



**RWE Renewables UK Dogger Bank
South (West) Limited**

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Dogger Bank South Offshore Wind Farms

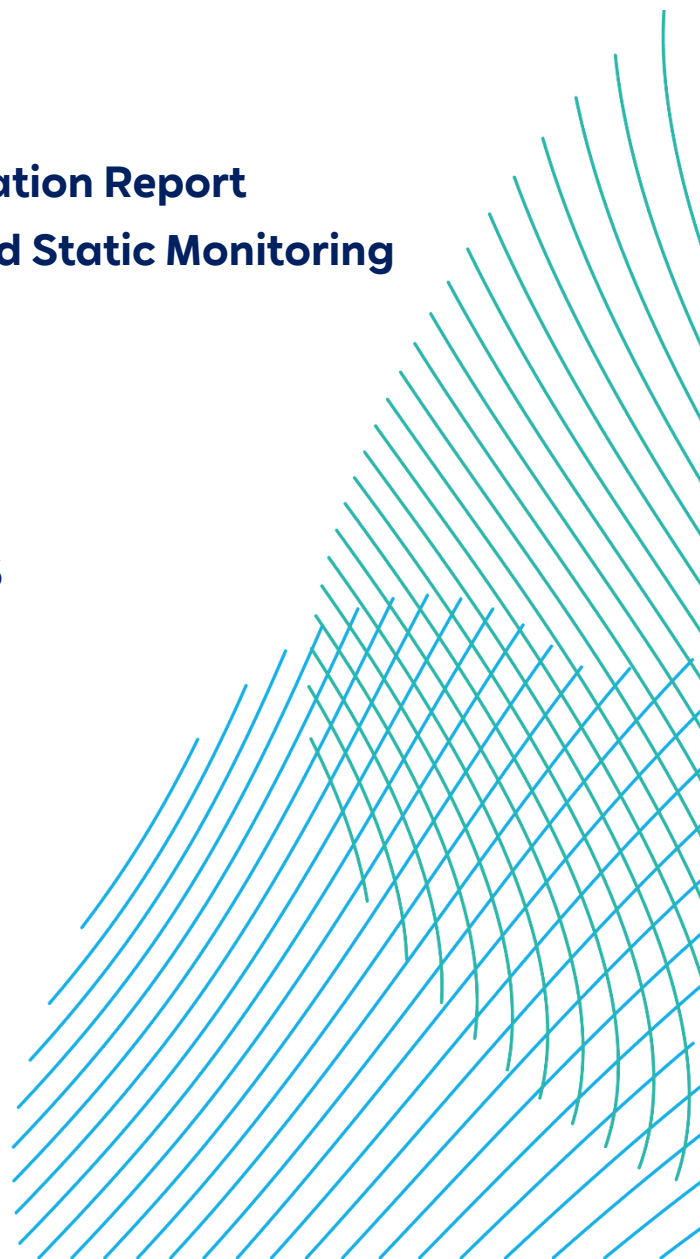
**Preliminary Environmental Information Report
Appendix 18-4 – Bat Transects and Static Monitoring
Report**

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Bat Transects and Static Monitoring Dogger Bank South Offshore Wind Farms

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EXECUTIVE SUMMARY

Overview

Bat transects and static monitoring were undertaken as part of an ecological assessment of the onshore cable route options connecting Dogger Bank South Offshore Wind Farm. The transects and static locations were spread out along the survey area and aimed to include habitats which are typically used by foraging and commuting bats, such as broadleaved woodland, areas of standing or running water and dense hedgerows. Due to the limited amount of access available to private land, surveys were undertaken in most cases from Public Rights of Way (PRoW), and static detectors deployed within the limited accessible land along the route.

Twelve transect routes were initially designed in April 2022, however, The Projects design was subject to a continual streamlining process subsequent to this, as a consequence the requirement for Transect 1, Transect 2 and Transect 3 was removed prior to commencement of surveys the following month. Surveys were undertaken of the remaining nine transects; Transects 4 to 12, primarily via PRoW.

The results varied across the transects, static detectors and by month. The highest levels of foraging were recorded at Transect 9, with Transects 4, 8 and 12 also showing reasonably high levels of foraging. The transect routes highlighted areas and types of habitat which were frequently used by foraging and commuting bats. This included the River Hull, around the caravan site where ponds, woodland edges and hedgerows were present in close proximity, woodland edges and sensitively managed hedgerows. The highest number of calls was recorded for Transect 5, which again was positioned where a variety of suitable habitats were present in close proximity, including hedgerows, wet ditches, ponds and residential buildings with gardens.

Implications and Recommendations

As the project design has not been finalised at this stage impact assessments or detailed recommendations have not been requested and are therefore not provided in this report. The initial data indicates that there are no particularly sensitive areas with very high levels of bat activity or key bat species which could influence the route refinement process. It is however recommended that, any sections of hedge, woodland or pond which are removed or impacted should be replaced, like for like.

Additional surveys may be required when the route is known in order to fill in the areas not covered by the transect locations. General good working methods, particularly regarding sound and lighting should also be followed throughout the construction period.

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1 INTRODUCTION

1.1 Scope of Report

This report has been prepared by Peak Ecology Ltd with Royal HaskoningDHV on behalf of RWE Renewables UK. It provides the results of bat transect surveys and static monitoring surveys within the Onshore Survey Area associated with the Dogger Bank South Offshore Wind Farms.

This is an interim data report being prepared for the Preliminary Environmental Impact Review (PEIR); the final data report will inform the ecological section of an Environmental Impact Assessment (EIA) for the site. The purpose of this report is to:

- Detail the methods used to undertake the bat transects and static monitoring surveys;
- Include the survey details, surveyors, weather conditions and any constraints to the surveys;
- Provide the results of the surveys;
- Identify key areas of bat activity in the vicinity of the Onshore Survey Area;
- Identify potential impacts to roosting and foraging bats;
- Set out any need for additional survey work; and
- Outline recommendations for mitigation and/or avoidance measures where appropriate.

As an interim data report this will not include an evaluation of impacts or details of mitigation; this will be addressed in the EIA.

The approach to this assessment follows best practice published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2013) and the British Standards Institution (BSI, 2013). Details of individual survey methods and associated supporting information are provided in Section 2.

1.2 Proposed Works

RWE Renewables is intending to develop the two proposed Projects together. The Projects will require a buried onshore export cable between the landfall location and the onshore grid connection points at Creyke Beck, west of Beverley, this area with associated infrastructure is referred to as the Onshore Study Area. The route options are being refined; at the time of survey the Onshore Survey Area comprised several route options. For the purpose of this interim report the areas are based on those correct on the 1st September 2022.

1.3 Survey Area

The site comprises nine transect routes and seven static location points, approximately located between Skipsea and Walkington, in East Yorkshire. The individual survey areas are described in more detail in Section 3. The transect routes are presented within Appendix D.

1.4 Legislation

Bats and their roosts are fully protected under the Conservation of Habitats and Species Regulations 2017 and under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Section 1 (Schedule 5). Bats are also a UK Post-2010 Biodiversity Framework species. As such it is an offence to:

- Intentionally or deliberately kill, injure or capture (or take) bats;
- Deliberately disturb bats (whether in a roost or not);
- Recklessly disturb roosting bats or obstruct access to their roosts; or
- Damage or destroy bat roosts.

2 METHODOLOGY

2.1 Desk Study

A desk study was undertaken using bat records provided by the North and East Yorkshire Ecological Data Centre (NEYEDC). Additionally, MAGIC was used to obtain any bat European Protected Species (EPS) licence returns from Natural England that were within the Onshore Survey Area. The desk study has been reported in a standalone document (Peak Ecology, 2022) but relevant information is included in this report. All data has been included from within 5km of the survey area at the time of writing.

2.2 Bat Transect Surveys

Twelve transect routes were initially designed, however this was reduced to nine as a result of project streamlining and the removal of the requirement for three transects routes (Transects 1 to 3).

Survey methods followed industry standard, outlined by Bat Conservation Trust (Collins (ed), 2016). Surveys lasted for approximately 2.5 - 3 hours, with each route being between 5.5 - 7km. The routes generally followed public rights of way (PRoW) apart from one transect (T5) where access could be gained to private land.

The surveys were undertaken between the months of May and October 2022, i.e., six visits. Transect surveys are generally undertaken at dusk, however good practice guidelines state '*At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period*', which were undertaken during the June or July survey visit.

Dusk surveys commenced at approximately sunset, and dawn surveys finished at approximately sunrise. Times on site were noted on every survey visit, in addition to weather conditions and observations of disturbance which may have influenced the levels of bat activity. Surveys were scheduled to avoid unsuitable weather conditions, such as strong wind or rain, and poor visibility. Where unforeseen sub-optimal conditions were experienced, this was noted.

Each survey involved two surveyors walking a pre-determined route around the site, with a series of five-minute stopping points at regular intervals throughout. Surveyors were equipped with hand-held heterodyne bat detectors, either a Batbox Duet or a Batbox III; this is a listening device which enables the operator to hear a full range of bat calls and then to denote the presence and number of bats on a base map, in some cases the species is also recorded. Surveyors recorded details of observations during the survey including bat flight lines, number of individual bats and their behaviour. In addition to the 'listening device an Anabat Swift or Titley Scientific Chorus detector was used to record and GPS-tag any detected bat calls. The recordings were subsequently analysed with Analook Insight software, this enabled the confirmation of species recorded on the transect.. .

2.3 Bat Static Monitoring Surveys

A static monitoring device (Titley Scientific Chorus) was positioned in a designated location along each transect route, where possible. Four transect routes had a corresponding static detector present for all six visits (T4, T5, T7 and T12), a further three transect routes had a corresponding static detector present for three months (T8, T10 and T11) and the final two had no static detector (T6 and T9). This is detailed in Table 1. Whilst activity surveys could be undertaken using PRow, static detectors were only able to be installed where access permission had been granted. The number of months of static detector surveys that were possible were therefore dependant on when access permission was granted.

Transects 1, 2 and 3, present to the northern extent of the survey area, were not surveyed because access was not secured for this area. When the route options were amended in summer 2022, these transects were removed from the survey area.

The detectors were programmed to record any passing bat calls from on “night only” mode which records from approximately half an hour before sunset, throughout the night, until half an hour after sunrise. The detectors were generally left out for a week in order to record five days of bat activity. The detectors were then collected and any recordings analysed.

Table 1. Bat Transect Details

Transect No.	Transects Timing	Access for Transect	Access for Static Deployment
T1	Not surveyed	None	None
T2	Not surveyed	None	None
T3	Not surveyed	None	None
T4a and T4b	May - October	Yes - PRow	May - October
T5	May - October	Yes - Private Land	May - October
T6	May - October	Yes - PRow	None (No access)
T7	May - October	Yes - PRow	May - October
T8	May - October	Yes - PRow	August – October (No access May – July)
T9a and T9b	May - October	Yes - PRow	None (No access)
T10	May - October	Yes - PRow	August – October (No access May – July)
T11	May - October	Yes - PRow	August – October (No access May – July)
T12	May - October	Yes - PRow	May - October

2.3.1 Survey Dates

The surveys were undertaken between May and October 2022 inclusive, all dates mentioned within this report refer to 2022, unless otherwise stated.. Due to unforeseen unsuitable weather or health and safety concerns, some surveys had to be postponed or repeated within the month. Details can be seen in Table 2. Information regarding survey conditions can be found within Appendix C.

Table 2: Survey dates

No.	Survey Dates							
	May	June (dusk)	June (dawn)	July (dusk)	July (dawn)	August	September	October
T4a & T4b	23/05/22 & 31/05/22	13/06/22	14/06/22	20/07/22	-	08/08/22	20/09/22	17/10/22
T5	24/05/22	13/06/22	-	18/07/22	20/07/22	09/08/22	13/09/22	19/10/22
T6	24/05/22	15/06/22	16/06/22	19/07/22	-	23/08/22	20/09/22	18/10/22
T7	25/05/22	14/06/22	-	18/07/22	19/07/22	09/08/22	21/09/22	19/10/22
T8	24/05/22	13/06/22	14/06/22	28/07/22	-	10/08/22	12/09/22	12/10/22
T9a & T9b	23/05/22 & 31/05/22	14/06/22	15/06/22	20/07/22	-	15/08/22	20/09/22	17/10/22
T10	25/05/22	16/06/22	17/06/22	19/07/22	-	11/08/22	14/09/22	11/10/22
T11	24/05/22	16/06/22	17/06/22	19/07/22	-	10/08/22	21/09/22	18/10/22
T12	23/05/22	15/06/22	16/06/22	18/07/22	-	15/08/22	21/09/22	13/10/22

2.4 Limitations

2.4.1 Survey Methods

As habitat surveys had not been undertaken prior to the bat surveys, presumptions were made about the habitat quality from aerial maps in order to decide the level of survey effort required. It was deemed likely that the habitats along the survey area were going to vary significantly, although the landscape appeared to be dominated by arable land; offering low-moderate levels of potential foraging habitat. Furthermore, as the route was not finalised at this point, survey locations and methods have been designed around getting a reasonable overview of the area as a whole. Once the route is refined, further survey effort may be required or, if the surveyed area is still relevant, the survey effort undertaken may be able to reasonably infer the impact on foraging bats with no further survey effort.

The Bat Conservation Trust (BCT) good practice guidelines (BCT, 2016) state that transects for moderate suitability habitat should take place every month from April to October inclusive. The good practice guidelines states that moderate suitability habitat should have static detectors deployed at two locations per transect on five consecutive nights per month in April to October. Due to the access restrictions (as permission to private land is required) and the large scale of surveys being undertaken as part of the survey areas, a single static detector was instead deployed every month, where access could be gained. Access was only possible to four transect routes for May – October and an additional three transect routes for August – October. Two transect routes had no static detector deployment. This is detailed within Table 1.

Peak Ecology Ltd were not instructed to conduct surveys until May 2022, it was therefore not possible to undertake the April 2022 survey visits. The surveys which were undertaken were completed under optimal survey conditions, and Peak Ecology Ltd are confident that the data collected accurately represents the bat activity in the area.

2.4.2 Access

Each of the transects, bar one, were accessed via PRow, therefore access permission was not necessary for the majority of transects. This did however cause a limitation to the areas which could be surveyed, and meant that two routes; Transect 4 and Transect 9, had to be split into two sections (labelled as a and b) in order to be long enough to cover the required length.

Access for Transect 5 was on private land, and permission was therefore requested each month in order to undertake the visit. Deployment of static detectors relied on access to private land which is why only four could be deployed for the first time in May, with an additional three deployed for the first time in August, and therefore why two transect routes could not have any corresponding static surveys undertaken. This limits the ability to compare the species present and numbers of calls across the different transect locations.

2.4.3 Equipment and Data Analysis

Peak Ecology Ltd purchased brand new bat detectors in order to undertake all the surveys using the same, most up-to-date equipment and analysis software. This included using Titley Scientific's Anabat Chorus detectors and analysis software Anabat Insight.

Unfortunately, due to manufacturing faults with the bat detectors, various unforeseen issues were encountered, particularly in the earlier months. This included; faulty battery connections leading to detectors turning off mid-survey, faulty GPS connections leading to data on transects not being attributed to the correct geographical point and analysis software attributing species recording incorrectly leading to additional manual identification being required. All faults were reported to Titley Scientific, the manufacturers of the detectors and analysis software. In response updates to detector software were required, although this was found to only rectify some faults. Peak Ecology Ltd. also used some different recording equipment where this was possible to do. This included using Anabat Swifts, Echo Meter Touch 2 Pro and Anabat Express in order to gain data; each detector will however have different recording capabilities and therefore it has been made clear which detector was used.

Generally, these faults were rectified on later survey visits. In cases where transect data or GPS data was missing the paper survey forms were used as a backup, which has been clearly noted. Where static data had been lost, sub-optimal nights were used where this was possible.

Further details of faults identified per transect/ static is detailed within the Table 5 below. Those highlighted in red are where faults were noted.

Table 5. Bat Detector Faults

Transect Location	Static Detector Faults	Transect Detector Faults	
		Recordings	GPS
T4a and T4b	May –no data. Stopped recording before dusk on night 1 due to battery fault. June – Limited data on night 1 and 2 due to battery fault. No data night 2 - 4. July – No fault August – Stopped recording on night 3, but started again on night 6. September- No fault October- No fault	May – No fault June (dusk) – stopped recording at 23:26. June (dawn) – stops recording at 02:06. July – No fault August – No fault September- No fault October- No fault	May – Missing transect line (T4a) and Grouped recordings (T4b). June (dusk) – No fault June (dawn) – No fault July – No fault August – No fault September- Grouped recordings October- No fault
T5	May – No fault June – No fault July – No fault August – No fault September- No fault October- No fault	May – No fault June – No recordings after 2 minutes July (dusk) – No fault July (dawn) – No fault August – No fault September- No fault October- No fault	May – Grouped recording June – No data July (dusk) – Some Grouping July (dawn) – Grouped at end August – All Grouped at start September- Grouped recordings October- No fault
T6	No static deployed	May – No fault June (dusk) – No recordings after an hour June (dawn) – No data July – No fault August – Missing last hour September- No fault October- No fault	May – Grouped recording June (dusk) – No fault when recording June (dawn) – No data July – Grouped recording August – Grouped recording September- No fault October- No fault
T7	May – No fault June – No fault July – No fault August – No fault September- No fault October- No fault	May – No fault June – No data recorded July (dusk) – No fault July (dawn) – No fault August – No fault September- No fault October- No fault	May – Grouped recording June – No data recorded July (dusk) – Grouped recording July (dawn) – Grouped recording August – No fault September- No fault October- No fault

Transect Location	Static Detector Faults	Transect Detector Faults	
		Recordings	GPS
T8	August – No fault September- No fault October- No fault	May – No fault June (dusk) – No data recorded June (dawn) – No data recorded July – No fault August – No fault September- No fault October- No fault	May – Faulty (unclear why) June (dusk) – No data recorded June (dawn) – No data recorded July – Grouped recording August – No fault September- Grouped recordings October- No fault
T9a and T9b	No static deployed	May – No data recorded. Back up detector used. June (dusk) – No fault June (dawn) – No fault July – No data August – No fault September- No fault October- No fault	May – Grouped recording June (dusk) – Grouped recording June (dawn) – Grouped recording July – No data recorded August – No fault September- No fault October- No fault
T10	August – No fault September- No fault October- no data. Did not record due to battery fault	May – No fault June (dusk) – No fault June (dawn) – Missing last hour July – No fault August – No fault September- No fault October- No fault	May – Grouped recording June (dusk) – Grouped recordings for second half June (dawn) – Grouped recording July – Transect line present. No data along route. August – No fault September- Grouped recordings October- No fault
T11	August – No fault September- stopped recording at 5am on night 3. No data night 4-5. October- No fault	May – No fault June (dusk) – No fault June (dawn) – No fault July – No fault August – No fault September- No fault October- No fault	May – Grouped recording June (dusk) – No GPS file June (dawn) – No GPS file July – Transect line present. No data along route. August – No fault September- No fault October- No fault

Transect Location	Static Detector Faults	Transect Detector Faults	
		Recordings	GPS
T12	May – Only recorded on night 1. June – No fault July – No fault August – Stopped recording at end of night 2. September- no recording for night 1. No faults for night 2-5 October- No fault	May – No fault June (dusk) – Stopped after 15 mins June (dawn) – No fault July – Missing sections August – No fault September- No fault October- No fault	May – GPS lost half way June (dusk) – No data June (dawn) – Grouped July – Incorrect times on files August – No fault September- No fault October- No fault

When undertaking transect surveys it is normal practice for surveyors to note down all bat activity on paper maps using the listening device, irrespective of the functioning of the recording device. Therefore, there is a record of all activity and the location of the activity. In cases where the GPS location was not assigned to a call and calls were grouped the field notes have enabled the data to be recorded accurately. The malfunction of the recording devices means that the identity of some bat species could not be confirmed. The absence of this detail is not critical and the locations of the greatest levels of activity are very clear. Whilst some species data is missing, the overall species list for all surveys across all survey months is still likely to give a comprehensive list of bats present along each transect.

Whilst some species data is missing, the overall species list for each transect, across all survey months, is likely to be sufficiently representative of those present at the site.

With regards static detectors, there is not an additional 'listening device' and so data is lost. However, it is noted that static detectors provide supplementary information to the transect data and therefore, the levels and locations of bat activity in the area are still well represented. Furthermore, during June, when most detector faults arose, adult females would be feeding young; August and September tend to be the months with the highest activity levels because that years' young are also flying. Whilst it is regrettable that the bat detectors failed when they did it is anticipated that the lack of data will not detract from the overview of bat activity in the area and a reasonable assessment of impacts of the Project can still be made.

Analysis of bat calls to species level is not always possible and therefore some calls are only identified to genus level, this is particularly the case with *Myotis* species of bats. Where possible an identification has been made, for example, Daubenton's *Myotis daubentonii*, although as there are other species of *Myotis* which may be present the number of species recorded is presented as, for example, five or six species.

2.4.4 *Lifespan of Data*

The results and recommendations contained within this report are considered to be valid for up to two years from the date of survey, assuming that there are no significant changes to the site condition or management within this period. After this period, or should the site conditions change, an update may be required in order to inform ecological constraints to development proposals and/or accompany a planning submission.

3 RESULTS

3.1 Desk Study

3.1.1 Designated Sites

Table 6 outlines statutory designated wildlife sites which lie within 2kms of the survey area, as per the 1st September 2022. Statutory sites include Sites of Special Scientific Interest (SSSI) and Special Protection Areas (SPA). None of the sites were specifically designated for bats.

Table 6: Designated sites identified during the desk study

Local Nature Reserves	Closest Transects (T)	Designation
Beverley Parks	T4, T10, T11	It includes the largest recently planted non-commercial orchard of traditional northern apple varieties.
SSSI		
Brantingham Dale SSSI	T12	Sloped land supporting a mosaic of species-rich chalk grasslands, amid extensive scrub invasion and young woodland.
Withow Gap, Skipsea SSSI	T4	Important site for geological and environmental history interest.
Burton Bushes SSSI	T10	Oak woodland exceeding 200years in age. Canopy dominated by oak, with birch, field maple and wych elm also present. Understory dominated by holly.
Leven Canal SSSI	T7	5km stretch of canal designated for its wetland and marsh habitats.
Hornsea Mere SSSI	T6	A large shallow lake with associated mosaic of habitats. Designated for its ornithological importance.
Skipsea Bail Mere SSSI	T4	Important site for geological interest.
Pulfin Bog SSSI	T7	Remnant of fenland and reed swamp habitat important botanically and for breeding birds.
SPA		
Hornsea Mere SPA	T6	SPA designation specifically for bird species gadwall and mute swan.

3.1.2 Bat Species

Table 7 below provides a summary of the bat records provided by the client that are considered most relevant to the site and/or proposals. Records are included from a buffer of 2km from the survey area boundary at the time of writing. The full dataset is not included here but is available on request. The distribution of records is shown in Appendix E.

Table 7: Summary of bat species records relevant to the site

Species	Common name	Total Number of Records	Years
<u>Casual Records (from the last 20 years)</u>			
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	63	2001 - 2018
<i>Pipistrellus nathusii</i>	Nathusius' pipistrelle	1	2010
<i>Pipistrelle</i> sp.		5	2002 - 2015
<i>Plecotus auritus</i>	Brown long-eared	4	2004 - 2014

Species	Common name	Total Number of Records	Years
<i>Myotis daubentonii</i>	Daubenton's	1	2016
<i>Myotis mystacinus</i>	Whiskered	7	2002 - 2016
<i>Nyctalus noctula</i>	Noctule	1	2015
<i>Vespertilio murinus</i>	Parti-coloured	2	2010
<u>Roost Records (whole data set)</u>			
Unidentified Bat sp.		46	1984 - 2008
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	20	2001 - 2015
<i>Pipistrelle</i> sp.		56	1982 - 2011
<i>Plecotus auritus</i>	Brown long-eared	5	1991 - 2008
<i>Nyctalus noctula</i>	Noctule	5	1982 - 1988

3.2 Bat Transect and Static Surveys

Transects are described below with an outline of the number of bats and bat species that were recorded. The data is shown in more detail on a series of maps for all transects included in Appendix D.

3.2.1 Bat Transects Surveys

Transect 4a and 4b

Transect 4a and 4b were approximately 2.9 and 3.9km respectively. The routes were located to the north of the survey area near to the landfall point at Skipsea. T4a started in Skipsea, before travelling south through a section of arable land. T4b followed a lane through the village of Dunnington, which is dominated by arable fields, although the lane is tree / hedgerow lined in places.

Detector Recordings

During the transects up to six species of bats were identified along the route. The most recorded species was common pipistrelle, with a maximum number of calls recorded in May (148). May's survey visit returned the greatest number of calls (164), although August had the greatest number of individual species recorded (five or six). Table 9 provides greater detail of this.

Surveyor Observations

Transects 4a and 4b generally presented low levels of foraging activity observed by the surveyors. Bats were recorded on every visit foraging along a stretch of single track, unlit lane in Dunnington where woodland is present on both sides of the lane. The surveyors encountered a maximum count of four individual pipistrelle bats foraging in this area in June. In October brown long-eared, and myotis bats were also recorded here. Bats were also recorded foraging further north on this lane in June, July, September and October. Up to two pipistrelles were recorded here and a myotis was also recorded in September. Up to three pipistrelle bats were also recorded foraging along a hedgerow south of Skipsea village on the

4a transect section of the route in May, June and August. A noctule bat was also recorded in this area on the August visit.

Table 9 Summary of Results for Transect 4a and 4b

Species	May	June (Dusk)	June (Dawn)	July	Aug	Sept	Oct	Total
Common pipistrelle	148	-	19	46	113	117	91	534
Soprano pipistrelle	6	-	-	0	16	7	5	34
<i>Pipistrelle</i> sp.	7	-	-	0	0	0	0	7
Brown long-eared	0	-	-	0	4	0	1	5
Daubenton's	0	-	-	0	9	0	0	9
<i>Myotis</i> sp.	3	-	-	6	1	3	14	27
Noctule	0	-	-	0	2	0	0	2
Total	164	-	-	52	145	127	111	618

NB. Red text denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

Transect 5

Transect 5 was entirely on private land as access had been granted; it was approximately 6.5km long, traversing pasture and arable fields from a collection of farmland and residential buildings through to the village of Nunkeeling in the south. Generally, the route followed the hedgerows at the edges of fields, some of which had associated ditch systems.

Detector Recordings

During the transects, six or seven species of bats were recorded. Common pipistrelle was the most recorded species and was recorded each month at similar levels (max count of 66 in September). May recorded the largest number of calls out of the months, with a count of 90 passes over the length of the transect. Table 10 provides further details.

Surveyor Observations

Bats were recorded along the length of Transect 5. Peak areas of activity included the northern end of the route near the residential buildings, where bats were recorded foraging along the boundary features. Pipistrelle bats, up to four individuals, were recorded in both July and August. The boundary features of a private property on Billings Lane, as well as the Nunkneeling Priory, also provided good foraging habitats with multiple individual bats recorded in this area on each visit. A maximum number of seven individual pipistrelle bats were recorded in this area in May. The only bats recorded in October for this transect were foraging in this area.

Table 10 Summary of Results for Transect 5

Species	May	June	July (Dusk)	July (Dawn)	Aug	Sept	Oct	Total
Common pipistrelle	56	-	30	17	47	66	5	221
Soprano pipistrelle	2	-	5	3	16	4	0	30
<i>Pipistrelle</i> sp.	0	-	0	0	0	0	0	0

Species	May	June	July (Dusk)	July (Dawn)	Aug	Sept	Oct	Total
Brown long-eared	1	-	0	0	0	0	0	1
Daubenton's	0	-	0	0	2	0	0	2
<i>Myotis</i> sp.	31	-	7	0	0	18	0	58
Noctule	0	-	0	0	3	0	0	3
Total	90	-	42	20	73	88	5	318

NB. **Red text** denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

Transect 6

Transect 6 was approximately 5.7km in length, starting at the village church in Sigglesthorne before traversing the arable fields though to Little Catwick before heading south towards Long Riston. The majority of the route was through arable and pasture fields, however the gardens and residential areas of Sigglesthorne and Little Catwick were also captured.

Detector Recordings

During the transect visits, three or four species were recorded along the route of Transect 6. The calls were quite evenly split between common pipistrelle and soprano pipistrelle, with a maximum count of 100 passes and 99 passes respectively for May. The most calls were recorded in May (237) however, the detectors malfunctioning on three transect surveys did impact the data collected for this Transect.

Surveyor Observations

The level of activity observed along Transect 6 varied from month to month. The highest level of activity was observed in June where Groups of bats were observed in Little Catwick (just outside of the survey area) and just south of the village, maximum counts of five and three individual pipistrelle bats were recorded. Bats were also observed in these areas in May, July and October, although in lesser numbers. May, June, August and September highlighted a high level of foraging activity at the start of the transect route in Sigglesthorne, with a peak count of eight individual pipistrelle bats recorded on the May visit. It is therefore considered likely that a roost is present within this area. Brown long-eared bats were also recorded commuting along the transect route from Sigglesthorne, so may also be roosting within the village. Activity was recorded along the stretch of transect to the south of Stream Dyke south of Little Catwick, every month of survey. With a maximum count of three pipistrelle bats in June. A Noctule and a brown long-eared and were recorded along this section in August and September respectively.

Table 13 Summary of Results for Transect 6

Species	May	June (Dusk)	June (Dawn)	July	Aug	Sept	Oct	Total
Common pipistrelle	100	3	-	8	5	33	48	197
Soprano pipistrelle	99	28	-	2	15	32	5	181
<i>Pipistrelle</i> sp.	31	0	-	0	0	0	0	0
Brown long-eared	0	0	-	0	0	0	0	31

Species	May	June (Dusk)	June (Dawn)	July	Aug	Sept	Oct	Total
Daubenton's	2	0	-	0	0	0	0	2
<i>Myotis</i> sp.	5	0	-	1	0	0	0	6
Noctule	0	2	-	1	3	0	0	6
Total	237	33	-	12	23	65	53	423

NB. Red text denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

Transect 7

Transect 7 was approximately 6.6km long, located to the northern side of Beverley. The route follows part of the River Hull as well as the Beverley and Barmston Drain, and the North Bullock Drain. The route continues past Leconfield Low Parks and Molescroft Carr Dog Walking Field, both of which had hedgerows and standing broadleaved trees present.

Detector Recordings

During the transect visits, between five and seven different species of bat were recorded along the route of Transect 7. The most common species recorded was the common pipistrelle, with a maximum count of 170 passes recorded in September. The highest number of calls was recorded in September. However, May found the greatest number of species (four to six). The October visit had the fewest number of calls with just three passes over the duration of the transect.

Surveyor Observations

The stretch of River Hull within Transect 7 provided a key foraging resource, with individual pipistrelle bats recorded along most of the length. In September a minimum of two noctule bats were observed commuting and foraging along this stretch of river. With the exception of October, bats were also observed foraging around the edge of Leconfield Low Parks and the adjacent railway every month, with pipistrelle bats (up to three individuals), noctule bats (up to three individuals) and *Myotis* bats (single individuals) recorded. The boundary edges of Molescroft Carr Secure Dog Walking Field and the adjacent private residential property also provided a key foraging resource most months (June, July, August and September) with up to five pipistrelle bats and a single noctule recorded foraging and/or commuting in this area.

Table 12 Summary of Results for Transect 7

Species	May	June	July (Dusk)	July (Dawn)	Aug	Sept	Oct	Total
Common pipistrelle	112	7	21	17	130	170	3	460
Soprano pipistrelle	6	-	0	0	0	2	0	8
<i>Pipistrelle</i> sp.	16	-	0	0	0	0	0	16
Brown long-eared	0	-	0	0	0	0	0	0
Daubenton's	1	-	0	0	0	0	0	1
<i>Myotis</i> sp.	14	-	0	0	0	0	0	32
Noctule	3	-	16	0	4	15	0	38

Species	May	June	July (Dusk)	July (Dawn)	Aug	Sept	Oct	Total
Total	153	-	38	17	151	187	3	556

NB. **Red text** denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

Transect 8

Transect 8 was approximately 6.2km long, located to the south east of Beverley travelling between the villages of Wawne and Weel. The route largely follows a ditch system through arable land, before reaching the River Hull and Weel.

Detector Recordings

During the transect visits, five or six species of bat were recorded along the length of Transect 8. The most common species of bat recorded was the common pipistrelle, with a maximum count of 165 passes in August. The highest number of calls was also recorded in August (181) although July was also recorded a similar number of passes (159). October saw both the fewest number of passes and species with just 31 common pipistrelle passes.

Surveyor Observations

Bat numbers recorded along Transect 8 were relatively high throughout June – August, but much lower in May and October. Most bats observed by the surveyors were pipistrelle species, although bats were recorded along most of the route in one or more months, foraging along the lane and/or the ditch systems. In August at least eight individuals were recorded along the first section of the transect just north out of Wawne. The River Hull also provided a well-used foraging resource with at least four individuals recorded in the small section where the transect follows the river during the June visit. During the September visit there was increased activity observed on the central part of the transect to the west of Weel including noctule activity as well as continuous foraging from pipistrelle bats. In addition to this a single pass from a myotis was also noted just north of Weel.

Table 13 Summary of Results for Transect 8

Species	May	June (Dusk)	June (Dawn)	July	Aug	Sept	Oct	Total
Common pipistrelle	44	-	-	125	165	135	31	500
Soprano pipistrelle	0	-	-	9	5	5	0	19
<i>Pipistrelle</i> sp.	0	-	-	0	0	0	0	0
Brown long-eared	0	-	-	2	2	0	0	4
Daubenton's	0	-	-	0	3	0	0	3
<i>Myotis</i> sp.	0	-	-	20	6	9	0	35
Noctule	0	-	-	3	0	3	0	6
Total	44	-	-	159	181	152	31	567

NB. **Red text** denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

Transect 9a and 9b

Transects 9a and 9b had a combined length of approximately 7km, located to the south east of Beverley. T9a followed the western side of the River Hull. T9b started at the village of Woodmansey, following PRoW through arable land, a caravan site and a small section of woodland where a pond was present.

Detector Recordings

During the transect visits, five species of bat were recorded along the lengths of Transects 9a and 9b. The most common species recorded was the common pipistrelle, with a max count of 274 passes recorded during the June dusk visit. While common pipistrelle still had the highest number of passes for September (130), this month saw a high number of Noctule passes recorded (115). The greatest number of total passes was also recorded during the June dusk (395); however, the June dawn survey and the August and September visit also recorded a high number of passes.

Surveyor Observations

Where Transect 9a followed the River Hull, pipistrelle, noctule and myotis bats were recorded. June, September and October were a particularly busy months with high numbers of individuals recorded along most of the stretch, up to six recorded in one section in June. The myotis bats were most likely Daubenton's bats due to the habitat present. May and August were much quieter along this section although bats were still observed. Around the caravan site in Transect 9b, pipistrelle, myotis and noctule bats were recorded in May – July. Pipistrelle and myotis were recorded here in September and October; while only pipistrelle bats were recorded in this area in August. The variety of habitats present, including the caravan site, two ponds, a small section of woodland, hedgerows and arable fields likely accounted for this high level of foraging resource. At least 11 pipistrelle bats were recorded in this area in May, foraging over the ponds and up and down the hedgerows and woodland edge. Two myotis bats were also recorded in both May and June. Activity in this area was much quieter in October compared to previous months, however, a Daubenton's bat was observed foraging over the pond.

Table 14 Summary of Results for Transect 9a and 9b

Species	May	June (Dusk)	June (Dawn)	July	Aug	Sept	Oct	Total
Common pipistrelle	40	274	172	3	213	130	103	935
Soprano pipistrelle	0	19	8	-	2	0	24	53
Pipistrelle sp.	0	4	0	-	0	3	0	7
Brown long-eared	0	1	0	-	4	0	0	5
Daubenton's	0	0	0	-	0	0	8	8
Myotis sp.	11	49	6	-	7	8	7	88
Noctule	0	48	9	-	30	115	24	226
Total	51	395	195	-	256	256	166	1322

NB. Red text denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

Transect 10

Transect 10 was approximately 5.4km in length, located on the southern side of Beverley. The route started at Beverley Parks, traveling north and west through park and arable land before following the A164 and A1079. The route then continued through arable land with small sections of woodland and woodland strips.

Detector Recordings

During the transect visits, a minimum of four species of bat were recorded along the route of Transect 10. The most common species recorded was the common pipistrelle, with a maximum call count of 81 from the May visit. Generally, the number of calls were low along this transect, with a highest count of 97 recorded during September.

Surveyor Observations

Bat activity was generally low in Transect 10, particularly in the middle sections by the A-roads. Pipistrelle and noctule bats were recorded in ones and twos on the eastern stretch of the route, generally following the line of a ditch and/or a hedgerow. During the May and June visits, approximately six individual pipistrelle bats were recorded along the side road (Victoria Road) off the A164 and where the route then crosses the A1079. This area has a line of residential properties on one side and an established hedgerow on the other, likely providing a variety of suitable foraging resources. Individual pipistrelle bats were also recorded to the western edge of the transect, including a woodland edge and a hedgerow with ditch. Both the September and October Surveys recorded *Myotis* bats on the western half of the transect.

Table 15 Summary of Results for Transect 10

Species	May	June (Dusk)	June (Dawn)	July	Aug	Sept	Oct	Total
Common pipistrelle	81	40	27	22	74	76	10	330
Soprano pipistrelle	2	0	0	0	0	1	0	3
<i>Pipistrelle</i> sp.	0	0	2	0	0	0	0	2
Brown long-eared	0	0	0	0	0	0	0	0
Daubenton's	0	0	0	0	0	0	0	0
<i>Myotis</i> sp.	0	0	0	0	0	9	1	10
Noctule	0	3	0	1	2	11	1	18
Total	83	43	29	23	76	97	12	363

NB. Red text denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

Transect 11

Transect 11 was approximately 6km in length, also located on the southern side of Beverley. The route also began in Beverley Parks, at the southern end, starting at the side of the railway. The route travelled north through the woodland at Beverley Parks, before heading west through arable and pasture land and parallel to the A1079 for a section.

Detector Recordings

During the transect visits, three or four species of bat were recorded along the route of Transect 11. The most common species recorded was the common pipistrelle, with a max count of 186 passes in August. The greatest number of passes were recorded during the August visit (234) although all the other visits recorded relatively low numbers of passes.

Surveyor Observations

The level of foraging activity observed on Transect 11 was quite low between May and July, with more species and individuals recorded on the August visit. Despite the presence of woodland and parkland, the eastern section of Transect 11 showed very few bat observations, this is also true for the stretch along the side of the A1079 although the habitats present here were less suitable for foraging bats. The August visit to Transect 11 recorded observations of pipistrelle, myotis and noctule bats. The same species were recorded in September and October with the addition of a single brown long-eared bat along the same hedgerow to the south of the A1079 both months. Particular areas of note included the stretch along Park Lane past the pasture fields and agricultural buildings. All three species groups were recorded here, with counts of up to three individual pipistrelle bats recorded at one time. The woodland edges and standard trees along the access track to a set of farm buildings also recorded individual and small numbers of pipistrelle bats foraging, particularly in August. A single myotis bat was also recorded in this area in August, September and October.

Table 16 Summary of Results for Transect 11

Species	May	June (Dusk and Dawn)	July	Aug	Sept	Oct	Total
Common pipistrelle	30	47	18	186	175	77	533
Soprano pipistrelle	0	0	0	0	2	3	5
<i>Pipistrelle</i> sp.	0	0	0	5	1	0	6
Brown long-eared	0	0	0	0	1	1	2
Daubenton's	0	0	3	0	0	0	3
<i>Myotis</i> sp.	0	12	0	8	5	2	27
Noctule	1	3	0	35	1	1	41
Total	31	63	23	234	184	84	619

Transect 12

Transect 12 was approximately 6.7km in length, located to the south western side of Beverley. The route looped around the rural area of Risby, including the northern extent of the village of Skidby. The route generally passed arable and pasture land, with sections of mature hedgerows and woodland strips also present. The Risby Park Fishing Ponds provided a section of woodland and ditch section about half way around.

Detector Recordings

During the transect visits, five or six species of bat were recorded along the route of Transect 12. The most common species recorded was the common pipistrelle, with a max count of 181 passes in May. The greatest number of passes were recorded during the August visit (187).

Surveyor Observations

Transect 12 recorded a moderate level of foraging activity, dominated by pipistrelle bats. A couple of sections of mature hedgerow at the start of the transect route provided a notable foraging resource for pipistrelle bats, with at least five individuals recorded on the first section and two or three on the second section in May. These were used less frequently in subsequent visits, however a noctule bat was recorded foraging in this area on the July visit. Bats were recorded along the edge of the Skidby village most months (June –October), with up to three individual pipistrelle bats recorded on the July visit. The woodland edge of Risby Park Fishing Ponds was also frequently used by foraging pipistrelle bats with two minimum individuals seen most months. Myotis bats were also recorded here in September and October.

Table 17 Summary of Results for Transect 12

Species	May	June (Dusk)	June (Dawn)	July	Aug	Sept	Oct	Total
Common pipistrelle	181	-	81	14	146	115	74	611
Soprano pipistrelle	0	-	2	0	2	1	0	5
<i>Pipistrelle</i> sp.	1	-	7	1	0	2	0	11
Brown long-eared	0	-	0	0	2	1	0	3
Daubenton's	0	-	1	0	0	0	0	1
<i>Myotis</i> sp.	0	-	9	0	31	2	2	44
Noctule	0	-	1	6	6	0	1	14
Total	182	-	101	21	187	121	77	689

NB. Red text denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

3.2.2 Bat Static Monitoring Surveys

Seven static detectors were deployed during the survey period. Static detectors were deployed at T4, T5, T7 and T12 from May – October; T8, T10 and T11 were deployed from August – October. It was not possible to deploy static detectors at a location at T6 or T9, due to no suitable land access available along these routes.

Species recorded included common pipistrelle, soprano pipistrelle, pipistrelle sp., noctule, Daubenton's, Myotis sp. and brown long-eared.

Table 18 Summary of Static Monitoring Survey Results

Static No.	No. of months deployed	Total No. of species recorded
T4a and T4b	6	4-5
T5	6	5-6
T6	0	-
T7	6	5
T8	3	4-5
T9	0	-
T10	3	4-5

Static No.	No. of months deployed	Total No. of species recorded
T11	3	4-5
T12	6	5-6

Static Location T4a and T4b

A static detector was installed each month on the edge of a small section of woodland within an arable field in the village of Dunnington. The surrounding land was generally arable.

Four or five species were recorded at Static Location T4a and T4b including common pipistrelle, soprano pipistrelle, *Myotis* sp. (with nine records of Daubenton's bat, a species of *Myotis*) and noctule. The most common individual species recorded was common pipistrelle. However, the most common species group recorded was myotis, with 448 passes in June alone were identified as belonging to this genus. June recorded the average highest number of bat calls. However, this may be skewed by the fewer number of successful recording days this month. The October static period had the highest number of pipistrelle activity with 180 common pipistrelle passes over the five nights. The static detector results are summarised in Table 19 below.

Table 19 Summary of Results for Static T4a and T4b

Species	May	June	July	Aug	Sept	Oct	Total
Common pipistrelle	-	66	139	60	36	180	481
Soprano pipistrelle	-	0	0	4	4	13	21
<i>Pipistrelle</i> sp.	-	0	0	0	0	0	0
Brown long-eared	-	0	0	0	0	2	2
Daubenton's	-	1	7	1	24	0	33
<i>Myotis</i> sp.	-	448	1	15	56	3	523
Noctule	-	1	2	2	0	0	5
Number of nights of data collected	0	2	5	2	3	5	20
Total bat passes per static period	-	516	149	82	120	198	1065
Average number of bat passes per night	-	258	29.8	41	24	39.6	56.1

NB. Red text denotes where there have been issues with data recording, dashes indicates where no recordings was taken.

Static Location T5

A static detector was installed each month on the corner of a woodland strip (approximately 25-30 meters wide), surrounding an area of arable and residential buildings. Arable and pastureland were also present in the immediate surroundings.

The static detectors installed at location T5 recorded five or six different bat species including common pipistrelle, soprano pipistrelle, unidentified pipistrelle sp. (likely to be either common or soprano), brown long-eared, *Myotis* sp. (with thirty-four calls identified to species level as Daubenton's bat) and noctule. The highest number of recordings were from common

pipistrelles, with the highest number of calls recorded in June. High numbers of soprano pipistrelle and *Myotis* sp. calls were recorded, both being greater than one hundred in May and June. In both September and October soprano pipistrelle calls exceeded that of common pipistrelle with a maximum number of 826 in October. *Myotis* activity remained relatively high each month with only August seeing fewer calls over all. The highest average number of calls was recorded in June. The static detector results are summarised in Table 20 below.

Table 20 Summary of Results for Static T5

Species	May	June	July	Aug	Sept	Oct	Total
Common pipistrelle	250	1335	171	67	94	304	2221
Soprano pipistrelle	134	139	65	24	217	826	1405
<i>Pipistrelle</i> sp.	47	0	0	0	0	64	111
Brown long-eared	1	1	3	1	0	0	4
Daubenton's	0	27	4	3	0	0	34
<i>Myotis</i> sp.	118	175	96	17	109	294	809
Noctule	1	1	3	1	0	0	6
Number of nights of data collected	5	5	5	5	5	5	30
Total bat passes per static period	550	1679	340	112	420	1488	4590
Average number of bat passes per night	110	335.8	68	22.4	84	297.6	153

Static Location T7

A static detector was installed each month on a tree on the edge of a residential property adjacent to the south of Molescroft Carr Dog Walking Field. The surrounding land was dominated by arable with the railway line and a drain also present.

Five or six species were recorded at static location T7. This included common pipistrelle, soprano pipistrelle, *Myotis* sp. (with sixteen calls identified to species level as Daubenton's) brown long-eared and noctule. The highest number of calls were from common pipistrelles with 975 passes recorded in October, relatively low number of calls were attributed to the other species. Noctule bats were recorded approximately fifty times on the June and August visits, which is quite high for this species. 163 myotis calls were recorded in October which is the highest for any species, aside from common pipistrelle, on this transect. The highest number of average bat passes was recorded in October. The static detector results are summarised in Table 21 below.

Table 21 Summary of Results for Static T7

Species	May	June	July	Aug	Sept	Oct	Total
Common pipistrelle	504	526	860	182	247	975	3294
Soprano pipistrelle	6	0	1	5	0	52	64
<i>Pipistrelle</i> sp.	0	0	0	0	0	103	103
Brown long-eared	0	0	0	0	1	1	2
Daubenton's	0	1	14	1	0	0	16
<i>Myotis</i> sp.	19	30	22	2	41	163	277

Species	May	June	July	Aug	Sept	Oct	Total
Noctule	9	46	6	58	4	0	123
Number of nights of data collected	5	5	5	5	5	5	30
Total bat passes per static period	538	603	903	248	293	1294	3879
Average number of bat passes per night	107.6	120.6	180.6	49.6	58.6	258.8	129.3

Static Location T8

A static detector was installed each month from August on a tree in a line of trees, where it intersects with a field drain. The surrounding land was dominated by arable and pastureland with a network of drains.

Only three months of data is available for this transect as access was only possible from early August. Four or five species were recorded during the August visit, with the most frequent overall being the common pipistrelle. Myotis bats were also similarly frequent with 140 passes overall, six of which were identified to species level as Daubenton's. Other species recorded included soprano pipistrelle and noctule. August recorded the highest frequency of activity with more than double the number of calls compared to September and October. The static detector results are summarised in Table 22 below.

Table 22 Summary of Results for Static T8

Species	Aug	Sept	Oct	Total
Common pipistrelle	70	80	44	194
Soprano pipistrelle	6	2	13	21
<i>Pipistrelle</i> sp.	0	0	2	2
Brown long-eared	0	0	0	0
Daubenton's	4	0	2	6
<i>Myotis</i> sp.	107	10	17	134
Noctule	6	0	0	6
Number of nights of data collected	5	5	5	15
Total bat passes per static period	193	92	78	363
Average number of bat passes per night	38.6	38.6	15.6	24.2

Static Location T10

A static detector was installed each month from August on a tree on the edge of an area of broadleaved woodland. The surrounding land included arable and pastureland with connected lines of trees and woodland pockets.

Due to a detector Error no data was recorded for the month of October for T10, In addition, Access was only possible from early August. As a result, only two months of data is available for this static location. Four or five species were recorded during the on both visits, with the most frequent being the common pipistrelle with over one thousand calls recorded in August. Activity in September was vastly reduced in comparison with only 48 calls in total primarily

attributed to myotis bats. Other species recorded included soprano pipistrelle, *Myotis* sp. (with onecall identified to the species level as Daubenton's) and noctule. The static detector results are summarised in Table 23 below.

Table 23 Summary of Results for Static T10

Species	Aug	Sept	Oct	Total
Common pipistrelle	1012	1	-	1013
Soprano pipistrelle	1	1	-	2
<i>Pipistrelle</i> sp.	0	0	-	2
Brown long-eared	0	0	-	0
Daubenton's	1	0	-	1
<i>Myotis</i> sp.	74	45	-	119
Noctule	12	1	-	13
Number of nights of data collected	5	5	0	10
Total bat passes per static period	1100	48	-	1148
Average number of bat passes per night	220	9.6	-	114.8

Static Location T11

A static detector was installed each month from August as access was only possible from early August. The detector was installed on a tree on the northern extent of a section of woodland. The surrounding land was dominated by arable land, as well as another section of woodland. Two A-roads were also present nearby.

Approximately four species were recorded across the three months, with the most frequent being the common pipistrelle. Other species recorded included soprano pipistrelle, *Myotis* sp. and noctule. October had the highest level of bat activity for this static location and had the highest level of activity for all species recorded here, with the exception of noctule which peaked in August. The static detector results are summarised in Table 24 below.

Table 24 Summary of Results for Static T11

Species	Aug	Sept	Oct	Total
Common pipistrelle	291	33	509	833
Soprano pipistrelle	2	1	7	10
<i>Pipistrelle</i> sp.	0	0	13	13
Brown long-eared	0	0	0	0
Daubenton's	0	0	1	1
<i>Myotis</i> sp.	13	8	27	48
Noctule	23	10	2	35
Number of nights of data collected	5	3	5	13
Total bat passes per static period	329	52	559	940
Average number of bat passes per night	65.8	17.3	111.8	72.3

Static Location T12

A static detector was installed each month on a tree on the edge of an arable field. Adjacent to the field was Risby Park Fishing Ponds, with sections of woodland and fishing ponds.

The static detectors installed at static location T12 recorded five or six species with the most common being common pipistrelle. Other species included soprano pipistrelle, *Myotis* sp. (with one call identified to species level as Daubenton's) brown long-eared and noctule. A relatively low number of calls were recorded at this location with the highest numbers recorded in May and August, although both of these months encountered difficulties with equipment and may therefore have been higher had they been recording for the full five days. The static detector results are summarised in Table 25 below.

Table 25 Summary of Results for Static T12

Species	May	June	July	Aug	Sept	Oct	Total
Common pipistrelle	100	65	33	82	59	23	362
Soprano pipistrelle	6	1	1	1	3	5	17
<i>Pipistrelle</i> sp.	0	0	0	0	0	0	0
Brown long-eared	0	0	0	0	2	0	2
Daubenton's	0	1	0	0	1	1	2
<i>Myotis</i> sp.	0	1	1	3	5	5	10
Noctule	3	7	37	20	6	3	76
Number of nights of data collected	1	5	5	2	4	5	22
Total bat passes per static period	109	75	72	106	76	31	469
Average number of bat passes per night	109	15	14.4	53	19	6.2	21.3

NB. Red text denotes where there have been issues with data recording

Graphs summarising the results from the static monitoring can be found in **Appendix F**

4 **EVALUATION**

Currently, across the survey area five species of bat have been identified as part of the transect surveys and deployment of static detectors. It is likely that other species of *Myotis*, such as whiskered, brandt's and Natterer's, are also present within the survey area, however it is difficult to identify these species further than genus level (i.e., *Myotis*) through analysis of call sonograms.

Transects

The level of foraging recorded varied across the transect locations and the months surveyed. The transect with the highest levels of foraging (on average) was Transects 9. Transects 4, 8 and 12 also showed reasonably high levels of foraging activity recorded. These variations between transects are likely due to the varying quality of habitats present. Transect 9 had two hotspots of foraging activity; along the River Hull and around the caravan site where ponds, woodland and hedgerows were in close proximity. Transect 4 included woodland edge along an unlit lane, which likely contributed to much of the bats recorded as otherwise the route was relatively quiet. Transect 8 also included a section of the River Hull (overlapping with Transect 9), as well as a hedgerow lined lane where bats were recorded foraging. Transect 12 had a couple of mature hedgerow sections as well as a woodland edge near fishing lakes.

Although the transect routes do not cover the whole of the survey area, and do leave certain large areas un-surveyed, they do infer the type of habitats present within the survey area which are favoured by foraging bats. Interestingly Transect 7 also includes a section of the River Hull, although this was one of the quieter transects on average and therefore this extrapolation is not always true.

The level of foraging also varied across the months surveyed. August showed the highest levels of bat passes recorded, with May and June dusks also showing reasonable high levels. This variation can be attributed to bats using habitat differently throughout the year but will also be impacted by the weather conditions. Heat waves and country wide droughts in July are likely to have attributed to the lower levels of activity recorded.

Statics

The highest level of bat passes on a static detector was recorded in June for Transect 5. Transect 10 also had a high number of bat passes when deployed for the first time in August. On average, June recorded the highest number of calls, with May being only slightly lower. This is in contrast to the number of passes recorded during the transect visits which may suggest that the static detectors weren't installed in the areas of highest foraging potential for some of the transects.

5 **CONCLUSIONS AND RECOMMENDATIONS**

As the Projects' infrastructure locations have not yet been finalised, it is not possible to provide an impact assessment or detailed recommendations at this time. It is however recommended that, any sections of hedge, woodland or pond which are removed or impacted should be replaced, like for like. Particular care should also be taken when impacting areas near the River Hull. Additional surveys may be required when the route is known in order to complete surveys for the entire route.

General good working methods should also be followed throughout the construction period. As such it is recommended that works are not carried out after dusk and they do not commence until after dawn. Generators and machinery that emit significant noise levels must not be left to run through the night.

To minimise any negative effects on bat foraging habitat it is recommended that any lighting to be installed within the development post-construction, is bat friendly. The following recommendations have been made in accordance with Guidance Note 08/18: *Bats and artificial lighting in the UK (BCT & ILP, 2018)* to ensure minimal impact to bat commuting and foraging routes.

6 **REFERENCES**

British Standards Institution (2013) BS42020:2013 Biodiversity – code of practice for planning and development. BSI Standards Ltd, London

Chartered Institute of Ecology and Environmental Management (2013) *Competencies for Species Surveys in Britain and Ireland; Overview*. CIEEM, Winchester. Online [Available at]

Collins J. (ed) (2016) Bat Surveys For Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust, London.

Department for Communities and Local Government (2019) *The National Planning Policy Framework*. <http://www.communities.gov.uk/publications/planningandbuilding/nppf>

Multi-Agency Geographic Information for the Countryside Website. <http://www.magic.gov.uk/>

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APPENDICES

APPENDIX A: Protected and Priority Species	30
APPENDIX B: Relevant Legislation	32
APPENDIX C: Survey Visit Conditions	35
APPENDIX D: Transect Maps.....	36

APPENDIX A: Protected and Priority Species

Legal protection is afforded to particular habitats and species (as well as designated sites), see Appendix B. The legislation, and the habitats and species listed, vary between the different jurisdictions. Certain habitats and species are also considered to have some level of nature conservation importance, due to factors such as their rarity, vulnerability or declining population/status. This document uses the term 'priority habitats' and 'priority species', as they are those which should be considered as priorities for conservation (it should not be confused with priority habitats and species as listed in the EU Habitats Directive). Priority habitats and species are defined as those which are:

- 1) listed as a national priority for conservation (such as those listed as habitats and species of principal importance for the conservation of biodiversity);
- 2) listed as a local priority for conservation, for example in the relevant local Biodiversity Action Plan (BAP);
- 3) Red Listed using International Union for the Conservation of Nature (IUCN) criteria (e.g. in an all-Ireland Red List, in one of the UK Species Status Project reviews, in the Species of Conservation Concern Red List, Birds of Conservation Concern in Wales, or BWI/ RSPB Red List for Ireland and Northern Ireland (Birds of Conservation Concern in Ireland 2014 to 2019) or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book);
- 4) listed as Near Threatened or Amber Listed e.g. in an all-Ireland Red List, in one of the UK Species Status Project reviews, in Birds of Conservation Concern in Wales, in the Species of Conservation Concern Amber List or BirdWatch Ireland (BWI)/RSPB Amber List for Ireland and Northern Ireland (Birds of Conservation Concern in Ireland 2014 to 2019);
- 5) listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a Nationally Notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or
- 6) endemic to a country or geographic location (it is appropriate to recognise endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place).

Most protected species are also considered to be priority species, although there are some exceptions. There are numerous priority habitats and species which do not receive any legal protection.

Note that the terms 'priority habitat' and 'priority species' used in this document differ from the following uses of the same terms:

- a) These terms were previously used to denote those habitats and species afforded the highest level of priority for conservation under the UK BAP; this has been superseded by the lists of habitats and species of principal importance for the conservation of biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, Section 7 of the Environment (Wales) Act 2016, or their equivalents in Scotland (Nature Conservation (Scotland) Act 2004, Scotland's

Biodiversity Strategy and the Scottish Biodiversity List¹⁵) and Ireland (Actions for Biodiversity – Ireland’s National Biodiversity Plan 2017 -2021¹⁶; and Valuing Nature – A Biodiversity Strategy for Northern Ireland to 2020).

- b) The terms ‘Priority Natural Habitat Type’ and ‘Priority Species’ are used to denote specific lists of habitats and species under The Conservation of Habitats and Species Regulations 2017; these are defined in Articles 1(d) and 1(h) respectively of the Habitats Directive.

APPENDIX B: Relevant Legislation

The following text provides information on the key legislation, which is applicable to this survey.

The main wildlife legislation in the UK is as follows:

- The sections of UK legislation considered to be of relevance include:
- The Conservation (Natural Habitats, and c.) Regulations 2017 (as amended)
 - o This transposes the Habitats Directive into national law. The Regulations provide for the designation and protection of 'European sites', and the protection of 'European protected species.
- The Wildlife and Countryside Act 1981 (as amended) (WCA)
 - o This consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) in Great Britain.
- The Countryside and Rights of Way Act 2000 (CRoW)
 - o This act strengthens wildlife enforcement legislation.
- The Protection of Badgers Act 1992

Species-Specific Legislation

Species specific legislation is provided in the Table below:

Species-Specific Wildlife Legislation

Feature/Species	Legislation	It is an offence to:
Bats	Sch. 5 Wildlife and Countryside Act 1981 (as amended). Conservation of Habitats and Species Regulations 2010 (as amended).	• Intentionally or deliberately kill, injure or capture (or take) bats; • Deliberately disturb bats (whether in a roost or not); • Recklessly disturb roosting bats or obstruct access to their roosts; Damage or destroy bat roosts.

In addition, species and habitats listed on the UK Post-2010 Biodiversity Framework (formally the UK BAP) are also considered. Details on these species and habitats can be found at: <http://jncc.defra.gov.uk/page-5705>.

Protected Sites

A network of protected sites, at varying levels, have been put in place across the UK. Further details are provided below;

International importance

Natura 2000

Natura 2000 is the name of the European Union-wide network of nature conservation sites established under the EC Habitats and Birds Directives. This network will comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

Special Areas of Conservation (SAC)

SACs are designated under the EC Habitats Directive. The Directive applies to the UK and the overseas territory of Gibraltar. SACs are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs in terrestrial areas and territorial marine waters out to 12 nautical miles are designated under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). New and/or amended Habitats Regulations are shortly to be introduced to provide a mechanism for the designation of SACs and SPAs in UK offshore waters (from 12-200 nm).

National importance

Sites of Special Scientific Interest (SSSI)

The SSSI series has developed since 1949 as the national suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. Most SSSIs are privately-owned or managed; others are owned or managed by public bodies or non-government organisations. The SSSIs designation may extend into intertidal areas out to the jurisdictional limit of local authorities, generally Mean Low Water in England and Northern Ireland; Mean Low Water of Spring tides in Scotland. In Wales, the limit is Mean Low Water for SSSIs notified before 2002, and, for more recent notifications, the limit of Lowest Astronomical Tides, where the features of interest extend down to LAT. There is no provision for marine SSSIs beyond low water mark. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs have been renotified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

Regional/local importance

Wildlife Sites

Local authorities for any given area may designate certain areas as being of local conservation interest. The criteria for inclusion, and the level of protection provided, if any, may vary between areas. Most individual counties have a similar scheme, although they do vary. These

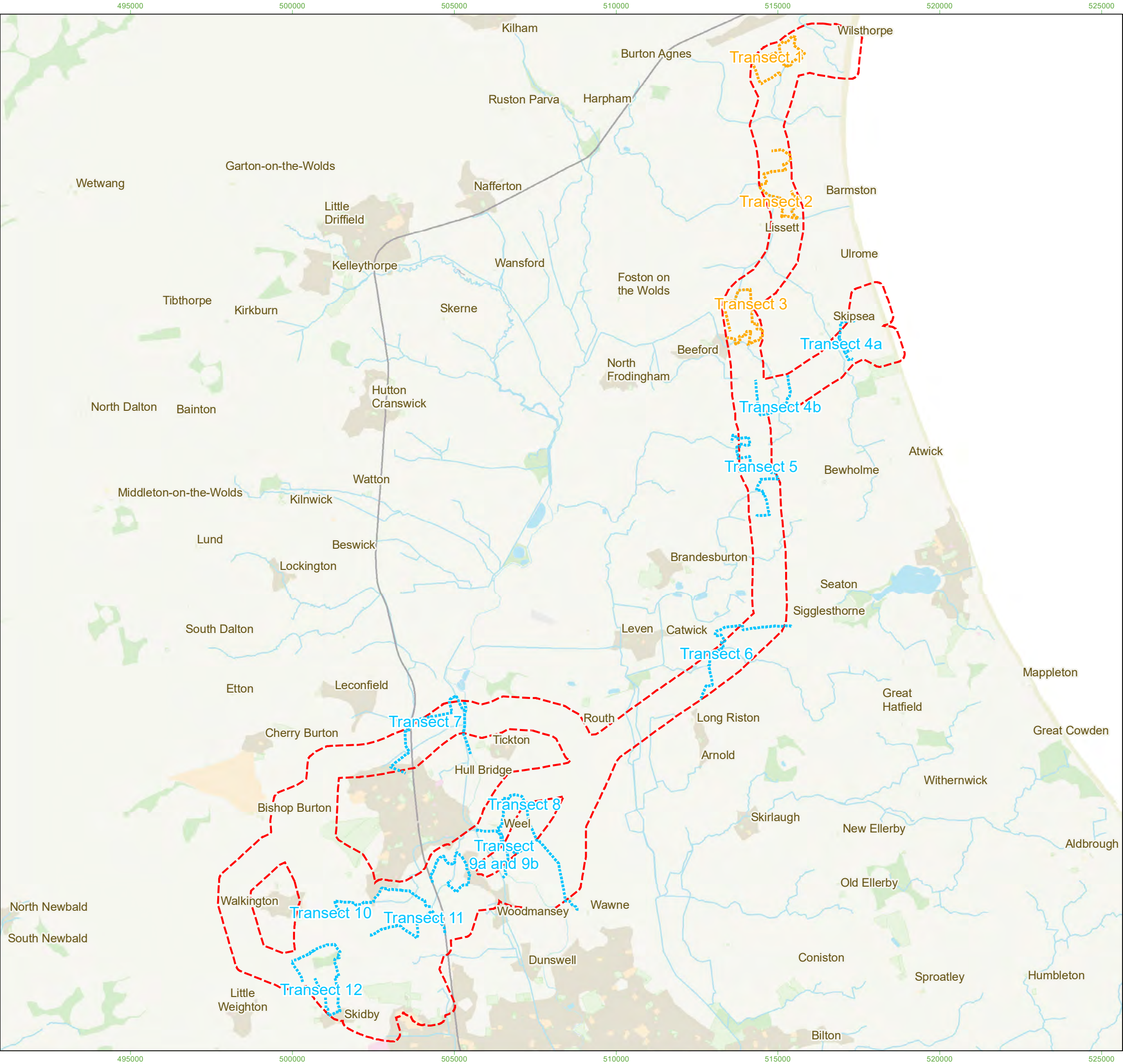
sites, which may be given various titles such as 'Listed Wildlife Sites' (LWS), 'County Wildlife Sites' (CWS), 'Local Nature Conservation Sites' (LNCS), 'Sites of Importance for Nature Conservation' (SINCs), or Sites of Nature Conservation Importance' (SNICIs), together with statutory designations, are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined.

APPENDIX C: Survey Visit Conditions

Table for weather conditions for Transects

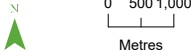
Table for weather conditions for Statics.

APPENDIX D: Transect Maps



Survey Information	
	Onshore study area (11/04/22)
	Bat survey - proposed transects (10/06/22) - surveyed
	Bat survey - proposed transects (10/06/22) - not surveyed

Source:
Ordnance Survey © Crown copyright 2022, All rights reserved. License Number 100049837.



PROJECT TITLE

DOGGER BANK SOUTH

DRAWING TITLE

Figure 1. Bat Transects - Proposed Routes 10/06/22

VER	DATE	REMARKS	Drawn	Checked
1.1	12/12/22	Proposed Bat Transects	MP	CP

DRAWING NUMBER:

PeakEcology/DB2/Bats/ProposedTransects

peakecology LIMITED ECOLOGICAL CONSULTANTS	Arden House, Deepdale Business Park, Bakewell, Derbyshire. DE45 1GT. www.peakecology.co.uk	DATUM	OSGB
		PROJECTION	BNG
		PLOT SIZE	A3
		SCALE	1:115,000

May (Dusk)

Key

Foraging or commuting bats

Pip sp.

Noctule

Myotis sp.

3+

No. of individuals seen

DRAWING TITLE

T4a

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

VER

DATE

REMARKS

SCALE

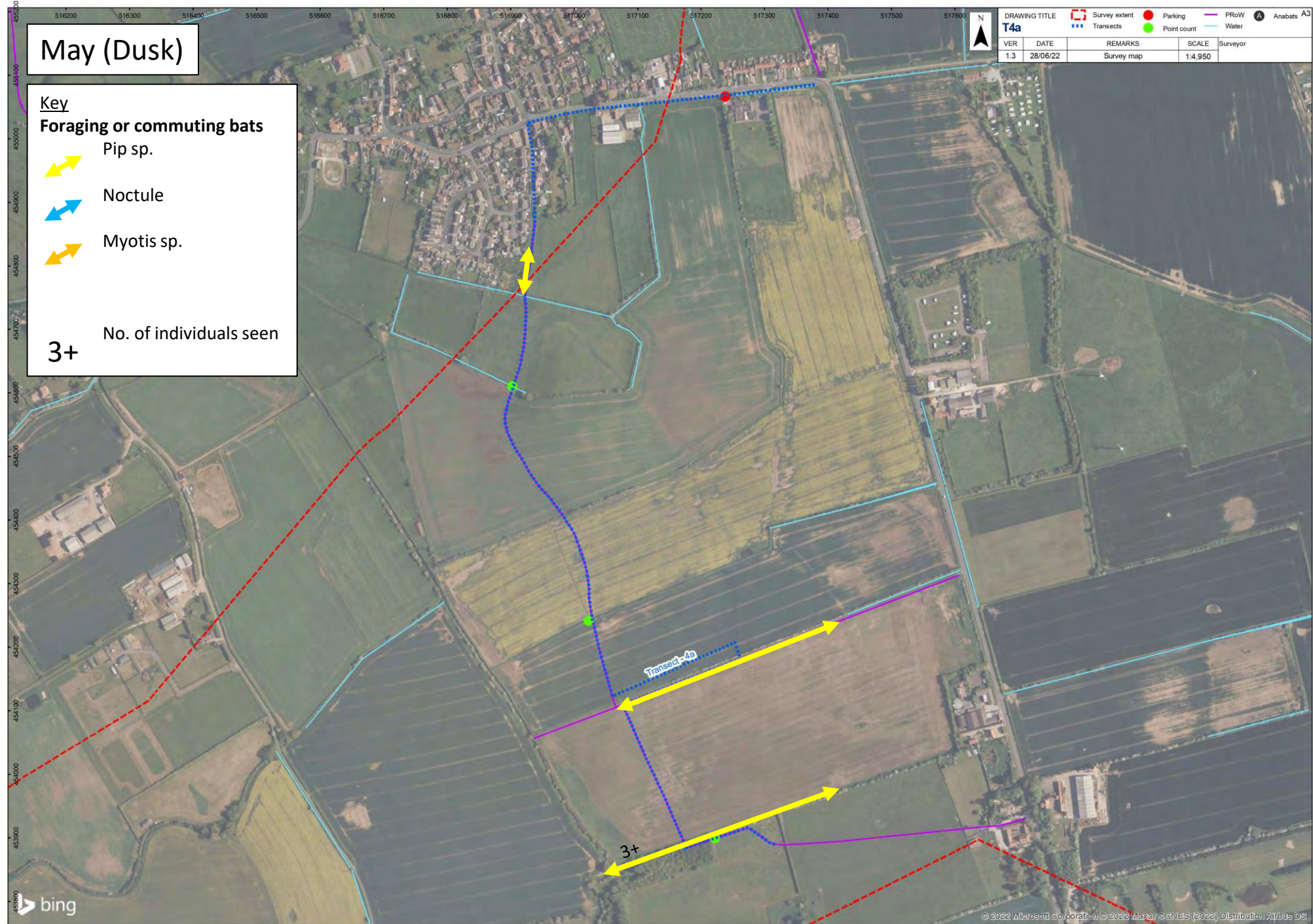
Surveyor

1.3

28/06/22

Survey map

1:4,950



May (Dusk)

DRAWING TITLE

T4b

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

VER

DATE

REMARKS

SCALE

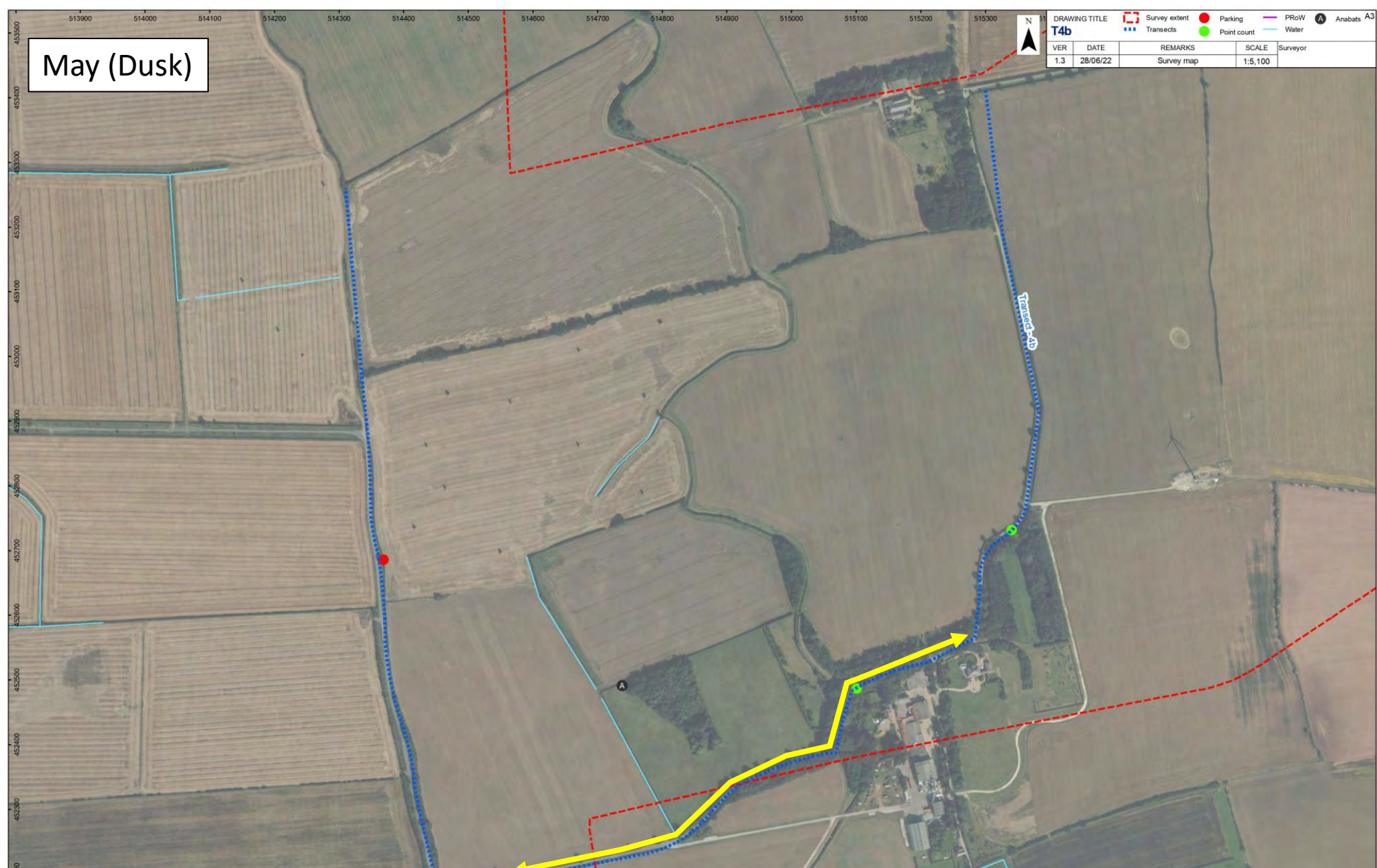
Surveyor

1.3

28/06/22

Survey map

1:5,100



May (Dusk)

Key

Foraging or commuting bats

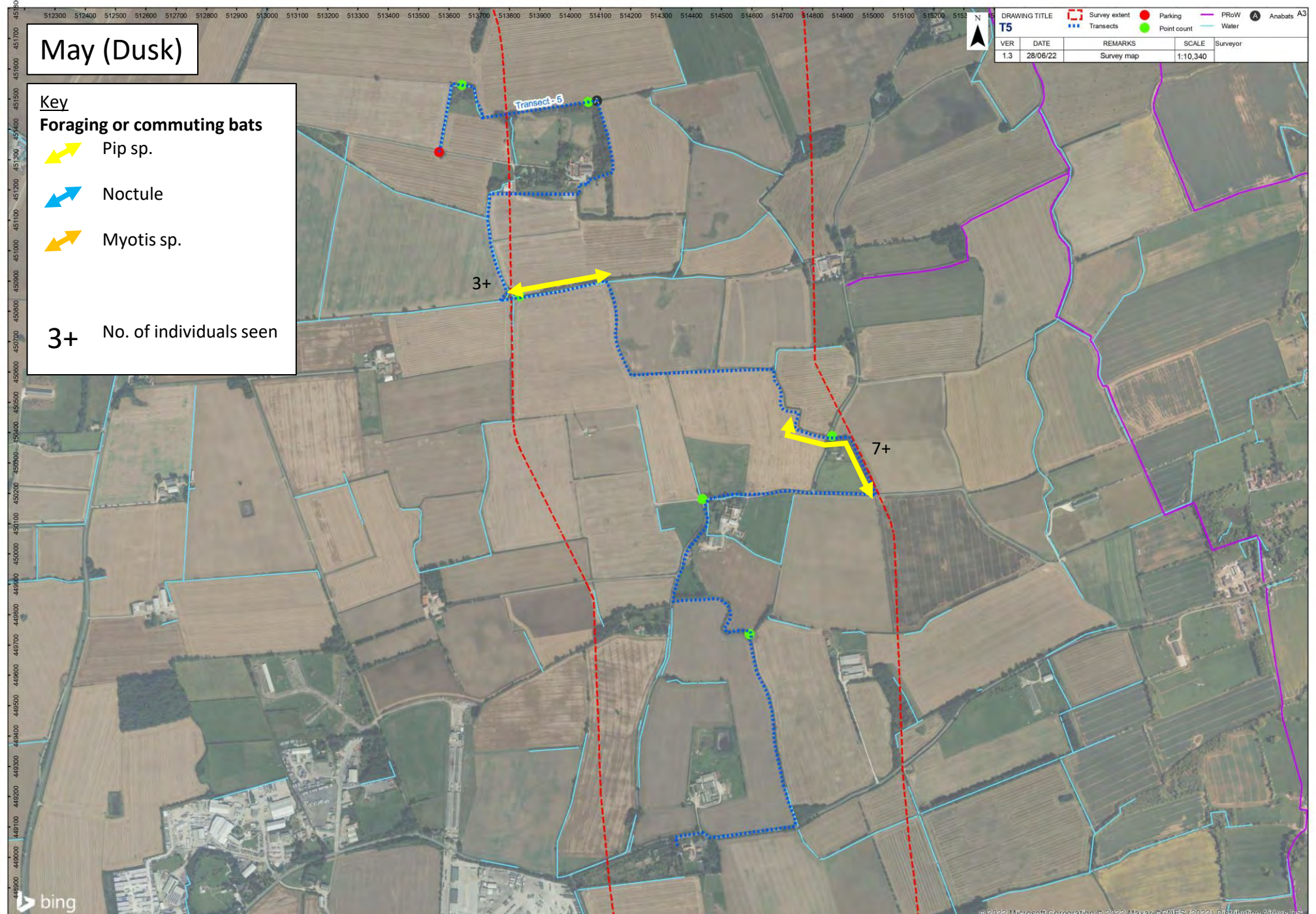
 Pip sp.

 Noctule

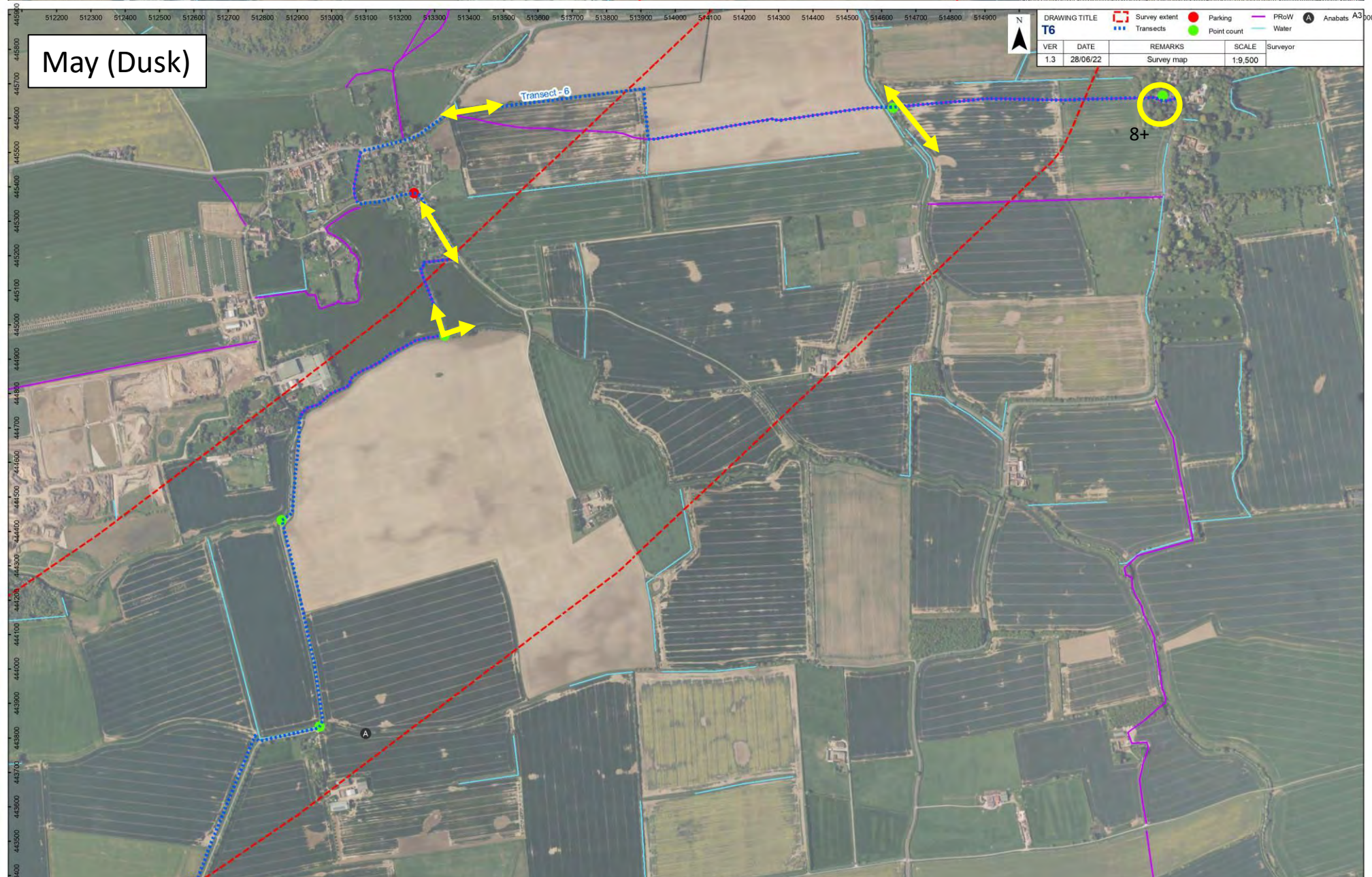
 Myotis sp.

3+

No. of individuals seen



May (Dusk)



May (Dusk)

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

3+ No. of individuals seen

May (Dusk)

Key

Foraging or commuting bats

↗ Pip sp.

↘ Noctule

↖ Myotis sp.

3+ No. of individuals seen

2+

3

Transect 17

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

DRAWING TITLE
T7

VER	DATE	REMARKS	SCALE	Surveyor
1.3	28/06/22	Survey map	1:9,840	A3

May (Dusk)

May (Dusk)

Legend:

- Survey extent (Red dashed line)
- Transects (Blue dashed line)
- Parking (Red dot)
- Point count (Green dot)
- PRoW (Purple line)
- Water (Cyan line)
- Anabats (Black 'A')

VER	DATE	REMARKS	SCALE	Surveyor
1.3	28/06/22	Survey map	1:14,570	

© 2022 Microsoft Corporation © 2022 Maxar © CNES (2022) Distribution Airbus DS

May (Dusk)

Legend:

- Survey extent (Red dashed line)
- Transects (Blue dotted line)
- Parking (Red dot)
- Point count (Green dot)
- PRoW (Purple line)
- Water (Light blue line)
- Anabats (Black circle with 'A')

VER	DATE	REMARKS	SCALE	Surveyor
1.3	28/06/22	Survey map	1:14,570	

© 2022 Microsoft Corporation © 2022 Maxar © CNES (2022) Distribution Airbus DS

May (Dusk)

Legend:

- Survey extent (Red dashed line)
- Transects (Blue dotted line)
- Parking (Red dot)
- Point count (Green dot)
- PRoW (Purple line)
- Water (Light blue line)
- Anabats (Black circle with 'A')

VER	DATE	REMARKS	SCALE	Surveyor
1.3	28/06/22	Survey map	1:14,570	

© 2022 Microsoft Corporation © 2022 Maxar © CNES (2022) Distribution Airbus DS

May (Dusk)

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

3+

No. of individuals seen

DRAWING TITLE

T9a and 9b

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:7,870

Surveyor

 Survey extent

 Transects

 Parking

 Point count

 PRow

 Water

 Anabats

A3

May (Dusk)

DRAWING TITLE

T10

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:9,850

Surveyor

 Survey extent

 Transects

 Parking

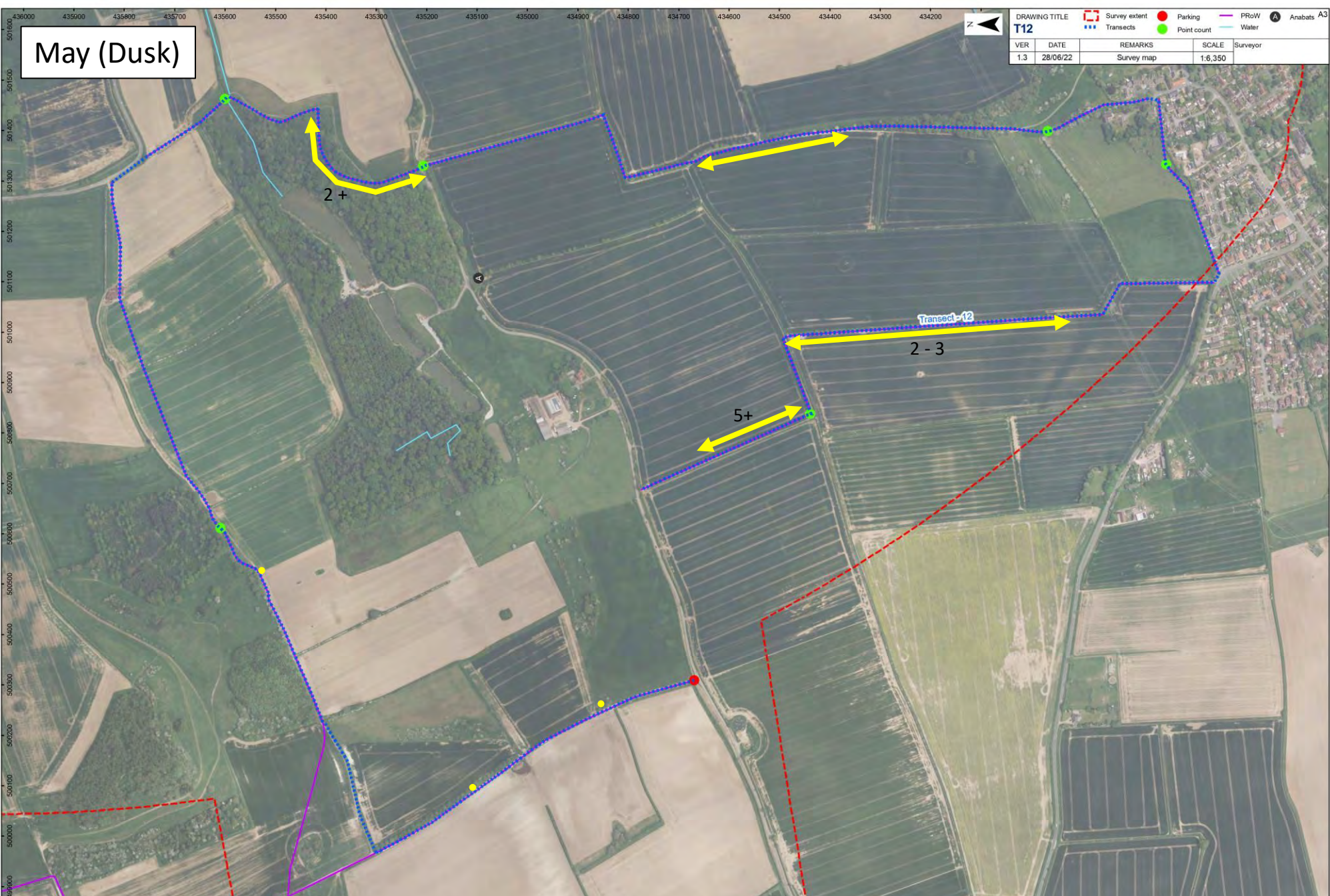
 Point count

 PRow

 Water

 Anabats

A3



June (Dusk and Dawn)

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+

No. of individuals seen

DRAWING TITLE

T4a

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:4,950

Surveyor

 Survey extent

 Transects

 Parking

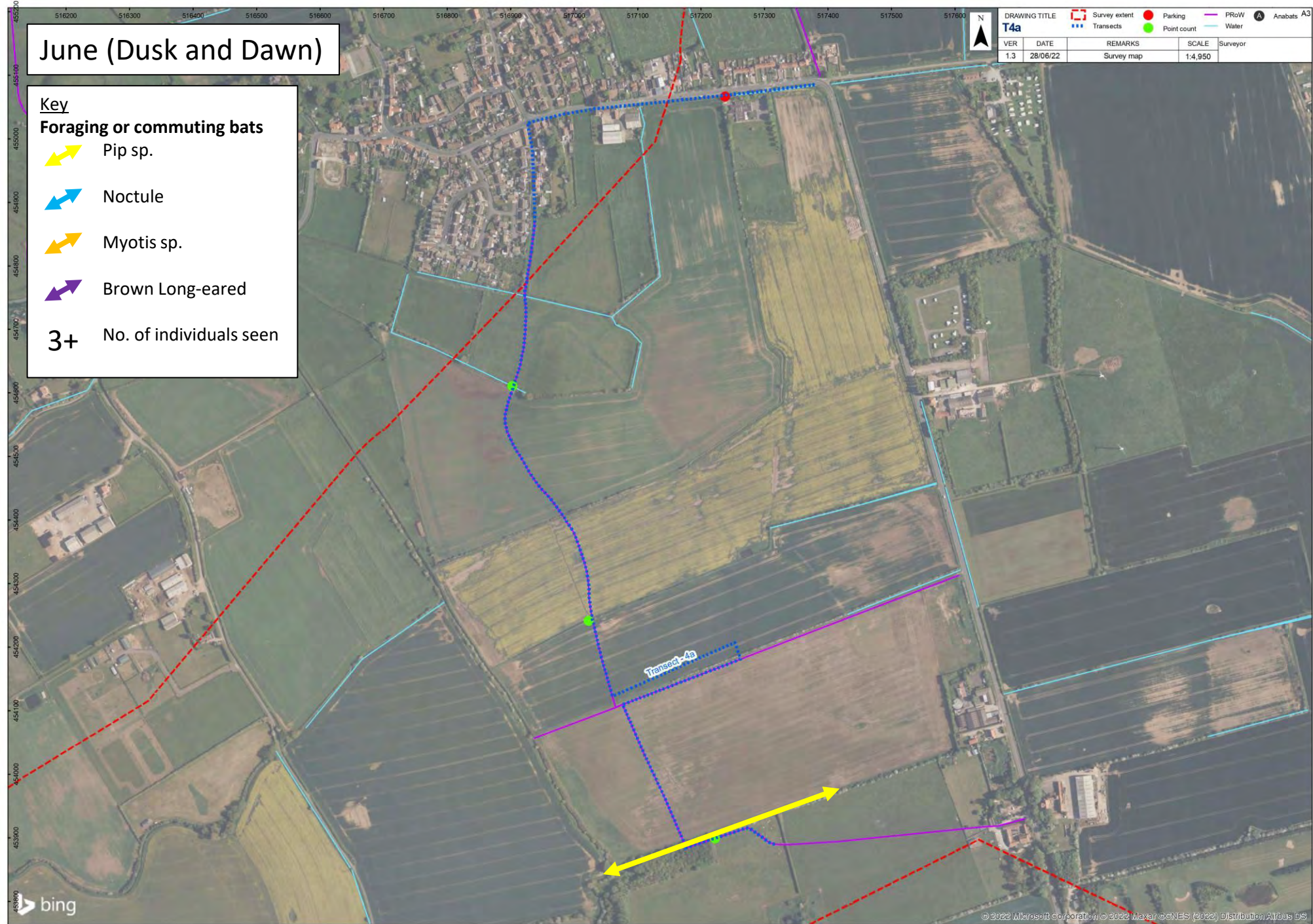
 Point count

 PProW

 Water

 Anabats

A3



June (Dusk and Dawn)

DRAWING TITLE

T4b

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:5,100

Surveyor

 Survey extent

 Transects

 Parking

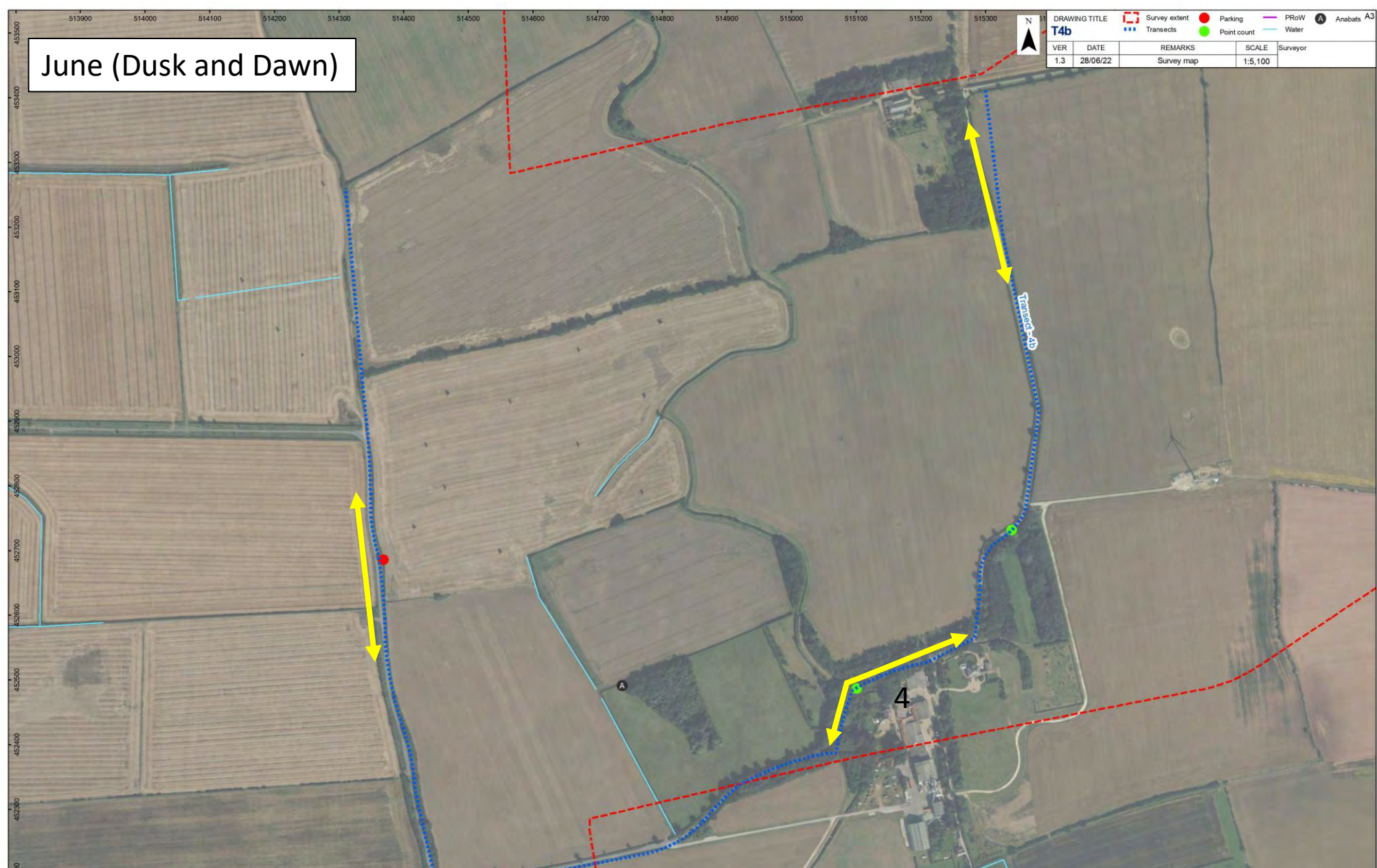
 Point count

 PProW

 Water

 Anabats

A3



June (Dusk)

Key

Foraging or commuting bats

Pip sp.

Noctule

Myotis sp.

Brown Long-eared

3+

No. of individuals seen

This aerial map displays survey data for June at dusk. A red dashed line outlines the survey extent. Blue dotted lines represent the survey transects, with 'Transect-5' labeled in blue. Yellow arrows indicate sightings of Pip sp. bats, with counts '2' and '3-4' shown near the arrows. Blue arrows indicate sightings of Noctule bats. Purple arrows indicate sightings of Brown Long-eared bats. Green dots represent point counts, and a red dot indicates a parking location. A purple line marks the PRow (Public Roadway). A north arrow is located in the top right corner. The map includes a coordinate grid with UTM coordinates (512300 to 515300 Easting, 451700 to 452300 Northing).

June (Dusk and Dawn)

This aerial map displays survey data for June during dusk and dawn. A red dashed line outlines the survey extent. Blue dotted lines represent the survey transects, with 'Transect-6' labeled in blue. Yellow arrows indicate sightings of Pip sp. bats, with counts '3+', '5+', and '4+' shown near the arrows. Blue arrows indicate sightings of Noctule bats. Purple arrows indicate sightings of Brown Long-eared bats. Green dots represent point counts, and a red dot indicates a parking location. A purple line marks the PRow (Public Roadway). A north arrow is located in the top right corner. The map includes a coordinate grid with UTM coordinates (512200 to 514900 Easting, 44200 to 445900 Northing).

June (Dusk)

Key

Foraging or commuting bats

Pip sp.

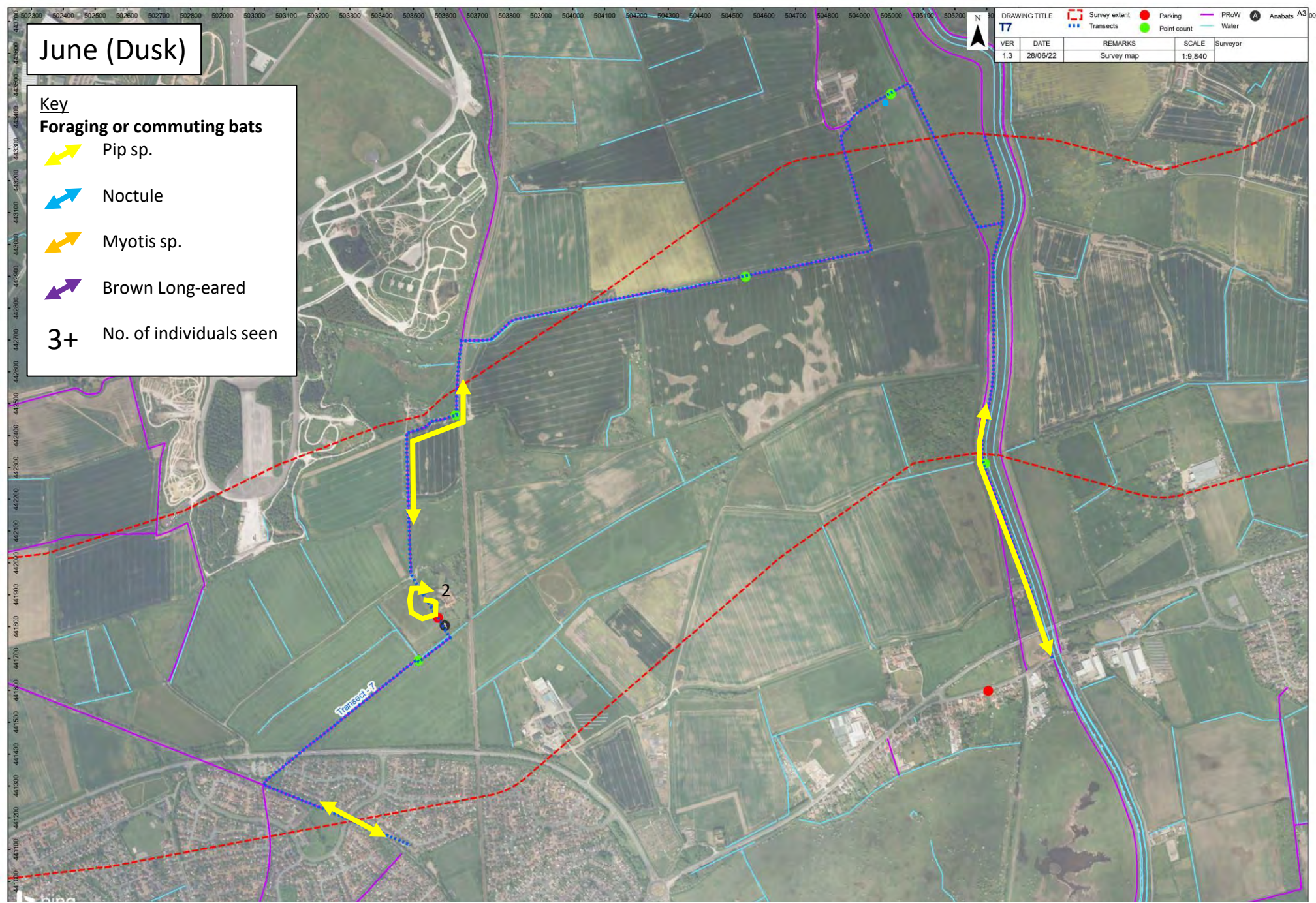
Noctule

Myotis sp.

Brown Long-eared

3+

 No. of individuals seen



DRAWING TITLE

T7

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:9,840

Surveyor

Survey extent

Transects

Parking

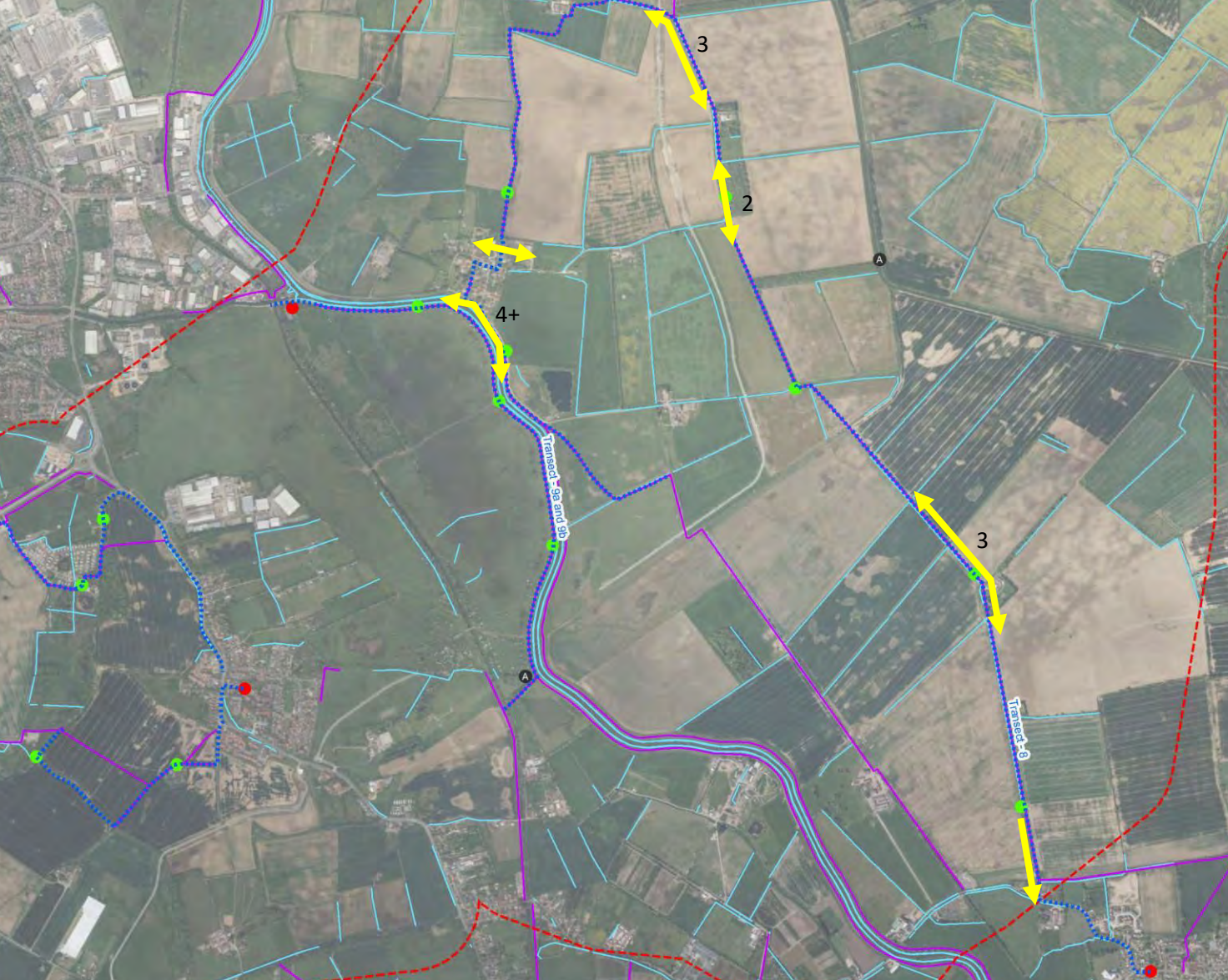
Point count

PRoW

Water

Anabats

June (Dusk and Dawn)



DRAWING TITLE

T8

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:14,570

Surveyor

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

June (Dusk and Dawn)

Key

Foraging or commuting bats

Pip sp.

Noctule

Myotis sp.

Brown Long-eared

3+

No. of individuals seen

DRAWING TITLE

T9a and 9b

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:7,870

Surveyor

Survey extent

Transects

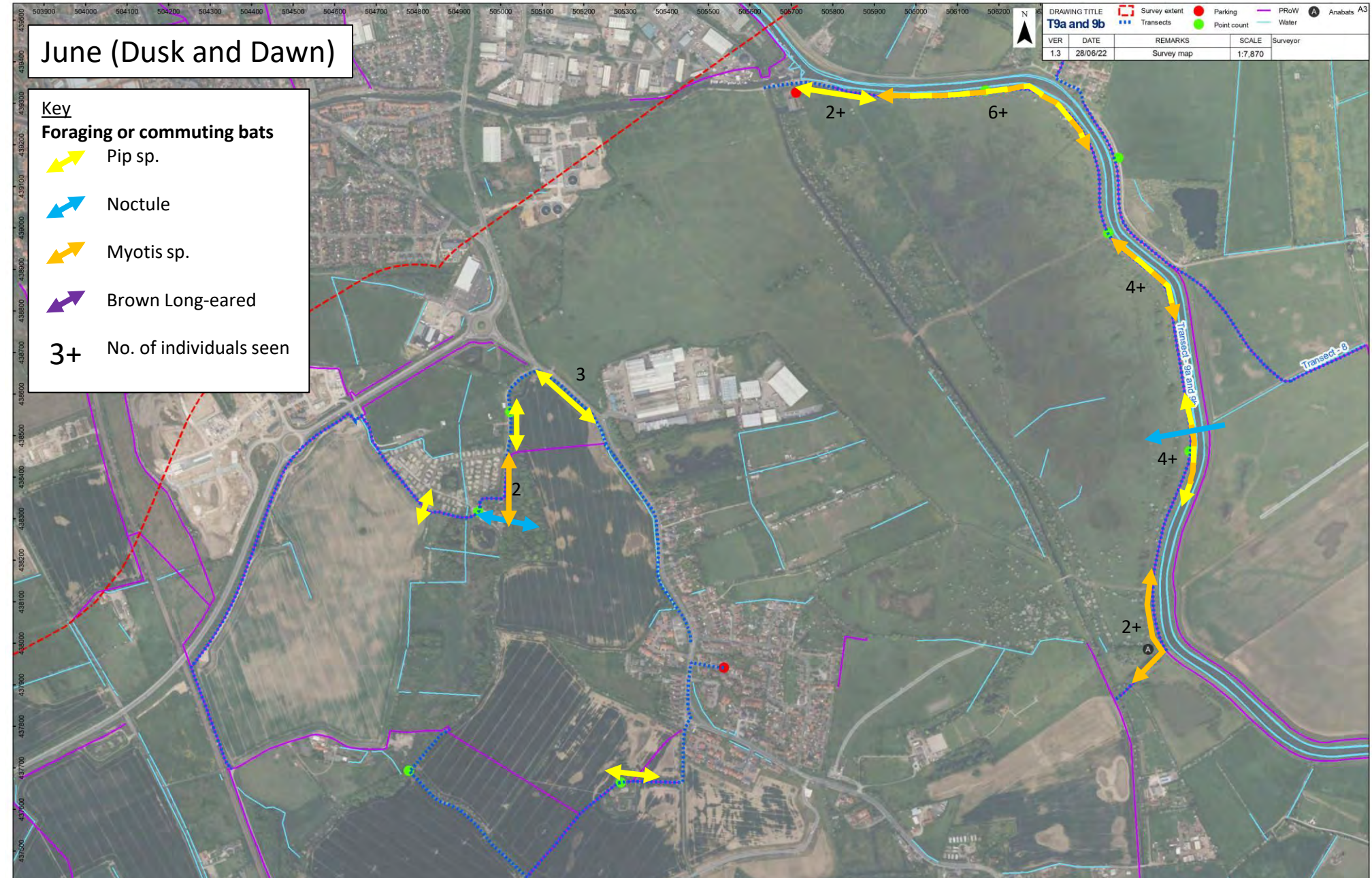
Parking

Point count

PRow

Water

Anabats A3



June (Dusk and Dawn)

DRAWING TITLE

T10

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:9,850

Surveyor

Survey extent

Transects

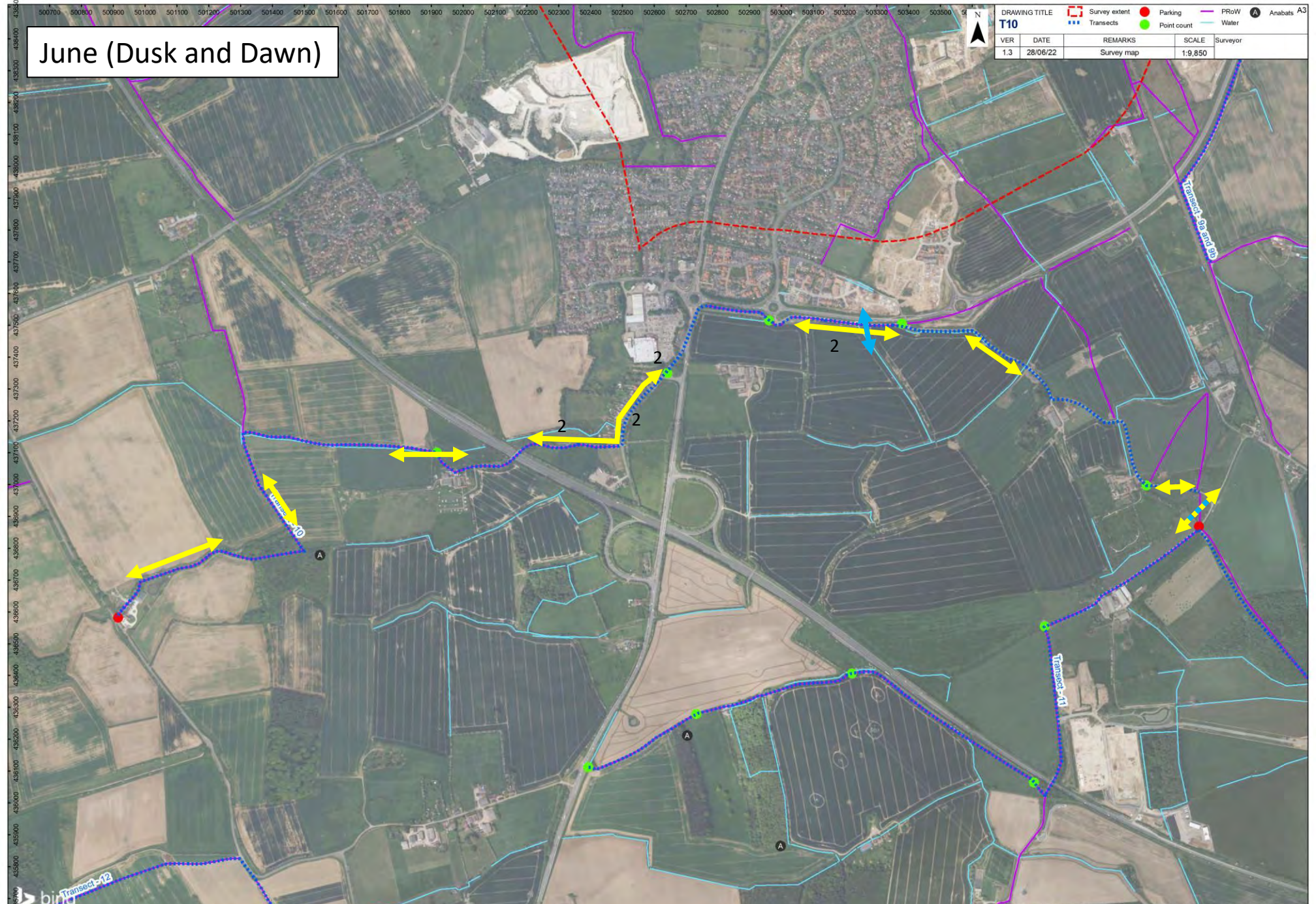
Parking

Point count

PRow

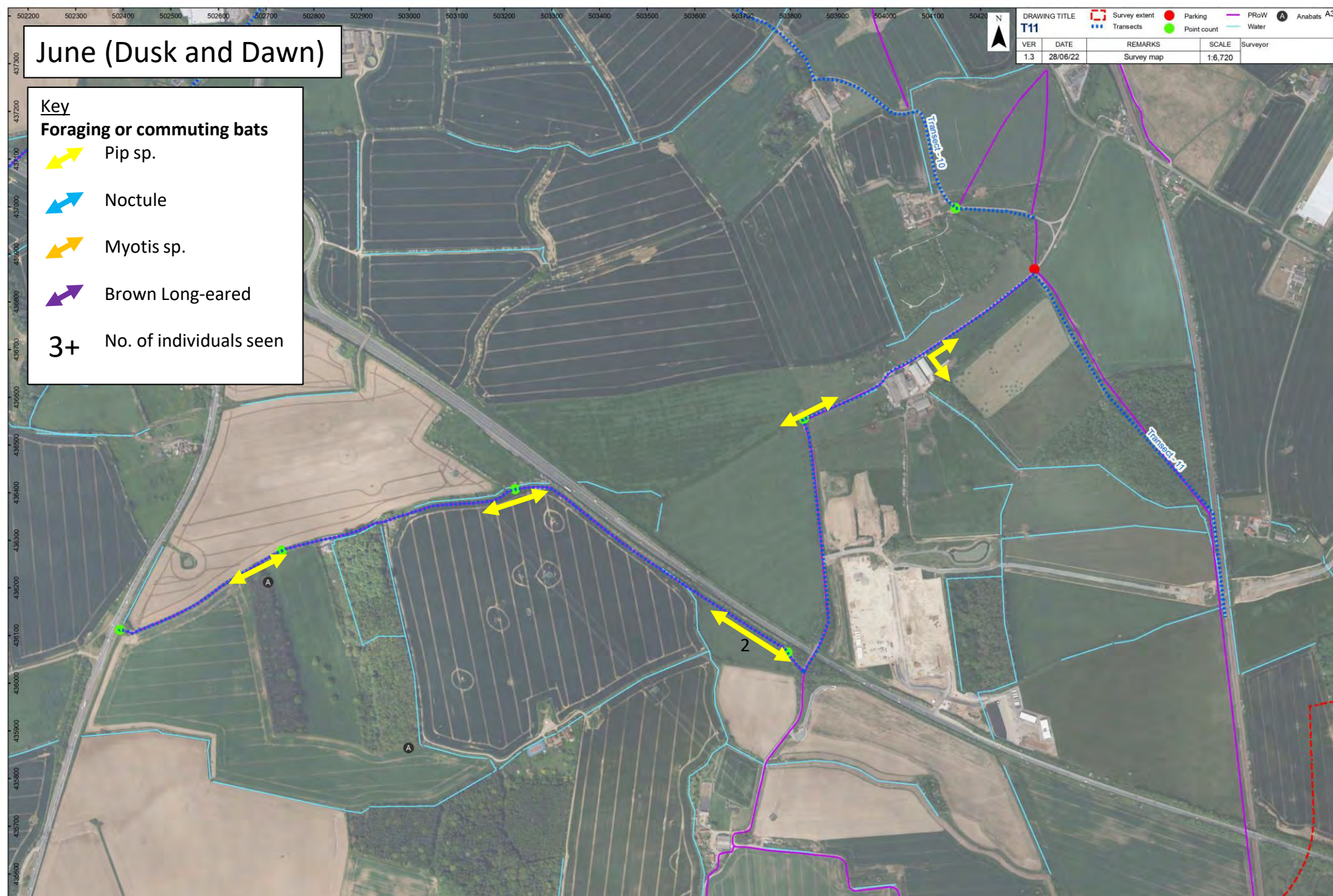
Water

Anabats A3

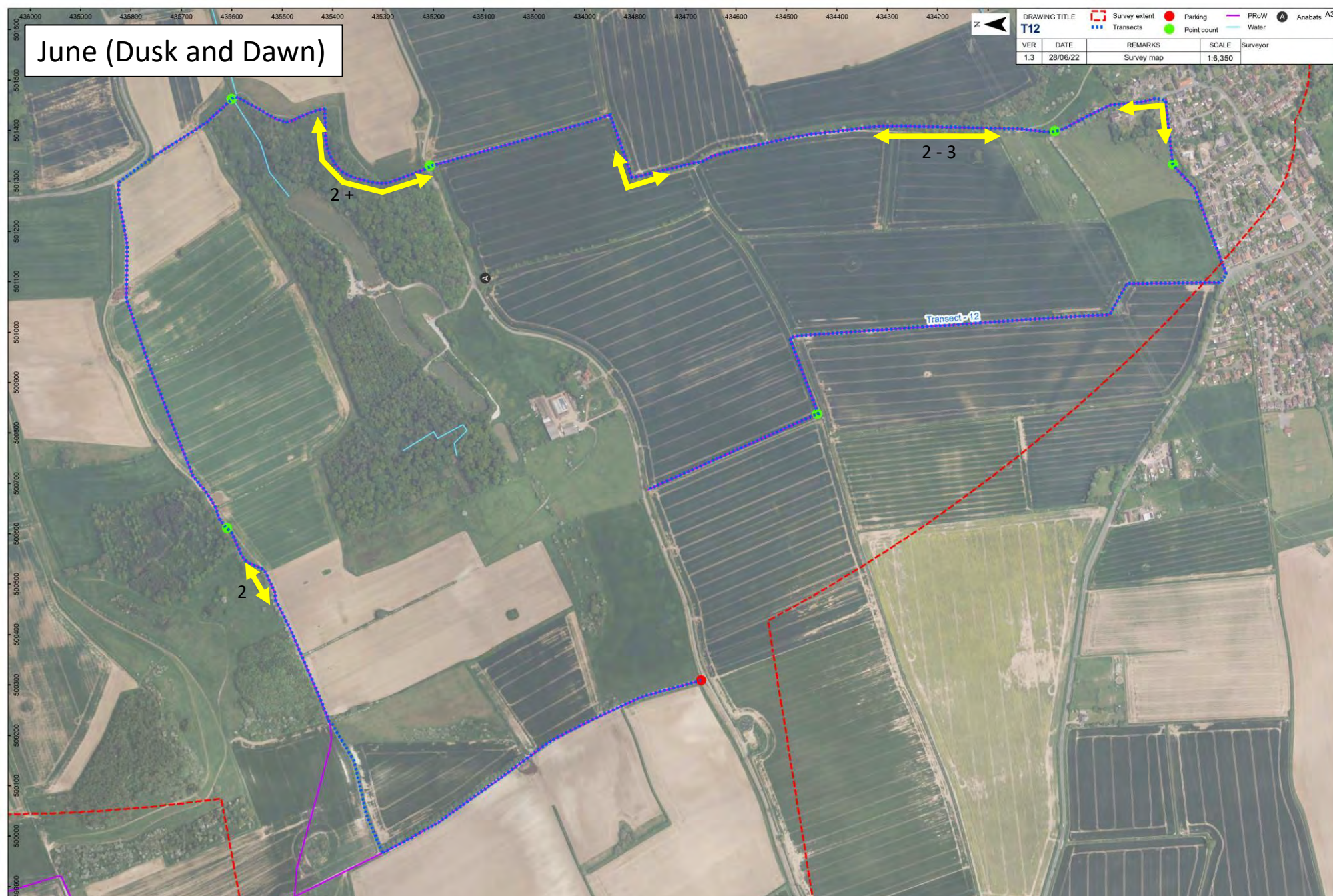


Key

	Pip sp.
	Noctule
	Myotis sp.
	Brown Long-eared
3+	No. of individuals seen



2



July (Dusk)

Key

Foraging or commuting bats

Pip sp.

Noctule

Myotis sp.

Brown Long-eared

3+ No. of individuals seen

DRAWING TITLE

T4a

Survey extent

Parking

Transects

Point count

PfRoW

Water

Anabats

A3

VER

DATE

REMARKS

SCALE

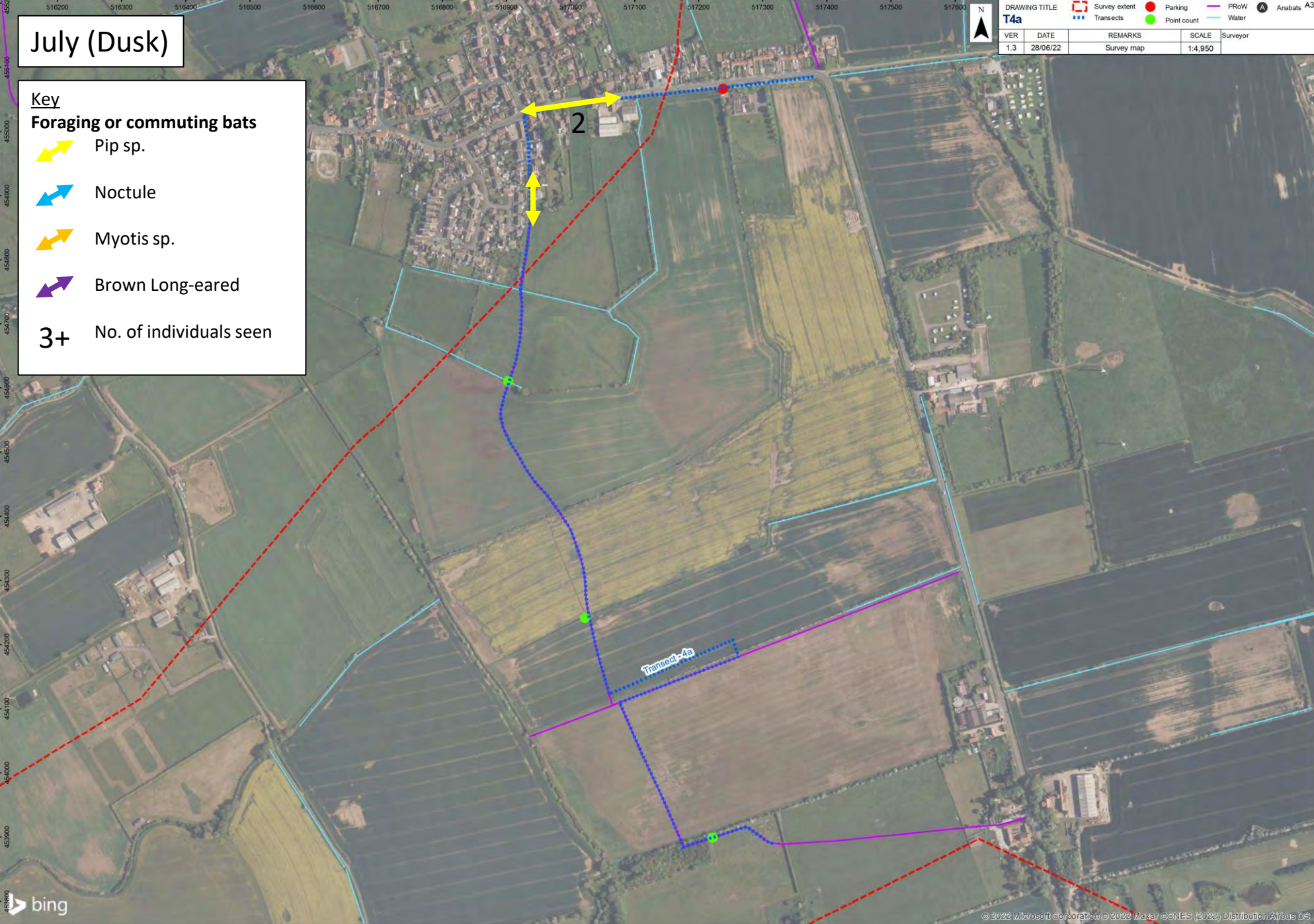
Surveyor

1.3

28/06/22

Survey map

1:4,950



July (Dusk)

DRAWING TITLE

T4b

Survey extent

Parking

Transects

Point count

PfRoW

Water

Anabats

A3

VER

DATE

REMARKS

SCALE

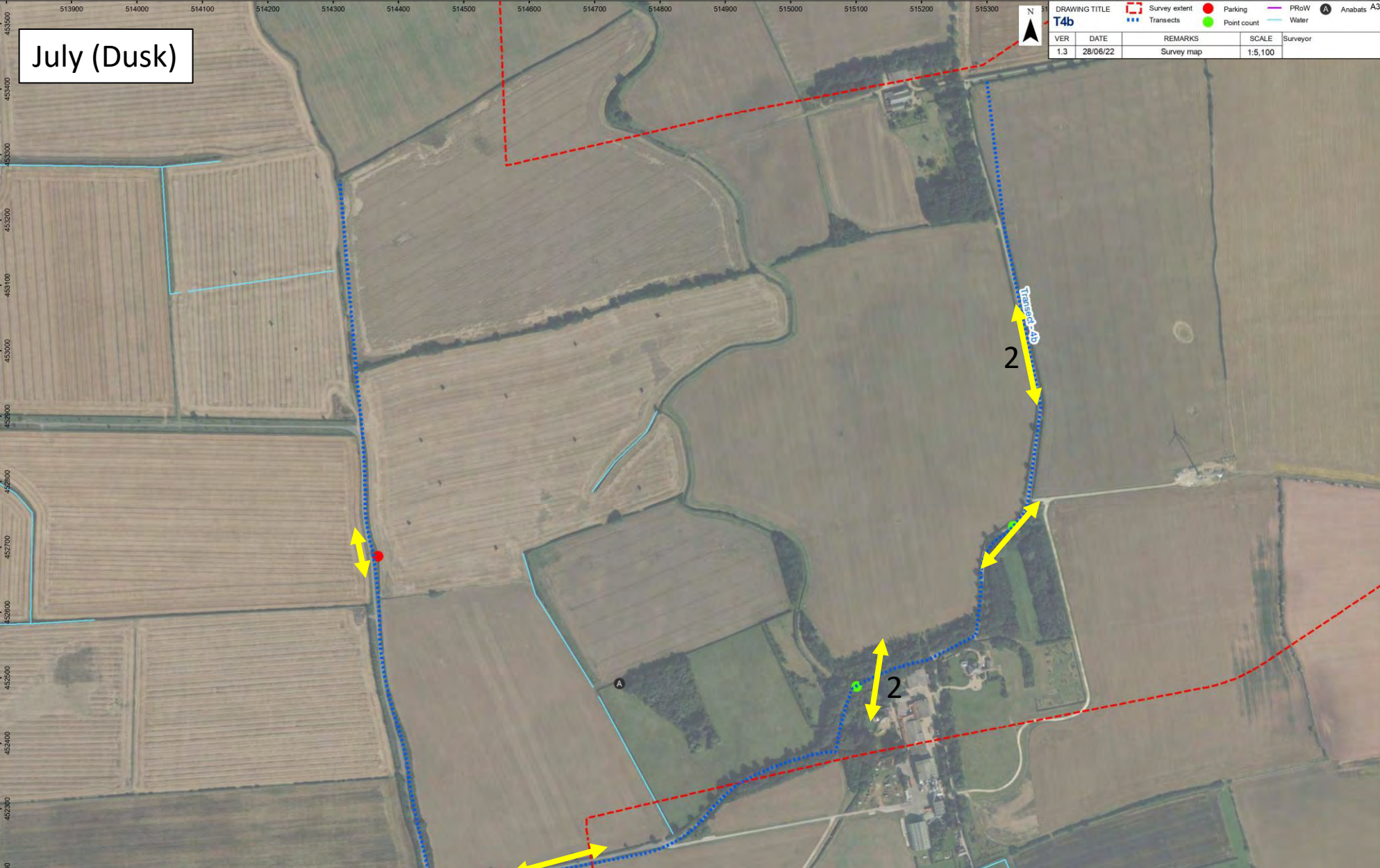
Surveyor

1.3

28/06/22

Survey map

1:5,100



July (Dusk and Dawn)

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen

Key

Foraging or commuting bats

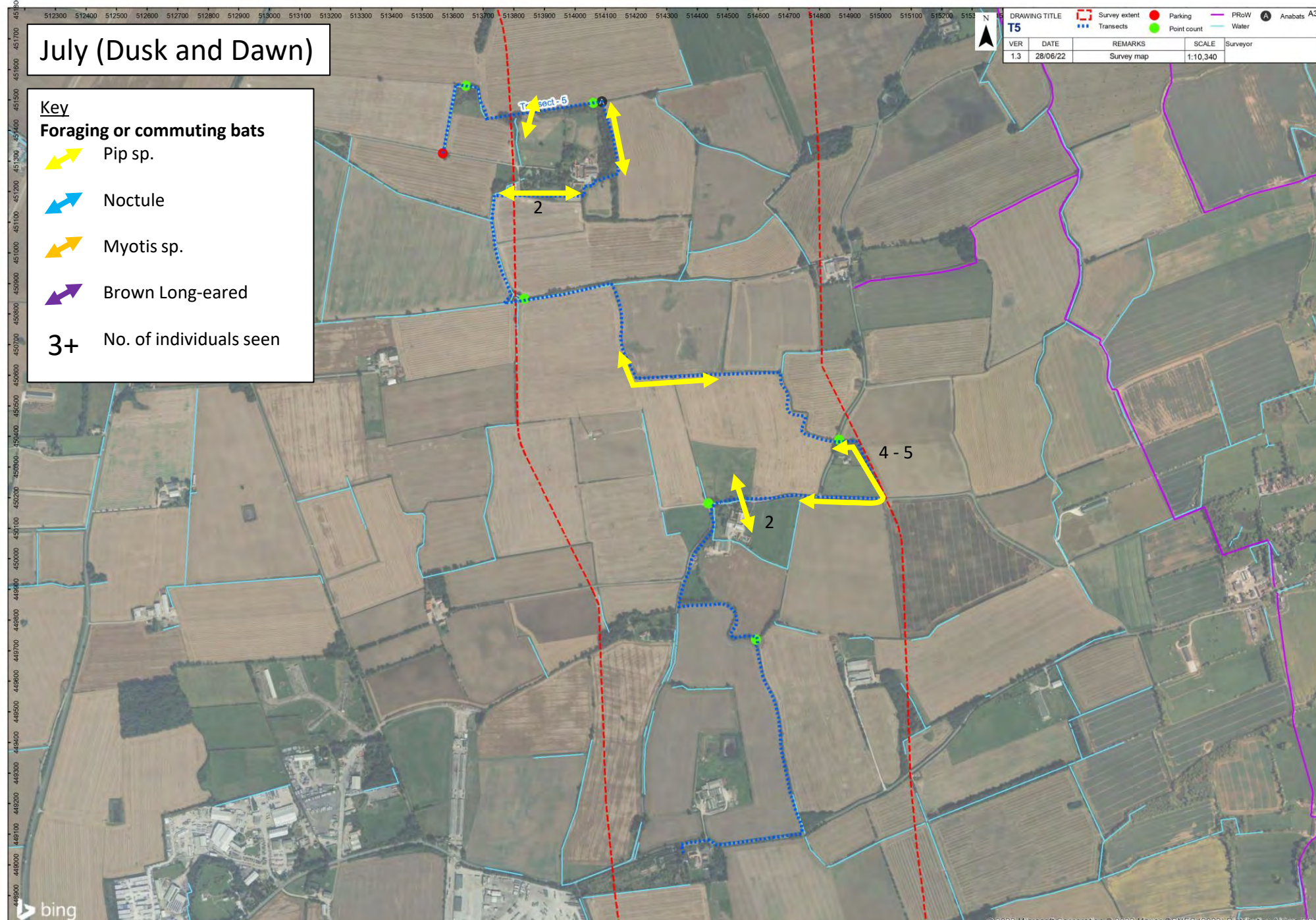
 Pip sp.

 Noctule

 Myotis sp.

 Brown Long-eared

3+ No. of individuals seen



July (Dusk)

July (Dusk)

DRAWING TITLE		Survey extent	Parking	PRoW	Anabats A3
T6		Transects	Point count	Water	
VER	DATE	REMARKS	SCALE	Surveyor	
1.3	28/06/22	Survey map	1:9,500		

July (Dusk)

DRAWING TITLE		Survey extent	Parking	PRoW	Anabats A3
T6		Transects	Point count	Water	
VER	DATE	REMARKS	SCALE	Surveyor	
1.3	28/06/22	Survey map	1:9,500		

July (Dusk and Dawn)

Key

Foraging or commuting bats

Pip sp.

Noctule

Myotis sp.

Brown Long-eared

3+

No. of individuals seen

VER 1.3 DATE 28/06/22 REMARKS Survey map SCALE 1:9,840 Surveyor

July (Dusk)

VER 1.3 DATE 28/06/22 REMARKS Survey map SCALE 1:14,570 Surveyor

July (Dusk)

Key

Foraging or commuting bats

Pip sp.

 Noctule

 Myotis sp.

3+

DRAWING TITLE

T9a and 9b

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

VER

1.3

DATE

28/06/22

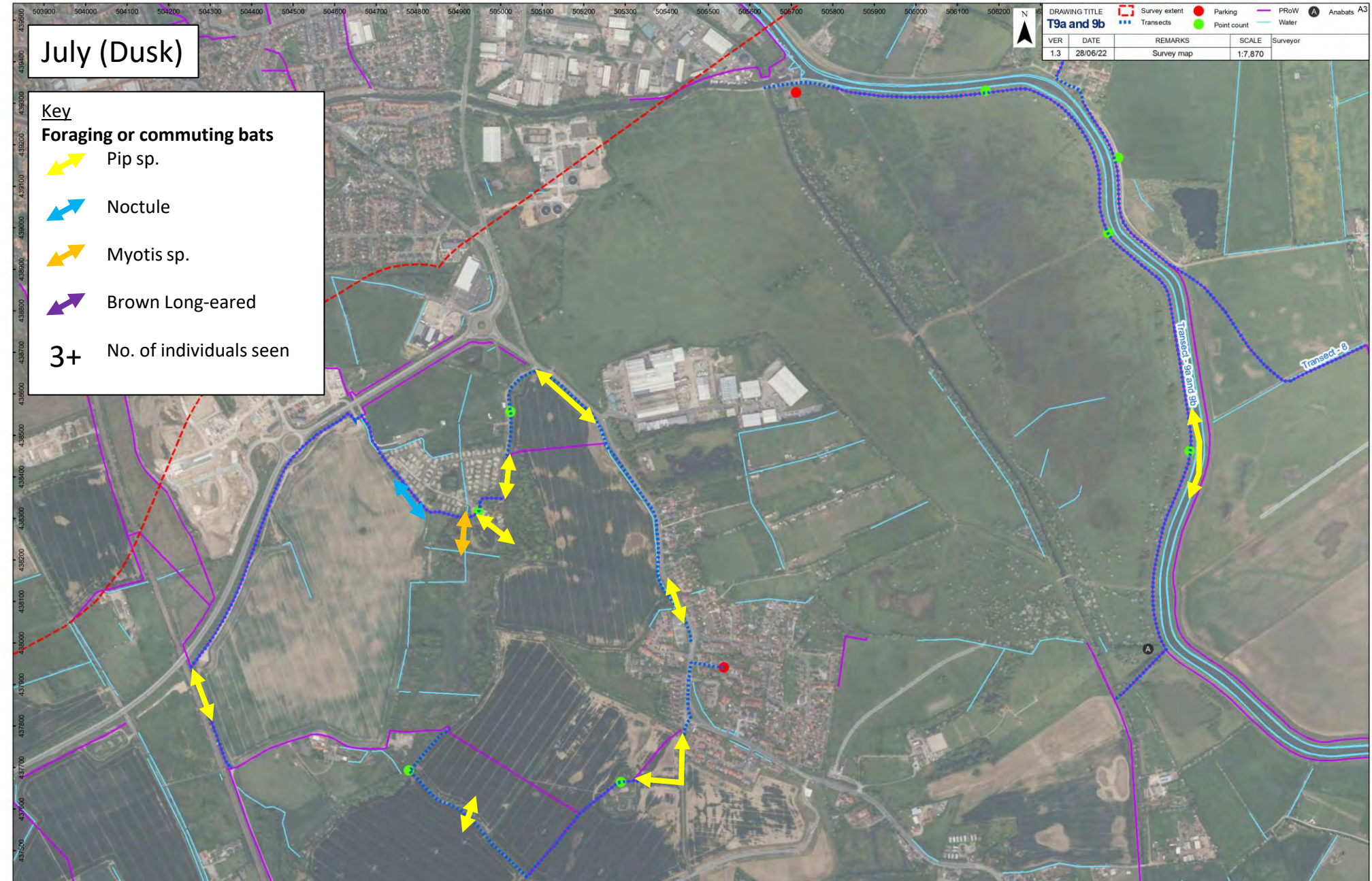
REMARKS

Survey map

SCALE

1:7,870

Surveyor



July (Dusk)

DRAWING TITLE

T10

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

VER

1.3

DATE

28/06/22

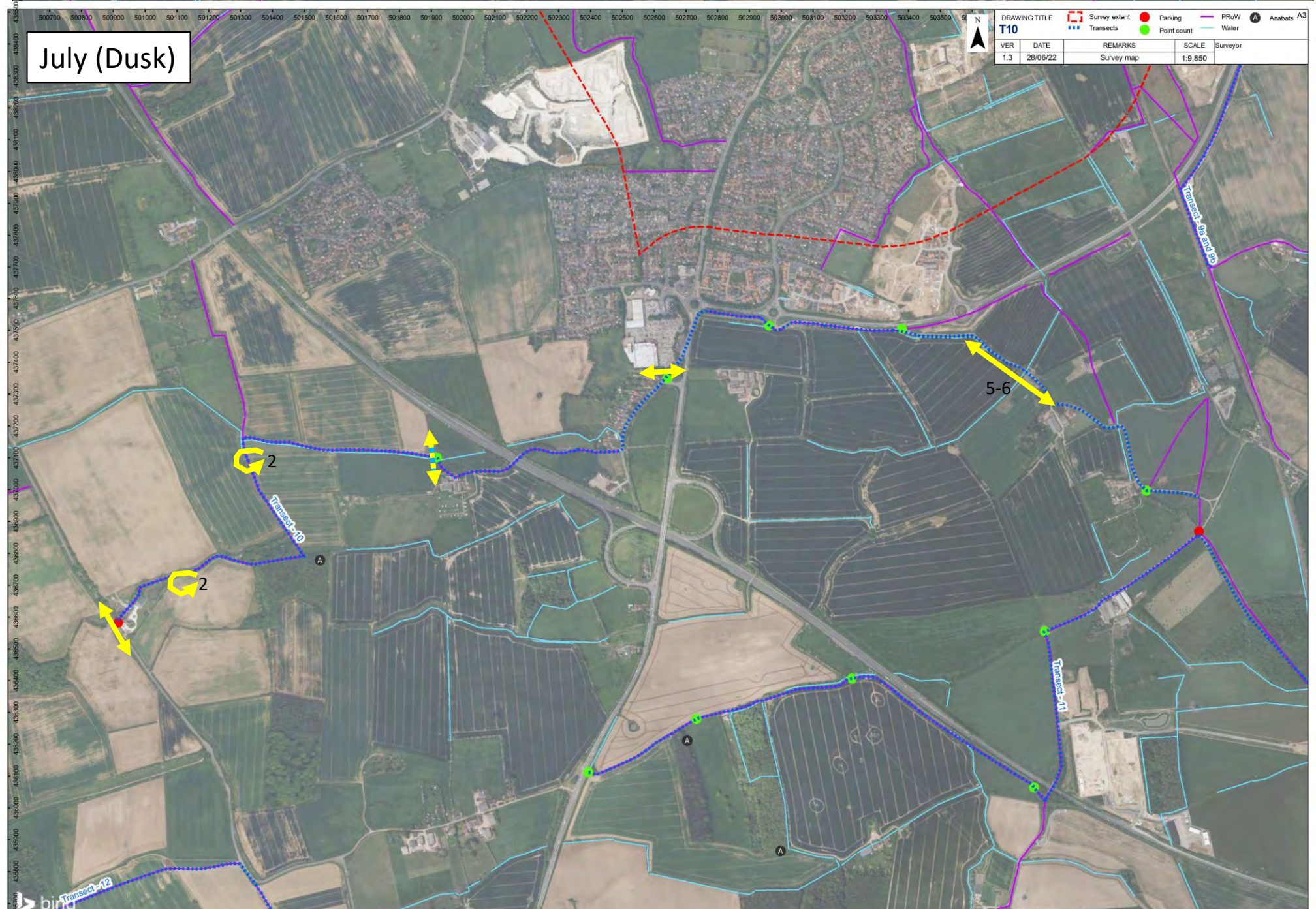
REMARKS

Survey map

SCALE

1:9,850

Surveyor



August (Dusk)

Key

Foraging or commuting bats

C.Pip and/or S. Pip

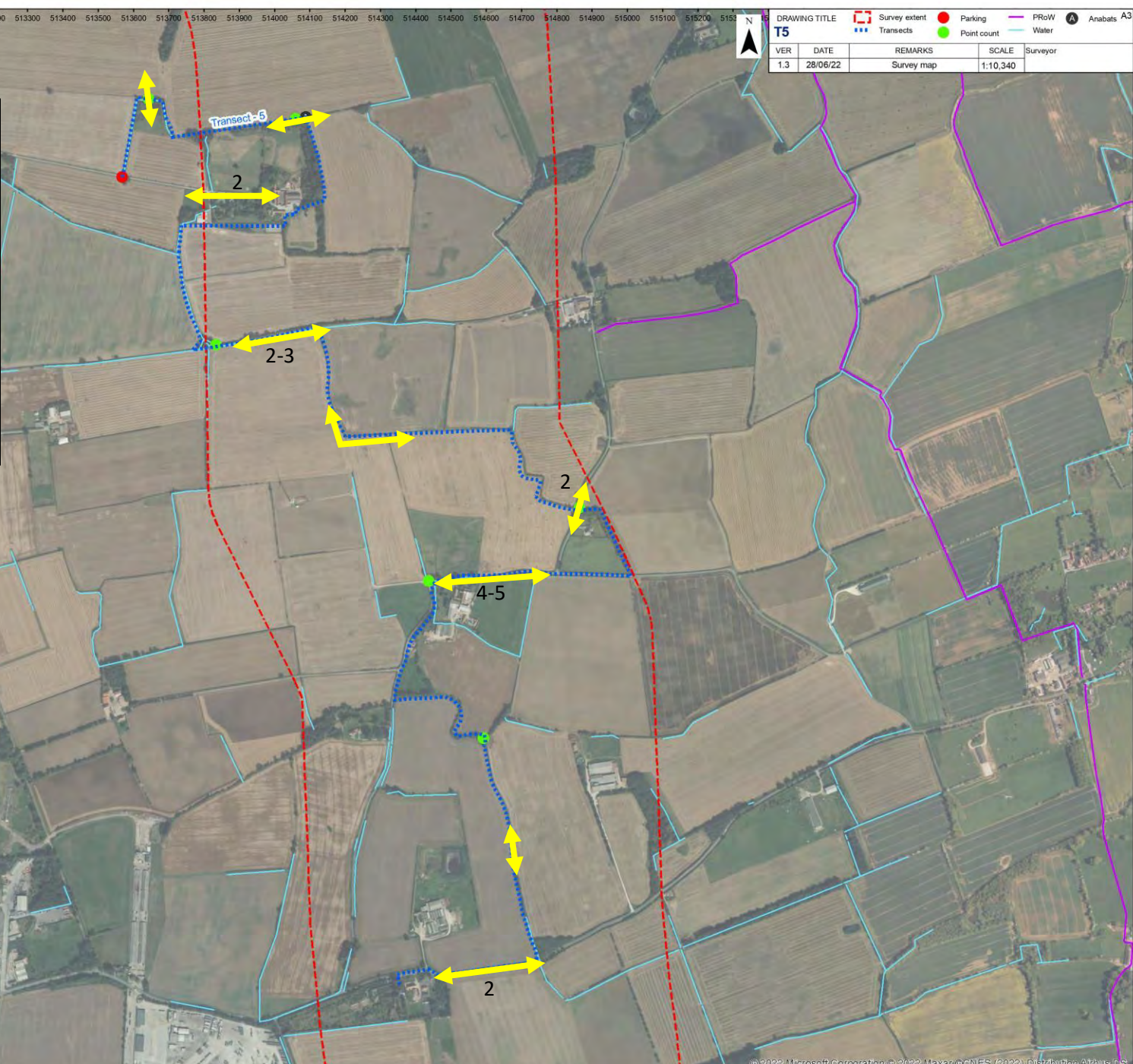
Noctule

Myotis sp.

Brown Long-eared

3+

 Number of individuals seen



August (Dusk)



August (Dusk)

Key

Foraging or commuting bats

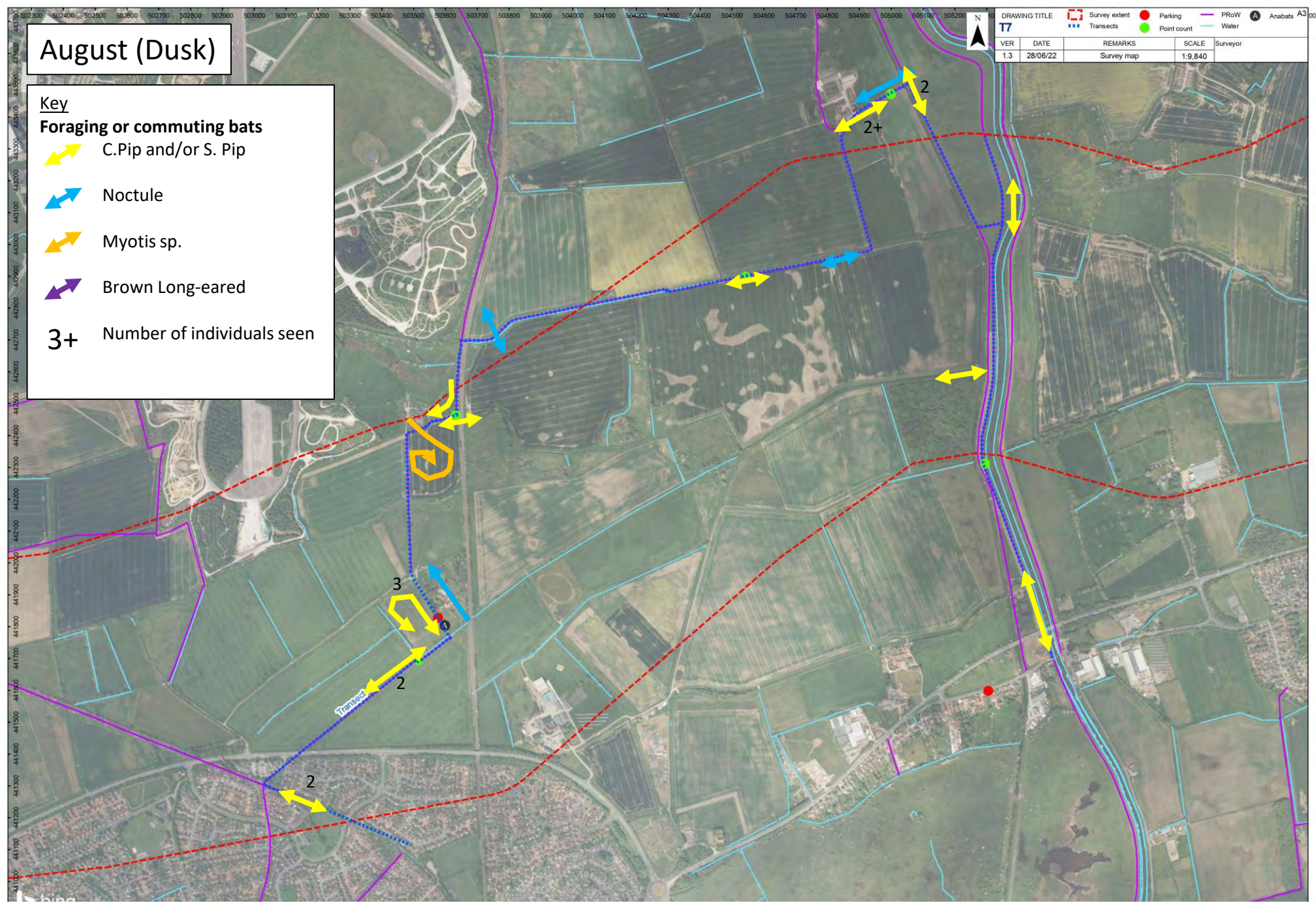
C.Pip and/or S. Pip

Noctule

Myotis sp.

Brown Long-eared

3+ Number of individuals seen



DRAWING TITLE

T7

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:9,840

Surveyor

Survey extent

Transects

Parking

Point count

PRoW

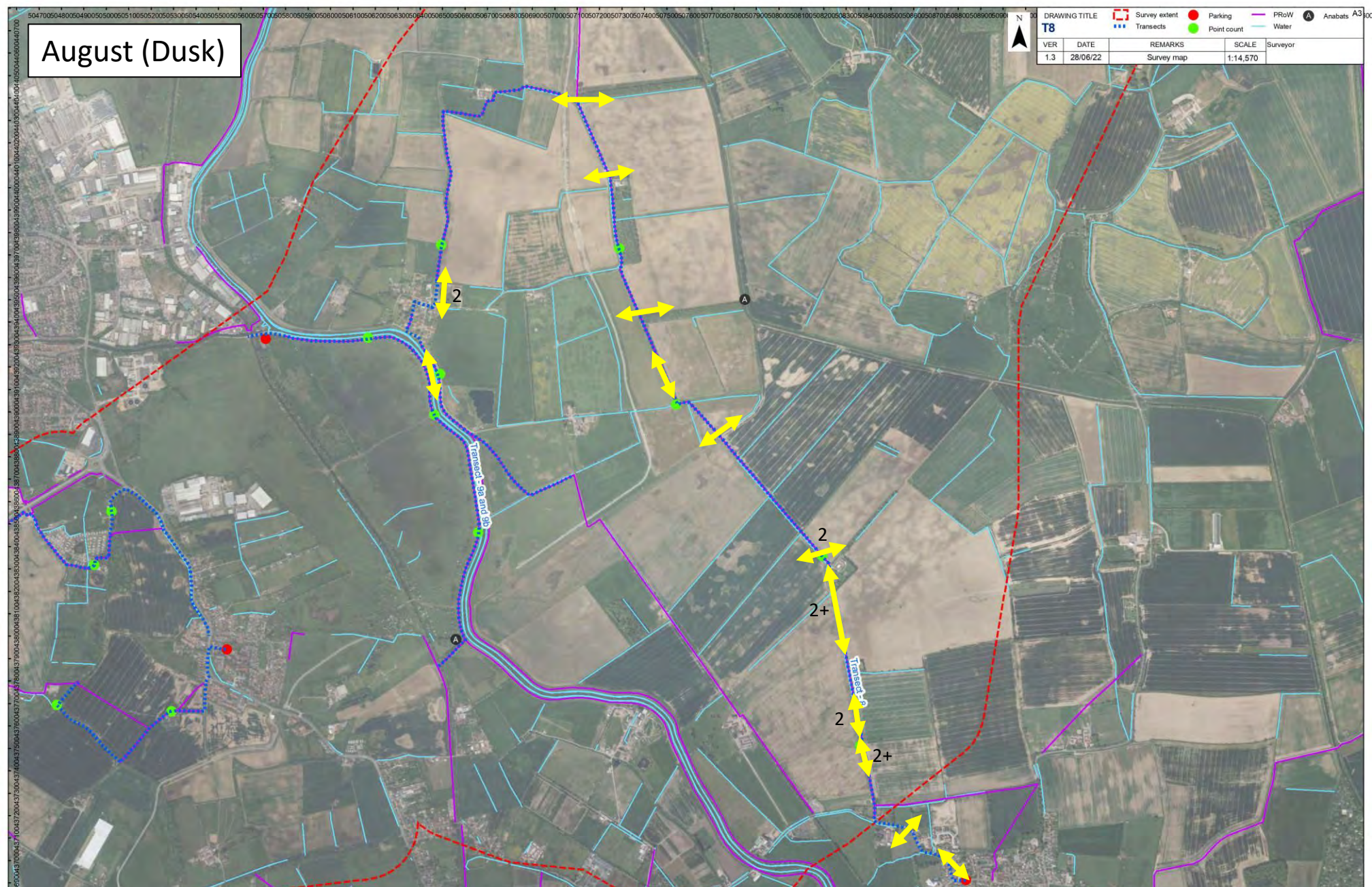
Water

Anabats

A3

100

August (Dusk)



DRAWING TITLE

T8

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:14,570

Surveyor

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

100

August (Dusk)

Key

Foraging or commuting bats

 C.Pip and/or S. Pip

 Noctule

 Myotis sp.

 Brown Long-eared

3+ Number of individuals seen

DRAWING TITLE

T9a and 9b

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

VER

1.3

DATE

28/06/22

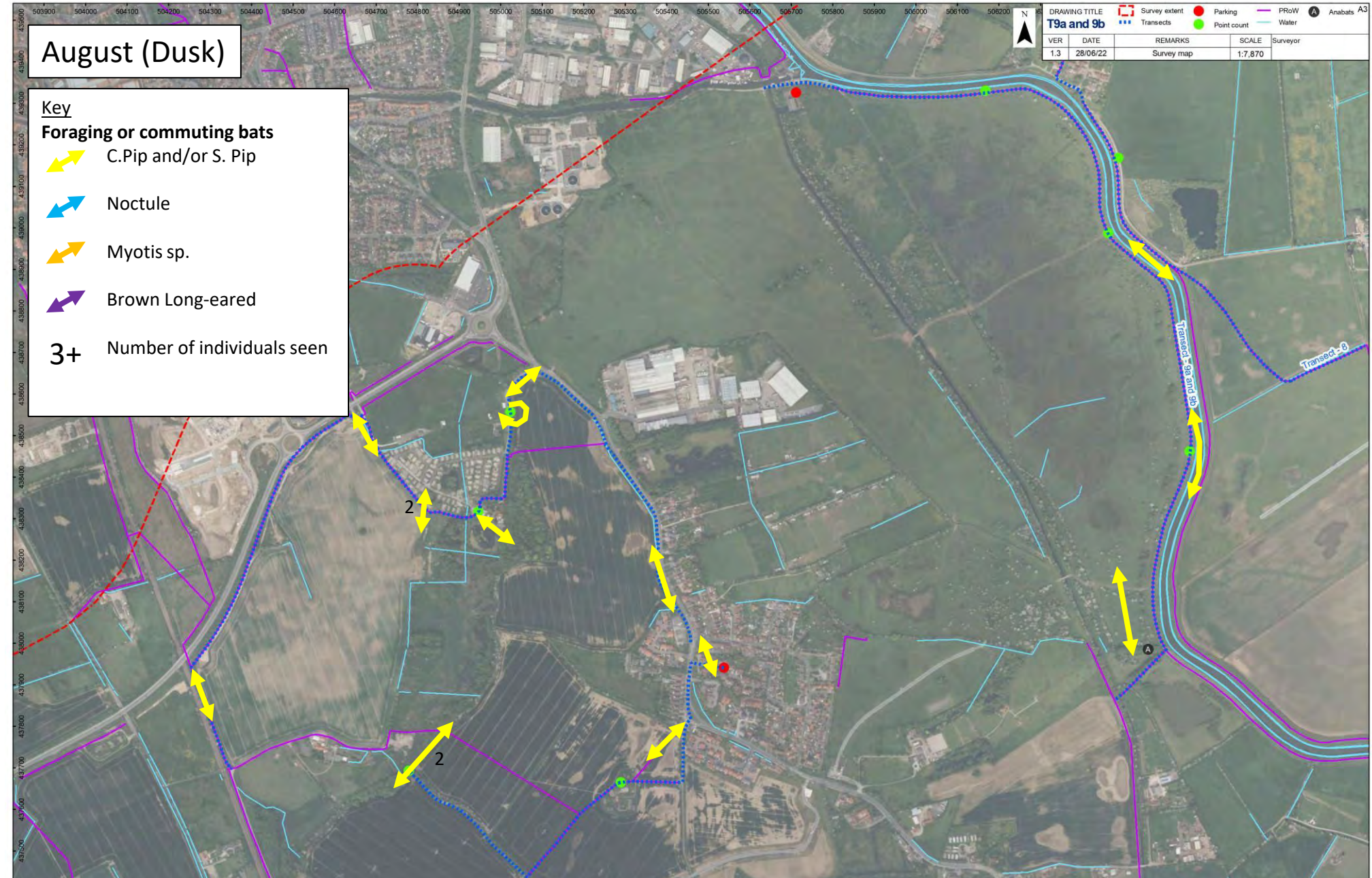
REMARKS

Survey map

SCALE

1:7,870

Surveyor



August (Dusk)

DRAWING TITLE

T10

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

VER

1.3

DATE

28/06/22

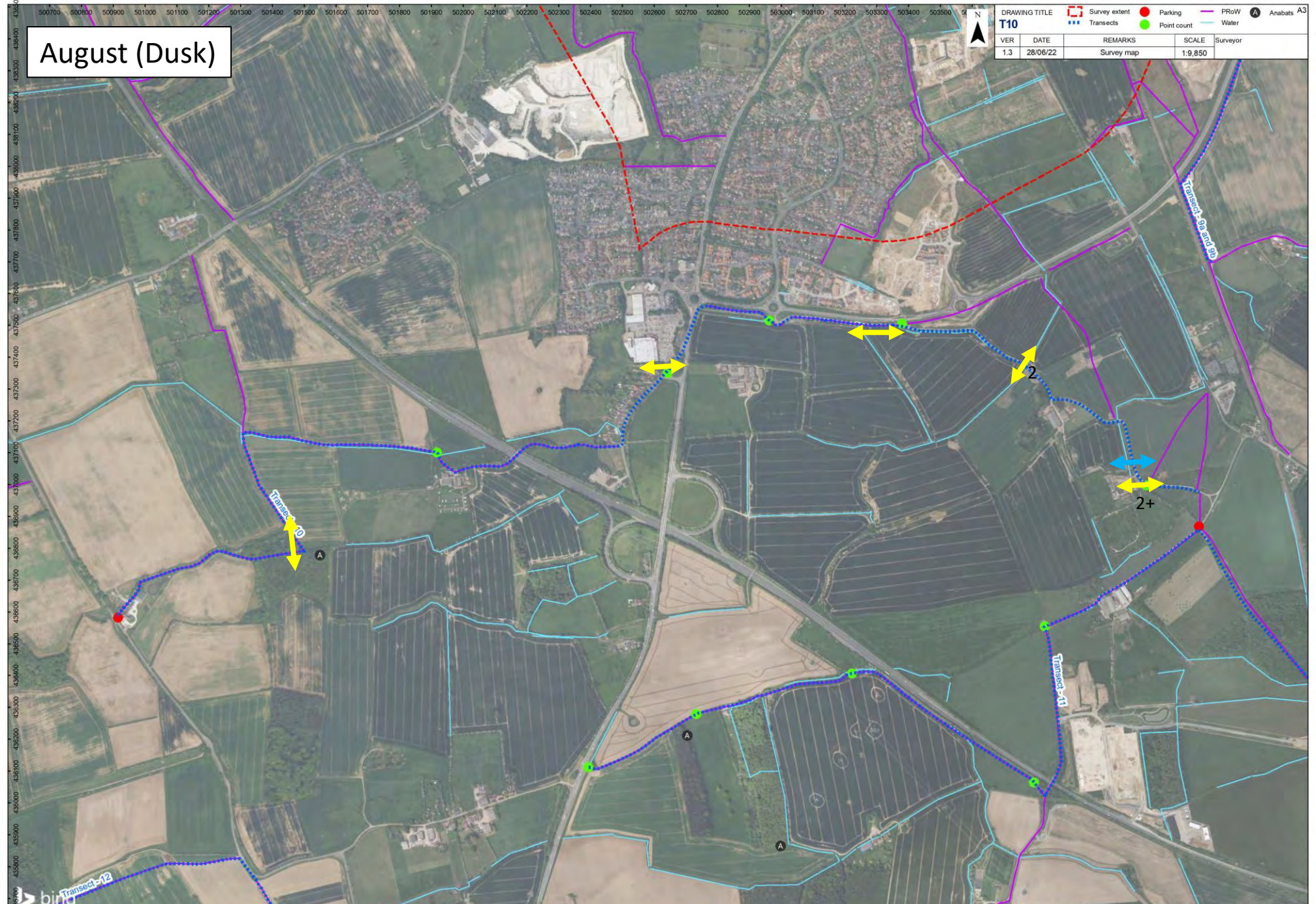
REMARKS

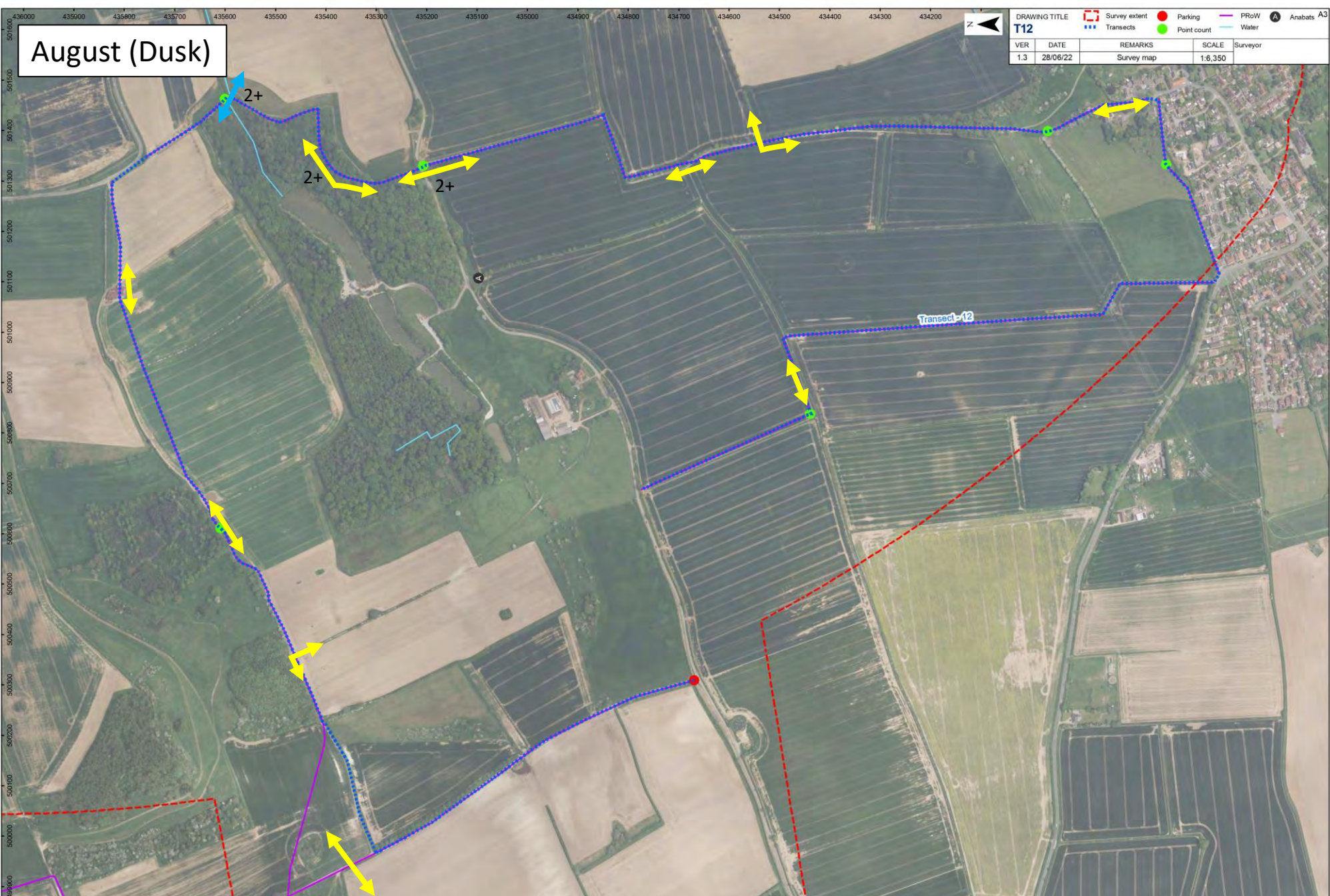
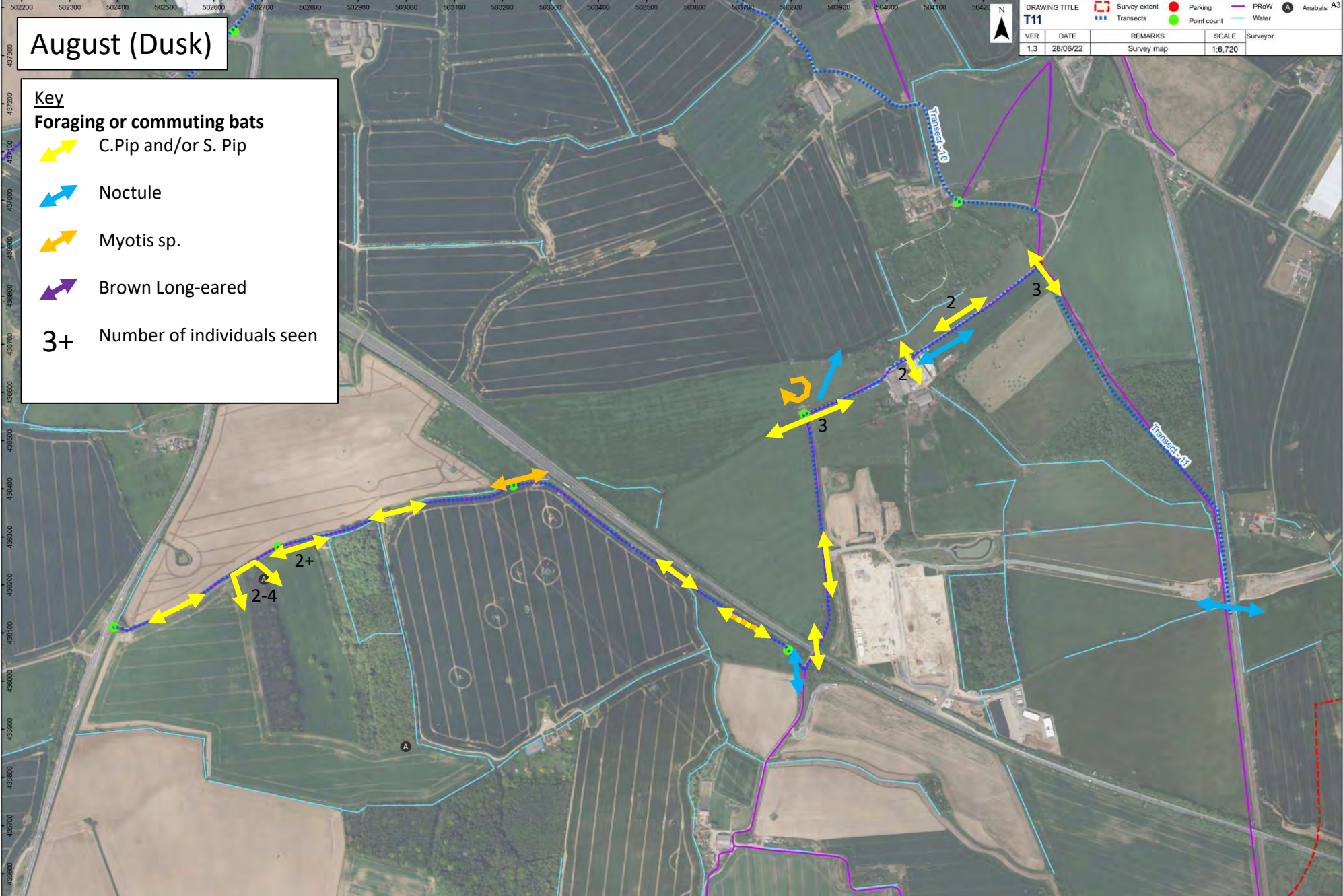
Survey map

SCALE

1:9,850

Surveyor





September (Dusk)

Key

Foraging or commuting bats

- C.Pip and/or S. Pip
- Noctule
- Myotis sp.
- Brown Long-eared
- 3+ Number of individuals seen

N

DRAWING TITLE

T4a

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:4,950

Surveyor

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

This aerial map displays the survey area T4a, bounded by a red dashed line. The map includes a coordinate grid with Easting values from 516200 to 517600 and Northing values from 452800 to 455200. A blue dotted line represents the survey transect, with a yellow double-headed arrow indicating the direction of travel. A red dot marks a parking location near the top center. A green dot indicates a point count location. A purple line represents the PRoW (Public Right of Way). A blue line represents the water body. A black circle with the letter 'A' indicates an Anabats location. The map shows a mix of agricultural fields, a residential area, and a road.

September (Dusk)

N

DRAWING TITLE

T4b

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:5,100

Surveyor

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

This aerial map displays the survey area T4b, bounded by a red dashed line. The map includes a coordinate grid with Easting values from 513800 to 515300 and Northing values from 452300 to 453500. A blue dotted line represents the survey transect, with a yellow double-headed arrow indicating the direction of travel. A red dot marks a parking location near the top center. A green dot indicates a point count location. A purple line represents the PRoW (Public Right of Way). A blue line represents the water body. A black circle with the letter 'A' indicates an Anabats location. The map shows a mix of agricultural fields, a residential area, and a road.

September (Dusk)

Key

Foraging or commuting bats

C.Pip and/or S. Pip

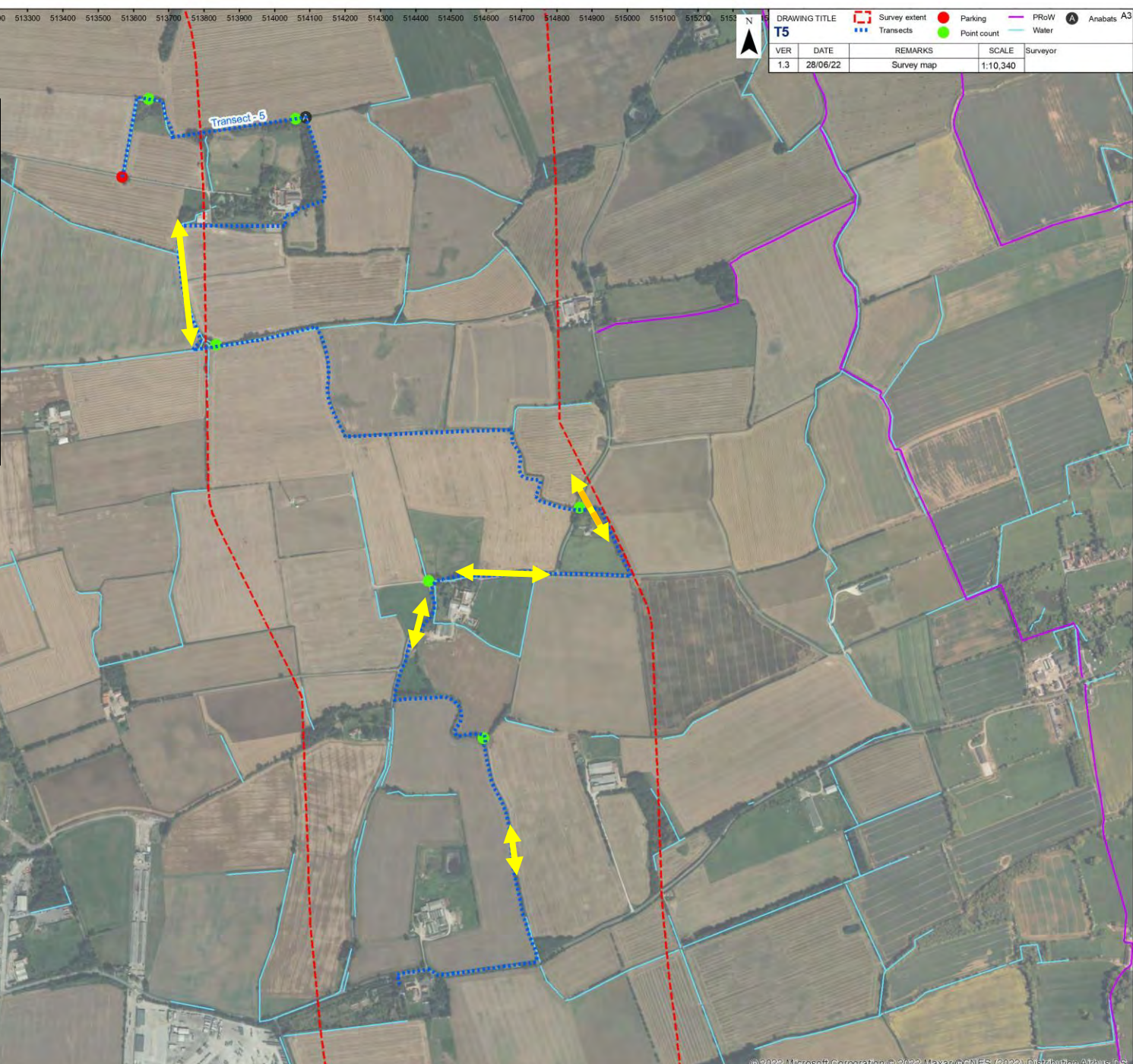
Noctule

Myotis sp.

Brown Long-eared

3+

Number of individuals seen



September (Dusk)



September (Dusk)

Key

Foraging or commuting bats

 C. Pip and/or S. Pip

 Noctule

 Myotis sp.

 Brown Long-eared

3+ Number of individuals seen

Key

Foraging or commuting bats

 C. Pip and/or S. Pip

 Noctule

 Myotis sp.

 Brown Long-eared

3+ Number of individuals seen

Key

Foraging or commuting bats

 C. Pip and/or S. Pip

 Noctule

 Myotis sp.

 Brown Long-eared

3+ Number of individuals seen

Key

Foraging or commuting bats

 C. Pip and/or S. Pip

 Noctule

 Myotis sp.

 Brown Long-eared

3+ Number of individuals seen

Key

Foraging or commuting bats

 C. Pip and/or S. Pip

 Noctule

 Myotis sp.

 Brown Long-eared

3+ Number of individuals seen

Key

Foraging or commuting bats

 C. Pip and/or S. Pip

 Noctule

 Myotis sp.

 Brown Long-eared

3+ Number of individuals seen

Key

Foraging or commuting bats

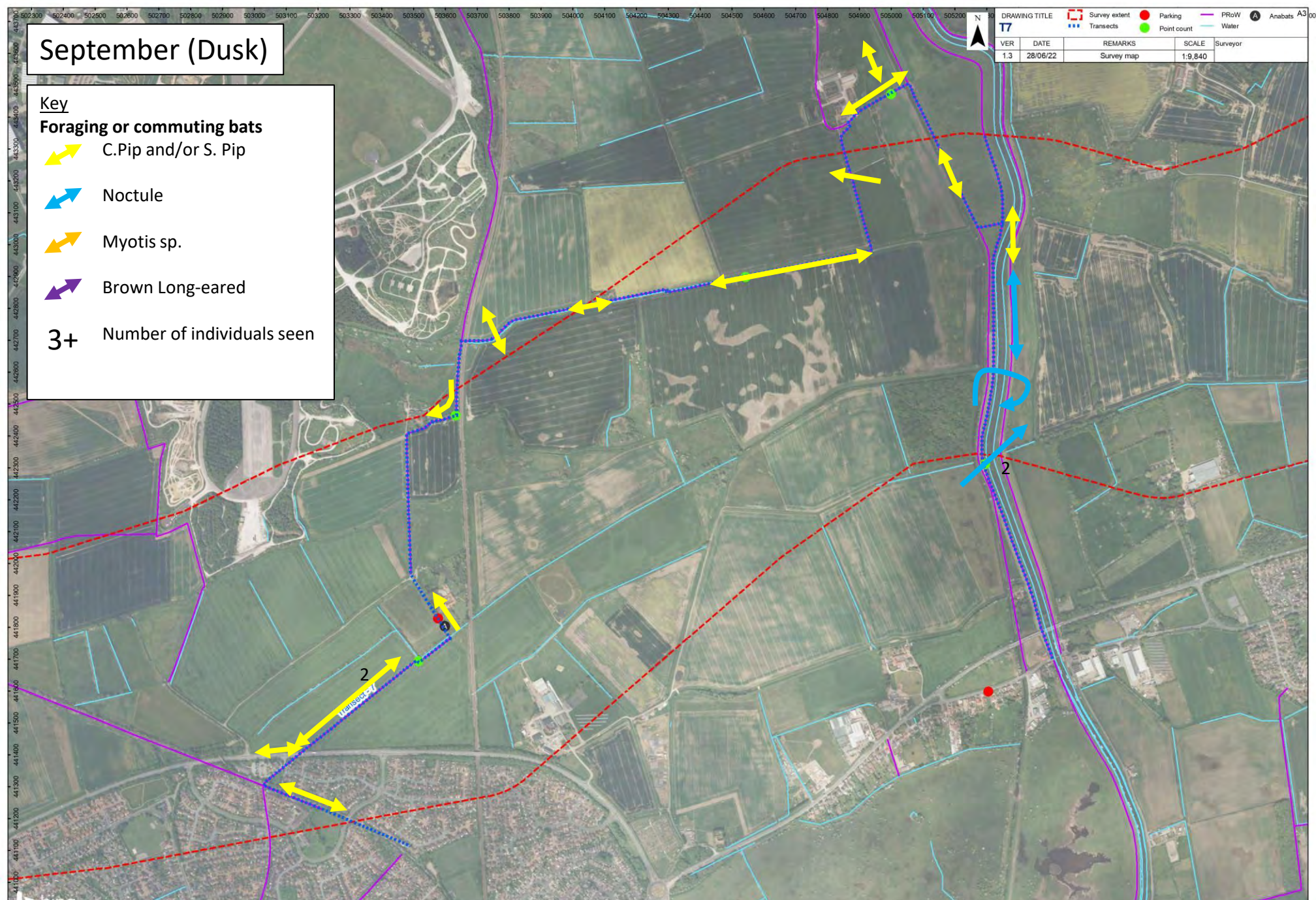
 C. Pip and/or S. Pip

 Noctule

 Myotis sp.

 Brown Long-eared

3+ Number of individuals seen



September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

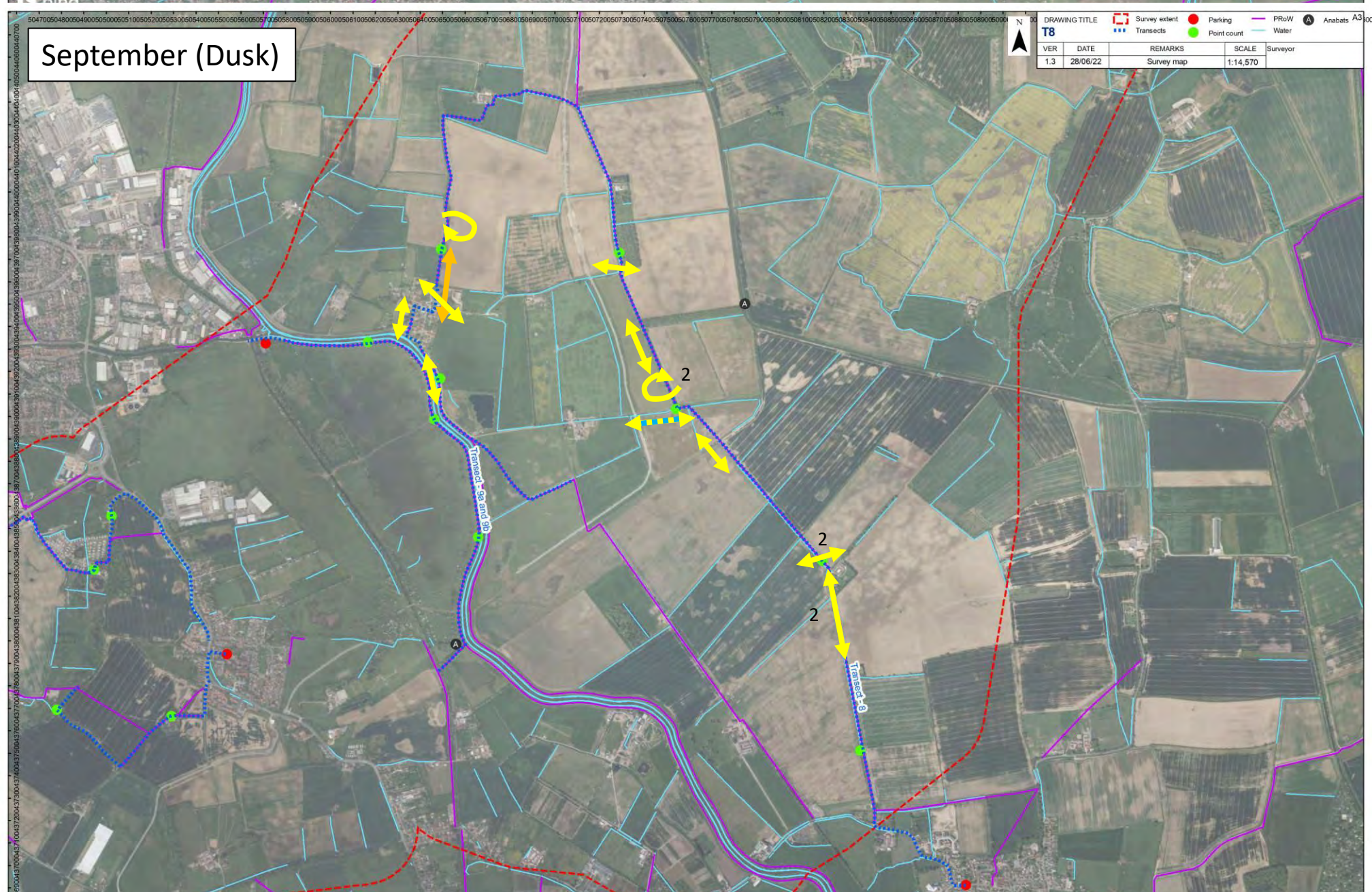
September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)

September (Dusk)



September (Dusk)

Key

Foraging or commuting bats

C.Pip and/or S. Pip

Noctule

Myotis sp.

Brown Long-eared

3+ Number of individuals seen

DRAWING TITLE

T9a and 9b

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:7,870

Surveyor

Survey extent

Transects

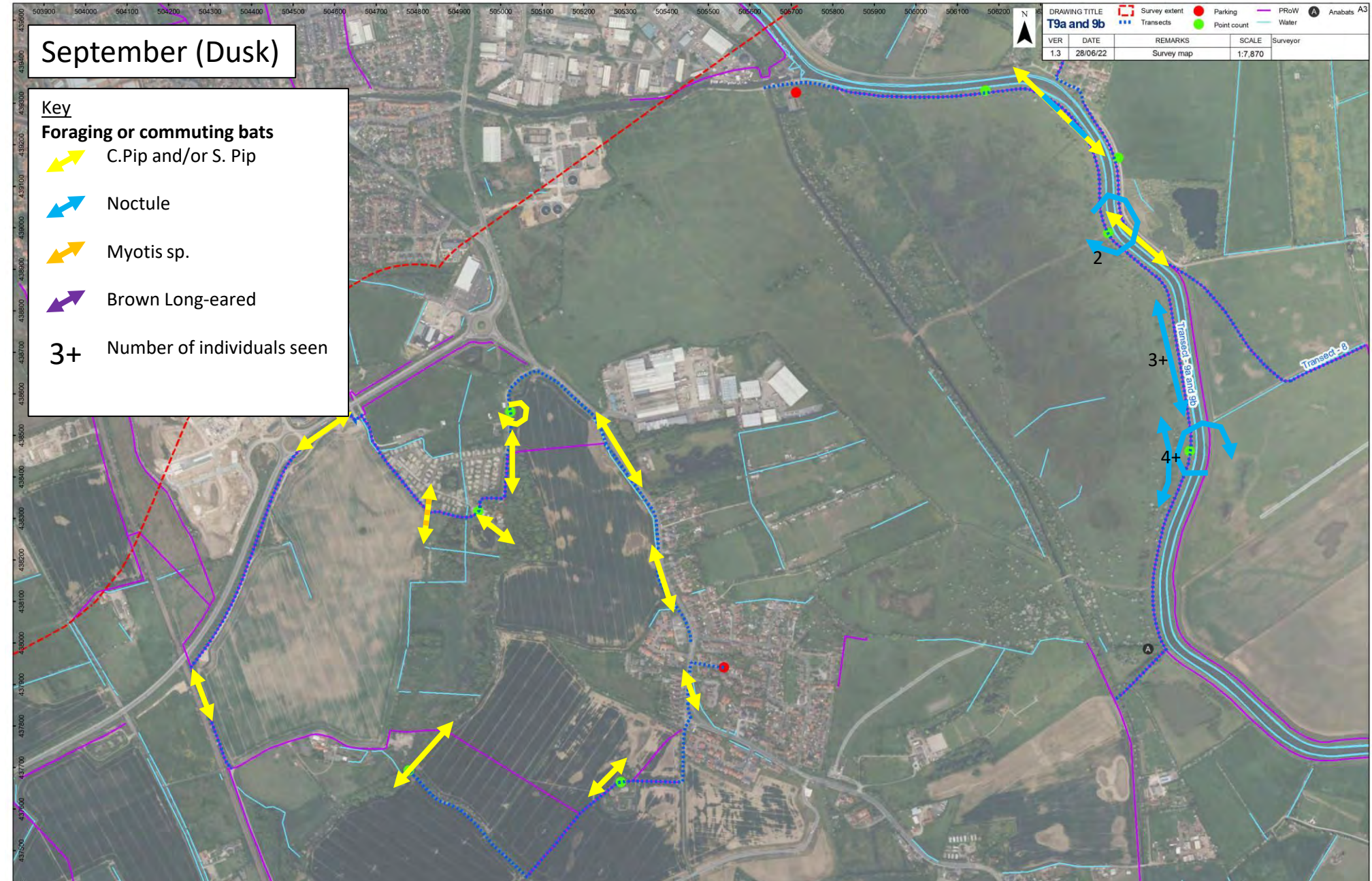
Parking

Point count

PRow

Water

Anabats A3



September (Dusk)

DRAWING TITLE

T10

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:9,850

Surveyor

Survey extent

Transects

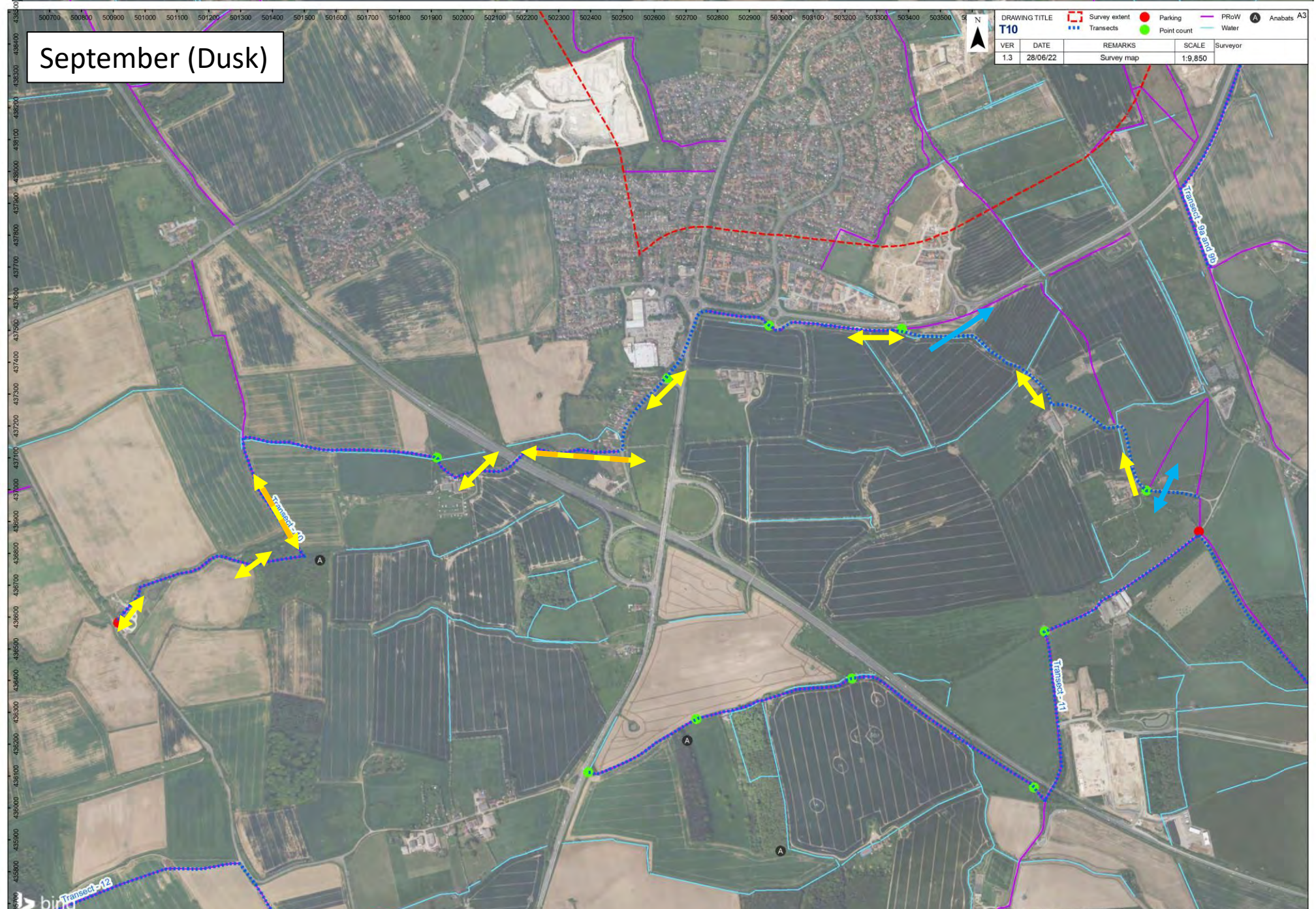
Parking

Point count

PRow

Water

Anabats A3



September (Dusk)

Key

Foraging or commuting bats

- C.Pip and/or S. Pip
- Noctule
- Myotis sp.
- Brown Long-eared

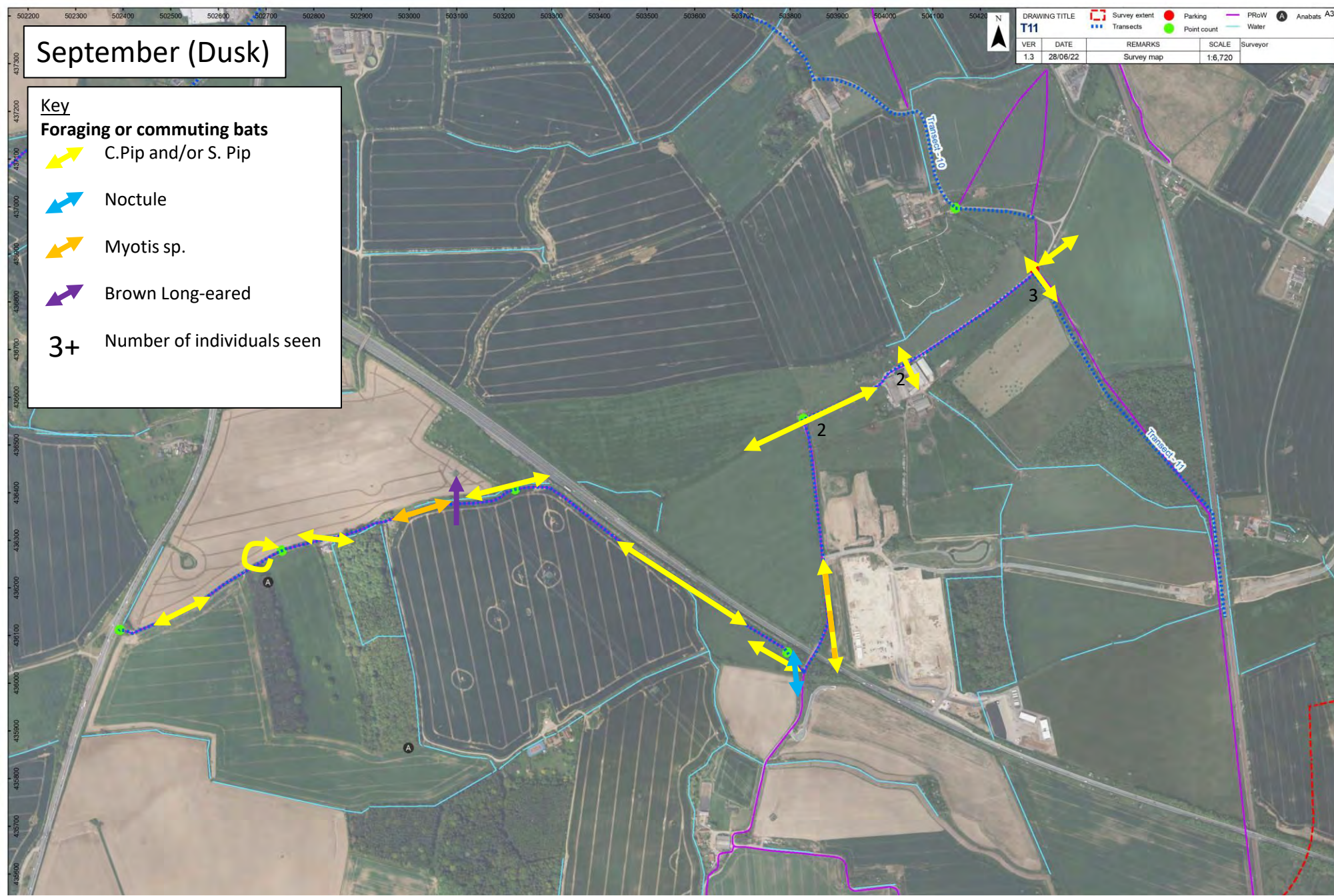
3+ Number of individuals seen



T11

VER	DATE	REMARKS	SCALE	Surveyor
1.3	28/06/22	Survey map	1:6,720	

- Survey extent
- Transects
- Point count
- PRoW
- Water
- Anabats A3



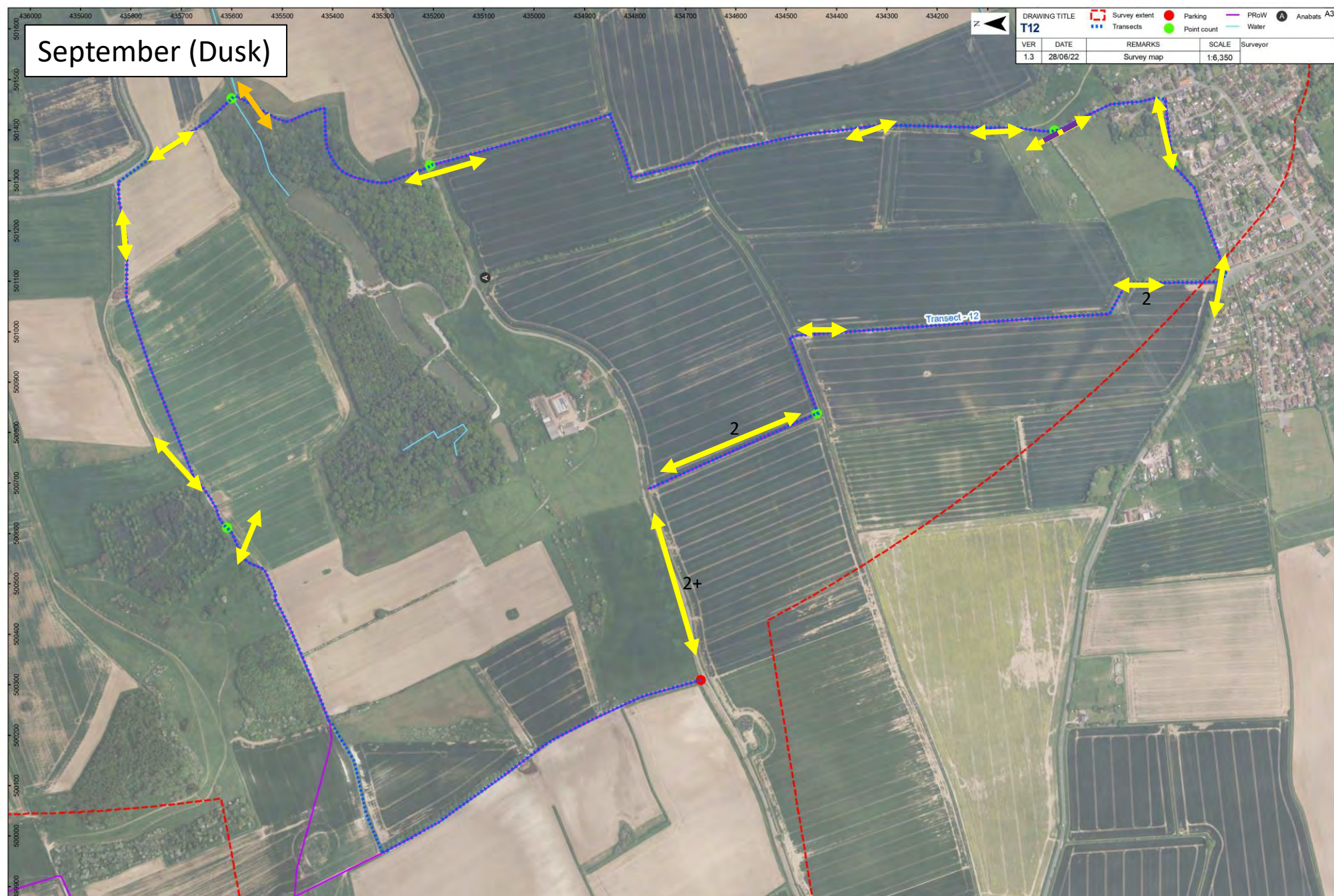
September (Dusk)



T12

VER	DATE	REMARKS	SCALE	Surveyor
1.3	28/06/22	Survey map	1:6,350	

- Survey extent
- Transects
- Point count
- Parking
- PRoW
- Water
- Anabats A3



October(Dusk)

Key

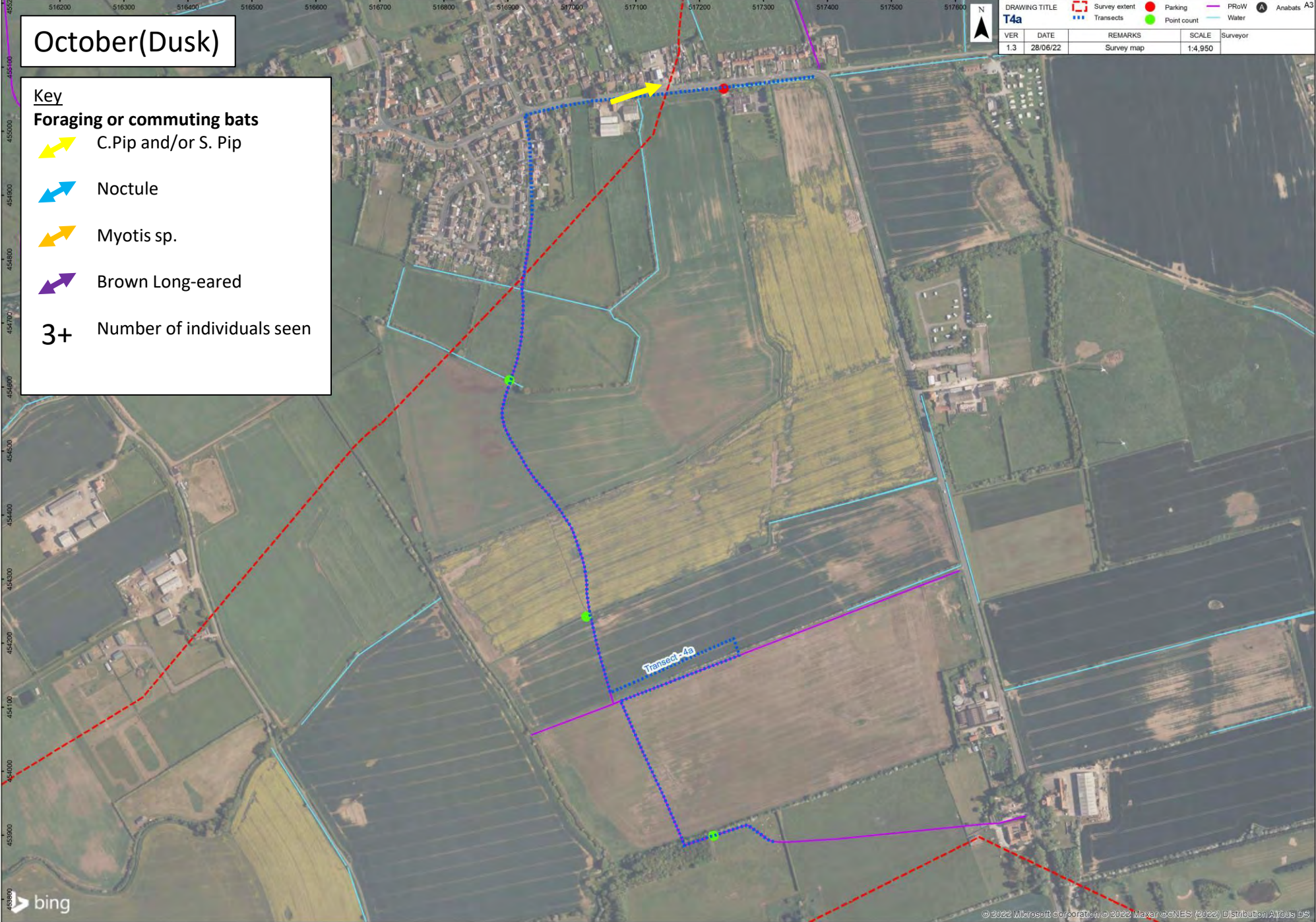
Foraging or commuting bats

- C.Pip and/or S. Pip
- Noctule
- Myotis sp.
- Brown Long-eared

3+ Number of individuals seen



DRAWING TITLE					T4a				
VER	DATE	REMARKS		SCALE	Surveyor				
1.3	28/06/22	Survey map		1:4,950					



October (Dusk)



DRAWING TITLE					T4b				
VER	DATE	REMARKS		SCALE	Surveyor				
1.3	28/06/22	Survey map		1:5,100					



October (Dusk)

Key

Foraging or commuting bats

C.Pip and/or S. Pip

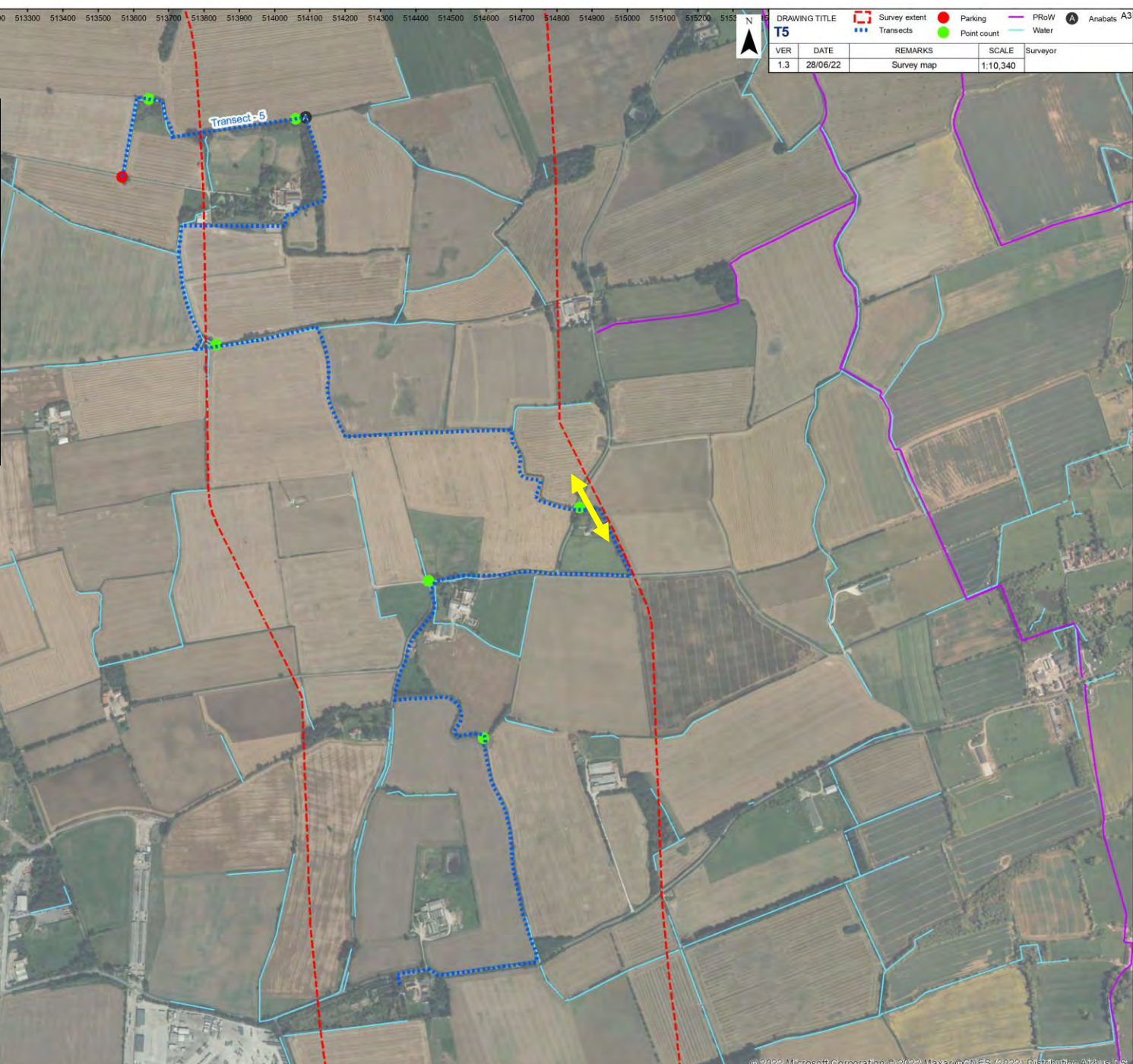
Noctule

Myotis sp.

Brown Long-eared

3+

Number of individuals seen



October (Dusk)



October (Dusk)

Key

Foraging or commuting bats

C.Pip and/or S. Pip

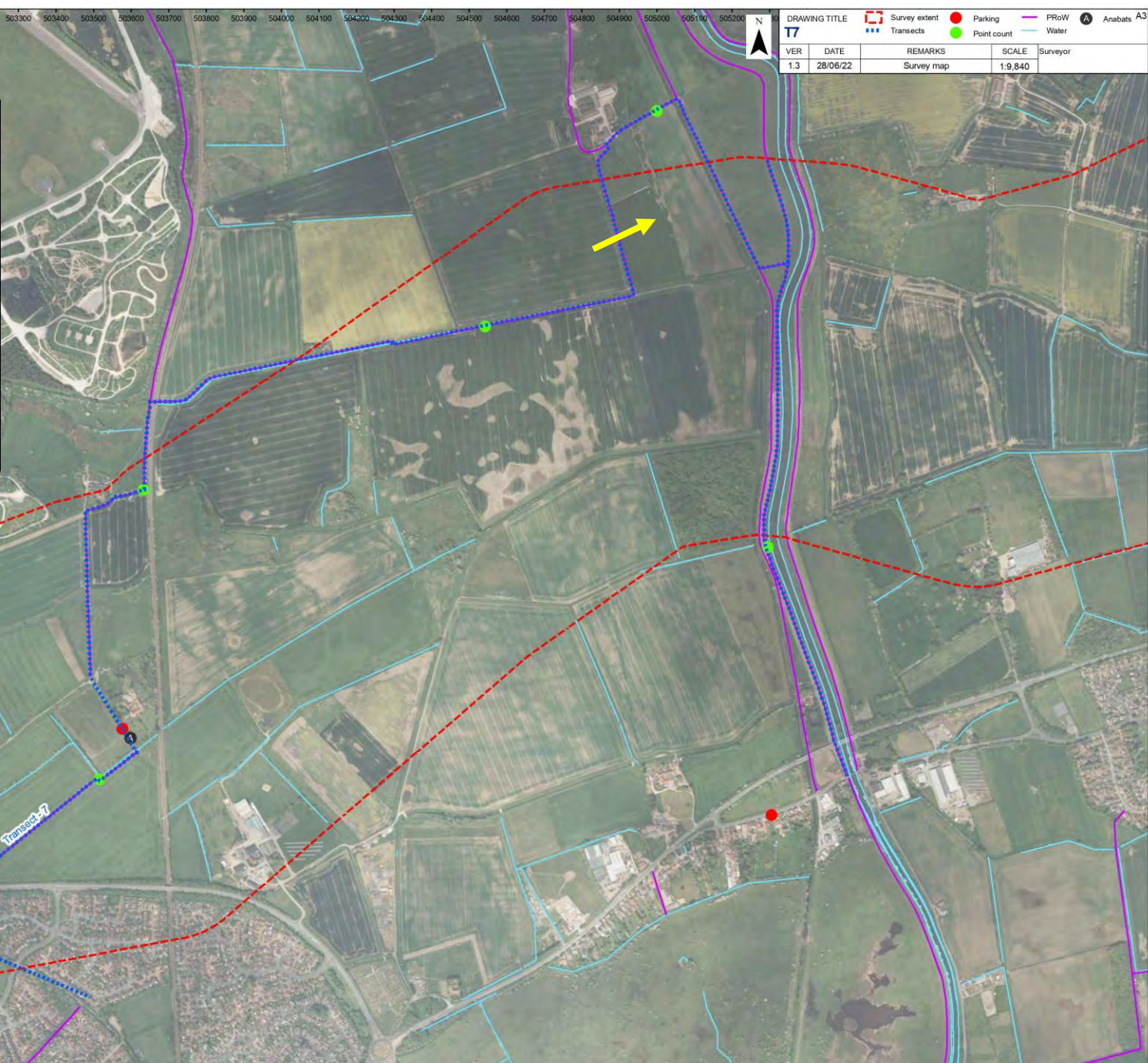
Noctule

Myotis sp.

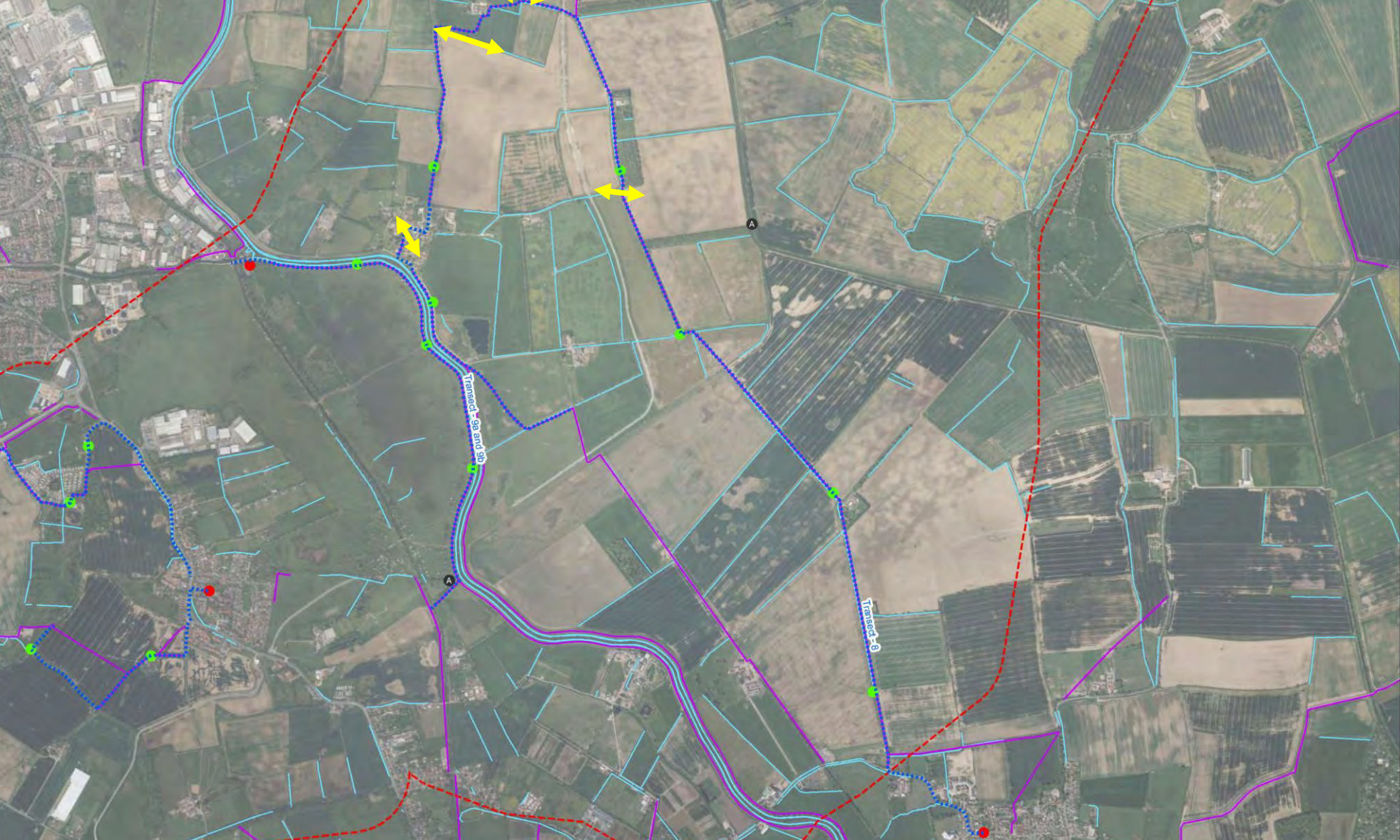
Brown Long-eared

3+

Number of individuals seen



October (Dusk)



October(Dusk)

Key

Foraging or commuting bats

- C.Pip and/or S. Pip
- Noctule
- Myotis sp.
- Brown Long-eared

3+ Number of individuals seen

N

DRAWING TITLE

T9a and 9b

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:7,870

Surveyor

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

October (Dusk)

N

DRAWING TITLE

T10

VER

1.3

DATE

28/06/22

REMARKS

Survey map

SCALE

1:9,850

Surveyor

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

October (Dusk)

Key

Foraging or commuting bats

C.Pip and/or S. Pip

Noctule

Myotis sp.

Brown Long-eared

3+

Number of individuals seen

T11

VER	DATE	REMARKS	SCALE	Surveyor
-----	------	---------	-------	----------

1.3	28/06/22	Survey map	1:6,720	
-----	----------	------------	---------	--

Survey extent

Transects

Parking

Point count

PRoW

Water

Anabats

A3

October (Dusk)

Key

Foraging or commuting bats

C.Pip and/or S. Pip

Noctule

Myotis sp.

Brown Long-eared

3+

Number of individuals seen

T12

VER	DATE	REMARKS	SCALE	Surveyor
-----	------	---------	-------	----------

1.3	28/06/22	Survey map	1:6,350	
-----	----------	------------	---------	--

Survey extent

Transects

Parking

Point count

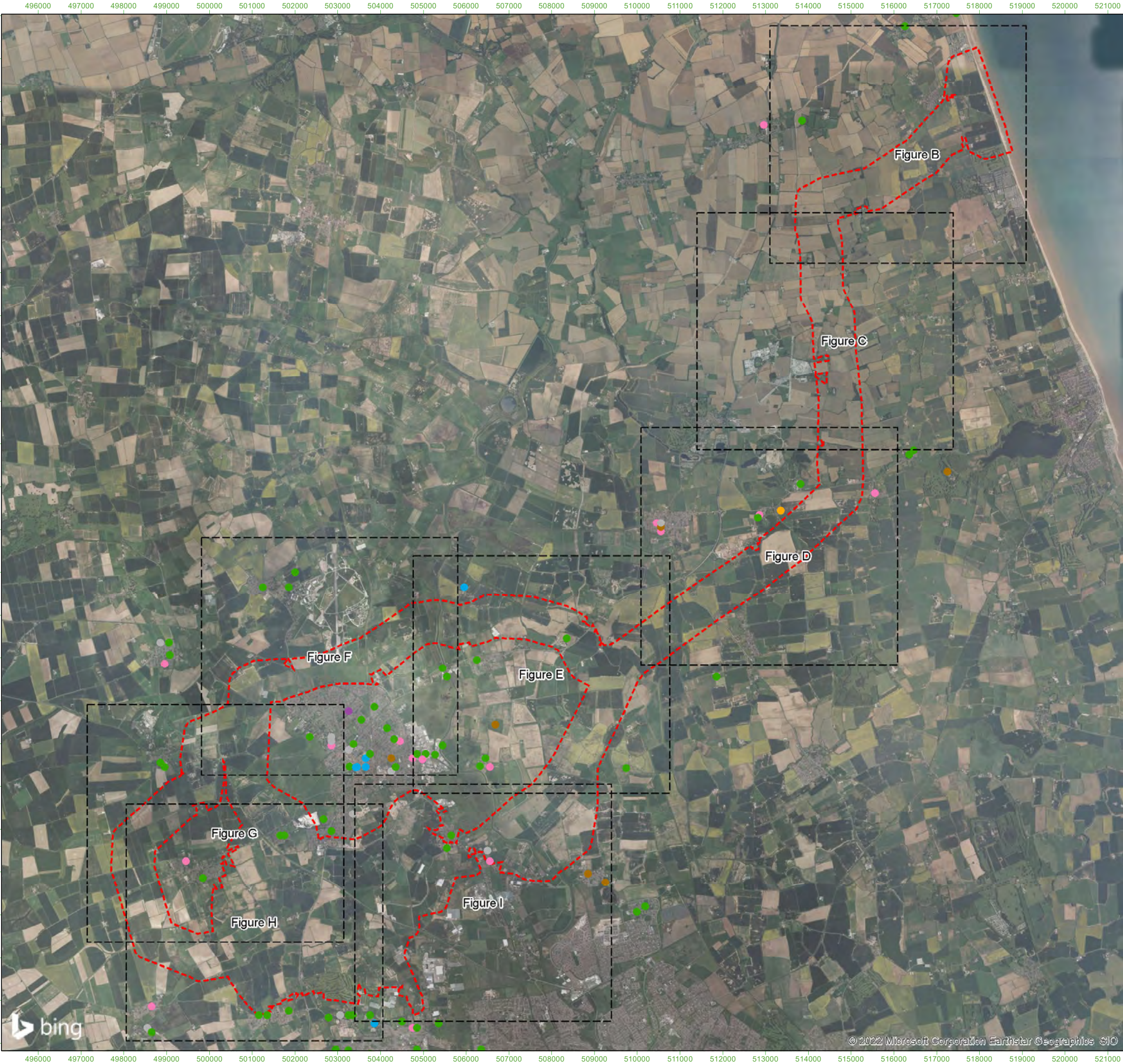
PRoW

Water

Anabats

A3

APPENDIX E: Distribution of Historical Bat Data



Survey Information	
	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species
	Bat roost record

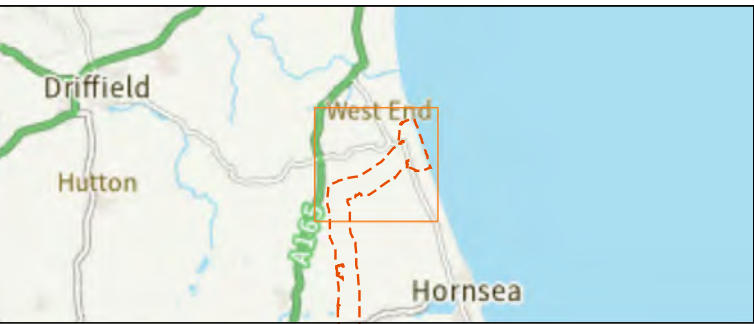
Source: Ordnance Survey © Crown copyright 2022, All rights reserved. License Number 100049837.

PROJECT TITLE
DOGGER BANK SOUTH

DRAWING TITLE				
Figure 1A. Bat Search Data (Within 2km) - Overview				
VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Overview	MP	CP

DRAWING NUMBER: PeakEcology/Bats/eDNA/Overview

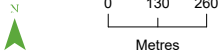
peakecology LIMITED ECOLOGICAL CONSULTANTS	Arden House, Deepdale Business Park, Bakewell, Derbyshire, DE45 1GT. www.peakecology.co.uk		DATUM	OSGB
			PROJECTION	BNG
			PLOT SIZE	A3
			SCALE	1:87,000



Survey Information	
	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species

	Bat roost record
-------------	------------------

Source:
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PROJECT TITLE

DOGGER BANK SOUTH

DRAWING TITLE

**Figure 1B. Bat Search Data
(Within 2km) - Section 1**

VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Section 1	MP	CP

DRAWING NUMBER:

PeakEcology/Bats/eDNA/Section 1

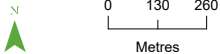
Arden House,
Deepdale Business Park,
Bakewell,
Derbyshire,
DE45 1GT.
www.peakecology.co.uk

DATUM	OSGB
PROJECTION	BNG
PLOT SIZE	A3
SCALE	1:20,000



Survey Information	
	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species
	Bat roost record

Source:
Ordnance Survey © Crown copyright 2022, All rights reserved. License Number 100049837.

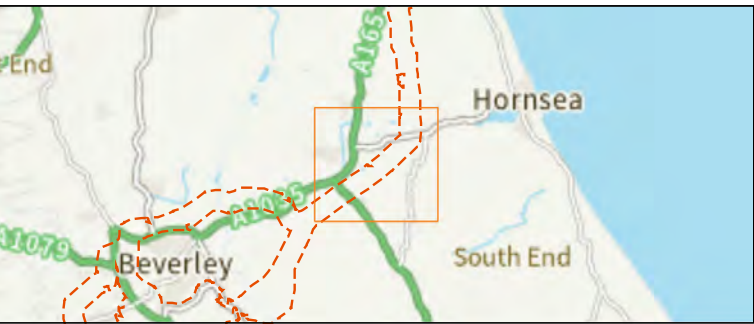


PROJECT TITLE

DOGGER BANK SOUTH

DRAWING TITLE				
Figure 1C. Bat Search Data (Within 2km) - Section 2				
VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Section 2	MP	CP
DRAWING NUMBER:				
PeakEcology/Bats/eDNA/Section 2				

 Arden House, Deepdale Business Park, Bakewell, Derbyshire, DE45 1GT. www.peakecology.co.uk	DATUM	OSGB
	PROJECTION	BNG
	PLOT SIZE	A3
	SCALE	1:20,000



Survey Information

	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species
	Bat roost record

Source:
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N

0130260

Metres

PROJECT TITLE

DOGGER BANK SOUTH

DRAWING TITLE

Figure 1D. Bat Search Data
(Within 2km) - Section 3

VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Section 3	MP	CP

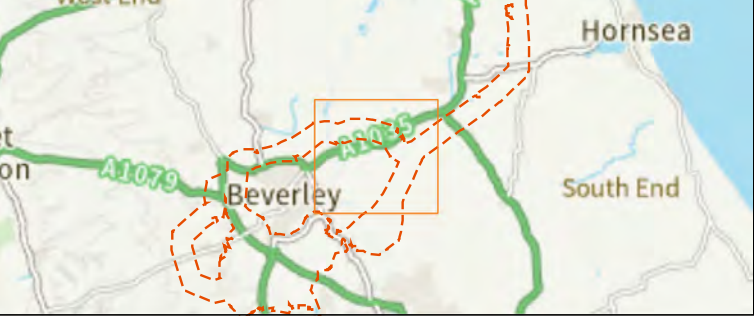
DRAWING NUMBER:

PeakEcology/Bats/eDNA/Section 3

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Arden House,
Deepdale Business Park,
Bakewell,
Derbyshire,
DE45 1GT.
www.peakecology.co.uk

DATUM	OSGB
PROJECTION	BNG
PLOT SIZE	A3
SCALE	1:20,000



Survey Information	
	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species
	Bat roost record

Source:
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PROJECT TITLE

DOGGER BANK SOUTH

DRAWING TITLE

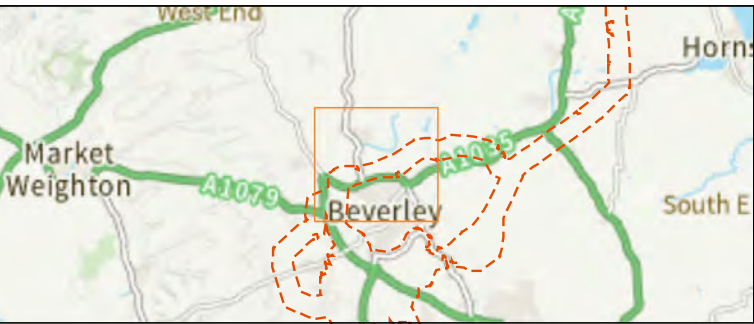
**Figure 1E. Bat Search Data
(Within 2km) - Section 4**

VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Section 4	MP	CP

DRAWING NUMBER:

PeakEcology/Bats/eDNA/Section 4

peakecology LIMITED ECOLOGICAL CONSULTANTS	Arden House, Deepdale Business Park, Bakewell, Derbyshire, DE45 1GT. www.peakecology.co.uk		DATUM	OSGB
			PROJECTION	BNG
			PLOT SIZE	A3
			SCALE	1:20,000



Survey Information	
	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species
	Bat roost record

Source:
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PROJECT TITLE

DOGGER BANK SOUTH

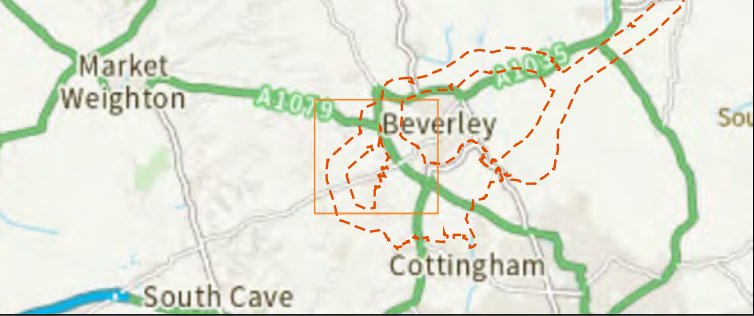
DRAWING TITLE				
Figure 1F. Bat Search Data (Within 2km) - Section 5				
VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Section 5	MP	CP
DRAWING NUMBER:				
PeakEcology/Bats/eDNA/Section 5				

peakecology

ECOLOGICAL CONSULTANTS

Arden House,
Deepdale Business Park,
Bakewell,
Derbyshire,
DE45 1GT.
www.peakecology.co.uk

DATUM	OSGB
PROJECTION	BNG
PLOT SIZE	A3
SCALE	1:20,000



Survey Information	
	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species
	Bat roost record

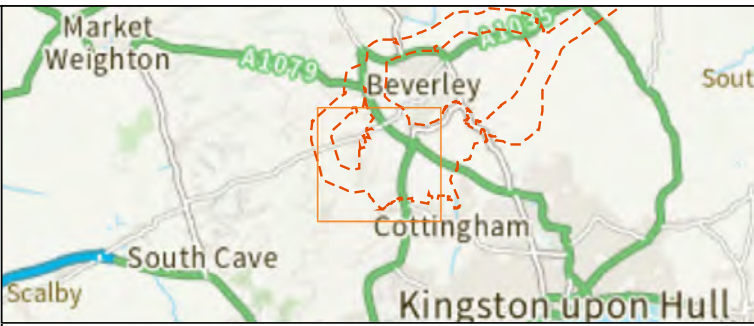
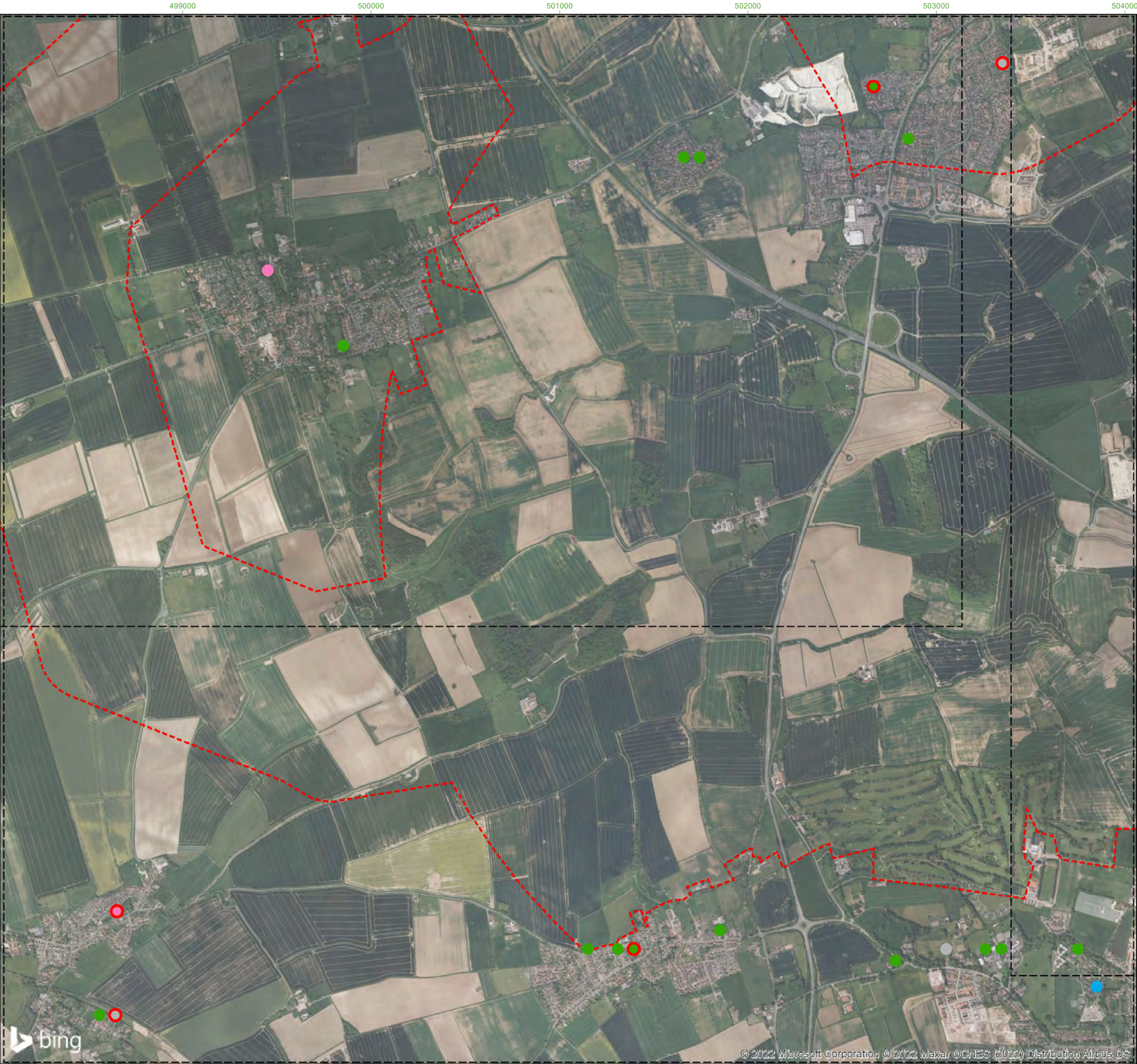
Source:
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DOGGER BANK SOUTH

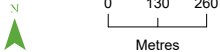
DRAWING TITLE				
Figure 1G. Bat Search Data (Within 2km) - Section 6				
VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Section 6	MP	CP
DRAWING NUMBER:				
PeakEcology/Bats/eDNA/Section 6				

peakecology ECOLOGICAL CONSULTANTS	Arden House, Deepdale Business Park, Bakewell, Derbyshire. DE45 1GT. www.peakecology.co.uk	DATUM	OSGB
		PROJECTION	BNG
		PLOT SIZE	A3
		SCALE	1:20,000



Survey Information	
	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species
	Bat roost record

Source:
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PROJECT TITLE

DOGGER BANK SOUTH

DRAWING TITLE

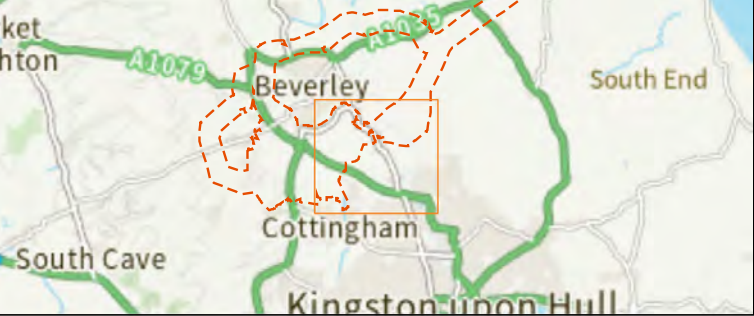
**Figure 1H. Bat Search Data
(Within 2km) - Section 7**

VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Section 7	MP	CP

DRAWING NUMBER:

PeakEcology/Bats/eDNA/Section 7

peakecology ECOLOGICAL CONSULTANTS	Arden House, Deepdale Business Park, Bakewell, Derbyshire, DE45 1GT. www.peakecology.co.uk		DATUM	OSGB
			PROJECTION	BNG
			PLOT SIZE	A3
			SCALE	1:20,000



Survey Information

	Onshore study area (21/08/22)
	Brown Long-eared Bat
	Daubenton's Bat
	Nathusius's Pipistrelle
	Noctule Bat
	Parti-coloured Bat
	Whiskered Bat
	Common Pipistrelle
	Pipistrelle species
	Unidentified bat species
	Bat roost record

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Metres

PROJECT TITLE

DOGGER BANK SOUTH

DRAWING TITLE

**Figure 11. Bat Search Data
(Within 2km) - Section 8**

VER	DATE	REMARKS	Drawn	Checked
1.3	04/10/22	Bats - Section 8	MP	CP

DRAWING NUMBER:

PeakEcology/Bats/eDNA/Section 8

peakecology LIMITED
ECOLOGICAL CONSULTANTS

Arden House,
Deepdale Business Park,
Bakewell,
Derbyshire,
DE45 1GT.
www.peakecology.co.uk

DATUM	OSGB
PROJECTION	BNG
PLOT SIZE	A3
SCALE	1:20,000

APPENDIX F: Average Number of Bat Passes per Species per Night for Each Static Location

