



BERICOTE PROPERTIES LIMITED

OLDLAND FARMS,
SHRIPNEY ROAD,
BOGNOR REGIS,
WEST SUSSEX

Water Vole Report

November 2014
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ecology solutions for
planners and developers

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1. INTRODUCTION

Background

- 1.1. Ecology Solutions was instructed in July 2014 by Bericote Properties to undertake a water vole *Arvicola amphibius* survey at the proposed development site at Oldhams Farm, Bognor Regis (see Plan ECO1). Hereafter referred to as the site.
- 1.2. Following the initial survey Ecology Solutions was instructed to undertake the systematic and low impact clearance of vegetation along the northern section of ditch D2 to ascertain whether this area of the ditch was occupied / being actively used by water voles.
- 1.3. The proposals for the site is for the erection of two detached industrial / distribution units that also includes access and servicing arrangements, car parking, landscaping and an associated Flood Compensation Area to the north of the main development site (beyond the Bognor Northern Relief Road).

Site Description

- 1.4. The site consists of arable fields situated to the north of the town of Bognor Regis. The two elements of the site, the development site and the northern flood compensation are separated by the Bognor Regis Northern Relief Road. There are four ditches on the site that were surveyed. All of the ditches contained large amounts of vegetation, specifically Common reed *Phragmites australis*, and were bordered by arable fields with a thin field margin.

Purpose of this Report

- 1.5. This report sets out the results of the water vole survey work undertaken by Ecology Solutions at the site on the 30th July 2014 and the subsequent survey work to ascertain the use of ditch D2 by water voles and measures taken to remove the ditch in a careful manner following confirmation of the absence of the species.
- 1.6. An assessment of the findings of the survey work and its implications for the proposals are made with reference to published guidance.

2. WATER VOLE LEGISLATION AND ECOLOGY

Legislation & Licensing

- 2.1. Before 1998 the water vole received limited legal protection through its inclusion in Schedule 5 of the Wildlife & Countryside Act 1981. This protection has now been extended, so that the water vole is now fully protected. Legal protection makes it an offence to:
- Intentionally kill, injure or take (capture) a water vole;
 - Possess or control a live or dead water vole, or any part of a water vole;
 - To sell, offer for sale or advertise for live or dead water voles;;
 - Intentionally or recklessly damage, destroy, or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place.
- 2.2. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that were not the primary purpose of the act.
- 2.3. Licenses are available from Natural England in certain circumstances, and permit activities that would otherwise be considered an offence.
- 2.4. There is no provision under the Wildlife & Countryside Act 1981 for licensing what would otherwise be offences for the purpose of development, maintenance or land management. Such activities must be covered by the defence in the Act that permits otherwise illegal actions if they are the incidental result of a lawful operation and could not reasonably be avoided.
- 2.5. If the development or maintenance work proposed would impact upon water voles and the impacts cannot reasonably be avoided (i.e. as far as is reasonable, appropriate action has been taken to safeguard the animals and the places they use for shelter and protection), then the developer will need to rely on the incidental result defence having made a judgement as to whether his actions are covered by that provision. Ultimately only a court can decide what is reasonable and to what extent adverse impacts might have been reasonably avoided in any set of circumstances.

Ecology

- 2.6. Once a common feature on the waterways of Britain, the water vole has experienced a dramatic decline in numbers. The cause is multifaceted with the main contributors to their decline being loss of habitat and predation from the American mink *Neovison vison*.
- 2.7. Water voles will only ever live close to freshwater but are not exclusive to any one aquatic habitat. They favour slow-flowing, narrow water courses that have a depth of water averaging around 1m. The presence

of mud banks with emergent vegetation is needed to allow for borrowing, feeding and covering from predation.

- 2.8. Water voles do not hibernate but they will reduce their above ground activity over the winter, preferring to remain within their nest chambers for long periods of time.
- 2.9. Water voles will typically breed during March to October and females can have up to five litters annually, with each litter consisting of up to 8 young.

3. SITE DESCRIPTION

- 3.1. The site is situated to the north of the town of Bognor Regis. It is bordered on the west by the A29 and in the north by arable fields. To the east of the site runs the Southern Railway line and the south of the site consisting of an industrial area.
- 3.2. The site itself consists of arable fields. A relief road is currently being developed that intercepts the northern and southern halves of the proposed sites. The fields are bordered by a species-poor grass margin and the ditches to be surveyed.
- 3.3. There are four ditches located on the site or to be affected by the proposals. Ditches D1, D2 and D3 are all situated in the southern half of the proposed site, with ditch D4 present to the north of Bognor Northern Relief Road and associated with the proposed flood compensation area (see Plan ECO1).

4. SURVEY METHODOLOGY

Field Survey

- 4.1. As water voles are rarely seen, the survey was based around the identification of characteristic signs. The survey followed guidance by Natural England and consisted of a close examination of all the ditches on site and banks up to two metres from the water's edge (or where there was no water from centre of channel).
- 4.2. As all ditches to be surveyed supported significant common reed it was necessary to survey from the centre of the channel using a machete to establish sight lines and pathways through the common reed such that an effective survey could be undertaken which would not be possible from the edge of the ditches.
- 4.3. The experienced water vole surveyors completing the survey carefully searched the length of the ditches, and their associated banks, for the characteristic field signs of water vole. The following signs were sought:
 - Faeces - 8-12 mm long and 4- 5 mm wide with blunt ends;
 - Latrines - Water voles will deposit the majority of their droppings at points of their boundary;
 - Feeding Stations – Water voles often bring pieces of cut vegetation to favoured feeding stations close to the water's edge;
 - Burrows - Typically 4-8 cm in diameter and found in the river / ditch bank;
 - Footprints of water vole in soft substrates along the ditches; and
 - Animals / water voles that may be observed directly.
- 4.4. Following the initial water vole survey, ditch D2 (dry at the time of surveying) was identified as supporting water voles, albeit with the opportunity considered to be sub-optimal, and field signs old. To ascertain whether any water voles were present, the systematic and low impact removal of vegetation along ditch D2 was conducted under the direct supervision of an ecologist. The vegetation was cut to around 100 mm, with the arisings removed from the channel of the ditch, and monitoring surveys were undertaken to identify whether water voles were present. To ensure the clearance work did not hamper the subsequent checking and monitoring the cutting was completed using traditional ditch scythes such that common reed stands could be cut and removed without creating excessive vegetation debris like mechanical clearance methods.
- 4.5. Immediately following the careful and supervised vegetation removal, the presence of any potential water vole burrows were marked with surveying flags. It was important to mark old burrows such that any fresh activity became evident during the monitoring period.
- 4.6. Each survey consisted of a detailed and thorough search of the ditch banks for any fresh signs of water vole activity (footprints, feeding signs,

food stores and latrines). The flagged borrows were also checked for any fresh excavations and footprints at the entrances.

- 4.7. Four surveys were conducted in total, spanning from 19th August – 26th August. This provided adequate time to assess whether the ditch had been frequented by water voles and ascertain any fidelity to the old burrows recorded.
- 4.8. A camera trap was also set up in the middle of the ditch to monitor any activity of water voles during the times where a surveyor was absent. The camera was left on site from the 19th August – 26th August to capture any fauna activity, both night and day.
- 4.9. Due to the lack of water vole activity the removal of all vegetation was undertaken, blading off the vegetation to expose base earth in line with current legislation. The stretch of ditch D2 was then monitored a final time to make certain there were no fresh signs of water voles present.
- 4.10. Following the subsequent monitoring period, where no activity was recorded, the ditch was released for in-fill / removal.

5. SURVEY RESULTS

Ditch D1

Conditions

- 5.1. Ditch D1 was densely vegetated with common reed. The western end of the ditch was dry with small areas of standing water only being observed at the eastern side near the railway (100-150mm).

Field Signs

- 5.2. Several burrows were identified along the banks of the ditches but also in the bed of the ditch, with these burrows considered to represent recent burrowing events. These were found approximately every 3-5 metres along the bed of the ditch. The survey also found food stations / fresh feeding signs, together with footprints. However the most recent signs were found along the eastern section of the ditch.

Ditch D2

Conditions

- 5.3. Ditch D2 was dry along its total length and the vegetation was again heavily dominated by common reed in the north-east of the ditch, where it is likely to be ephemeral in nature, whilst further to the south the ditch supported bramble *Rubus fruticosus*.

Field Signs

- 5.4. Old evidence of water vole activity was found in ditch D2 including several burrows, many of which were covered in cobwebs, and old feeding signs/ food stations. There does appear to be some mammal movement within the ditch itself, with deer tracks being recorded. Whilst a Stoat *Mustela erminea* was recorded on the camera trap deployed.

Habitat manipulation & Monitoring

- 5.5. Following the removal of vegetation from ditch D2 a single potential water vole footprint was discovered at the western end of ditch D2, at the junction with ditch D1. As this falls outside the boundary of the proposed development, and no further footprints being found within the ditch, it is not thought to show regular use of ditch D2 by water voles (see Plan ECO4).
- 5.6. A fresh water vole latrine was identified along ditch D2 during the survey undertaken on 20th August 2014. This suggests that there had been use of the ditch by a water vole soon after the vegetation removal. However, due to the lack of subsequent evidence during the rest of the monitoring period, as well as there being no evidence from the camera trap, it is believed this is not a regular occurrence (see Plan ECO4).

- 5.7. The flagged burrows, which were subject to careful monitoring, showed no signs of active use after the vegetation removal, with many being covered in cobwebs and debris. A fresh burrow was identified prior to the second stage of vegetation removal but this once again fell outside of the site boundary (see Plan ECO4). No further evidence of water vole activity was found during the monitoring process.

Ditch D3

Conditions

- 5.8. Ditch D3 contained approximately 100-300 mm of water. The vegetation associated with the ditch contained a greater diversity of species with large areas of brambles *Rubus fruticosus* and blackthorn *Prunus spinosa* dominating the banks, presenting additional foraging opportunity for the water voles. Due to the dominance of brambles along the ditch access was restricted in locations.

Field Signs

- 5.9. Evidence of water vole runs were found in the areas surveyed along ditch D3 suggesting this ditch is has been or is being used by water voles. However, the level of evidence was less seen in other ditches such as ditch D1.

Ditch D4

Conditions

- 5.10. Ditch D4 contained approximately 100-200mm of water and was the deepest of all the ditches within the site. The vegetation itself contained a greater diversity of species with large areas of brambles and blackthorn dominating the banks, presenting additional foraging opportunity for the water voles. Due to the dominance of brambles along the ditch access was limited in areas.

Field Signs

Ditch D4 contained very little in terms of water vole evidence with no confirmed burrows or recent feeding signs discovered.

6. DISCUSSION AND RECOMMENDATIONS

Water Vole Evaluation

- 6.1. The survey results have been compared to those recorded by Tim Moya Associates completed on the 18th June 2014, with the aim of providing the applicant with potential options in accordance with current legislation.
- 6.2. The surveys recorded the majority of ditches on site or bordering the site were dry at the time of survey thus being of reduced value compared to when the targeted surveys were completed by Tim Moya Associates. The dry nature, which would not mean the removal of suitability for water vole does demonstrate that the site's value and opportunities are varied across the year and change with precipitation levels.
- 6.3. The lack of latrines recorded, by both Tim Moya Associates and Ecology Solutions, would also suggest that the local water vole population are not holding territories, as one would expect in habitats supporting a good population, and such it can be concluded on the evidence recorded that the site supports a very low density of water voles that appear to use the network of ditches to access favoured conditions.
- 6.4. Currently it would appear that water voles are possibly utilising ditches D1 and D3, but are not utilising ditch D2 or D4 with both of these ditches considered to be sub-optimal, being dry at the time of survey. Nonetheless, in order to be confident in the removal of ditch D2 it was recommended some vegetation clearance was completed such that the ditches could be fully surveyed (the initial Ecology Solutions survey was constrained by the sheer abundance of common reed within it).
- 6.5. The vegetation clearance was completed in two stages with continuous monitoring having recorded limited water vole activity. As it was clear that water voles were not currently present within ditch D2 this ditch was in-filled.

Further Survey / Ditch Management

Ditch D1

- 6.6. This ditch was seen to support the majority of fresh water vole activity within the context of the site. The level of activity increased towards the wet area of the ditch in the east.
- 6.7. It is considered that any works to this ditch which could affect the existing water vole population, will need to be aware of the species and implement any mitigation measures as required to protect water voles.

Ditch D2

- 6.8. After the initial surveys undertaken by Ecology Solutions, it appeared that no water voles were active within the sub-optimal ditch D2.

However, to fully ascertain whether this was the case vegetation clearance was undertaken. The clearance of vegetation also allowed for monitoring to be undertaken to assess any fidelity to ditch D2 by any water vole.

- 6.9. Ditch D2 was subjected to further survey work consisting of the removal of vegetation to a height of 100 mm in a systematic and low impact manner under the direct supervision of an experienced ecologist. The vegetation was removed by hand (use of scythes) as it was the intention to preserve any signs of water voles currently present. Four water vole surveys were conducted and a camera trap installed during the week following the vegetation clearance.
- 6.10. A second stage of clearance and monitoring was then carried out on ditch D2 once it was confirmed only very limited activity was recorded during the previous monitoring. Due to no further signs of water vole activity having been identified from within the ditch, this was in-filled on the 11th September 2014, allowing the ground works for the development to proceed.

Ditch D3

- 6.11. There is a varying amount of water vole activity along the length of the ditch within the context of the site and in relation to ditch D1 contained far less activity mainly restricted to runs and old feeding signs. Although occasional fresh feeding remains were noted along the length of the ditch.
- 6.12. The presence of brambles and blackthorn associated with ditch D3 are a valuable food resource for water voles and may be used by water voles in adjacent ditches.
- 6.13. It is considered that if any works to this ditch are timetabled which could affect the existing water vole population, then there should be mitigation measures implement to avoid any potential harm arising.

Ditch D4

- 6.14. Ditch D4 contained no signs of water voles and because of this it is likely that there are no current populations using this part of the site. It is considered that any work that will affect ditch D4 will not be subject to any constraints regarding water voles.
- 6.15. General engineering safeguards should be employed to ensure that there are no detrimental effects to other connected ditches from the proposed works. It is considered the main potential risk is that of accidental pollution, such as fuel spillage or significant siltation.

7. SUMMARY AND CONCLUSIONS

- 7.1. Ecology Solutions was instructed by Bericote Properties to undertake a water vole *Arvicola amphibius* survey at the proposed development site at Oldhams Farm, Bognor Regis.
- 7.2. The proposals for the site is for the erection of two detached industrial / distribution units that also includes access and servicing arrangements, car parking, landscaping and an associated Flood Compensation Area to the north of the main development site (beyond the Bognor Northern Relief Road).
- 7.3. The survey conducted in August 2014 by Ecology Solutions recorded evidence of water vole activity in each ditch located on the site with the exception of ditch D4. However the majority of the activity was not recent, with ditch D1 and D3 showing the most field signs of active use by water voles.
- 7.4. It is understood that the proposed development and associated works shall leave ditches D1 and D3 undisturbed, and as such the water vole population present within these ditches shall remain unaffected.
- 7.5. Ditch D2 was subjected to further survey work consisting of the removal of vegetation to a height of 100 mm in a systematic and low impact manner under the direct supervision of an experienced ecologist. The vegetation was removed by hand (use of scythes) as it was the intention to preserve any signs of water voles currently present. Four water vole surveys were subsequently conducted for any signs of water vole activity. Following these surveys, due to no fresh signs of water voles, the ditch was subject to further vegetation removal (blading off) and following further monitoring with confirmed absence the ditch was filled allowing the progression of the development.
- 7.6. The lack of latrines found in the ditches suggest that water voles are not currently holding territories within the site, and it can be concluded based on the evidence recorded to date that the site supports a very low density of water voles. The lack of defined territories is likely due to temporary suitability present within the site, with its extant population moving to and from areas depending on their condition.
- 7.7. In conclusion, due to its inclusion within the site boundary only ditch D2 required further detailed surveys. A number of thorough and low impact surveys were implemented, with no substantial evidence of water vole presence was observed. The northern section of ditch D2 was therefore cleared to be in-filled which has now been undertaken.

8. REFERENCES AND SELECTED BIBLIOGRAPHY

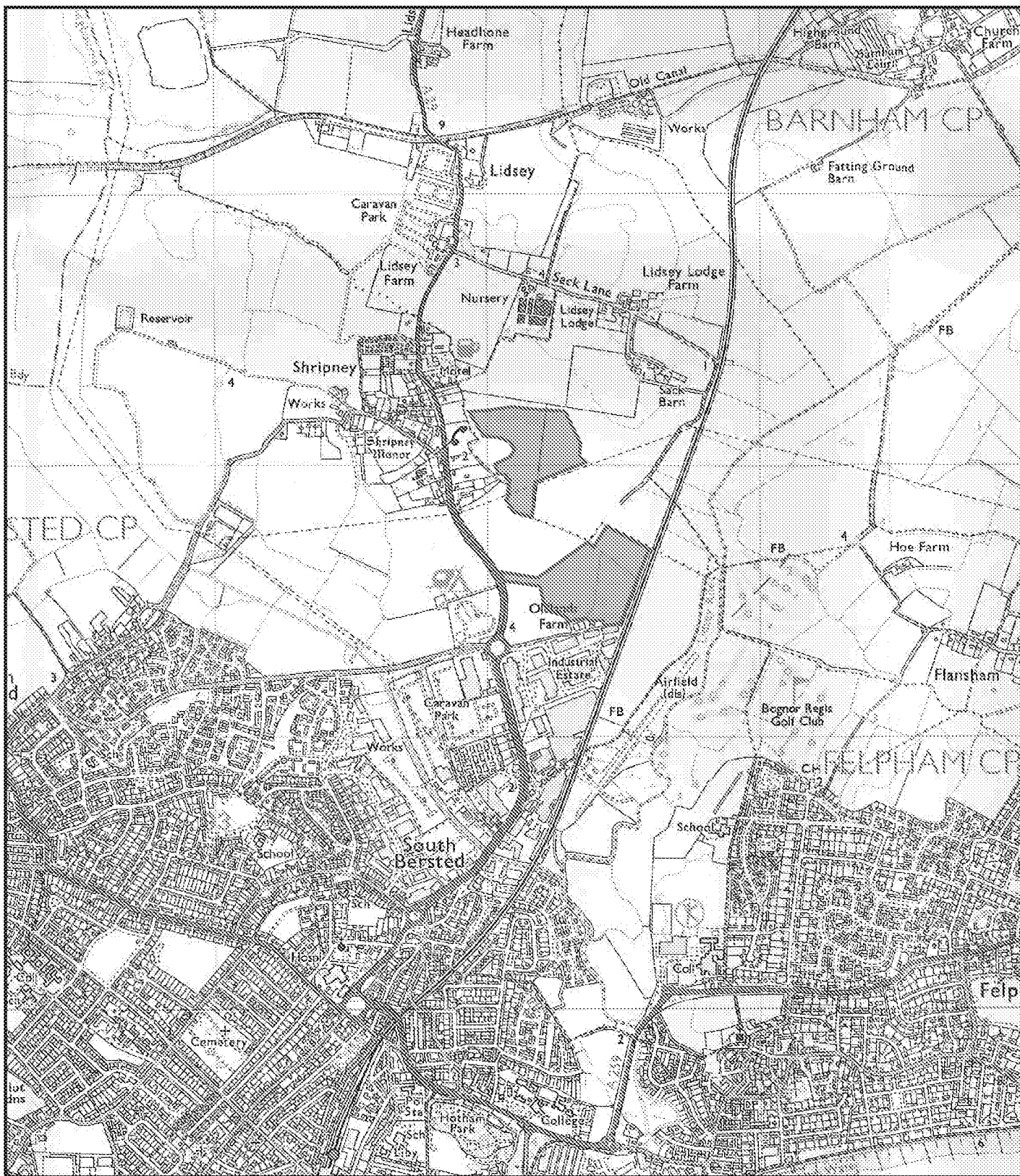
Natural England (2011). *Water voles and development: licensing policy*. Natural England Technical Information Note TIN042. Natural England, Peterborough.

Strachan, R and Moorhouse, T. (2011) *Water Vole conservation Handbook*. Third Edition, Wildlife conservation and Research Unit, Oxon.

PLANS

PLAN ECO1

Site Location



KEY:



SITE LOCATION



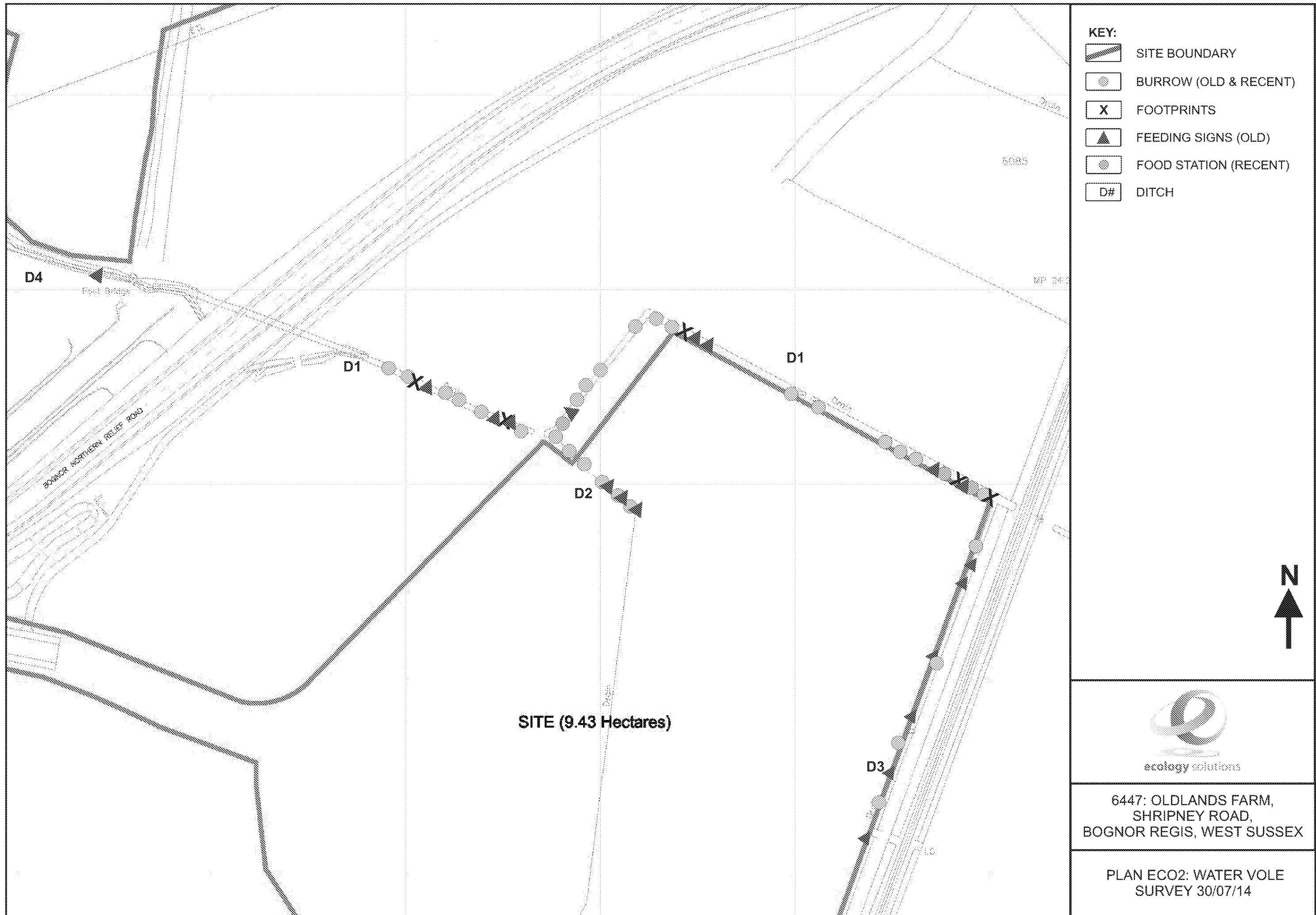
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6447: OLDLANDS FARM,
SHRIPNEY ROAD,
BOGNOR REGIS, WEST SUSSEX

PLAN ECO1: SITE LOCATION

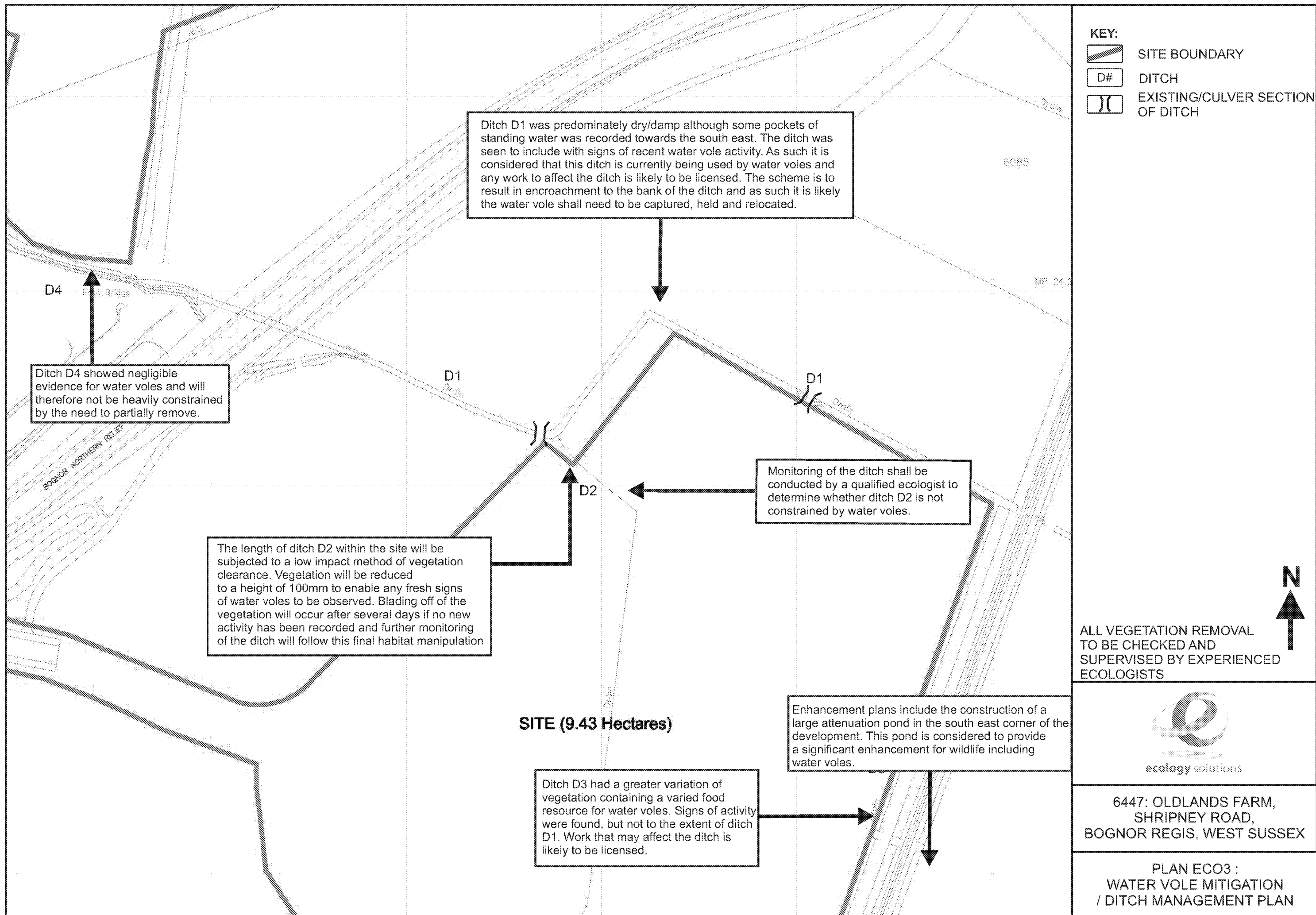
PLAN ECO2

Water Vole Survey Results



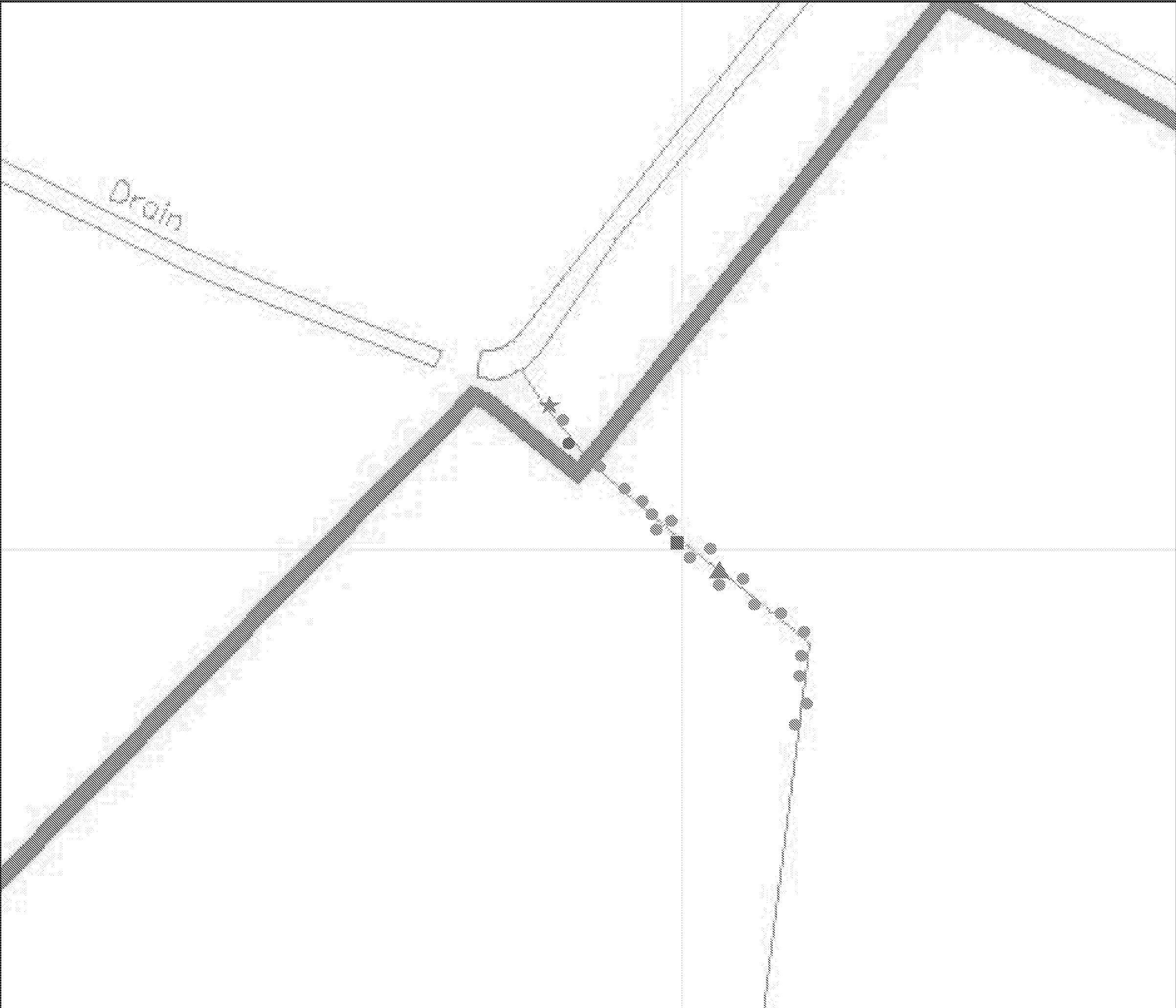
PLAN ECO3

Water Vole Mitigation / Ditch Management Plan



PLAN ECO4

Ditch D2 Monitoring Results



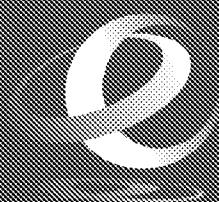
- KEY:**
- APPLICATION SITE BOUNDARY
 - LATRINE
 - FOOT PRINT
 - BORROW (OLD)
 - BORROW (NEW)
 - CAMERA TRAP



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PLAN ECO4:
DITCH D2 MONITORING
RESULTS



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