Data Analysis .....	9
7B.2.3 Evaluation Methodology .....	9
7B.2.4 Survey Limitations .....	10
7B.3 Survey Results .....	11
7B.3.1 Desk Study.....	11
7B.3.2 Field Survey .....	13
7B.3.2.1 Bat Roost Potential Assessment.....	13
7B.3.2.2 Bat Activity Survey.....	14
7B.3.2.2.1 Walked transect surveys.....	14
7B.3.2.2.2 Static detector activity surveys.....	14
7B.4 Evaluation .....	16
7B.4.1 Foraging and Commuting Bats .....	16
7B.4.2 Overall summary of results in context of Proposed Works .....	17
7B.4.3 Recommendations.....	17
7B.4.3.1 Tree emergence/re-entry surveys .....	17
7B.4.3.2 Structure emergence/re-entry surveys.....	18
7B.5 References.....	19
Figures 20	
Annex 1 - Legislation and Planning Policy.....	24
Annex 2 - Additional methodology and grading criteria .....	26
Annex 3 - Bat Roost Potential Survey Data.....	30
Annex 4 - Bat Activity Transect Data .....	39
Annex 5 - Bat Activity Index Calculations .....	41

## Figures

Figure 1 Desk Study Area.....	20
Figure 2 Walked Transect Survey Area and Static Detector Locations.....	21
Figure 3.1 – 3.3 Bat Activity Recorded on Transect Surveys.....	22
Figure 4 Bat Roost Potential Assessment .....	23

## Tables

Table 1: Dates of 2021 Walked Transect Surveys for bats with associated weather conditions .....	8
Table 2: Dates of 2021 Static Detector Activity surveys for bats with associated weather conditions ...	9

Table 3: Desk study records relevant or potentially relevant to the EOS.....	11
Table 4: Granted European Protected Species Licences for bats within the Desk Study Area .....	12
Table 5: Bat Roost Potential (BRP) of Trees.....	13
Table 6: Survey Area overall BAI.....	15
Table 7: The value of bat species present within the Survey Area (based on Ref 9).....	16

# Appendix 7B Bat Survey Report

## 7B.1 Introduction

### 7B.1.1 The Scheme

AECOM was instructed by National Grid to conduct bat surveys between Fraisthorpe, East Riding of Yorkshire (approximate OS grid reference TA 16835 63441) and Drax, North Yorkshire (approximate Ordnance Survey (OS) grid reference SE 66811 27434). The bat surveys were undertaken as part of a suite of Phase 2 protected species surveys conducted to inform the Ecological Impact Assessment (EclA) of the Scotland to England Green Link 2 (SEGL2) English Onshore Scheme (EOS). The EOS is described in detail in **Chapter 3: Description of the English Onshore Scheme** of the Environmental Statement (ES).

National Grid has proposed to construct a High Voltage Direct Current (HVDC) Link from Peterhead in Aberdeenshire, Scotland to Drax in North Yorkshire referred to as SEGL2.

SEGL2 is a major reinforcement of the electricity transmission system which will provide additional north-south transmission capacity across transmission network boundaries ensuring that green energy is transported from where it is produced to where it is needed. The English Onshore Scheme, i.e. the components of SEGL2 proposed terrestrially in England, will include an underground cable which transition from the subsea cable route at the landfall site at Fraisthorpe and extends for approximately 69 km underground to a new proposed converter station site at Drax, North Yorkshire.

The cable route will be buried underground using a temporary Working width of 40 m, in the centre of which will be a 1.5 m wide and 1.5 m deep trench into which a pair of cables will be laid. Multiple sections of Horizontal Directional Drilling (HDD) are proposed for the installation of the cables to avoid open-cutting key infrastructure routes (such as railways, A614, A1034, A1079 and A165 as well as several B roads and other minor roads) and watercourses, including the River Ouse, River Foulness and River Hull (as well as other streams and minor drains). As part of the English Onshore Scheme, a new permanent converter station is proposed to the east of the existing Drax Power Station. The extents of the EOS including all project components are defined by the planning application boundary shown on **Figure 1**. The proposed converter station site at Drax is also shown.

### 7B.1.2 Survey Scope

The survey scope has been informed by the findings of the Preliminary Ecological Appraisal (PEA) and sought to consider the evolving EOS design but capture an understanding of the baseline ecological status of habitats and features for bats, subsequent Bat Roosting Potential (BRP) surveys and bat activity surveys have been conducted to determine the potential status of these legally protected species within the Bat Survey Area (as defined below).

Given the mostly temporary nature of the majority of the EOS, and as agreed at the EIA Scoping stage, bat activity surveys to determine the potential importance of habitat predicted to be lost for foraging bats were specifically focussed on the areas where permanent land take will occur; namely the proposed converter station site at Drax. Activity surveys were undertaken to determine the status of foraging and commuting bats specifically within and adjacent to this area during 2021.

In terms of potential impacts of the EOS on roosting bats, BRP surveys were focused to the extent of the EOS including the cable Working width and associated temporary construction elements. The BRP surveys have sought to determine the presence of trees and structures with suitability to support roosting bats within and within direct proximity to (up to 50 m) the planning application boundary which could be impacted by temporary and/or permanent components of the EOS. Due to the evolving design throughout the 2021 bat survey season and the high number of trees and structures present within the Study Area the scope of bat work sought to assess the presence of potential roost but for a number of factors as outlined here has not included detailed roost (dusk/dawn) surveys. The level of survey effort and approach to the EclA for roosting bats is proportionate to the potential predicted effects of the EOS upon this species group and aligns with the guidance set out by British Standard 42020:2013 Biodiversity. Code of Practice for Planning and Development (Ref 1) and DEFRA European protected species (EPS) policies (Ref 2) which is therefore applicable to bats. Policy 4 details guidance which endorses that a proportionate approach to collation of baseline ecological data for EPS is considered

acceptable 'where ecological impacts of development can be predicted with sufficient certainty' and where 'mitigation or compensation will ensure that the (licensed) activity would not detrimentally affect the conservation status of the local population of any EPS'. As detailed in the **Chapter 3: Project Description**, the proposed construction programme for the EOS is not predicted to commence until late 2024 therefore validity of roost survey data has also been considered in respect of completion of the scope of baseline work. Furthermore, as detailed in Chapter 7: Ecology and Nature conservation the mitigation approach commits to avoid and protect trees and structures with bat roost suitability within the planning application boundary as identified by the BRP surveys conducted and results detailed herein.

Based upon these factors combined, the EclA for roosting bats has been based upon an approach which assesses the likely potential effect of the EOS overall assuming the potential 'reasonable worst case scenario' assuming the loss of a proportion of the trees within the planning application boundary. This approach to the completion of the EclA combined with the commitment to conduct pre-construction surveys of any trees/structure which cannot be avoided and associated mitigation measures thereafter i.e. activities which result in a licensable effect upon bats would be subject to a Natural England EPS Mitigation License application.

The requirements to assess the status of, and potential effects of the EOS upon bats is driven by legislation attributed to all bat species found in the United Kingdom. Further information on the legislation and relevant planning policies for bats is provided in **Annex 1**.

### 7B.1.3 Defining the Study and Survey Areas

Within this report the following terminology is used when referring to the geographical areas within which the desk and field work for bats has been conducted:

- Desk Study Area – this is the area which was subject to collection of background desk and online baseline ecological information and includes the planning application boundary plus a 2 km buffer (as shown on **Figure 1**); and
- Bat Survey Area (hereafter referred to as the Survey Area) – this is the collective term used to describe the areas where the completion of bat survey and assessment was focussed and includes a) the area subject to bat activity surveys at the converter station site at Drax and b) the area within which the Bat Roost Assessments (BRP) have been conducted (within and up to 50 m from the planning application boundary).

As set out in the Preliminary Ecological Appraisal Report (Appendix 7A, Ref 6), initially the Desk Study Area and Survey Area were based on the EIA Scoping Boundary. However, as the project design has evolved the areas have been refined, and the information presented in this report is relevant to the final design and the planning application boundary.

### 7B.1.4 Study and Survey Aims and Objectives

The aim of the study and survey work and the subsequent report presented herein were to:

- Determine the value of habitats, which are predicted to be impacted by the EOS, for foraging and commuting bats and inform the Ecological Impact Assessment (EclA); and
- Assess the status of features and habitats located within and within proximity to the EOS for their potential to support roosting bat roosts, and in turn to inform the EclA relating to the potential effects (and mitigation approach).

The objectives of the study and survey work and the subsequent report presented here were to:

- Collate and review desk based bat records and relevant data to inform the determination of the status of bats within the Desk Study Area;
- Identify habitats and features that have potential to support roosting bats and be of potential importance to foraging and commuting bats through a habitat assessment (using Phase 1 Habitat survey data) within the Survey Area;
- Undertake bat activity surveys focussed on the converter station site to determine the value of the site for bats and inform the ES for this component of the EOS;

- Complete detailed bat roost potential assessment surveys of trees and structures which have been identified within and within proximity of the EOS to inform the design of the EOS, inform the EclA and provide the required baseline data to inform the proposed approach to mitigation requirements;
- Undertake analysis and interpretation of combined survey data to determine the nature conservation value of roosting, commuting and foraging bats with respect to the EOS.

## 7B.2 Methodology

### 7B.2.1 Desk Study

An initial data search was conducted in 2021 to support the initial scoping stage of the EOS. This search requested records of bat species within the Desk Study Area from the North and East Yorkshire Ecological Data Centre (NEYEDC).

The desk study was restricted to data within the last 10 years (post 2011), so that the data collated would be more likely to reflect the current (rather than historic) baseline conditions associated with the Desk Study Area.

In addition, a search for protected species mitigation licences granted within the Desk Study Area was undertaken using the Multi-Agency Geographical Information for the Countryside (MAGIC) (Ref 5).

### 7B.2.2 Field Survey

#### 7B.2.2.1 Bat Roost Potential (BRP) Assessment

Buildings, structures and trees within the Survey Area, were subject to a BRP Assessment Survey throughout 2021. The survey intended to identify any potential roost features (PRFs) and/or any evidence of roosting bats such as droppings, feeding remains, staining or live/dead bats. The methodology for the BRP assessment was undertaken in accordance with standard bat survey methodology the Bat Conservation Trust 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (Ref 7) as follows:

- PRFs associated with buildings and structures may include: crevices in brick or stonework where mortar is missing; lifted or missing tiles or slates; gaps behind fascia boards and soffits and crevices associated with roof frames.
- PRFs associated with trees include: rot holes, woodpecker holes, cracks in limbs or the trunk, peeling bark.

Inspections have been carried out from the ground with the aid of close-focussing binoculars and a high-powered torch where required. Where accessible, a detailed inspection with a torch and endoscope was undertaken, to determine the interior conditions of features.

BRPs were graded as negligible, low, moderate, high potential or a known or confirmed roost (Tables 5 and 6). For tree assessments, the approach also took into account that set out in BS 8596:2015, where the term 'risk' is used in lieu of 'potential' when assigning these categories (i.e. negligible, low, moderate and high). The term risk is not used when describing categories for structure or buildings (Ref 7), which uses the terms 'suitability/potential'. In order to avoid confusion, and as this report includes assessments of structures and trees the term 'potential' has been applied throughout when assigning a category to potential roost features. Further details of the BRP Assessment approach and classification criteria are provided as Tables A1 and A2 in Annex 2

#### 7B.2.2.2 Bat Activity Surveys

The PEA (Ref 6) included an appraisal of the habitats present within the Ecological Survey Area to determine whether parts of the Ecological Survey Area were of high, moderate or low suitability for bats based on published criteria (Collins, 2016) (Ref 7).

The proposed converter station site was identified as having **low** potential for foraging and commuting bats due to the presence of woodland and hedgerow habitats, which provide some foraging habitat as well as providing connectivity with the wider landscape. This was subsequently defined as part of the

Survey Area, within which the bat activity survey work has been conducted. The Survey Area was defined with reference to the planning application boundary, over which the proposed works may have potential to result in significant effects on bat populations both on and off site. The bat activity surveys incorporated habitats associated with the proposed converter station site adjacent to Drax Power Station (**Figure 2**).

The objectives of the bat activity surveys undertaken in 2021 were to:

- verify the previously assessed value of the site for bats by measuring bat activity levels;
- determine which bat species use this part of the Survey Area; and
- identify any patterns in the bat usage of this part of the Survey Areas i.e. which areas are more important to bats or used as commuting routes.

Based on the published guidance (Ref 7) for **low** suitability sites, the following survey effort was applied to assess this part of the Survey Area and is described in greater detail below:

- Walked seasonal transect survey – seasonal walked transect surveys were undertaken in the active season for bats (spring, summer and autumn inclusive).
- Static monitoring survey – seasonal survey periods (a minimum of five nights of deployment per survey period) in the active season for bats (spring (April/May), summer (June/July) and autumn (August/September)).

#### 7B.2.2.2.1. Walked Transect Survey

Walked transect surveys were undertaken on a seasonal basis within spring, summer and autumn 2021. All three of the surveys were undertaken at dusk. Survey visits were scheduled for dates when appropriate weather conditions were expected (survey dates are given with the survey results in Annex 4). Appropriate conditions were those with an absence of rain and/or strong winds and with temperatures above 7°C.

The survey involved walking a transect route (as shown on **Figure 2**) that provided representative coverage of the habitats of potential value to bats. The transect route was walked at a steady speed and bat activity was detected/recorded using a handheld full spectrum bat detector (e.g. Batlogger M). Several stopping points were incorporated along the transect route where the surveyors stopped for periods of three to five minutes to observe bat activity at the fixed locations. All bat activity detected during the survey was recorded on a form and mapped on a suitably scaled plan.

Each dusk survey commenced at sunset and lasted for two to three hours after sunset to coincide with peak activity periods as bats emerge and disperse from their roosts. The survey dates and associated conditions are summarised in **Table 1**.

**Table 1: Dates of 2021 Walked Transect Surveys for bats with associated weather conditions**

Visit	Month	Dates	Air Temperature (dusk-dawn)
1	May	19 <sup>th</sup> May 2021	15
2	July	22 <sup>nd</sup> July 2021	20
3	September	07 <sup>th</sup> September	26

#### 7B.2.2.2.2. Static Monitoring Survey

Static monitoring was undertaken at one location at the converter station site as shown in **Table 2**. The location was selected to collect data on bat activity associated with potential foraging and commuting habitats that could potentially be severed, or that could otherwise be altered, as a consequence of the proposed works. The location was approximately halfway along the southern boundary of the woodland which bordered the proposed converter station site to the north, attached to a semi-mature aspen *Populus tremula* tree.



Static monitoring was undertaken for a period of at least five nights in the months May (spring), July (summer) and September (autumn) 2021. Survey periods were chosen to avoid unseasonably low temperatures or periods of heavy rain.

Data was collected using an SM4 static bat detector. The static detector was set to start recording half an hour before the published sunset time and to stop recording half an hour after the published sunrise time. Typically, the static detector was left to run longer than the required five-night period to compensate for any nights when conditions were unsuitable for bats (dusk temperatures below 7°C, heavy rain or strong wind). The survey dates and associated conditions are summarised in **Table 2**:

**Table 2: Dates of 2021 Static Detector Activity surveys for bats with associated weather conditions**

Visit	Month	Dates	Air Temperature (dusk-dawn)
1	May	11 <sup>th</sup> – 17 <sup>th</sup> May 2021	12.6 – 9.2
2	July	12 <sup>th</sup> - 19 <sup>th</sup> July 2021	20.7 – 15.9
3	September	31 <sup>st</sup> August – 06 <sup>th</sup> September	27.4 – 13.3

### 7B.2.2.3 Data Analysis

Bat call identification was undertaken using Kaleidoscope Pro 5.3.6, BatSound v4 and Analook W software. When data was recorded in WAV format, files were converted using Kaleidoscope software to enable viewing in Analook. Subsequent data collation and analysis was undertaken using Microsoft Excel.

To compare bat activity across nights and locations, the number of bat passes per hour was calculated using the average night length of each month in hours. A bat pass is defined as a single static detector file made up of bat pulses of a single species i.e. this may be one bat in a file or many bats in a single file.

Bat activity is quantified using a Bat Activity Index (BAI). Bat activity values have been calculated by averaging the number of bat passes per night for each static detector unit. No guidance is available on what constitutes low, moderate or high bat activity based on number of passes. As such a relative scale is used in this report where:

- Low Activity is a mean of >0 but <6 passes per hour;
- Moderate Activity is a mean of >=6 but <60 passes per hour; and
- High Activity is a mean of over >=60 passes per hour.

### 7B.2.3 Evaluation Methodology

The method of evaluation that has been utilised has been developed with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater and Coastal – Second Edition (Ref 8). These give advice on scoping and carrying out environmental assessments and place appraisal in the context of relevant policies. Data received through consultation, desk-based studies and field-based surveys are used to allow relevant ecological features (i.e. designated sites, ecosystems, habitat and species) of value (or potential value) to be identified, and the main factors contributing to their value described and related to available guidance.

Ecological features may be important for multiple different reasons (e.g. rarity in a particular geographic context; role in habitat connectivity; or a species on the edge of their range). Relevant reasons for which an ecological feature is important are described and considered in order to assign each relevant ecological feature an overall value in accordance with the following geographical frames of reference:

- international (i.e. European);

- national (i.e. England);
- regional (i.e. Yorkshire and the Humber);
- county (i.e. East Riding of Yorkshire (Section 1 – 3 inclusive) /North Yorkshire (Section 4 only);
- local (i.e. Survey Area and up to 2km radius); and
- negligible (used where the value is lower than the Local level).

## 7B.2.4 Survey Limitations

The data collected by bat activity surveys and static bat detector surveys consist of bat passes recorded by a bat detector or surveyor. The number of bat passes cannot be directly related to the number of bats present as the same bat will make several passes in the same location. Instead this data is used as an indication of general bat activity.

The identification of bat echolocation calls recorded by bat detectors is not always possible due to poor recording quality, which can be a result of bats recorded at distance, interference caused by weather or bats altering their call in response to different environmental factors. Species identification within a genus is not always possible due to the similar nature of some bat species calls. When species identification cannot be made such calls are recorded to genus level (e.g. *Myotis* species) or simply as 'bat'.

Ecosystems are dynamic and constantly changing, and therefore species may move or new species may be recorded in subsequent years. For this reason, and in accordance with current guidance, the existing survey data has a 'shelf-life' of two years from the date of survey and should only be relied upon for this time. After this date, update surveys are likely to be required and advice sought from an appropriately qualified ecologist to determine survey scope and methods.

## 7B.3 Survey Results

### 7B.3.1 Desk Study

Bat roost records received from NEYEDC are summarised in **Table 3**. A total of 27 roost records of 38 bats were provided within 1 km of the planning application boundary, five of these are located within the planning application boundary.

All other bat records for the Desk Study Area refer to bat activity or have no specific details on the nature of the record attached.

**Table 3: Desk study records relevant or potentially relevant to the EOS**

Species	Record Details	Distance to planning application boundary
Brown Long-eared Bat ( <i>Plecotus auratus</i> )	Activity in Howden, North Howden	Within and 569 m
	Two individuals roosting in a tree north of Hutton Cranswick	21 m
	One individual roosting in a structure in North Cliffe	68 m
Common Pipistrelle ( <i>Pipistrellus pipistrellus</i> )	Multiple records of foraging and commuting throughout the Desk Study Area (Howden, Lund, Newsholme, Knedlington, Nafferton, Market Weighton)	Within and up to 728 m
	One individual grounded in North Cliff	Within
	One individual roosting in a tree south-east of Holme-upon-spalding-moor (Tollingham)	Within
	One individual roosting in a tree west of Asselby (for two consecutive years)	Within
	One individual roosting in a tree south of Market Weighton	Within
	One individual roosting in a tree south of Market Weighton	Within
	One individual roosting in a tree south of Market Weighton	34 m
	Two individuals roosting in a tree south-east of Holme-upon-spalding-moor	46 m
	One individual roosting in a tree south-east of Holme-upon-spalding-moor	79 m
	One individual roosting in a tree near Bursea	81 m
	One individual roosting in a tree south of Market Weighton	86 m
	Five individuals roosting in a tree near Bursea	87 m
	One individual roosting in a tree south of Market Weighton	104 m
	One individual roosting in a tree near Bursea	143 m
	Three individuals roosting in a structure southeast of Market Weighton	282 m
	At least two individuals roosting in a tree in North Howden (for two consecutive years)	490 m
One individual roosting in a tree West of South Dalton	678 m	
One individual roosting in a tree near Kilnwick	793 m	
Noctule Bat ( <i>Nyctalus noctula</i> )	Activity recorded near Howden	568 m
	One individual roosting in a tree south of Market Weighton	Within

Species	Record Details	Distance to planning application boundary
	One individual roosting in a tree near Bursea	87 m
Soprano pipistrelle ( <i>Pipistrellus pygmaeus</i> )	Activity recorded at a farm south of Nafferton	625 m
	Three individuals roosting in a tree north of Hutton Cranswick	2 m
	One individual roosting in a tree near Bursea	81 m
<i>Myotis</i> bat species ( <i>Myotis</i> sp.)	Activity recorded near Howden	569 m
	One individual roosting in a tree north-west of North Cliffe	1 m
	One individual roosting in a tree near Bursea	87 m
	One individual roosting in a tree north-west of Lund	183 m
	One individual roosting in a tree near Bainton	856 m
	One individual roosting in a tree south-west of Skerne	914 m
Natterer's bat ( <i>Myotis nattereri</i> )	Foraging and commuting activity in Knedlington	661 m

The MAGIC search concluded that there have been nine European Protected Species Licences (EPSL) granted for bats within the Desk Study Area. Of these four are located within 500 m of the planning application boundary. None are located within the extents of the planning application boundary. These are summarised in **Table 4** below and shown on **Figure 1**. The majority are associated with small non breeding roost sites of common species. Whilst record of EPSL do not confirm the status of roosting bats within the Survey Areas, they provide an indication of species distribution in the local area.

**Table 4: Granted European Protected Species Licences for bats within the Desk Study Area**

Reference	Location	Species	Licence Period	Damage of breeding site?	Damage of resting place?	Destruction of breeding site?	Destruction of resting place?
EPSM2013-5758	TA11515889 Gransmoor – approximately 200 m from the planning application boundary	Common Pipistrelle	April 2013 – August 2014	N	N	N	Y
2014-922-EPS-MIT	TA11495892 East of Little Kelk – approximately 200 m from the planning application boundary	Common Pipistrelle	June 2014 – September 2015	N	N	N	Y
EPSM2013-6716	TA05915797 Nafferton approximately 600 m from the planning application boundary	Common Pipistrelle and Soprano Pipistrelle	Dec 2013 - Sept 2014	N/A	N/A	Y	Y
EPSM2009-1526	TA00685351 Hutton Cranswick approximately 700 m from planning application boundary	Common Pipistrelle and Brown Long-eared	Mar 2010 - Oct 2010	N		N	Y

Reference	Location	Species	Licence Period	Damage of breeding site?	Damage of resting place?	Destruction of breeding site?	Destruction of resting place?
2017-27541-EPS-MIT	TA10305694 Gembling approximately 1.9 km from the planning application boundary	Common Pipistrelle	Feb 2017 - Jan 2022	N	N	N	Y
2018-33914-EPS-MIT	SE95515189 Bainton approximately 1.8 km from planning application boundary	Brown Long-eared, Common Pipistrelle and Natterer's	Mar 2018 - Mar 2028	Y	N	Y	Y
2018-36891-EPS-MIT	SE92794391 Kiplingcote approximately 170 m from planning application boundary	Common Pipistrelle	Oct 2018 - Sept 2024	N	N	N	Y
EPSM2013-6717	SE88614100 Market Weighton approximately 300 m from planning application boundary	Common Pipistrelle	Dec 2013 - Sept 2015	N/A	N/A	N	Y
2019-42410-EPS-MIT	SE84993693 North Cliffe approximately 400 m from planning application boundary	Brown Long-eared, Common Pipistrelle and Whiskered	Sept 2019 - April 2030	Y	N	N	Y

## 7B.3.2 Field Survey

### 7B.3.2.1 Bat Roost Potential Assessment

#### Trees

As summarised in Table 5, a total of 46 trees located with the extents of the planning application boundary, were confirmed to have Moderate or High suitability to support roosting bats. Of these, 19 are specifically located within the underground DC cable Working width. Furthermore 38 Low potential trees are also present with the extents of the EOS, and approximately 42 which were categorised as being of Negligible potential for roosting bats. A detailed list of these trees is provided as **Table B1, Annex 3** and the location of those with Moderate and High potential shown on **Figure 4**.

**Table 5: Bat Roost Potential (BRP) of Trees**

BRP	Location	Quantity	Total of each BRP rating
High	Within planning application boundary but outside of Working width	5	<b>High = 12</b>
High	Within Working width	7	
Moderate	Within planning application boundary but outside of Working width	22	<b>Moderate = 34</b>
Moderate	Within Working width	12	

BRP	Location	Quantity	Total of each BRP rating
Low	Within planning application boundary but outside of Working width	27	<b>Low = 38</b>
Low	Within Working width	11	

## Structures

Whilst numerous buildings and structures were subject to BRP assessment over the course of the surveys conducted, following a further review of the dataset, it has been confirmed that two structures located within the planning application boundary were confirmed to have Low suitability for roosting bats (the remainder have Negligible potential for roosting bats or are located outside the planning application boundary):

- ID reference 1674, **Figure 4** - Small bricked farm building located at North Howden (SE75253067) – partially fallen down but with crevices in brick work and partially ivy clad. Single skinned brickwork which is now partially exposed therefore likely only to be suitable as a small non breeding summer roost.
- ID reference 313, **Figure 4** - A small bricked farm track bridge over a drain located close to Warp Farm at Newsholme (SE72122921). Vegetated with cracks and cervices within brickwork.

### 7B.3.2.2 Bat Activity Survey

#### 7B.3.2.2.1 Walked transect surveys

Full results of the walked transect surveys are presented in **Tables B2 – B4** in **Annex 4** and shown on **Figures 3.1, 3.2 and 3.3**.

At least two bat species were recorded during the transect surveys; common pipistrelle and Noctule. The majority of activity was attributed to common pipistrelle bats. Noctule were recorded in very low numbers.

The majority of bat activity was recorded along the northern boundary of the Survey Area, alongside the woodland block and drainage ditch, where small numbers of common pipistrelle bats, typically one to three bats, were observed foraging up and down the woodland edge. Very little activity was recorded in the centre and south of the Survey Area. Bat activity here was limited to brief passes and foraging was rarely observed. This is unsurprising given that this habitat is typically of poor quality for foraging bats.

The majority of bat activity was recorded between one and two hours after sunset. Very few bats were recorded within half an hour of sunset, the typical emergence time of many bat species.

#### 7B.3.2.2.2 Static detector activity surveys

Four bat species have been identified by the static detector surveys:

- Common pipistrelle;
- Soprano pipistrelle;
- Daubenton's bat;
- Noctule; and
- Brown long-eared bat.

In addition, some bat passes could not be identified to species level due to the poor quality of bat calls, which was most likely a result of bats being recorded from a distance. These passes are likely to represent bat species already confirmed at the site rather than new species. For the purposes of analysis these passes were classified into a 'Myotis species' group.

The vast majority of bat activity recorded within the Survey Area was attributed to Common pipistrelle and Daubenton's bat. Bats of the *Myotis* genus, Noctule bats and soprano pipistrelle attributed to very low activity recorded.

Overall bat activity peaked in September, although activity was still at low levels. In other months very low activity was recorded. The very low activity during the mating season (June to August) may suggest the lack of maternity sites in the immediate area, at which bat activity would be concentrated at this time (see **Table B6 Annex 5**).

The BAI of bats of different species across the survey period for both **Transect** and **Static** surveys is summarised in **Table 6**. Full transect activity and static activity survey data are presented as **Tables B5 and B6, Annex 5**.

**Table 6: Survey Area overall BAI**

Species	Manual/Transect Passes per hour	Static/Automated Passes per hour	Comments
Common pipistrelle	6.17	0.56	Low-Moderate BAI (Manual data BAI higher than Static data BAI)
Soprano pipistrelle	0.50	0.03	Low BAI (Manual and Static data comparable)
Daubenton's	2.50	0.70	Low BAI (Manual and Static data comparable)
<i>Myotis</i> sp.	0.17	0.18	Low BAI (Manual and Static data comparable)
Noctule	0.50	0.15	Low BAI (Manual and Static data comparable)
Brown long-eared	0.00	0.15	Low BAI (Only recorded on Static detector)

## 7B.4 Evaluation

### 7B.4.1 Roosting Bats

Approximately 46 trees located with the extents of the planning application boundary were confirmed to have Moderate or High suitability to support roosting bats. Furthermore 38 Low potential trees are also present with the extents of the planning application boundary, and approximately 42 which were categorised as being of Negligible potential for roosting bats.

Whilst numerous buildings and structures were subject to BRP assessment over the course of the surveys conducted, it has been confirmed that only two structures are located within the planning application boundary. These were confirmed to have Low suitability for roosting bats. The remainder have Negligible potential for roosting bats or are located outside the planning application boundary.

Wherever possible all trees and with moderate and High potential to support roosting bats will be retained and protected during works.

Whilst the status of roosting bats has not been determined, based upon a reasonable assumption informed by species ecology and surveys conducted for previous similar projects, that small, non-breeding roosts of common species could be present within 25% of these trees, a reasonable precautionary value of **County** has been assigned.

### 7B.4.2 Foraging and Commuting Bats

At least five bat species were recorded within the proposed converter station site, three of which are common and widespread in England and North Yorkshire (common pipistrelle, soprano pipistrelle and brown long-eared) and two of which are rarer within England and North Yorkshire (Daubenton's and noctule). Species other than common pipistrelle and Daubenton's were recorded rarely, and it is likely that these species use the habitats in the Survey Area on an occasional basis.

Very Low - Low bat activity has been recorded across the proposed converter station site throughout the active bat period (May to September). This result supports the initial assessment of the proposed converter station area as being of **low** suitability for foraging and commuting bats. The levels of bat activity recorded are consistent with the types of habitats present. The woodland belt found at the north of the proposed converter station area appears to be used by small numbers of foraging common pipistrelle bats throughout the bat activity period. It is likely that this woodland edge habitat is used by bats to commute between roost and foraging sites however large numbers of commuting bats were not recorded therefore the proposed converter station area cannot be described as a significant commuting route.

The value of commuting and foraging bat species present within the proposed converter station area is presented in **Table 7** below. Further methodology of which can be found in **Tables A3-A5, Annex 2** (Ref 9). All species populations are assessed to be of **Local** value.

The highest value assigned to a particular species population is used to value the bat assemblage overall. Consequently, the bat assemblage as a whole is assessed to be of **Local** value.

**Table 7: The value of bat species present within the Survey Area (based on Ref 9)**

Species	National Rarity	BAI	Roosts/potential roosts nearby	Type and complexity of habitat	Score	Value
Common pipistrelle	Common (2)	Moderate (10)	Small number (3)	Isolated woodland patches, less intensive arable and/or small towns/villages Walls, gappy or flailed	2+10+3+3=18	Local
Soprano pipistrelle	Common (2)	Low (5)	Small number (3)		2+5+3+3=13	Local
Daubenton's	Rarer (5)	Low (5)	Small number (3)		5+5+3+3=16	Local
Noctule	Rarer (5)	Low (5)	Small number (3)		5+5+3+3=16	Local
Brown long-eared	Common (2)	Low (5)	Small number (3)		2+5+3+3=13	Local



Species	National Rarity	BAI	Roosts/potential roosts nearby	Type and complexity of habitat	Score	Value
				hedgerows, isolated well grown hedgerows, and moderate field sizes (3)		
<b>OVERALL VALUE OF BAT ASSEMBLAGE</b>						<b>LOCAL</b>

### 7B.4.3 Overall summary of results in context of Proposed Works

The proposed works will result in no loss of bat foraging habitat within the proposed converter station area. The proposed works will not result in the destruction of the woodland habitat to the north of the proposed converter station area these corridors of woodland will remain intact to provide commuting routes.

The proposed works will result in some commuting habitat loss in the form of trees used for access along the edge of the proposed converter station area. These routes were used very infrequently by bats during transect surveys, as exhibited by low passes per hour for all species, with the exception of common pipistrelle which exhibited moderate passes per hour during transect surveys.

Impacts associated with disturbance during the EOS within the proposed converter station area will be minimal as light and noise disturbance will be limited to daylight hours. In summary, foraging and commuting bats will not be adversely affected by the EOS.

Trees and structures identified within the extents of the planning application boundary will need emergence/re-entry surveys, if removed or impacted on as part of the EOS. This is highlighted below in the recommendations.

### 7B.4.4 Recommendations

#### 7B.4.4.1 Tree emergence/re-entry surveys

46 trees found within the planning application boundary were identified as having Moderate – High Bat Roosting Potential. Further emergence/re-entry surveys are required at the pre-construction phase of the EOS where these trees cannot be avoided and retained.

Surveys will consist of either a dusk emergence survey or a dawn re-entry survey. In accordance with standard guidance (Ref 7) the level of survey undertaken for each tree was as follows:

- High BRP – Three surveys with at least one being a dawn re-entry survey. At least one of these surveys should be undertaken between May and August.
- Moderate BRP – Two surveys, one dusk emergence and a separate dawn re-entry survey. At least one of these surveys should be undertaken between May and August.
- Low BRP – No emergence/re-entry surveys required. If tree is removed, a soft felling supervised by a Level 2 licenced ecologist will need to take place.

The above survey effort is the minimum required to give confidence in a negative result (for trees). Where bat roosts are identified as being present additional surveys will be undertaken to gain further information about the bat roost.

Bat emergence/re-entry surveys involve a small team of ecologists watching each aspect of the tree and recording any bats leaving or re-entering roosts. Emergence surveys begin 15 minutes prior to sunset and last until 1.5 hours after sunset. Re-entry surveys begin 1.5 hours prior to sunrise and conclude at sunrise. All surveys will be undertaken during suitable weather conditions (no heavy rain or wind and temperatures above 7°C).

#### 7B.4.4.2 Structure emergence/re-entry surveys

Two structures found within the planning application boundary of the EOS were identified as having Low Bat Roosting Potential. Further emergence/re-entry surveys are required at the pre-construction phase of the EOS if the structures if they cannot be entirely avoided.

Surveys will consist of either a dusk emergence survey or a dawn re-entry survey. In accordance with standard guidance (Collins, 2016) the level of survey undertaken for each structure is as follows:

- Low BRP – One survey consisting of either a dusk emergence or a dawn re-entry survey. This survey should be undertaken between May and August.

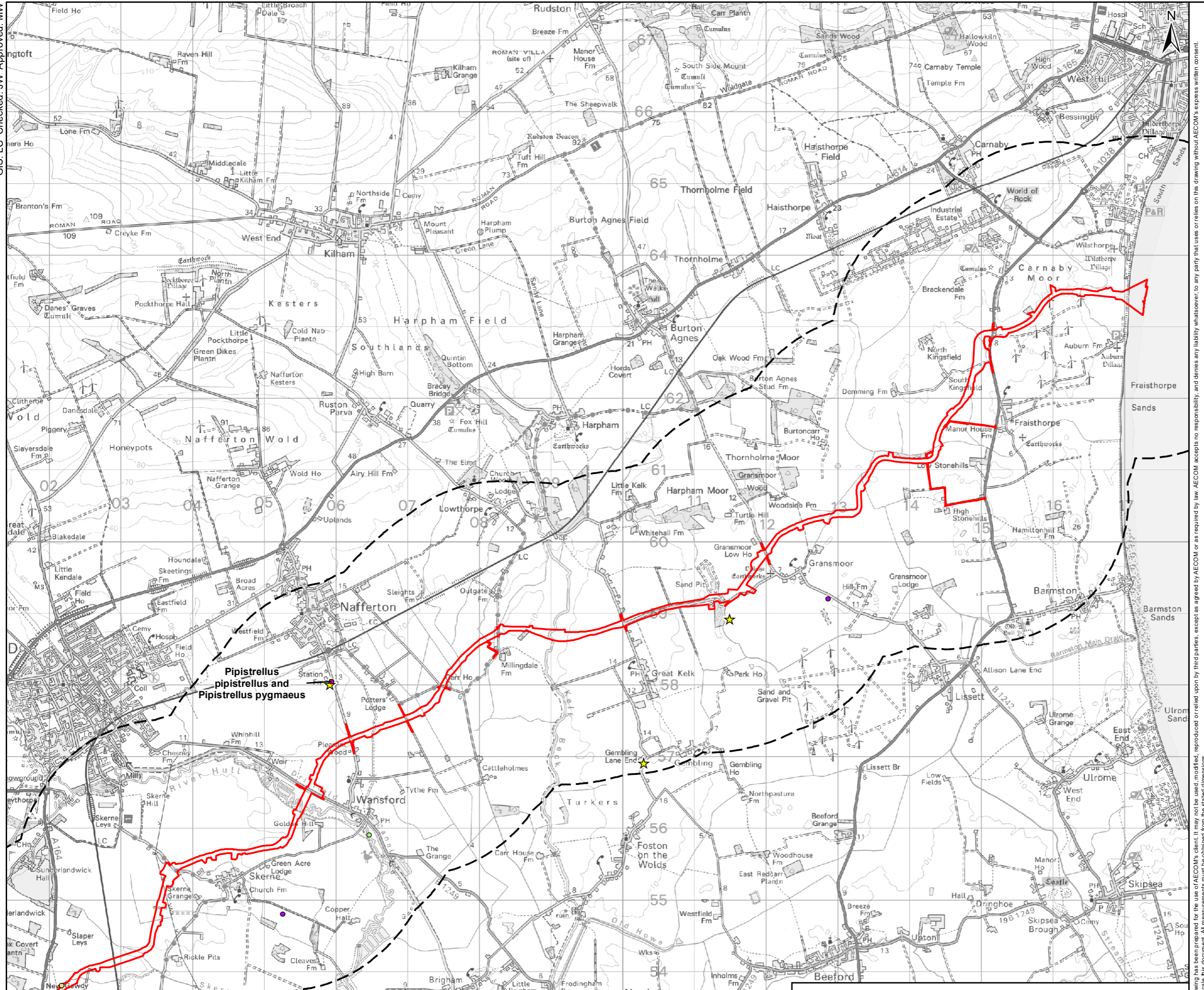
The above survey effort is the minimum required to give confidence in a negative result (for structures). Where bat roosts are identified as being present additional surveys will be undertaken to gain further information about the bat roost.

Bat emergence/re-entry surveys involve a small team of ecologists watching each aspect of the structure and recording any bats leaving or re-entering roosts. Emergence surveys begin 15 minutes prior to sunset and last until 1.5 hours after sunset. Re-entry surveys begin 1.5 hours prior to sunrise and conclude at sunrise. All surveys will be undertaken during suitable weather conditions (no heavy rain or wind and temperatures above 7°C).

PROJECT  
**Scotland England Green Link 2**

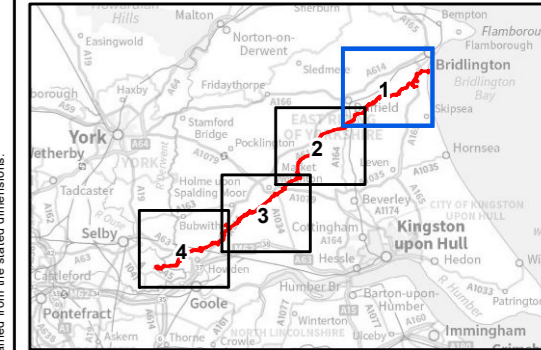
- KEY
- Planning Application Boundary
  - Desk Study Area
  - ★ Granted European Protected Species Applications

- Desk Study Records within 1km
- Myotis - Roosting
  - Pipistrellus pygmaeus - Roosting
  - Pipistrellus - Roosting
  - Plecotus auritus - Roosting
  - Multiple Species (Labelled)



**Pipistrellus pipistrellus and Pipistrellus pygmaeus**

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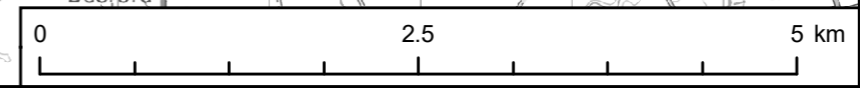


TITLE  
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REFERENCE  
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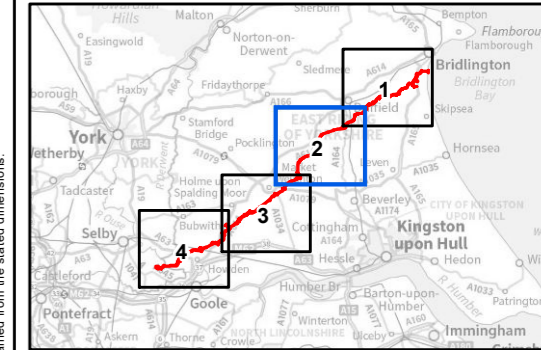
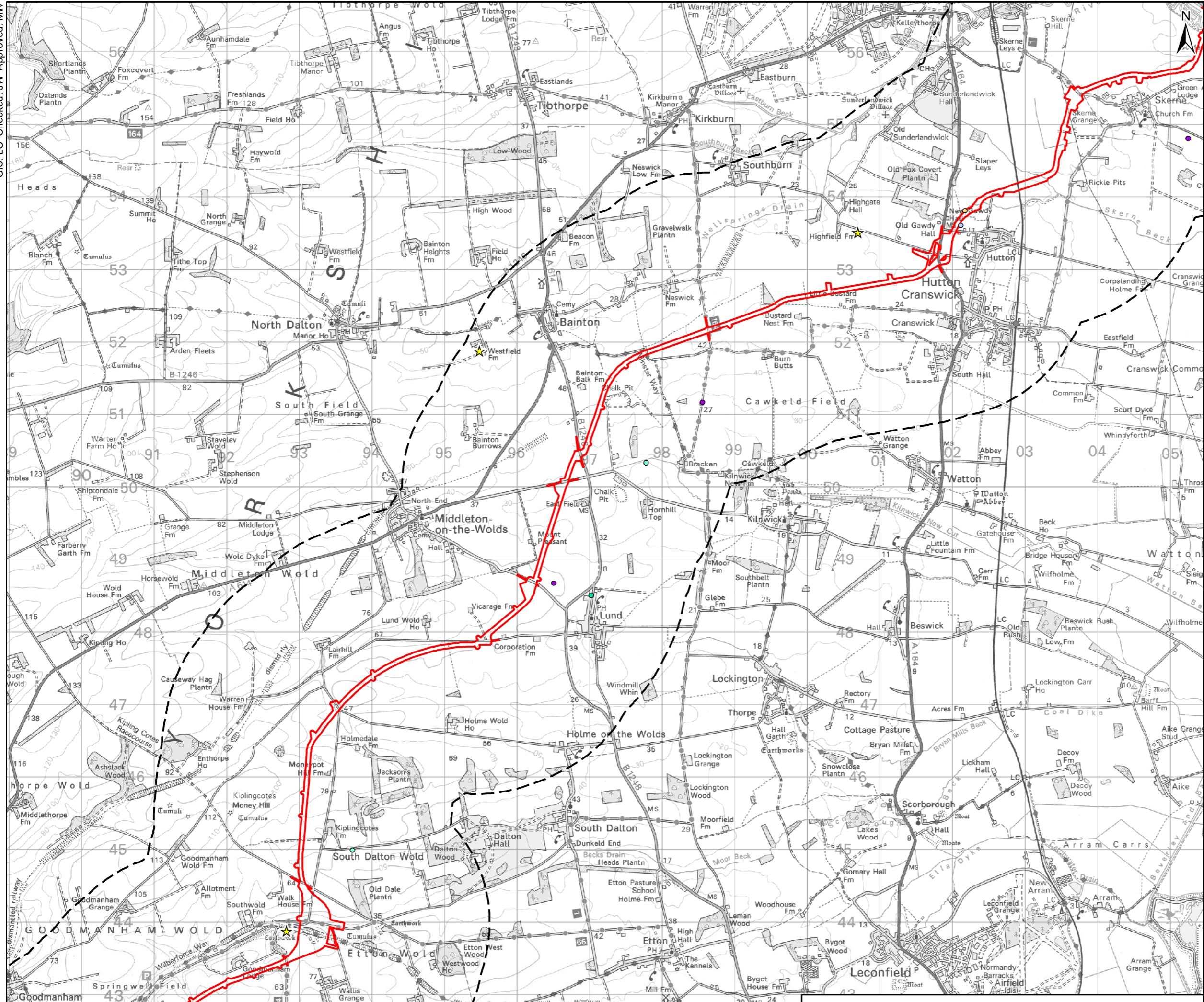
SHEET NUMBER  
1 of 4

DATE  
25/05/2022



**PROJECT**  
Scotland England Green Link 2

- KEY**
- Planning Application Boundary
  - Desk Study Area
  - ★ Granted European Protected Species Applications
- Desk Study Records within 1km**
- Myotis - Roosting
  - Pipistrellus pipistrellus
  - Pipistrellus pipistrellus - Roosting
  - Pipistrellus pygmaeus - Roosting
  - Plecotus auritus - Roosting



**TITLE**  
Figure 1  
Desk Study Area

**REFERENCE**  
SEGL2\_T\_BR\_1\_v4\_20220525

**SHEET NUMBER**  
2 of 4

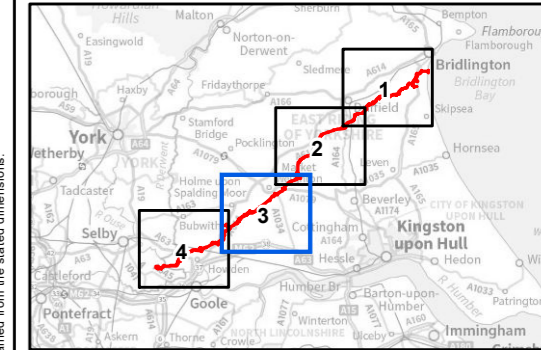
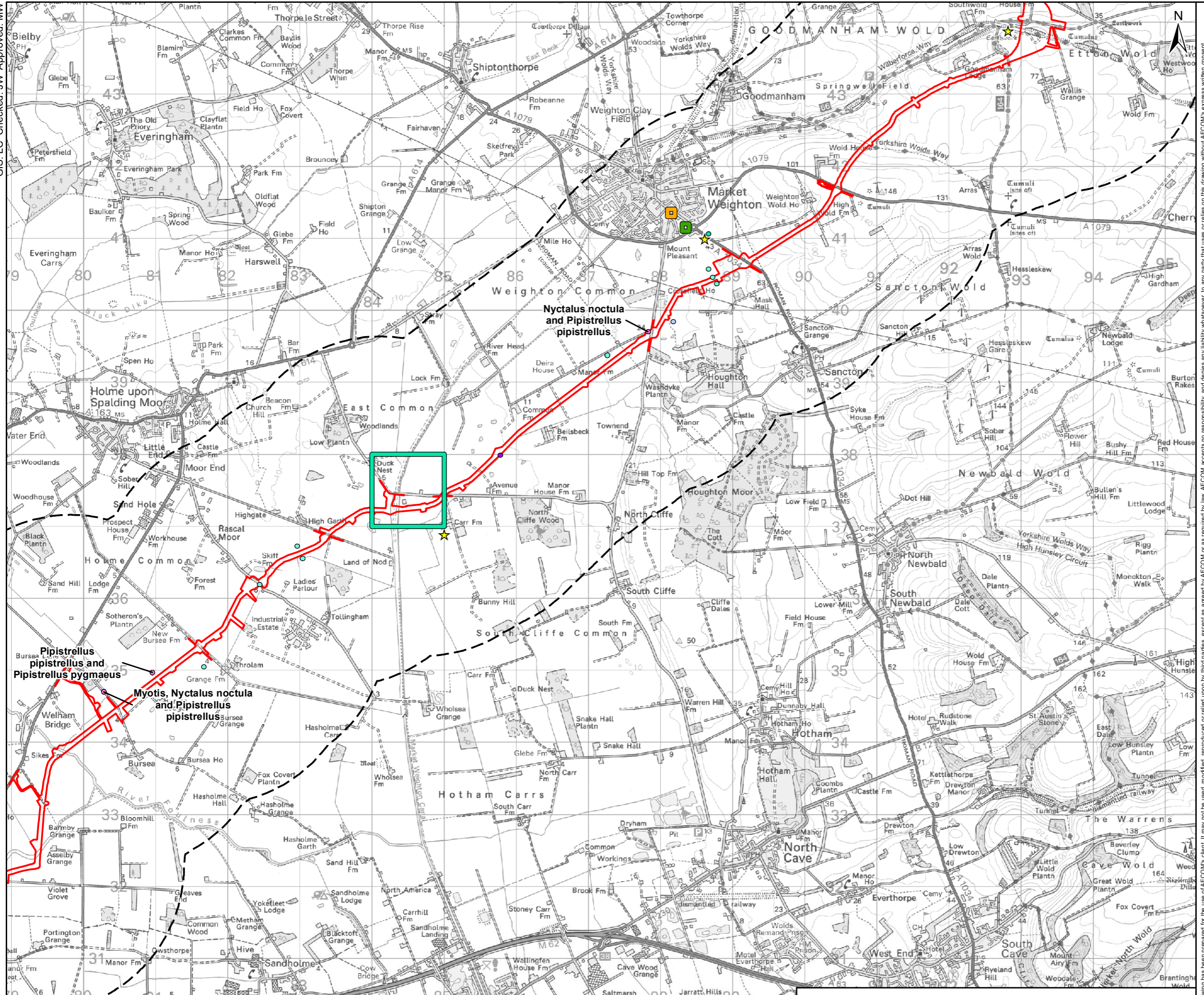
**DATE**  
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PROJECT  
**Scotland England Green Link 2**

- KEY
- Planning Application Boundary
  - Desk Study Area
  - ★ Granted European Protected Species Applications
- Desk Study Records within 1km
- Myotis - Roosting
  - Pipistrellus pipistrellus
  - Pipistrellus pipistrellus - Roosting
  - Pipistrellus pygmaeus
  - Pipistrellus
  - Plecotus auritus - Roosting
  - Multiple Species - Roosting (Labelled)

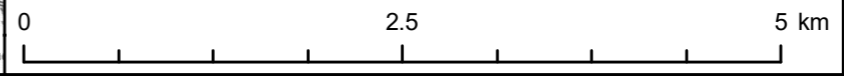


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**Figure 1  
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REFERENCE  
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SHEET NUMBER  
3 of 4

DATE  
25/05/2022

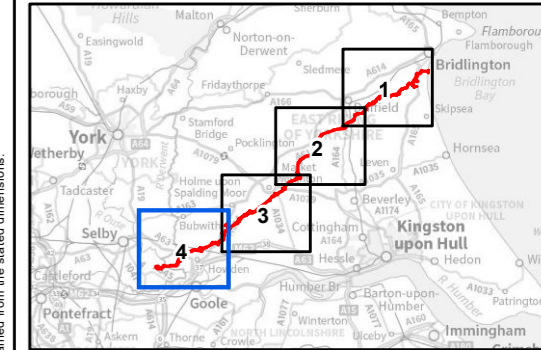
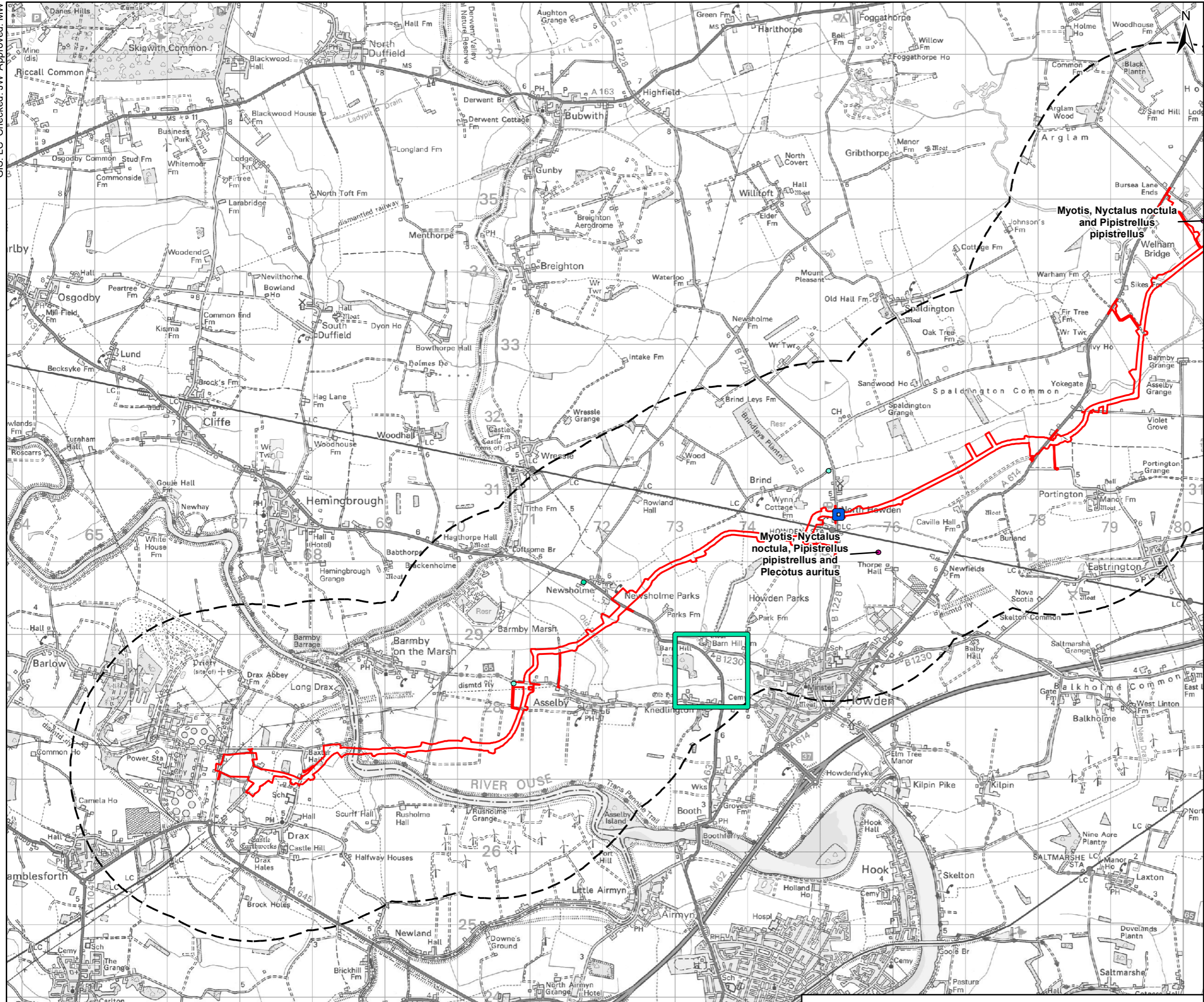


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PROJECT  
**Scotland England Green Link 2**

- KEY
- Planning Application Boundary
  - Desk Study Area
- Desk Study Records within 1km
- Pipistrellus pipistrellus
  - Pipistrellus pipistrellus - Roosting
  - Plecotus auritus
  - Multiple Species (Labelled)
  - Multiple Species - Roosting (Labelled)



TITLE  
**Figure 1  
Desk Study Area**

REFERENCE  
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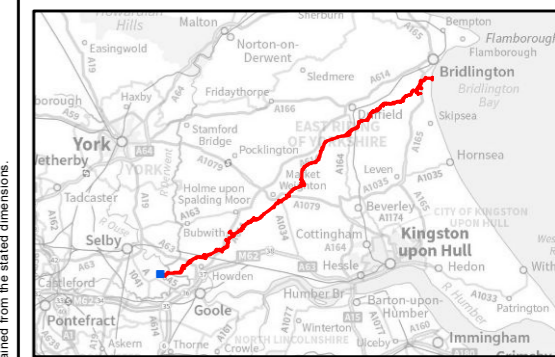
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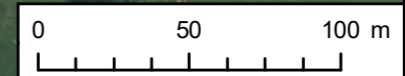
- KEY
- Stopping Point
  - Activity Transect Route
  - ★ Static Detector Location



TITLE  
**Figure 2  
Walked Transect Survey Area and Static  
Detector Location**

REFERENCE  
SEGL2\_T\_BR\_6-2\_v3\_20220525

SHEET NUMBER 1 of 1  
DATE 25/05/2022

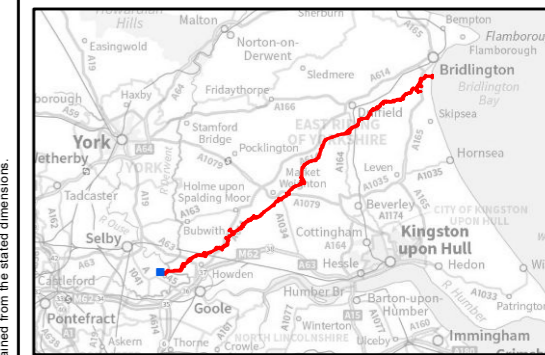
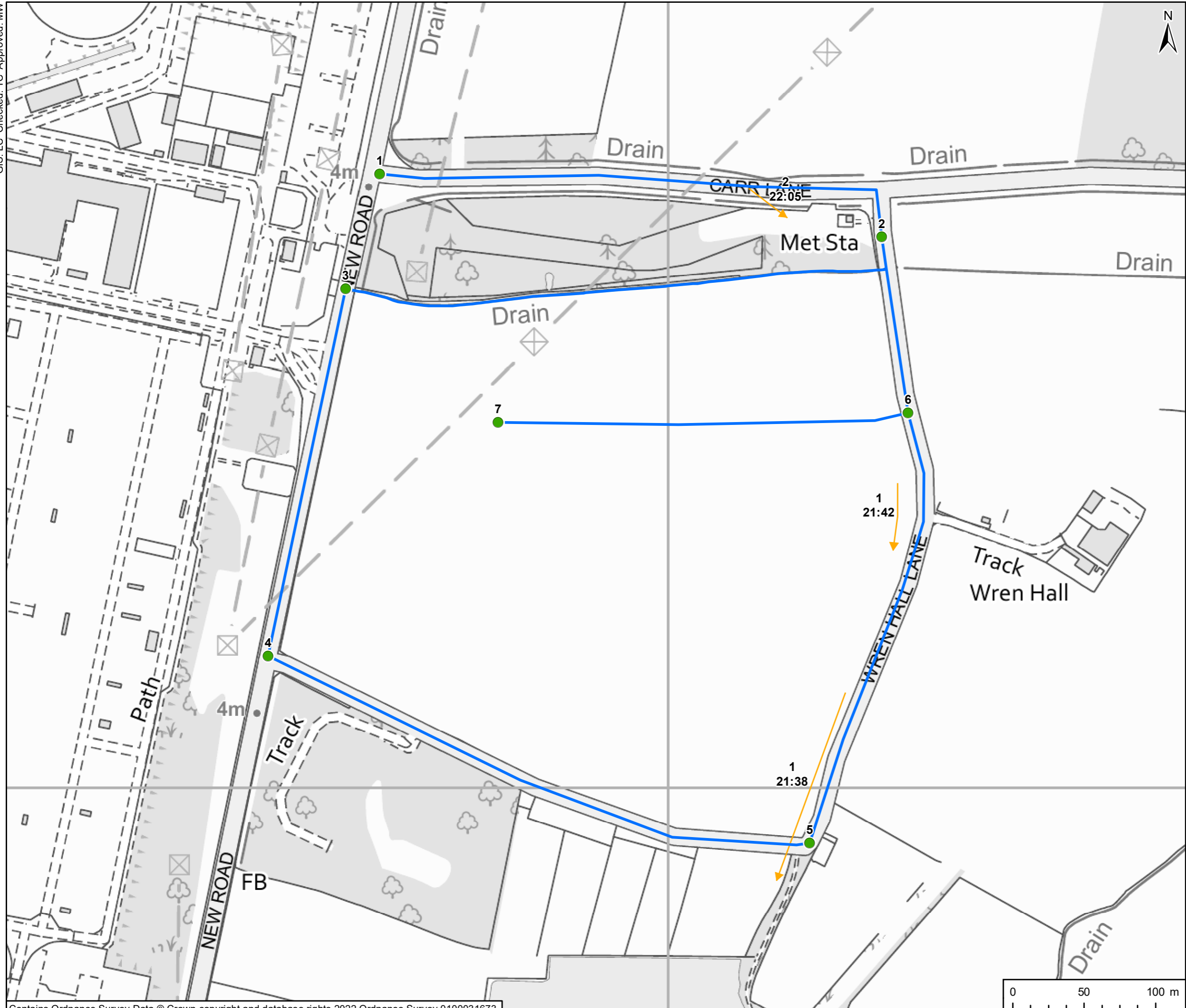


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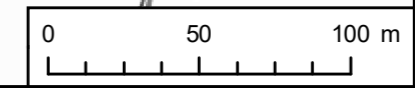
- KEY
- Stopping Point
  - Activity Transect Route
  - Bat Activity - Species
  - PIP1



TITLE  
**Figure 3.1  
Bat Activity Recorded on Tramsect  
19th May 2021**

REFERENCE  
SEGL2\_T\_BR\_3.1\_v3\_20220525

SHEET NUMBER 1 of 1  
DATE 25/05/2022



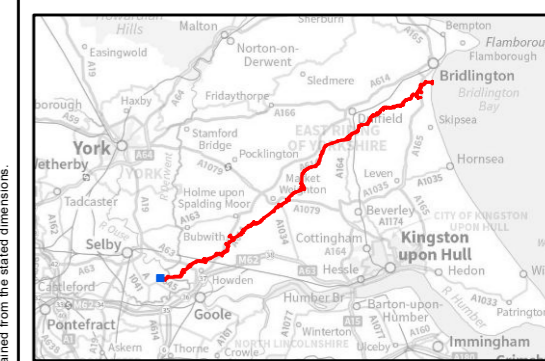
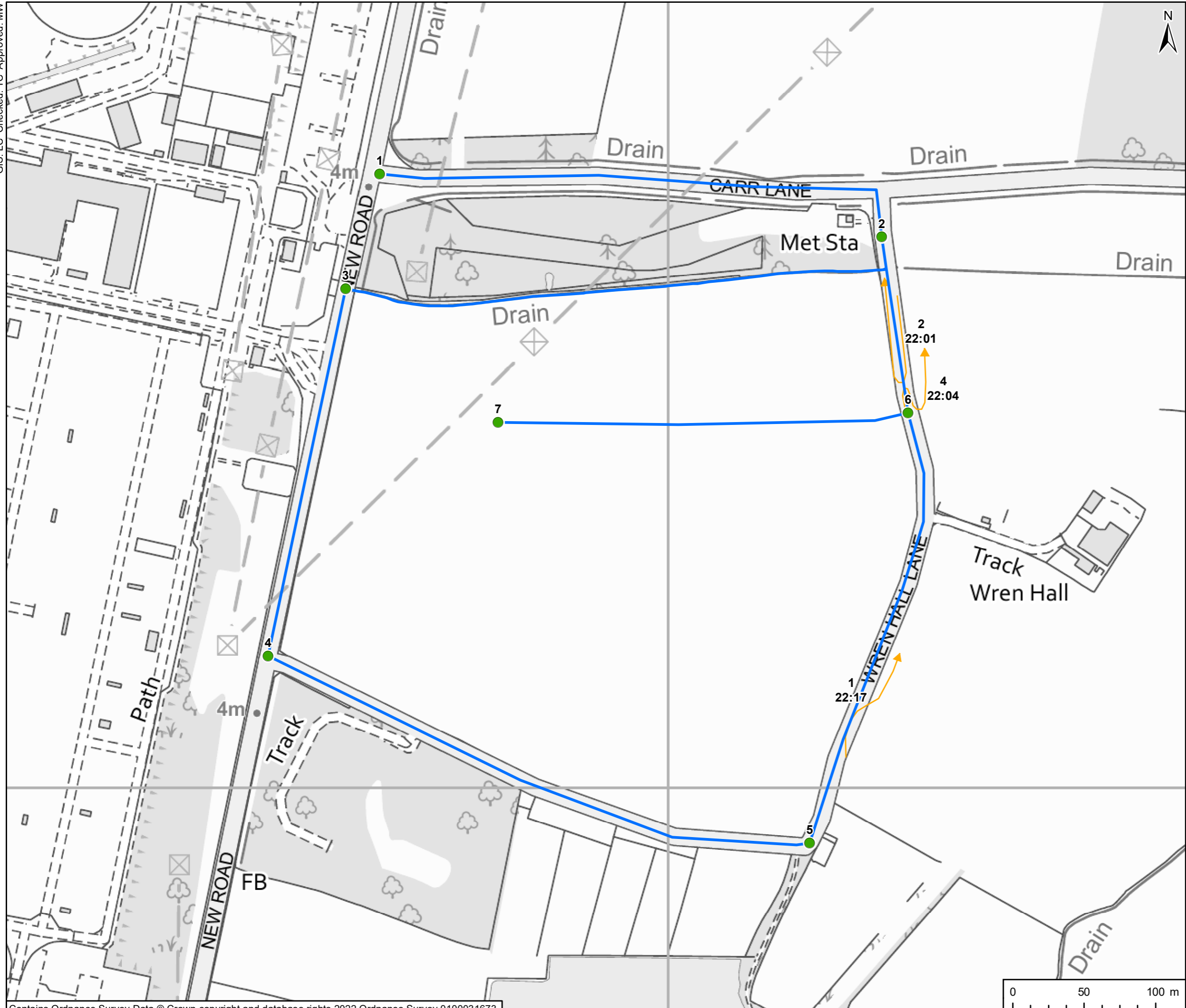
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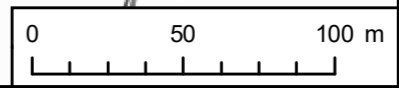


- KEY
- Stopping Point
  - Activity Transect Route
  - Bat Activity - Species
  - PIFI



TITLE  
**Figure 3.2  
Bat Activity Recorded on Tramsect  
22nd July 2021**

REFERENCE  
SEGL2\_T\_BR\_3.2\_v3\_20220525

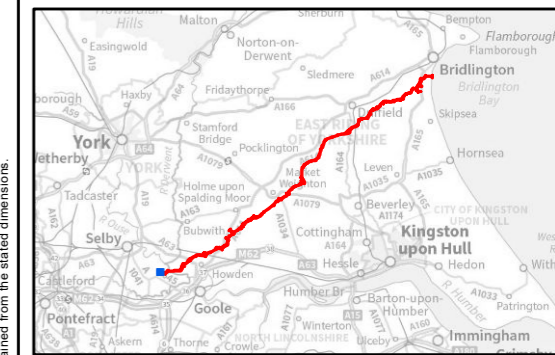
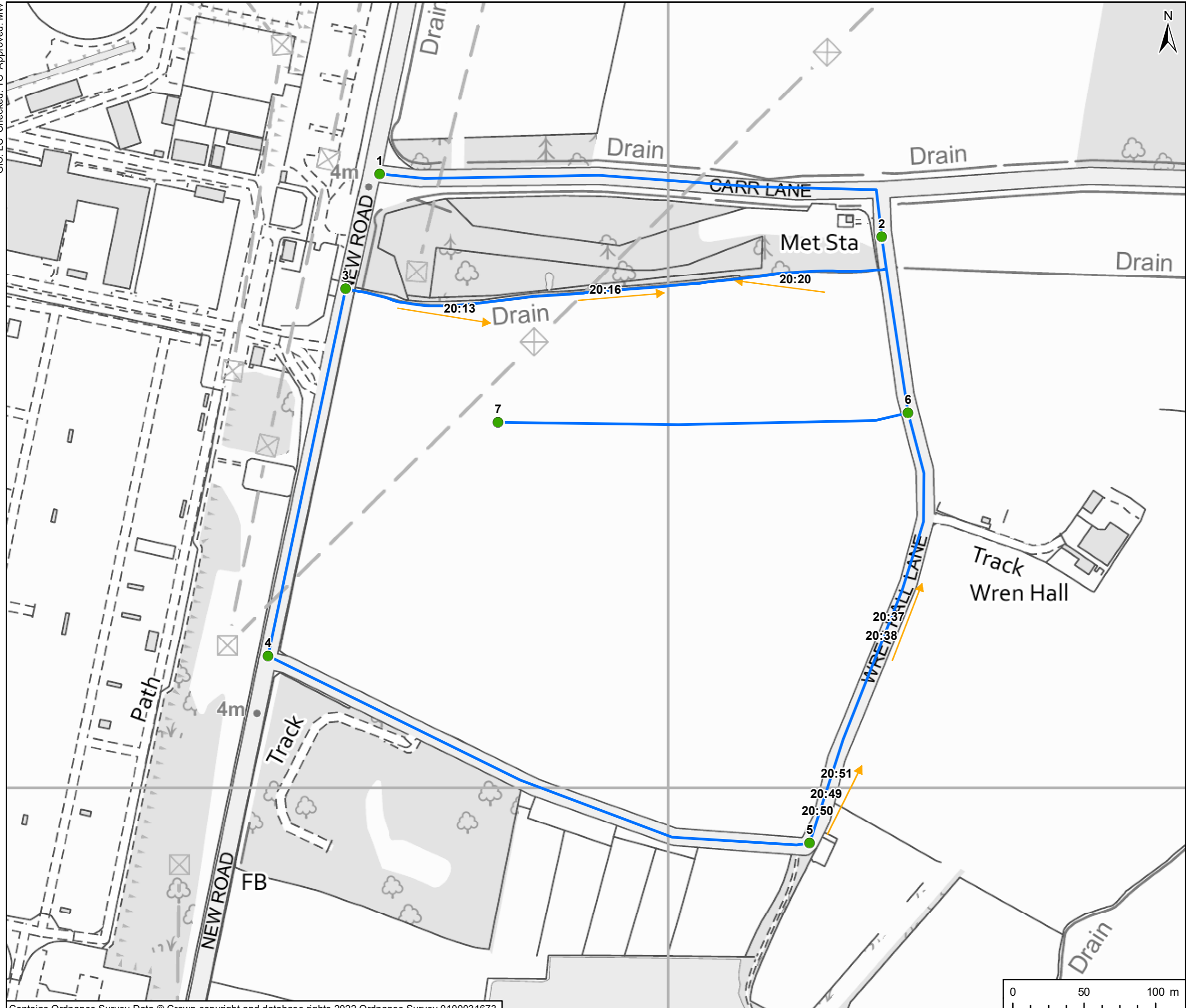


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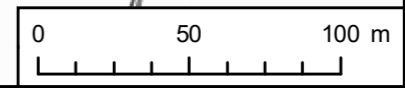
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- KEY
- Stopping Point
  - Activity Transect Route
  - Bat Activity - Species
  - PIFI



TITLE  
**Figure 3.3  
Bat Activity Recorded on Tramsect  
9th September 2021**

REFERENCE  
SEGL2\_T\_BR\_3.3\_v3\_20220525



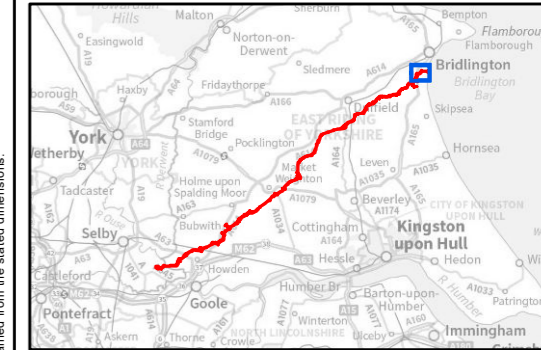
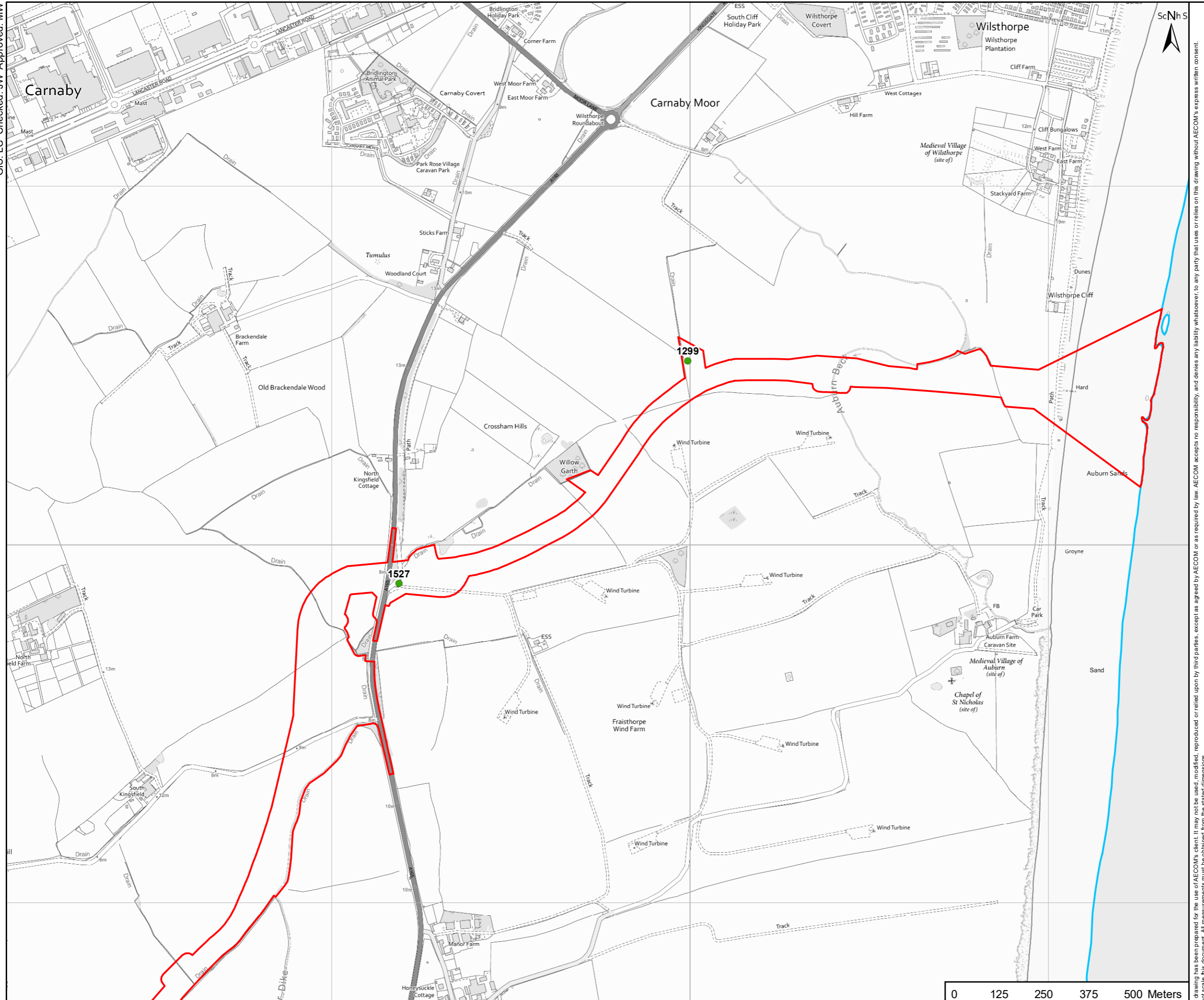
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- KEY**
- Planning Application Boundary
  - Mean Low Water Springs
  - Tree with Bat Roost Potential**
  - Low

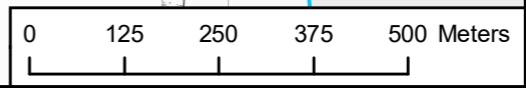
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**TITLE**  
**Figure 4**  
**Bat Roost Potential Assessment**

**REFERENCE**  
SEGL2\_T\_BR\_4\_v3\_20220525

**SHEET NUMBER** 1 of 21  
**DATE** 25/05/2022



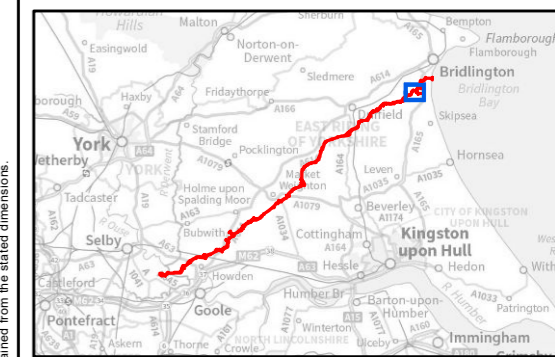
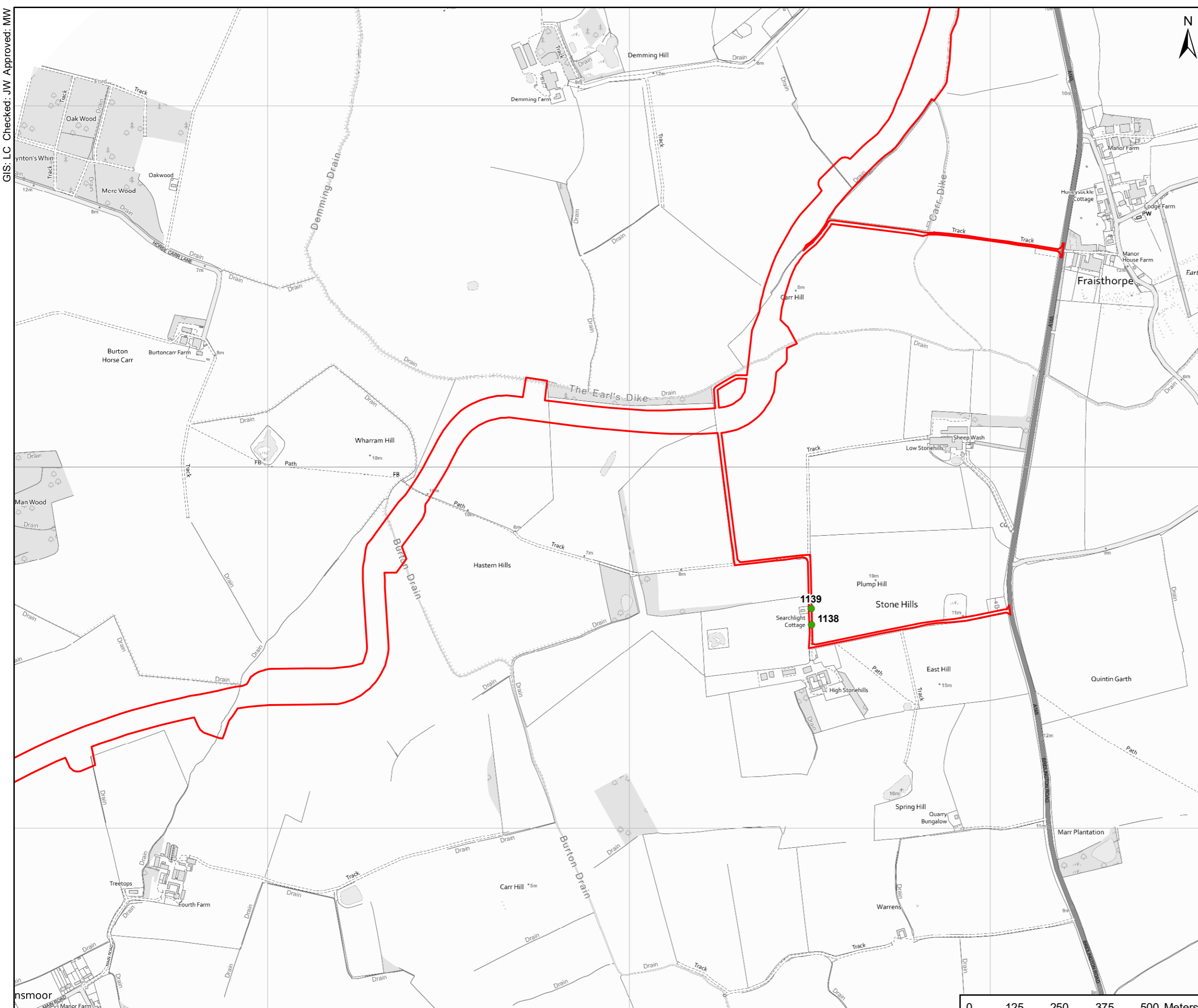
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Coordinate System: British National Grid

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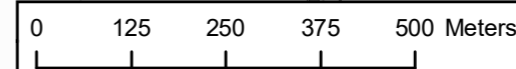
- KEY**
- Planning Application Boundary
  - Tree with Bat Roost Potential
    - Low



**TITLE**  
**Figure 4**  
**Bat Roost Potential Assessment**

**REFERENCE**  
SEGL2\_T\_BR\_4\_v3\_20220525

**SHEET NUMBER** 2 of 21 **DATE** 25/05/2022



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