



Pagham Homes.

Summer Lane, Pagham

Ecological Survey Summary Report 2021

04 November 2021

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Rev	Issue Status	Prepared / Date	Reviewed / Date	Approved / Date
-	Draft 1	APD / 29.10.21	DJC/ 03.11.21	DJC/ 04.11.21

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1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Ltd on behalf of Pagham Homes. It details the results of update walkover and protected species surveys undertaken at Summer Lane, Pagham (hereafter referred to as the 'site') in 2021. This report details the results of the following surveys.
- Breeding Bird Surveys April to June 2021
 - Bat activity surveys May to October 2021
 - Reptile surveys between June and October 2021
 - Riparian mammals June and October 2021
 - Site walkover survey May 2021
- 1.2 In addition to the survey methodologies and results, this report also includes the following assessments:
- Ecology Baseline: Comparisons and Changes – compares the 2021 survey work with the historic baseline.
- 1.3 This report should be considered in conjunction with the original Ecological Assessment (Ecology Solutions, 2016), Habitats Regulations Assessment (EPR, 2018) and Brent Goose Mitigation Plan (Ecology Solutions, 2017).
- 1.4 Biodiversity Net Gain figures are provided in this report and the spreadsheet summarising the calculations will be submitted separately.

Site Location and Context

- 1.5 The site is approximately 23ha in size and is located on the western edge of Pagham, to the south of summer lane. The site is surrounded by urban areas on its northern, eastern and southern boundaries and a large area of arable land to the west.
- 1.6 The site itself is divided into portions of three fields, all currently in arable management. These fields are bordered by narrow grassland margins, ditches, hedgerows and lines of mature trees.
- 1.7 Access to the site is from the Pagham Road which is situated to the east of the site.

2.0 METHDOLOGY

- 2.1 All update survey work was a repeat of the surveys undertaken in 2016 and are in-line with current, relevant best practice and guidance. For full methodology, please refer to previous Ecological Appraisal, Appendices and Addenda; and other supporting ecological documents.

3.0 RESULTS

- 3.1 The results section below sets out the data collected over the course of update survey works undertaken at Summer Lane, Pagham during 2021.

Walkover survey

- 3.2 A walkover survey of the site, to record any broad changes in habitat types, features, or signs of protected species (including badgers as per condition 28 of outline approval), was undertaken by FPCR Principal Ecologist Adam Day on 10th May 2021. During this survey, the site's features were compared to the last detailed walkover, undertaken as part of the 2016 ecological assessment. Overall, the site has remained broadly the same, with the majority of the site consisting of four arable fields, with narrow grassland margins and boundary features including ditches, hedgerows and mature tree lines (see *Figure 9* Phase 1 Habitat Plan). No notable changes to habitat types nor condition were recorded.
- 3.3 Signs and evidence of protected species were also searched for and recorded during the walkover. Overall, there was no additional evidence of protected species observed outside of their previous extent in 2016.

BatsManual Activity Survey

- 3.4 A table of the full results for each of the manual bat activity surveys undertaken May to October 2021 is provided in *Appendix A* and illustrated at *Figures 1-6*. A summary of survey results is provided in *Table 1*.

Table 1: Manual bat activity survey summary

Survey Occasion	Number of bat contacts (including point counts)	Species recorded (in order of abundance)	Summary of activity
May 2021	27	Soprano pipistrelle, common pipistrelle, <i>Nyctalus</i> species and <i>Plecotus</i> species.	Activity was mostly from common pipistrelle and soprano pipistrelle which were recorded passing and foraging throughout the site. Other activity recorded on site were single passes from <i>Plecotus</i> species and <i>Nyctalus</i> species which were recorded at the eastern end of the site.
June 2021	34	Common pipistrelle, soprano pipistrelle, <i>Plecotus</i> species, <i>Myotis</i> species.	Activity was mostly common pipistrelle and soprano pipistrelle which were recorded passing and foraging throughout the site although especially between PC4 and PC5.

Survey Occasion	Number of bat contacts (including point counts)	Species recorded (in order of abundance)	Summary of activity
			Other activity recorded on the site included foraging and passing <i>Plecotus</i> species and a single pass from a <i>Myotis</i> species.
July 2021	38	Common pipistrelle, soprano pipistrelle and noctule.	Peak level of activity throughout the survey season was observed. Activity at the northern end of site was low but was regular throughout the rest of the survey. The majority of passes and foraging recorded was from common pipistrelle and soprano pipistrelle. Noctule were noted passing, commuting and foraging, particularly around the stream between PC10 and PC1.
August 2021	14	Common pipistrelle, soprano pipistrelle and <i>Nyctalus</i> species.	Activity during this survey comprised predominantly of passes and foraging from common pipistrelle and soprano pipistrelle. Foraging activity was high along the hedgerow near PC4 and next to the ditch by PC9. A single pass from a <i>Nyctalus</i> species was recorded.
September 2021	16	Common pipistrelle and soprano pipistrelle.	Activity was exclusively from common pipistrelle and soprano pipistrelle and was mostly

Survey Occasion	Number of bat contacts (including point counts)	Species recorded (in order of abundance)	Summary of activity
			concentrated along the hedgerow between PC3 and PC4.
October 2021	18	Common pipistrelle, soprano pipistrelle, <i>Nyctalus</i> species, <i>Plecotus</i> species, <i>Myotis</i> species	Activity was mainly constituted by passing common pipistrelle and soprano pipistrelle along linear features on site. Other activity included commuting <i>Nyctalus</i> species, passing <i>Plecotus</i> species and a single pass from a <i>Myotis</i> species.

Static (Passive) Activity Survey

- 3.5 The following details the results of static monitoring of bat activity in 2021 with *Appendix B* showing a full table of results including peak counts, average bat passes per hour and total registrations. *Figure 7* shows the locations of all units.
- 3.6 Overall, during the surveys, a total of 12 bat species/species groups were recorded which were (in order of abundance); common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Nathusius' pipistrelle *Pipistrellus nathusii*, barbastelle *Barbastella barbastellus*, *Myotis* species, noctule *Nyctalus noctula*, *Nyctalus* species, serotine *Eptesicus serotinus*, *Pipistrellus* species, *Plecotus* species, *Nyctalus/Eptesicus*, Leisler's *Nyctalus leisleri*.
- 3.7 As expected, common and soprano pipistrelle accounted for the majority of all calls recorded, with all other species recorded in low numbers.
- 3.8 Barbastelle and Nathusius' pipistrelle were recorded monthly from May to October. Peak barbastelle activity was recorded in August on Unit 24, with a peak of 121 calls. This unit was deployed on the hedgerow to the north of the southernmost field. The peak of Nathusius' activity was recorded on July unit 23, with 497 calls. This unit was deployed on the western boundary, adjacent to the mature poplar tree belt.
- 3.9 Patterns of activity across the survey season were consistent with the normal bat activity calendar, with the highest levels of bat calls recorded between June and September. Overall, levels of activity were consistent across all of recording locations. The mature poplar tree belt recorded the highest levels of activity across the surveys, and the north western ditch and central ditch comparatively the lowest.

Reptiles

- 3.10 65 Reptile refugia tins were positioned across the application site within habitat considered most suitable for reptiles, which consisted of the arable margins. Findings from reptile surveys are presented in table 2 below. The population of slow worms *Anguis fragilis* and common lizard *Zootoca vivipara* present on site is considered to be 'low' with a maximum peak of <10 individuals in any one survey. Areas of the site in which slow worm and common lizard were recorded are shown in Figure 8.

Table 2: Reptile survey results

Visit Number	Date	Weather	Species Recorded
1	28.05.21	15°C, Cloud % 90-100 Wind 1-2 Conditions : Overcast, strong hazy sunshine, rain earlier in the day. Time 09:00	Five female adult, one male adult slow worm and two unknown adult common lizard
2	01.06.21	16°C, Cloud % 50-60 Wind 1-2 Conditions overcast with hazy sunshine, humid. Time 08:00	Four female adult slow worms and one unknown adult common lizard.
3	09.06.21	17°C, Cloud % 0-10 Wind 1-2 Conditions Clear, sunny and calm Time 10:00	No reptiles recorded
4	17.09.21	16°C, Cloud % 50-60 Wind 2-3 Conditions: Rain Earlier in the Day Time 11:30	One unknown adult common lizard
5	23.09.21	14°C, Cloud % 0-10 Wind 0 Conditions: Clear, bright, sunny Time 10:00	Three adult female slow worm and 1 unknown adult common lizard
6	27.09.21	16°C, Cloud % 10-20 Wind 2-3 Conditions: Clear, bright, sunny Time 14:16	One unknown juvenile slow worm and one unknown adult common lizard
7	29.09.21	13-16°C, Cloud % 0-10 Wind 0-1 Conditions: Clear and sunny, warming up throughout survey Time 10:00	No Reptiles Observed

Riparian mammals

- 3.11 Riparian mammal survey's were carried out on the 15th June and 21st October 2021. No evidence of water vole or otter was recorded along the sites ditches or in adjacent terrestrial habitats.

4.0 ECOLOGICAL BASELINE: COMPARISONS AND CHANGES

- 4.1 Baseline ecological conditions have not changed significantly from the most recent ecological documents submitted in support of the outline application in 2016. The results of the update surveys detailed within this report are considered to be consistent with those collected over the course of extensive survey work at Summer Lane prior to submission of an application and the likely significant impacts, proposed mitigation, compensation and enhancement measures as detailed within the original ecological assessment remain current, appropriate and proportional. A summary of the surveyed ecological features of interest is provided below.

Changing land use

- 4.2 Land use at the site is predominantly agricultural, with arable fields being the dominant habitat. Arable field management has largely remained consistent within the site boundary, although three of the four arable fields were fallow in autumn 2021 and had been sprayed to manage weeds, with sowing of cereals planned for spring 2022.

Phase 1 habitats

- 4.3 There have been very few changes in the habitats between the last full assessment of the site in 2016 and 2021. Overall, the baseline habitats remain of the same ecological value.

Hedgerows

- 4.4 The site hedgerows remain at the same extent as in 2016. There is a very limited amount of hedgerow within the site boundary, with the eastern boundary having the largest extent along it's length and a short section separating the northern boundary of the southernmost field. Small remnant patches of scrub are all that remain of historic hedgerows across the remainder of the site.

Habitat creation, enhancement, and Biodiversity Net Gain

- 4.5 Post development, there will be an overall increase in the amount of habitat in moderate to good condition at the site. This will include an overall increase in hedgerows, scrub, riparian habitats and species rich grassland. There will be more than a 7.60% net gain in habitats with biodiversity value, a 52.7% gain in hedgerows and 24.55% gain in river habitats over the baseline conditions at the site.

Bats

- 4.6 Activity recorded by bats utilising the site during the 2021 survey was consistent with previous surveys at the site as discussed in the 2016 Ecological Appraisal and overall were low and typical. Features of importance included hedgerows, lines of trees and sheltered ditches, with very low levels of activity recorded over arable fields.

- 4.7 Barbastelle were recorded on seven of the statics across the survey season. Barbastelle was an additional species to the previous surveys, and while this species is regarded as less common in terms of number and are restricted in range to the south of England, they are frequently recorded in low numbers on bat surveys throughout the South and Southwest of England and increasingly so with advances in microphone technology and recording frequency. Barbastelle and Nathusius' pipistrelle were recorded using some of the sites' important features for bats, but none of the areas are to be significantly impacted by the development.
- 4.8 Since the approval of the outline permission framework, there has been an increase in the amount of important habitat (such as hedgerows and wetland features) for bats, to be created at the site as part of the green infrastructure. In conjunction with the retention of all features important for bats, the specification of dark corridors and an increase in roosting habitat included within the proposals, there is likely to be an increase in benefits to the local bat species populations over the previously approved bat mitigation and enhancement scheme.

Breeding and wintering birds

- 4.9 BBS surveys in 2021 showed that there had been no overall change in the diversity and distribution of breeding bird species at the site. Overall, due to the low availability of suitable nesting habitat, there is very little use of the site by breeding birds. The proposals include significant enhancements for breeding birds, including increases in natural nesting and foraging habitat and the provision of new nesting opportunities in buildings.
- 4.10 WBS surveys are taking place over winter in 2021/22 and include the site area and proposed Pagham SPA enhancement zone. The aim of these surveys is to guide the enhancement strategy and not to re-evaluate the baseline status of the site for SPA species as this was already assessed at outline stage and is the reason for the proposed mitigation area.

Reptiles

- 4.11 The 2021 reptile surveys had consistent results with those previously undertaken. Low numbers of slow worm and common lizard have been recorded at the site in 2021 and during surveys in 2016. Reptile habitat is limited to arable margins hedgerow bases and small areas of scrub and ruderal vegetation along boundary features of the site. Reptiles are absent from all proposed development areas.
- 4.12 Post development, there will be a net gain in the amount and suitability of reptile habitat at the site, through the provision of suitably managed new grassland, scrub, hedgerows and hibernacula features. Reptile populations are likely to increase post development.

Riparian mammals

- 4.13 The 2021 riparian mammal surveys showed that there was no evidence of water vole or otter using the sites network of ditches. Both species are recorded locally and could utilise these features in the future.
- 4.14 Post development there will be an increase in the suitability and availability of habitats for these species within the sites ditch network. The ditches will be enhanced through an increased buffer zone and connected wetland habitat as well as through the provision of planting in the ditches using coir rolls for aquatic herb species and reed planting.

Badgers

- 4.15 No badger setts were recorded during the walkover in 2021. Post development there will be a net gain in badger habitat at the site. This will be through the extensive planting proposals, creating new grassland, scrub and hedgerows. Update badger surveys will be undertaken regularly to account for any new sets that may occur on the site.

5.0 SUMMARY OF CONSTRUCTION AND OPERATIONAL PHASE MITIGATION AND ENHANCEMENTS

- 5.1 Condition 15 of the approved outline application P/140/16/OUT, states that an Ecological Mitigation and Management Plan is required prior to the commencement of works on site. This will be provided as two documents, a Construction Environmental Management Plan (CEMP) and Landscape Environmental Management Plan (LEMP), for agreement with the Local Planning Authority.
- 5.2 The CEMP will provide strategies for protecting the environment on and surrounding the site during construction, particularly relating to protected habitats and species. Provisions will include but not be limited to;
- Measures to prevent disturbance to nearby protected sites including the Pagham Harbour SPA;
 - Pollution prevention for riparian habitats including on site ditches;
 - Fencing strategies to protect sensitive habitats from disturbance, including grassland margins that support reptiles and Root Protection Zones (RPZ's);
 - Recommendations for vegetation removal to avoid the nesting bird season;
 - Safe working methods to exclude wildlife from dangerous site activities, including excavations and setting concrete;
 - Recommendations for good working practices to avoid light and noise disturbance at night.
- 5.3 The LEMP document will provide detailed specifications for the provision of mitigation and enhancement measures and their long-term management. This includes habitats provided as BNG, the enhancement of existing habitats and the provision of enhancement features such as bird and bat boxes in new residential units. To summarise, the following will be provided as part of the submitted scheme;
- New areas of species rich grassland, scrub, native hedgerows, wetland features and tree planting;
 - Enhancement of existing hedgerows through new planting and detailed management regimes;
 - Enhancement of existing ditches through coir roll and reed planting, to provide additional habitat for water vole alongside increased and enhanced bank top buffer planting;
 - The installation of six new reptile hibernacula throughout the green infrastructure in addition to enhanced and increased grassland area;
 - Retention and creation of dark corridors adjacent to important features for bats and other nocturnal wildlife;
 - The provision of 150 swift bricks, integrated into new residential units;
 - The provision of 150 bat tubes, integrated into new residential units;

- 150 bee bricks integrated into new residential units;
- Hedgehog highways to be installed throughout the garden infrastructure to maintain connectivity for this species throughout the site.

5.4 A detailed Management and Maintenance Scheme for the adjacent Pagham Harbour SPA enhancement land, will be prepared in association with Natural England, to satisfy condition 30 of the outline approval. This will be implemented prior to the commencement of development, as per the wording of the condition. The following will be provided for as specified by the condition;

- An habitat enhancement strategy, including new planting and removal of existing vegetation where required, to mitigate for the loss of brent goose habitat from the development area, and enhance this zone for SPA bird species.

APPENDIX A

Bat Activity Transect Summary

Weather conditions from activity transects 2021

Date	Sunset/Sunrise	Wind	Temperature	Cloud Cover	Rain
19.05.21	20:50	1	13	40%	0
24.06.21	21:20	1	16	80%	0
26.07.21	20:58	1	18	80%	0
19.08.21	20:15	1	19	100%	0
09.09.21	19:31	2	18	50%	0
06.10.21	18:31	1	15	30%	0

Activity Transect Data

Bat contacts from activity transects 2021

19th May 2021					
Date	Ref	Time	Species	No. Passes	Comments
19.05.21	1	21:15	Soprano pipistrelle	1	Pass
	PC2	21:24	Soprano pipistrelle	2	Pass
	2	21:27	Common pipistrelle	1	Pass
	PC4	21:49	Common pipistrelle	Cont	Pass
		21:52	Soprano pipistrelle	2	Pass
	3	21:56	Soprano pipistrelle	Cont	Pass
	PC5	22:01	<i>Plecotus</i> Sp.	1	Pass
	PC6	22:07	<i>Nyctalus</i> Sp.	1	Pass
		22:09	Common pipistrelle	3	Foraging
	4	22:12	Soprano pipistrelle	2	Pass
	5	22:15	Common pipistrelle	2	Pass
	6	22:15	Soprano pipistrelle	2	Pass
	7	22:17	Soprano pipistrelle	1	Pass
	PC7	22:22	Soprano pipistrelle	1	Pass
	8	22:30	Common pipistrelle	1	Pass
	9	22:32	Soprano pipistrelle	1	Pass
	10	22:35	Common pipistrelle	Cont	Foraging
	PC8	22:37	Common pipistrelle	Cont	2x Foraging
		22:37	Soprano pipistrelle	Cont	Foraging
	11	22:44	Common pipistrelle	2	Foraging
	PC9	22:47	Common pipistrelle	Cont	Foraging
		22:47	Soprano pipistrelle	Cont	Foraging
	12	22:54	Common pipistrelle	2	Pass

	13	23:00	Common pipistrelle	2	Pass
	PC10	23:02	<i>Myotis</i> sp.	1	Pass
		23:03	Common pipistrelle	2	Pass
	14	23:06	Common pipistrelle	Cont	Foraging

24th June 2021

Date	Ref	Time	Species	No. Passes	Comments
24.06.21	1	21:51	Common pipistrelle	2	Pass
	2	22:02	Common pipistrelle	1	Pass
	3	22:04	Soprano pipistrelle	1	Pass
	4	22:05	Common pipistrelle	Cont	Foraging
	5	22:05	Soprano pipistrelle	Cont	Foraging
	PC1	22:07	Common pipistrelle	Cont	Foraging
		22:07	Soprano pipistrelle	Cont	Foraging
	PC2	22:17	<i>Plecotus</i> Sp.	3	Foraging
		22:18	Common pipistrelle	Cont	Foraging
	PC3	22:27	<i>Plecotus</i> Sp.	3	Foraging
		22:28	Soprano pipistrelle	3	Pass
		22:30	Common pipistrelle	3	Pass
	6	22:33	<i>Plecotus</i> Sp.	1	Pass
	7	22:34	Common pipistrelle	1	Pass
	8	22:35	Soprano pipistrelle	3	Foraging
	9	22:39	Common pipistrelle	1	Pass
	10	22:41	Soprano pipistrelle	1	Pass
	PC4	22:50	Soprano pipistrelle	1	Pass
	11	22:50	Common pipistrelle	Cont	Foraging
	12	22:52	Soprano pipistrelle	Cont	Foraging
	13	22:55	Common pipistrelle	Cont	Foraging
	14	22:56	Soprano pipistrelle	Cont	Foraging
	15	22:56	Common pipistrelle	Cont	Foraging
	PC5	22:56	Common pipistrelle	Cont	Foraging
	16	23:01	Soprano pipistrelle	Cont	Foraging
	17	23:06	Common pipistrelle	Cont	Foraging
	18	23:07	<i>Plecotus</i> Sp.	1	Pass
	PC6	23:08	Common pipistrelle	1	Pass
	19	23:15	<i>Myotis</i> Sp.	1	Pass
	20	23:19	Common pipistrelle	1	Pass
	PC7	23:24	Soprano pipistrelle	1	Pass
	21	23:31	Common pipistrelle	Cont	Foraging
	22	23:38	Common pipistrelle	2	Foraging
	23	23:38	Soprano pipistrelle	2	Foraging

26th July 2021

Date	Ref	Time	Species	No. Passes	Comments
26.07.21	1	21:34	Noctule	Cont	Commuting
	2	21:34	Soprano pipistrelle	1	Commuting
	3	21:36	Soprano pipistrelle	1	Foraging

4	21:36	Noctule	2	Foraging
5	21:37	Common pipistrelle	1	Pass
6	21:39	Common pipistrelle	1	Pass
7	21:41	Common pipistrelle	1	Pass
8	21:43	Common pipistrelle	2	Foraging
PC1	21:44	Soprano pipistrelle	1	Pass
	21:44	Common pipistrelle	Cont	Foraging
	21:44	Soprano pipistrelle	Cont	Foraging
	21:46	Noctule	1	Pass
PC2	21:52	Common pipistrelle	1	Pass
	21:55	Common pipistrelle	2	Pass
	21:55	Soprano pipistrelle	2	Pass
10	21:56	Common pipistrelle	1	Pass
PC3	21:59	Common pipistrelle	Multiple	Pass
	22:01	Soprano pipistrelle	Multiple	Pass
11	22:04	Common pipistrelle	2	Pass
12	22:04	Soprano pipistrelle	2	Pass
13	22:06	Soprano pipistrelle	2	Pass
14	22:08	<i>Pipistrellus</i> Sp.	1	Pass
15	22:13	Common pipistrelle	2	Pass
16	22:15	Common pipistrelle	1	Pass
PC4	22:18	Common pipistrelle	Multiple	Foraging
17	22:22	Soprano pipistrelle	2	Pass
18	22:33	Common pipistrelle	1	Pass
PC6	22:39	Common pipistrelle	1	Pass
19	22:41	Soprano pipistrelle	Multiple	Pass
20	22:44	Common pipistrelle	Cont	Foraging
21	22:46	Common pipistrelle	Multiple	Foraging
22	22:46	Soprano pipistrelle	Multiple	Foraging
PC7	22:51	Soprano pipistrelle	1	Pass
23	22:52	Common pipistrelle	Cont	Foraging
24	22:54	Soprano pipistrelle	Multiple	Pass
25	22:57	Common pipistrelle	2	Pass
26	22:59	Common pipistrelle	Cont	Foraging
27	23:02	Soprano pipistrelle	2	Foraging

19th August 2021

Date	Ref	Time	Species	No. Passes	Comments
19.08.21	PC4	20:36	Soprano pipistrelle	Cont	Foraging along hedgerow
		20:37	Common pipistrelle	Cont	Foraging along hedgerow
	PC6	20:55	<i>Pipistrellus</i> Sp.	2	Pass
		20:56	Soprano pipistrelle	1	Pass
	1	20:58	Common pipistrelle	1	Pass
	PC7	21:07	Soprano pipistrelle	2	Pass

	2	21:14	Common pipistrelle	1	Pass
	3	21:16	Soprano pipistrelle	1	Pass
	PC8	21:19	Common pipistrelle	Cont	2x individuals
		21:19	Soprano pipistrelle	Cont	2x individuals
	PC9	21:30	Common pipistrelle	Cont	Foraging next to ditch
		21:34	Soprano ipistrelle	Cont	Foraging next to ditch
	4	21:41	<i>Nyctalus</i> Sp.	1	Pass
	PC2	22:07	Soprano Pipistrelle	1	Pass

9th September 2021					
Date	Ref	Time	Species	No. Passes	Comments
09.09.21	1	20:12	Soprano pipistrelle	Multiple	Foraging
	PC8	20:16	Soprano pipistrelle	Multiple	Foraging
		20:17	Common pipistrelle	Cont	Foraging
	2	20:26	Common pipistrelle	1	Pass
	PC10	20:44	<i>Pipistrellus</i> Sp.	1	Pass
	3	20:57	Soprano pipistrelle	2	Pass
	PC1	20:59	Common pipistrelle	Multiple	Foraging
		21:01	<i>Pipistrellus</i> Sp.	1	Pass
	PC2	21:10	Common pipistrelle	1	Pass
	4	21:25	<i>Pipistrellus</i> Sp.	Multiple	Foraging
	5	21:27	<i>Pipistrellus</i> Sp.	Cont	Foraging
	6	21:28	Common pipistrelle	1	Pass
	7	21:28	Soprano pipistrelle	2	Pass
	8	21:31	Common pipistrelle	Cont	Pass
	9	21:34	Soprano pipistrelle	1	Pass
	10	21:35	Common pipistrelle	1	Pass

6th October 2021					
Date	Ref	Time	Species	No. Passes	Comments
06.10.21	1	19:00	Soprano pipistrelle	3	Commuting overhead
	PC10	19:05	<i>Nyctalus</i> Sp.	1	Commuting overhead
		19:08	<i>Nyctalus</i> Sp.	2	Commuting overhead
	2	19:15	Common pipistrelle	1	Pass
	3	19:18	Soprano pipistrelle	1	Pass
	4	19:18	Common pipistrelle	Multiple	Pass
	PC1	19:24	Soprano pipistrelle	1	Pass
		19:27	Common pipistrelle	Multiple	Foraging
	5	19:31	Soprano pipistrelle	1	Pass
	PC2	19:34	Common pipistrelle	2	Pass

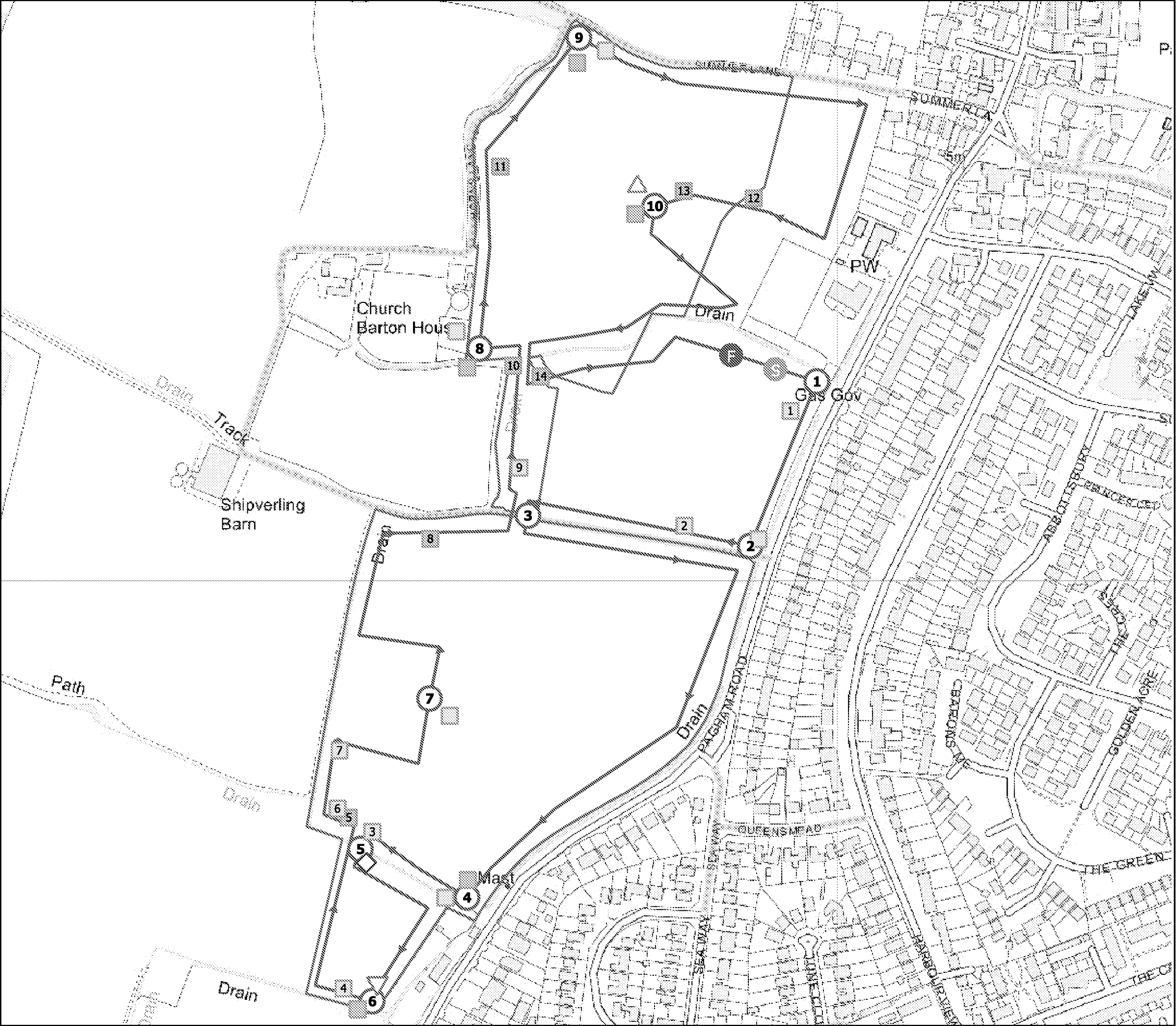
6	19:52	Soprano pipistrelle	Multiple	Pass
7	19:56	Common pipistrelle	2	Pass
8	20:06	<i>Plecotus</i> Sp.	1	Pass
9	20:09	Soprano pipistrelle	1	Pass
PC5	20:13	Common pipistrelle	Cont	Foraging
10	20:17	Common pipistrelle	1	Pass
PC6	20:20	<i>Plecotus</i> Sp.	2	Pass
11	20:29	<i>Myotis</i> Sp.	1	Pass

Appendix B: Automated Bat Activity Survey Results

Recording Period	Unit No.	Start Date	End Date	Survey Hours	Total Av. per hour	Total Registrations	Common Pipistrelle			Soprano Pipistrelle			Nathusius' pipistrelle		
							Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour
April	1 (25)	27/04/2021	02/05/2021	51:11:03	9.143	468	360	256	7.033	107	91	2.090	0	0	0.000
April	2 (26)	27/04/2021	02/05/2021	51:10:57	5.783	296	215	87	4.201	77	30	1.504	0	0	0.000
May	3 (23)	19/05/2021	24/05/2021	45:41:20	14.446	660	555	199	12.147	94	51	2.057	0	0	0.000
May	4 (24)	19/05/2021	24/05/2021	45:41:09	56.845	2597	1664	898	36.423	824	481	18.036	95	92	2.075
June	5 (21)	24/06/2021	29/06/2021	42:40:27	12.654	540	463	172	10.850	68	21	1.593	0	0	0.000
June	6 (22)	24/06/2021	29/06/2021	42:40:39	58.274	2487	2154	608	50.472	318	110	7.451	4	4	0.094
July	7 (22)	26/07/2021	31/07/2021	47:50:49	64.100	3067	2620	720	54.758	424	156	8.862	4	2	0.084
July	8 (23)	26/07/2021	31/07/2021	47:50:46	215.420	10307	4362	1272	91.167	5092	1519	106.425	497	179	10.387
August	9 (24)	18/08/2021	23/08/2021	54:12:06	34.464	1868	1133	521	20.903	495	196	9.133	24	8	0.442
August	10 (25)	18/08/2021	23/08/2021	54:12:00	187.657	10171	4957	1484	91.458	4937	1510	91.089	23	8	0.424
September	11 (25)	09/09/2021	14/09/2021	60:59:58	35.509	2166	1625	428	26.640	470	123	7.705	4	2	0.064
September	12 (26)	09/09/2021	14/09/2021	60:59:58	6.672	407	232	70	3.803	105	40	1.721	2	1	0.032
October	13 (22)	06/10/2021	11/10/2021	69:33:47	28.305	1969	589	218	8.467	1074	446	15.439	67	28	0.962
October	14 (23)	06/10/2021	11/10/2021	69:33:42	15.066	1048	580	333	8.338	189	94	2.717	4	3	0.052

Barbastelle			Myotis Species			Noctule			Nyctalus Species			Serotine			Pipistrelle Species		
Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour
0	0	0.000	0	0	0.000	0	0	0.000	1	1	0.020	0	0	0.000	0	0	0.000
0	0	0.000	2	1	0.039	0	0	0.000	2	2	0.039	0	0	0.000	0	0	0.000
0	0	0.000	6	3	0.131	0	0	0.000	0	0	0.000	2	2	0.044	0	0	0.000
1	1	0.022	12	7	0.263	0	0	0.000	1	1	0.022	0	0	0.000	0	0	0.000
1	1	0.023	3	1	0.070	0	0	0.000	1	1	0.023	1	1	0.023	3	3	0.070
0	0	0.000	0	0	0.000	1	1	0.023	1	1	0.023	8	7	0.187	0	0	0.000
0	0	0.000	1	1	0.021	4	3	0.084	4	3	0.084	10	5	0.209	0	0	0.000
0	0	0.000	19	6	0.397	232	104	4.849	84	65	1.756	6	6	0.125	0	0	0.000
121	81	2.232	34	11	0.627	6	6	0.111	31	22	0.572	7	3	0.129	5	2	0.090
17	10	0.314	67	33	1.236	7	6	0.129	43	33	0.793	106	56	1.956	4	2	0.070
12	5	0.197	20	7	0.328	22	21	0.361	3	2	0.049	1	1	0.016	7	4	0.110
19	17	0.311	21	7	0.344	8	7	0.131	2	1	0.033	8	4	0.131	2	1	0.030
34	12	0.489	154	69	2.214	0	0	0.000	2	2	0.029	2	2	0.029	43	35	0.610
207	156	2.976	44	11	0.633	0	0	0.000	0	0	0.000	10	5	0.144	7	4	0.100

Long Eared Species			Nyctalus / Eptesicus			Leisler's		
Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour
0	0	0.000	0	0	0.000	0	0	0.000
0	0	0.000	0	0	0.000	0	0	0.000
0	0	0.000	2	2	0.044	1	1	0.022
0	0	0.000	0	0	0.000	0	0	0.000
0	0	0.000	0	0	0.000	0	0	0.000
1	1	0.023	0	0	0.000	0	0	0.000
0	0	0.000	0	0	0.000	0	0	0.000
0	0	0.000	9	3	0.188	6	4	0.125
8	3	0.148	0	0	0.000	4	3	0.074
7	4	0.129	1	1	0.018	2	2	0.037
2	1	0.033	0	0	0.000	0	0	0.000
7	4	0.115	1	1	0.016	0	0	0.000
2	2	0.029	2	1	0.029	0	0	0.000
6	3	0.086	1	1	0.014	0	0	0.000



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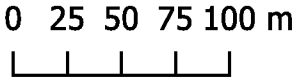
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Licence Number: 100019980

Key:

- Site Boundary
- Start point
- Finish point
- Point Count (with ref.)
- Transect Route

Bat Contacts

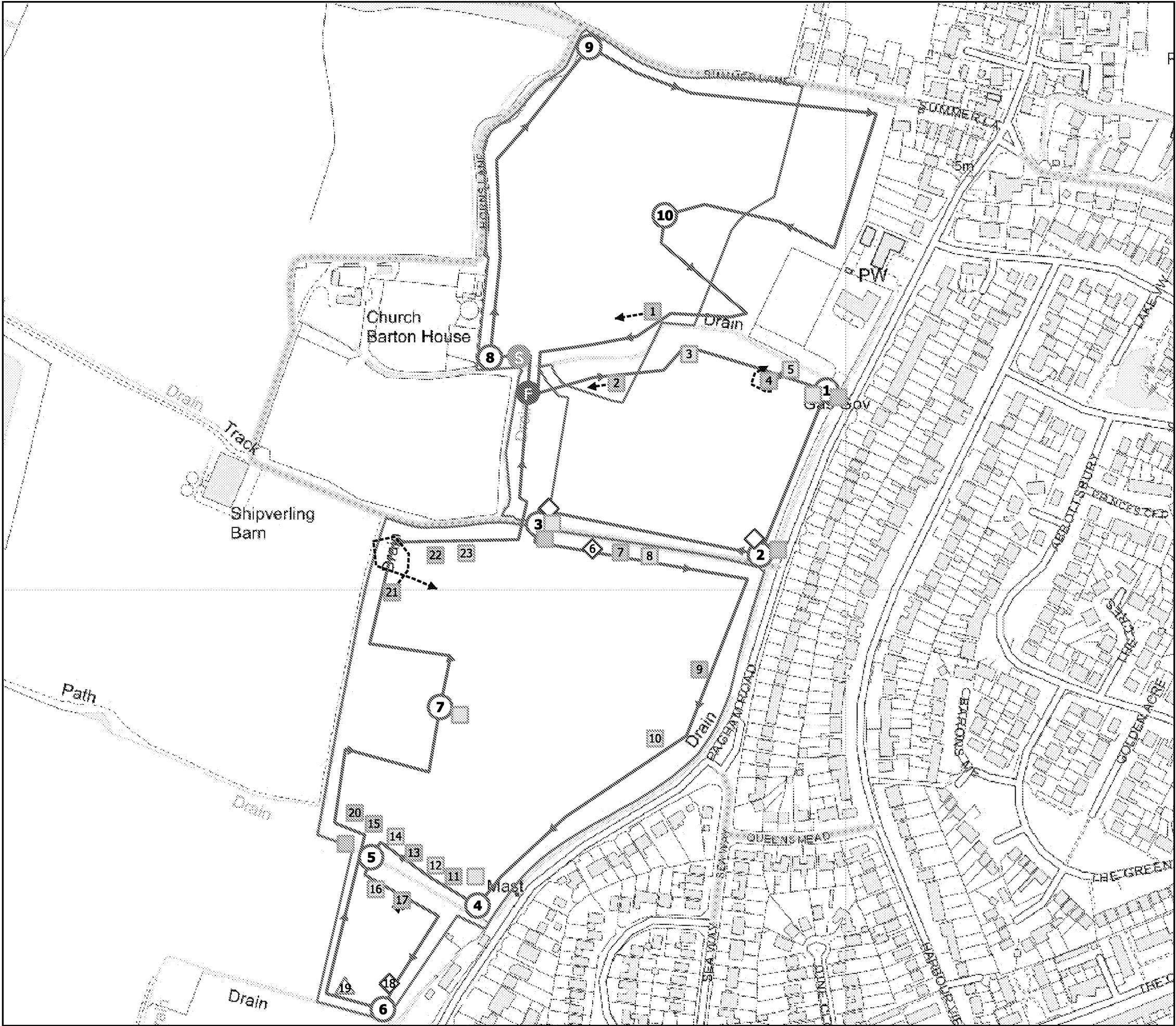
- Common Pipistrelle
- Soprano Pipistrelle
- Myotis Species
- Nyctalus Species
- Plecotus Species



client
Foreman Homes Ltd
project
Summer Lane,
Boanor Reais, Summer Lane PO21 4NW
drawing title
BAT TRANSECT PLAN (19.05.21)

scale @ A3
1:3500
drawn
ZB / APD
issue date
4/11/2021

drawing / figure number
Figure 1
rev
-



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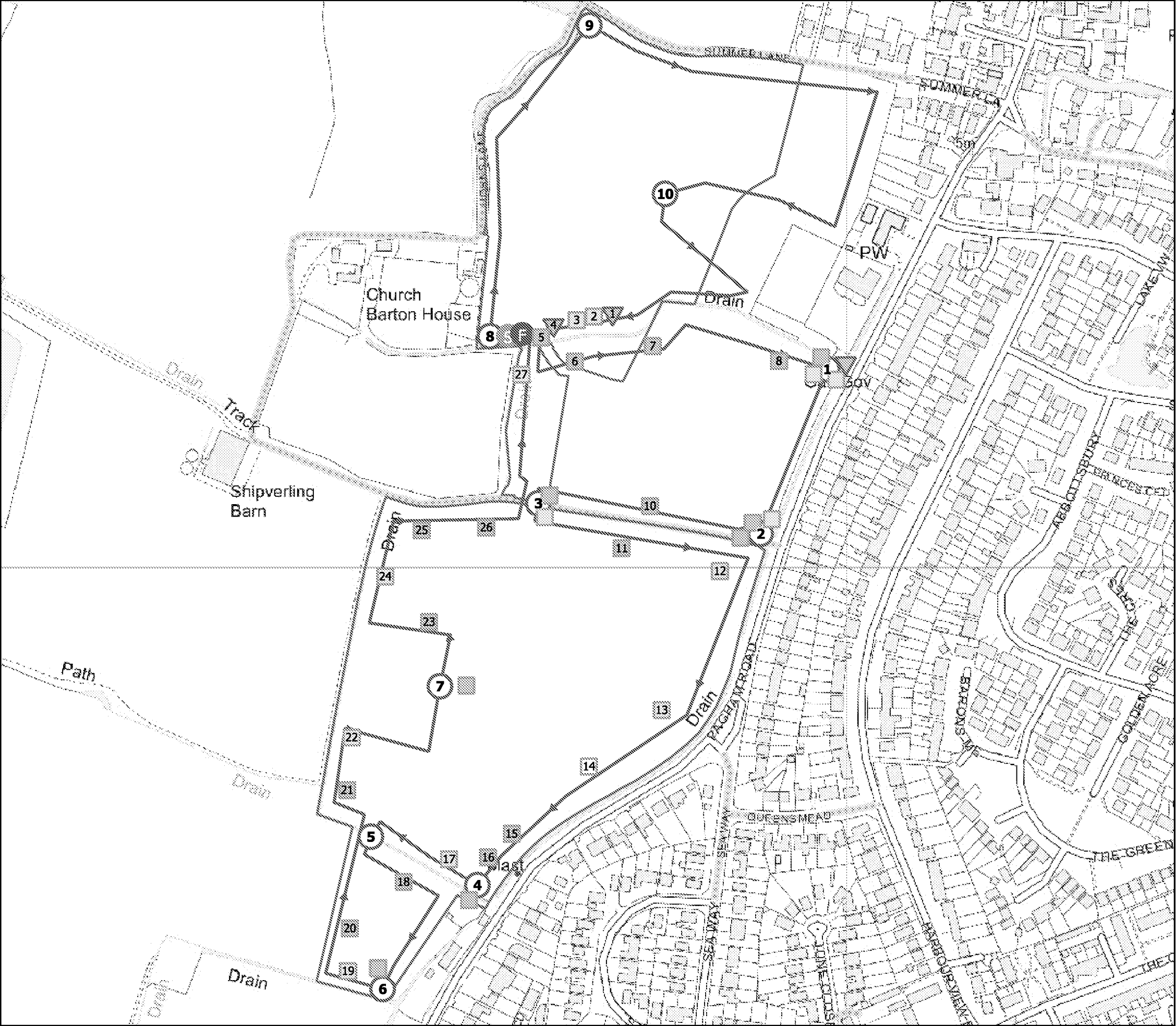
Key:

- Site Boundary
- Start point
- Finish point
- Point Count (with ref.)
- Transect Route
- Flight Path

Bat Contacts

- Common Pipistrelle
- Soprano Pipistrelle
- Myotis Species
- Plecotus Species





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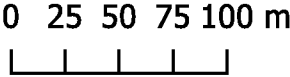
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Key:

- Site Boundary
- Start point
- Finish point
- Point Count (with ref.)
- Transect Route

Bat Contacts

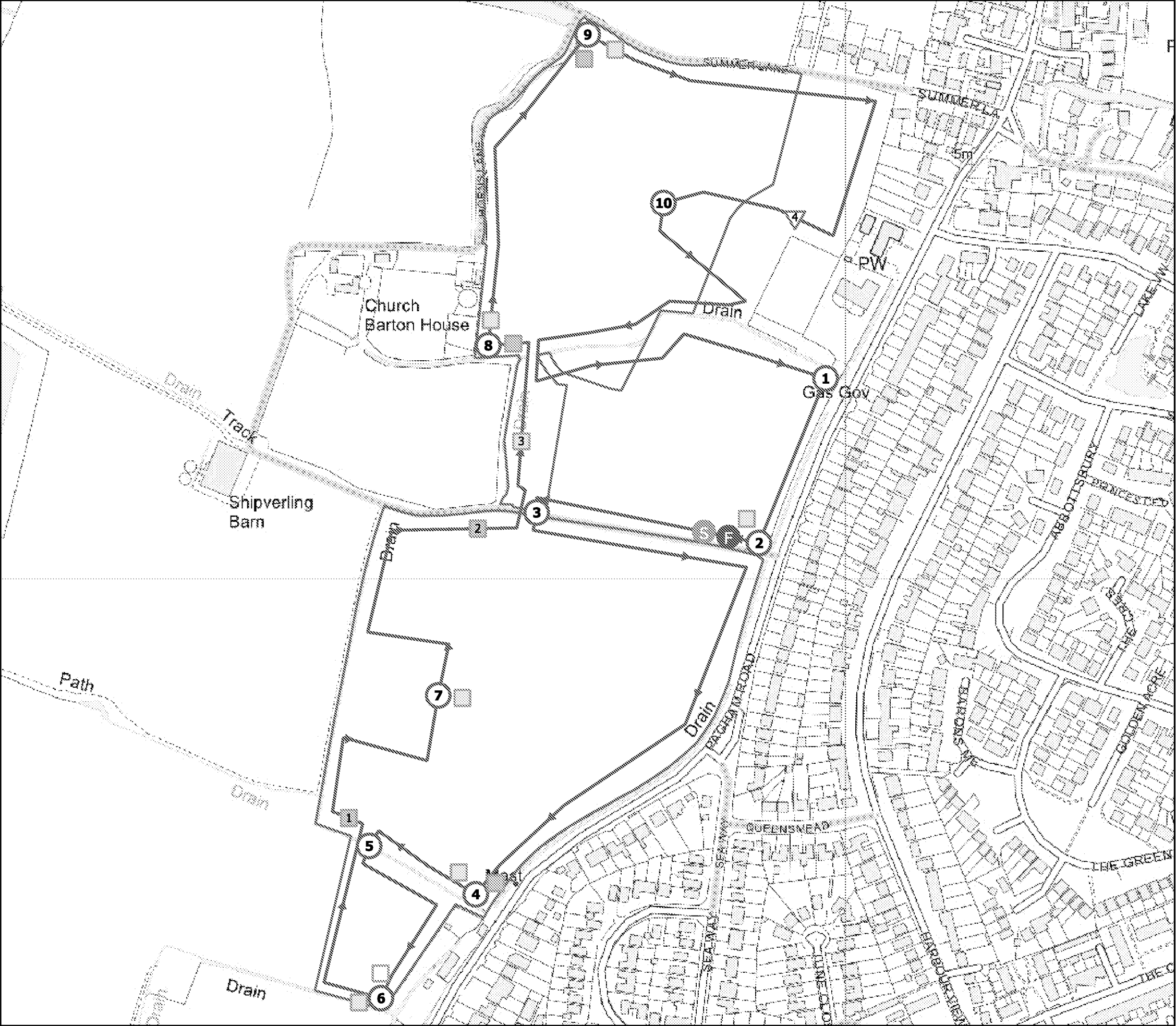
- Common Pipistrelle
- Soprano Pipistrelle
- Pipistrelle Species
- Noctule



client
Foreman Homes Ltd
project
Summer Lane,
Boanor Reais, Summer Lane PO21 4NW
drawing title
BAT TRANSECT PLAN (26.07.21)

scale @ A3
1:3500
drawn
ZB / APD
issue date
4/11/2021

drawing / figure number
Figure 3
rev
-



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Key:

- Site Boundary
- Start point
- Finish point
- Point Count (with ref.)
- Transect Route

Bat Contacts

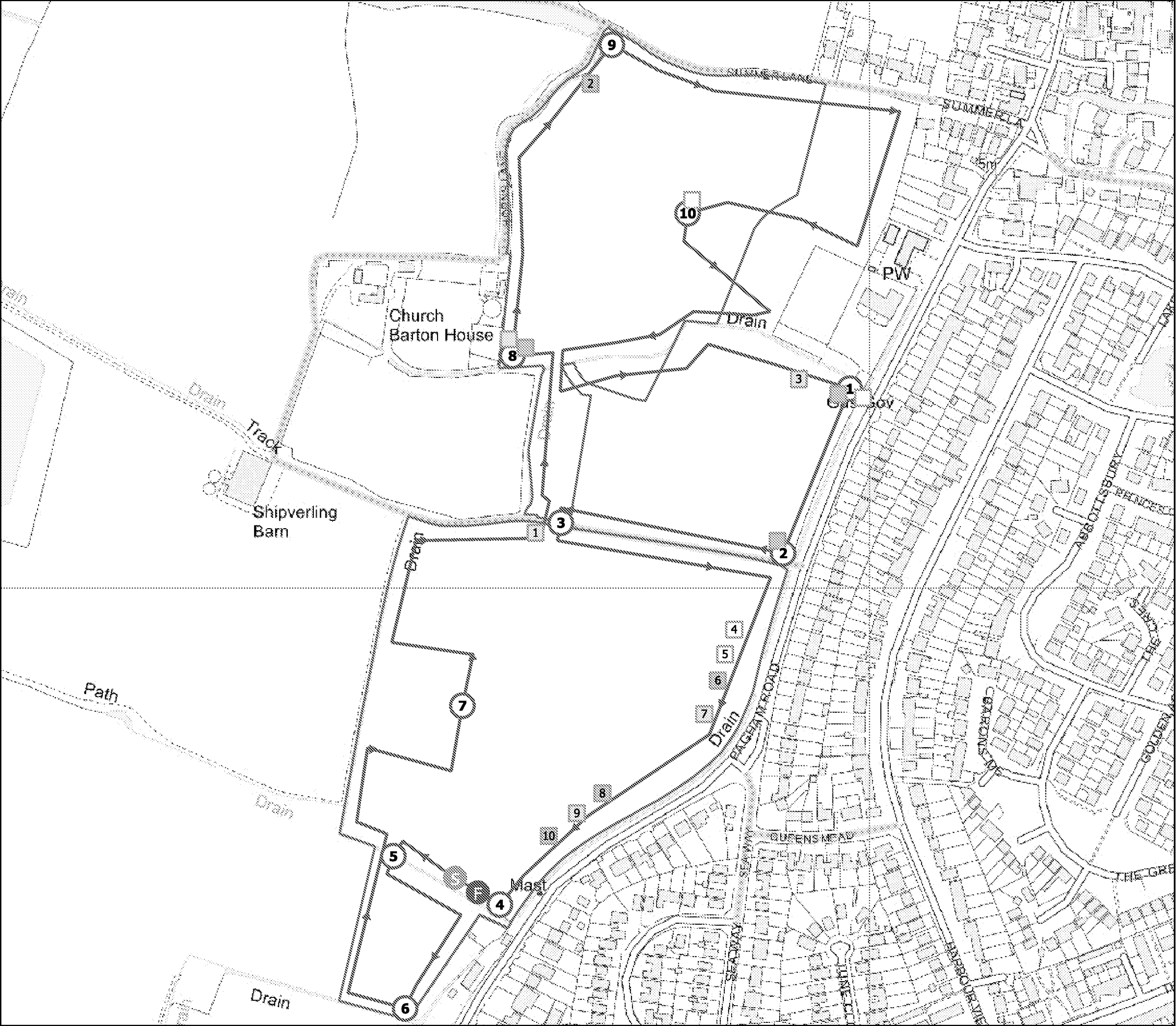
- Common Pipistrelle
- Soprano Pipistrelle
- Pipistrelle Species
- Nyctalus Species



client
Foreman Homes Ltd
project
Summer Lane,
Boanor Reais, Summer Lane PO21 4NW
drawing title
BAT TRANSECT PLAN (19.08.21)

scale @ A3
1:3500
drawing / figure number
Figure 4
drawn
ZB / APD
issue date
4/11/2021
rev
-

Figure 4



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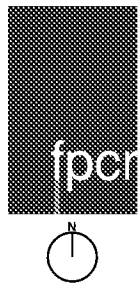
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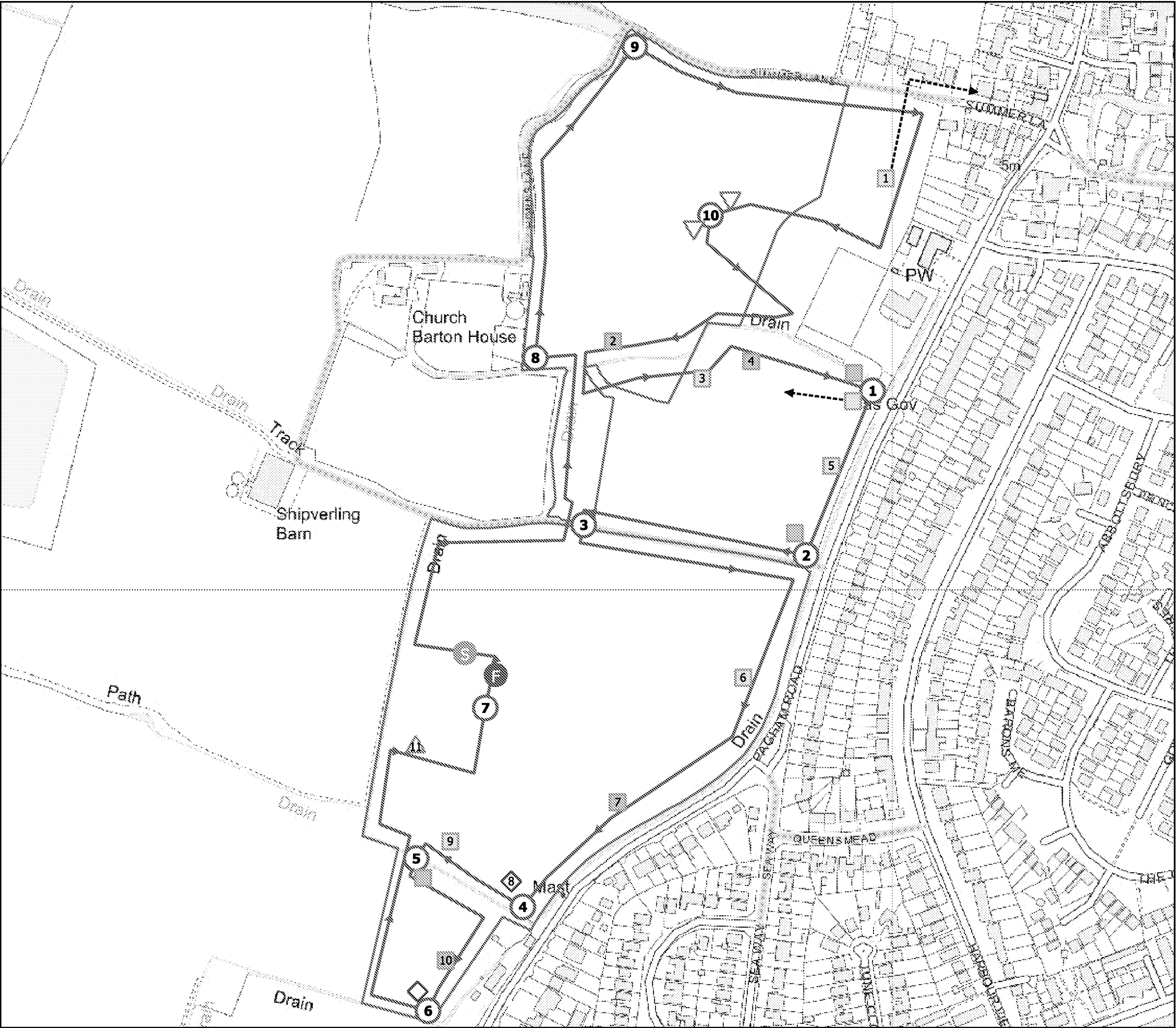
Key:

- Site Boundary
- Start point
- Finish point
- Point Count (with ref.)
- Transect Route

Bat Contacts

- Common Pipistrelle
- Soprano Pipistrelle
- Pipistrelle Species





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Key:

- Site Boundary
- Start point
- Finish point
- Point Count (with ref.)
- Transect Route
- Flight Path

Bat Contacts

- Common Pipistrelle
- Soprano Pipistrelle
- Myotis Species
- Nyctalus Species
- Plecotus Species

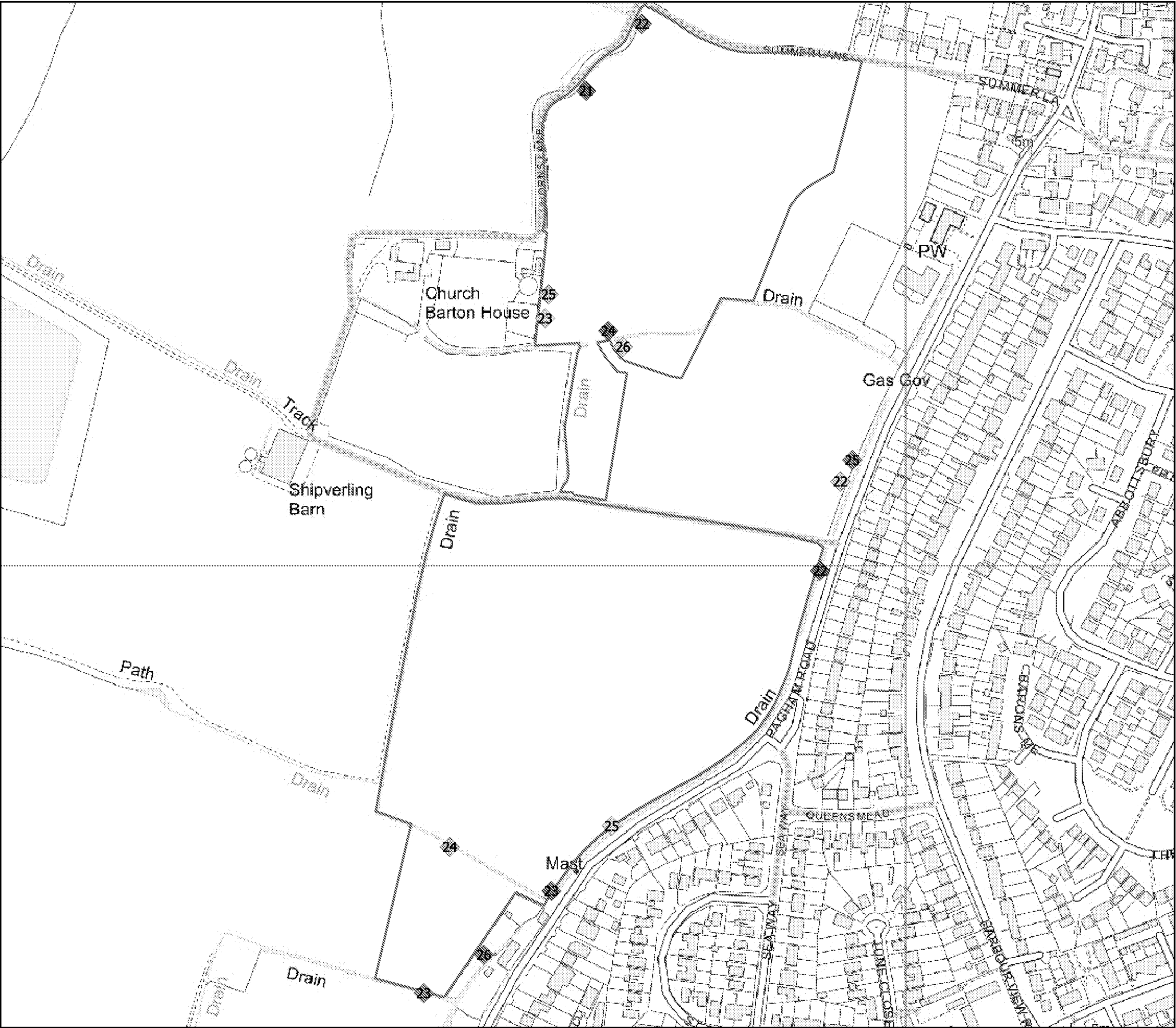


client
Foreman Homes Ltd
project
Summer Lane,
Boanor Reais, Summer Lane PO21 4NW
drawing title
BAT TRANSECT PLAN (06.10.21)

scale @ A3
1:3500
drawn
ZB / APD
issue date
4/11/2021

drawing / figure number
Figure 6

rev
-



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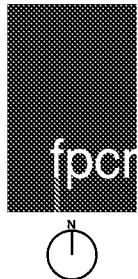
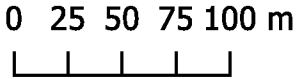
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Key:

Site Boundary

Static locations

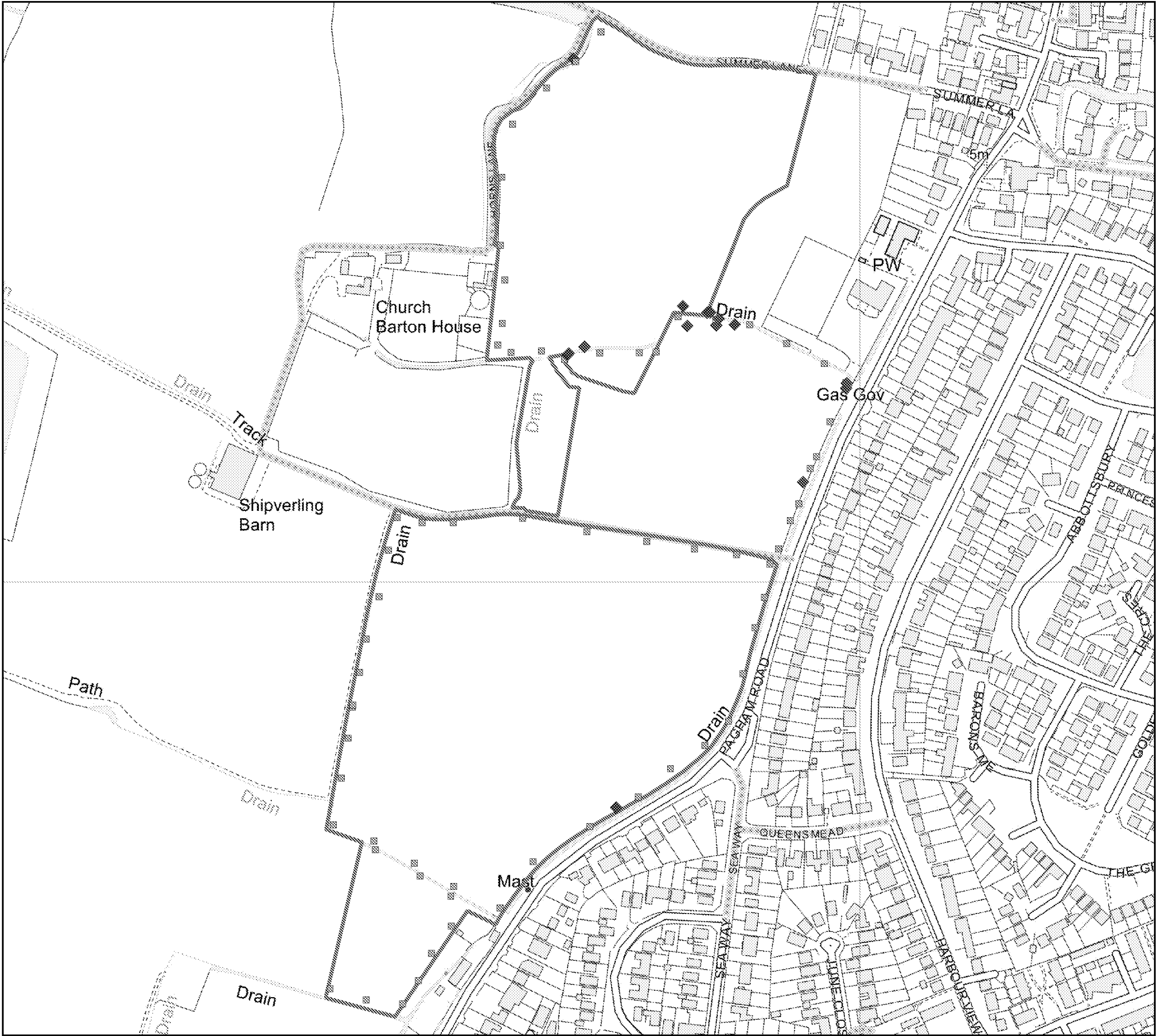
- April
- May
- June
- July
- August
- September
- October



client
Foreman Homes Ltd
project
Summer Lane,
Boynor Reais, Summer Lane PO21 4NW
drawing title
Static Location Plan 2021

scale @ A3
1:3500
drawn
ZB / APD
issue
4/11/2021

drawing / figure number
Figure 7
rev
-



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Key

-  Site Boundary
-  Reptile tin
-  Slow worm
-  Common lizard



client
Foreman Homes Ltd
project
Summer Lane, Bognor Regis,
Summer Lane PO21 4NW
drawing title
Reptile plan (2021)

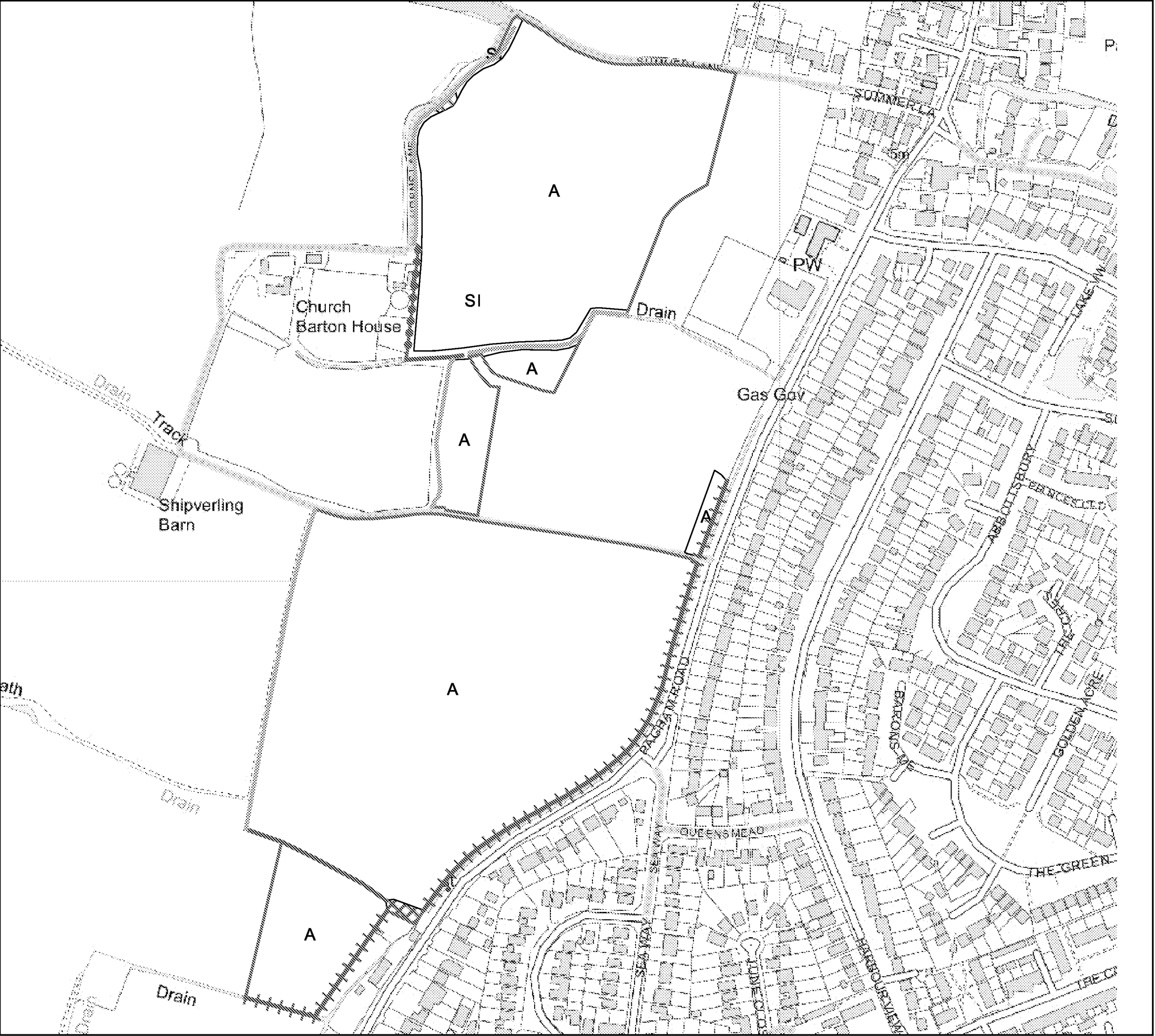
scale
1:3500

drawn
APD

issue
4/11/2021

drawing / figure number
Figure 8

rev
-



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Key

 Site Boundary

Phase 1 Lines

 Broadleaved trees

 Standing water

 Intact hedge - species-poor

 Hedge with trees - species-poor

Phase 1 Habitats

 Cultivated/disturbed land - arable

 Poor semi-improved grassland

 Scrub - dense/continuous



client
Foreman Homes Ltd

project
Summer Lane,
Bognor Regis

drawing title
PHASE 1 HABITAT PLAN

scale
1:3,500

drawn
JGW / APD

issue
4/11/2021

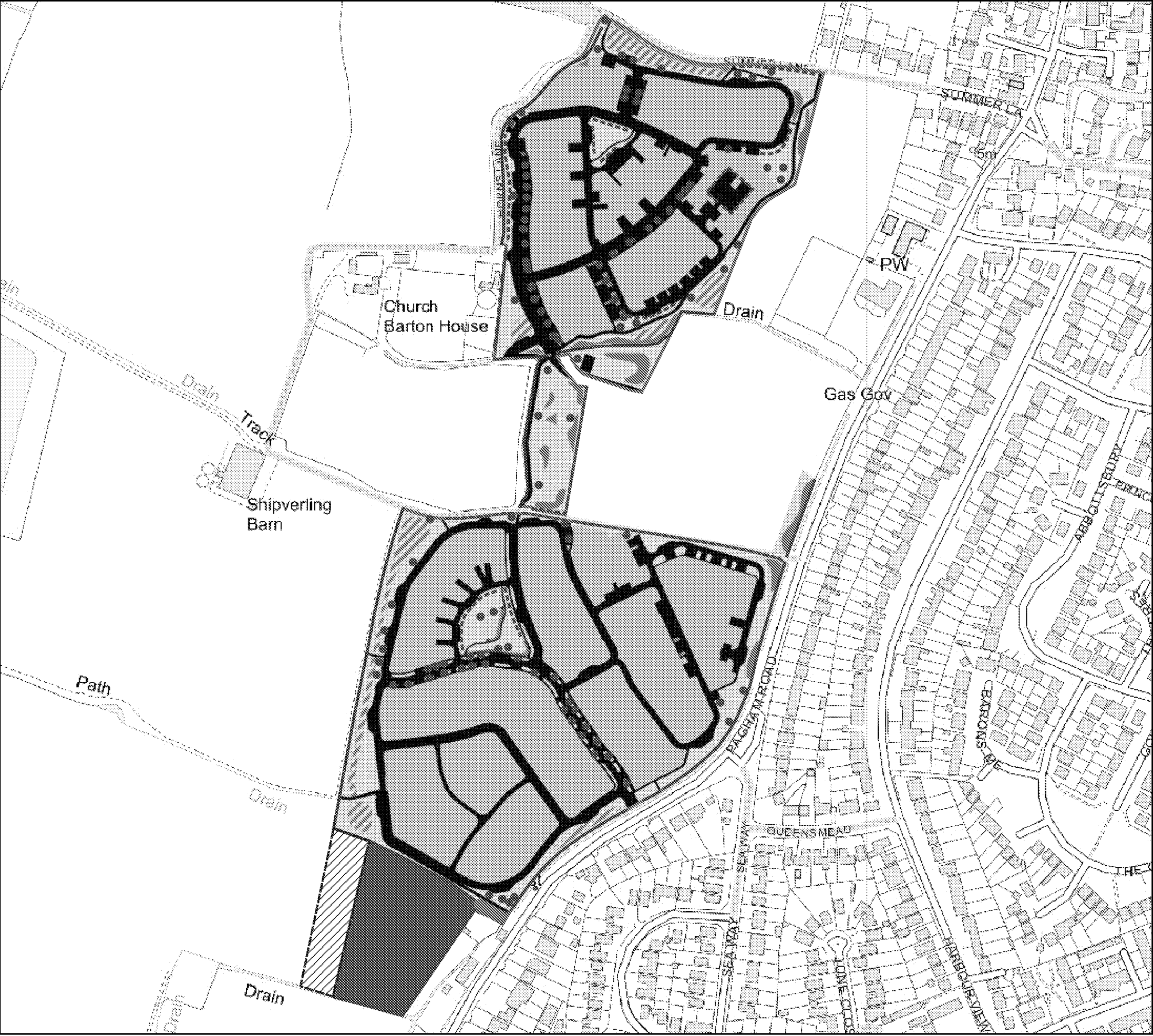
drawing / figure number

Figure 9

rev

10095-E-09A





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Key



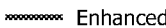
Site Boundary



Urban Trees



Ditches



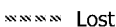
Enhanced



Lost



Hedgerows



Lost



Newly Planted

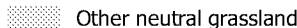


Retained

Habitats Post Intervention



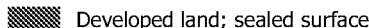
Modified grassland



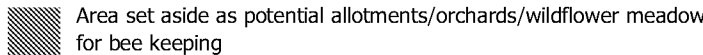
Other neutral grassland



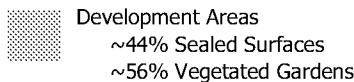
Mixed scrub



Developed land; sealed surface



Area set aside as potential allotments/orchards/wildflower meadow for bee keeping



Development Areas
~44% Sealed Surfaces
~56% Vegetated Gardens



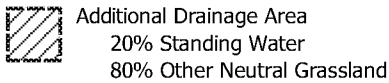
Play Areas - Sealed



Introduced shrub



SUDS Basin
30% Standing Water
70% Other Neutral Grassland



Additional Drainage Area
20% Standing Water
80% Other Neutral Grassland



client
Foreman Homes Ltd

project
Summer Lane,
Boanor Reais

drawing title
BIODIVERSITY NET GAIN PLAN

scale
1:3,500

drawn
JGW / APD

issue
4/11/2021

drawing / figure number

Figure 10

rev

10095-E-10A