
Kirkby Valley Golf Club

Water Vole Survey Report

Compiled by Ecology Services Ltd.

on behalf of

L32 Trading Ltd.

Written: April 2020 (updated September 2020, January 2021 & August 2021)



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Executive Summary

Ecology Services Limited was commissioned by L32 Trading Ltd. in May 2019, to carry out a water vole (*Arvicola amphibious*) presence/ absence survey of the River Alt for the proposed development at Kirkby Valley Golf Club, Ingoe Lane, Liverpool, L32 4SS. NGR 337405, 407416 (at centre of site). As over a year had passed since the initial survey, an updated survey was commissioned by L32 Trading Ltd. in July 2020.

The watercourse was identified as containing features that were suitable to support water vole during a walkover of the site, which was conducted in May 2019. A desktop study was undertaken as part of the Preliminary Ecological Appraisal and found multiple records dating from 1981-2018 within 2km of the proposed development.

Four parcels of land within the site are proposed for re-development including extension and reconfiguration of the existing golf course, conversion of the existing clubhouse to a training academy, construction of a new Club House, driving range, adventure golf course, greenkeeper's compound and associated landscaping. There are also proposals for additional sports and leisure facilities outdoor 5-a-side football pitches, tennis courts and bowling green with associated lighting, car parking and formal landscaping. The proposals also include two new lakes and habitat creation on site and the enhancement/creation of habitats to the east of the River Alt.

The proposals also include the construction of a new footbridge and three outfalls (0.3m wide) which have the potential to impact water voles and water vole habitat as shown on Figure 1.

The surveys included surveying the impacted area of works and up to 100m up and downstream within the River Alt. The second survey in 2019 included the use of a kayak where access to the watercourse was found to be limited on the first survey due to dense vegetation, steep banks and deep water. The September 2020 and June 2021 update surveys were undertaken from the banks and from wading in the watercourse.

Watercourse habitats within the survey area varied in their suitability; generally, they contained suitable banks for burrows with water present and sufficient herbaceous vegetation with the potential to support water vole. Water levels also fluctuated between surveys.

The survey identified presence of water vole on the second survey round in 2019. Small numbers of droppings were found, indicative of a transient water vole passing through the water course. Small mammal burrows were found during the second survey, however, there was no other evidence of water vole found in the vicinity of the burrows and at the present time there are no confirmed occupied water vole burrows. No evidence of water vole was found during the September 2020 survey.

It is recommended that a pre-development water vole survey is undertaken prior to works to confirm whether any active water vole burrows are present. If active water vole burrows are confirmed an appropriate method statement will need to be prepared to safeguard water voles and their burrows during development.

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1.0 Introduction

- 1.1 Ecology Services Limited was commissioned by L32 Trading Ltd. in May 2019, to carry out a water vole (*Arvicola amphibious*) presence/absence survey of the River Alt at Kirkby Valley Golf Club, Ingoe Lane, Liverpool, L32 4SS, hereinafter referred to as 'the site'. The centre of the site is located by National Grid Reference (NGR) 337405, 407416. The location of the site is shown on Figure 1. As over a year had passed since the initial survey, an updated survey was commissioned by L32 Trading Ltd. in July 2020.
- 1.2 The watercourse was identified as containing features that were suitable to support water vole during a walkover of the site, which was conducted in May 2019. See Figure 1 showing the water vole survey area.
- 1.3 Four parcels of land within the site, collectively referred to as the 'development area', are proposed for (re)development as shown on Figure 2 including:
- Reconfiguration and other improvement works across the entire golf course including the reshaping of tees / greens / bunkers and erection of a footbridge over the River Alt to provide both an improved 18 hole course and a new 9 hole course.
 - New and improved irrigation / drainage works (including irrigation lake), extensive tree and shrub planting, and ecological mitigation measures across the course.
 - The erection of a new 2 storey Clubhouse;
 - Retention, alteration and extension of the existing clubhouse and its change of use to form a golf-related / grounds maintenance training academy (existing access and car park retained / unchanged).
 - A new greenkeeper's compound with associated building and security fencing.
 - Provision of an adventure golf course and practice putting green; and provision of a golf driving range with an associated 2 storey building and external lighting and safety netting.
 - 6 synthetic outdoor 5-a-side football pitches, 5 synthetic outdoor tennis courts, 1 external bowling green with associated timber players' hut plus associated lighting and means of enclosure.
 - Car and cycle parking spaces to serve all of the above facilities with two new vehicular accesses created onto Valley Road.
 - Formation of a new gated access via Aintree Lane for the use of construction traffic and (upon completion of development works) for the sole use of course operatives for the purposes of course management / maintenance.
- 1.4 Two lakes are also proposed to assist with course irrigation and ecological mitigation at the site and the enhancement/creation of habitats to the east and west of the River Alt.
- 1.5 The proposals also include the construction of three outfalls (0.3m wide) which have indicated that there is the potential to impact water voles and water vole habitat. The locations are shown on Figure 1 and outfall design is shown on Figure 5. The type of proposed development works determines the baseline survey data required to prove presence or likely absence of water vole.

Site description

- 1.6 The site lies approximately 1.5km to the west of Kirkby. The development area includes the existing golf course and an area of land to the south-west of the golf course, bounded by Valley Road to the south and Aintree Lane to the west. The south-western part of the development area comprises three fields of unmanaged rough grassland with scattered trees, tall ruderal vegetation, wet grassland and hedgerows along the field boundaries. The

River Alt runs south to north between the two parcels of the development area and through the site.

- 1.7 In the wider landscape, land to the north of the golf course lies a railway line, woodland mosaic habitat and the Leeds Liverpool Canal, land further north is characterised by agricultural land which the River Alt also runs through. Land to the east, south and west comprises residential and industrial development.
- 1.8 The aims of the water vole survey were to:
 - Undertake two presence/ absence surveys of the affected watercourse to identify evidence of water vole;
 - Record and map signs of water vole and other small mammals.
- 1.9 The water vole presence/ absence surveys were undertaken between May and September 2019 and were updated in September 2020 and June 2021.

2.0 Planning Policy and Legislation

Planning Policy

- 2.1 The National Planning Policy Framework (NPPF, 2021) places a clear responsibility on Local Planning Authorities (LPA) to contribute to conserving and enhancing the natural and local environment. LPAs should promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species (e.g. Species of Principal importance, Local Biodiversity Action Plan species); and identify and pursue opportunities for securing measurable net gains for biodiversity. The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation.
- 2.2 The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation. Although intended as guidance on Planning Policy Statement 9, Circular 06/2005 has been retained as part of the guidance literature of the NPPF. Circular 06/2005 states that the presence of a protected species is a 'material consideration' in the determination of a planning application. The Government Circular on Biodiversity and Geodiversity (06/2005) provides clarification on the essential need to determine presence or likely absence of a protected species, together with the likely impacts of proposed development on that species, before planning permission is granted. Therefore, an LPA is unlikely to determine an application until all relevant information relating to protected species or habitats is submitted to fully inform the application. Relevant information includes adequate surveys and, where required, mitigation strategies, which will need to be submitted to inform a planning application.
- 2.3 Planning conditions can be implemented to protect, and where possible, improve water vole habitat when a proposed development is granted in such areas. Unless material considerations indicate otherwise, planning law requires that planning applications must be determined in accordance with the provisions of the relevant development plan.

Legal Protection and Licensing

- 2.4 In England and Wales water voles are listed on Schedule 5 of the Wildlife and Countryside Act 1981, receiving full protection since 2008. The Wildlife and Countryside Act 1981, together with amending legislation, lists the following as offences:
 - Intentionally killing, taking or injuring a water vole (Section 9(1));

- Possessing or controlling any live or dead water vole, or any part or derivative (Section 9(2));
- Intentionally or recklessly:
 - damaging or destroying a water vole’s place of shelter or protection (Section 9(4)(a));
 - disturbing a water vole whilst it is occupying a structure or place which it uses for shelter or protection (Section 9 (4)(b));
 - obstructing access to a water vole’s place of shelter or protection (Section 9(4)(c));

2.5 It is generally agreed that a place of shelter or protection used by water voles includes a network of burrows and/or any nests that have been constructed within the burrow system or above ground amongst dense vegetation.

2.6 Due attention, therefore, must be paid to the presence of water vole and appropriate actions taken to avoid committing offences.

2.7 Licences cannot be issued for the specific purpose of development or any activities associated with the improvement or maintenance operations of waterways. In some circumstances Natural England will consider issuing a licence in relation to a development proposal if the licensed action is going to provide a conservation benefit for water voles. The proposed project will therefore need to deliver a conservation benefit for water vole. Further information on licensing is provided in Appendix 1.

Natural Environment and Rural Communities (NERC) Act 2006

2.8 The Natural Environment and Rural Communities (NERC) Act 2006 imposes a duty on all public bodies, including the Local Planning Authority (LPA) and statutory bodies in exercising their functions “to have due regard, so far as is consistent with proper exercise of those functions, to the purpose of conserving biodiversity” which includes ‘restoring or enhancing a population or habitat’. The NERC Act lists Species of Principal Importance that are capable of being a material consideration in the making of planning decisions. Water vole is a Species of Principal Importance.

3.0 Methodology

Desktop Study

3.1 A desktop study involves contacting Local Record Centres for historic records of water vole. The Water Vole Mitigation Handbook 2016, requires certain types of works to be subject to a desktop study, in conjunction with a presence/or likely absence survey. Ecological data and historic records were collated from the following sources; listed in Table 1.

Table 1: Desktop Study Results and Record Centres Consulted

Source of information	Information supplied
Local Biodiversity Action Plan	Identification of Local BAP Species known to occur in the region.
Multi Agency Geographical Information Centre www.magic.gov.uk	To identify protected sites and Species of Principal Importance within 2km of the site.
Natural Environment and Rural Communities (NERC) Act 2006	Review of Species of Principal Importance known to occur in the region.
Merseyside Environmental Advisory Service (MEAS)	To identify locally protected sites or species of interest within 2km of the site.

3.2 The aim of the desktop study was to check for any water vole records and information on water vole status in the local area. The desktop study was undertaken on 23rd of May 2019 as part of the Preliminary Ecological Appraisal and updated on 15th of January 2021.

3.3 Water vole surveys were undertaken in following standard guidance within *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series) (Dean et al., 2016)*.

Water Vole Presence or Likely Absence Methodology

3.4 The survey followed standard best practice methodology and involved walking along the top of the bank/wading in the channel, or the use of a boat/kayak to the required distance up stream to identify the presence of water voles. Undertaking the survey in the upstream direction wherever possible, ensures that disturbance of any signs is limited.

3.5 As the 2019 season passed and dense vegetation became restrictive, the watercourse became difficult to survey. On the second survey in 2019, where access was restricted, a boat/kayak was utilised to allow surveyors to conduct a thorough survey.

3.6 The September 2020 and June 2021 surveys were undertaken by wading through the channel where possible and the remainder from the banks only. Where access was restricted, it was not considered that using a kayak would be any more effective than using binoculars from the top of the banks. If anything that looked of interest was seen the surveyors tried to get down to examine the location more closely, where feasible.

3.7 Water vole field signs searched for include: feeding remains, burrows, latrines, sightings, runs in vegetation and footprints. The presence of water vole droppings is the only field sign that can be used reliably on its own to confirm presence of water vole. Field signs of water voles are described in the Water Vole Conservation Handbook (Strachan et al., 2011).

3.8 It is important to note that water vole field signs must be interpreted carefully in order to distinguish differences in habitat use, ranging from inhabiting and foraging to excursion activities. The age of individual field signs and specific combinations in which they are found are also fundamentally important in determining the current use of a particular habitat.

3.9 All suitable areas of the water courses were closely inspected for signs such as those described above.

3.10 The age of individual field signs and specific combinations in which they are found are also fundamentally important in determining the current use of particular habitats.

3.11 A description of the physical features of the water courses were also recorded, including bank profile, depth, width and riparian habitats.

Survey Design

3.12 The type of proposed development works determines the baseline survey data required to prove presence or likely absence of water vole.

3.13 The proposed development works are relatively small scale, with permanent works affecting less than 15m of watercourse. Surveys included surveying the impacted area of works (proposed bridge and outfalls) and up to 100m up and downstream within the River Alt. The scope of works has changed since the 2019 surveys, to no longer include the two most southerly proposed outfalls, the survey area remained the same for the update surveys so the results were comparable. The survey area is shown on Figure 1.

- 3.14 The water vole survey was designed taking into account the proposed development and Dean et. al. (2016), see Appendix 2 for full details.

Timing of Survey

- 3.15 Two survey visits are required to be undertaken over the course of the water vole breeding season (April to September). This is due to changes in habitat suitability over this period of time. One visit is to be undertaken between mid-April to the end of June inclusive. The final survey visit is to be undertaken between July and September inclusive. These visits should be at least two months apart.
- 3.16 There may be some cases where a second survey visit may not be required such as: water vole presence was not confirmed during the first survey visit and the habitat is considered to be of very low suitability for water vole; and the likelihood of water vole being present in the surrounding area, up to 2km or less where a significant dispersal barrier is present, is also considered to be very low. Further details can be found in Appendix 2.
- 3.17 The first water vole survey was undertaken on the 17th May 2019. The second water vole survey visit was undertaken on the 20th of September 2019. Surveys were undertaken at least two months apart in accordance with Dean et. al. (2016). As over a year had passed since the initial survey, a further update survey visit was undertaken on 18th September 2020 with the second survey being undertaken on 28th June 2021.

Weather Conditions

- 3.18 Weather conditions prior to and on the day of the water vole surveys in 2019 and 2020/21 were considered suitable; the surveys were completed during periods of dry conditions and it was dry on the actual days of the surveys.

Personnel

- 3.19 All survey works were undertaken by experienced ecologists, Miss C. Wood MSc ACIEEM, Mr B. Meadows BSc ACIEEM and Mr. C. Smith BSc. The surveyors worked in pairs for health and safety reasons.

Relative Population Density of Water Vole

- 3.20 It is not possible to calculate the number of individual water voles from the number of latrine counts. However, the number of latrines indicates a level of water vole activity at the site suitable to be used to assess the impacts of the proposed development and design appropriate mitigation.
- 3.21 The number of latrines present will give an indication of the relative water vole population density. The number and location of latrines will also identify areas of the site most valuable for water vole. The survey area can then be divided into three categories that support water voles at a “high”, “medium” or “low” density.
- 3.22 Relative water vole population density is calculated by counting the number latrines per 100m of bankside habitat during the first and second survey.
- 3.23 Table 2 below shows the Relative Population Density of water vole taken from Dean et. al. (2016, page 16).

Table 2: Relative Population Density of Water Vole

Relative Population Density*	First half of Survey season (mid April - June)	Second half of Survey season (July - September)
High	10 or more	20 or more
Medium	3 to 9	6 to 19
Low	Less than 2 or none, but with other confirmatory field signs	Less than 5 or none, but with other confirmatory field signs

*Approximate number of latrines per 100m of bankside habitat

Constraints

- 3.24 There were access restrictions encountered on the surveys due to steep banks, dense vegetation and deep water. The first survey in 2019 was constrained due to deep water making it unsafe for surveyors to wade within the channel and the survey was undertaken from the banks. To aid the survey, part of the second survey in 2019 was undertaken using a kayak.
- 3.25 The 2020 and 2021 surveys were similarly constrained due to steep banks, dense vegetation and deep water. However, it was not considered, that use of a kayak would have been more effective than using binoculars. Anything that looked of interest that was seen, the surveyors endeavoured to get down to examine the location more closely. The area shown as no access during the 2019 surveys was accessed during the 2020 and 2021 surveys.

4.0 Results and Evaluation

Desktop Study

- 4.1 A desktop study was undertaken in 2019 as part of the Preliminary Ecological Appraisal for the site although not required as detailed in Appendix 1 taking into account the nature of the proposed works.
- 4.2 The desktop study found 104 records of water vole (*Arvicola amphibius*) within 2km of the site, dated between 1980 and 2018. Six of the records are located on the River Alt within Kirkby Golf Club, four dating from 1999, one from 2009 and one from 2010, the grid references given with the records all pertain to the northern portion of the golf club approximately 220m, 650m and 445m respectively from the survey area on both sides of the river. The River Alt is designated as a Local Wildlife Site for its value for water vole.
- 4.3 The desktop studies also identified three records of mink (*Mustela vison*), a known predator of water vole, within 2km of the site including records for the River Alt.
- 4.4 The River Alt which runs through the site is designated as a Local Wildlife Site (LWS) including under the guideline Mam1 for water voles.

Habitat Assessment

- 4.5 Descriptions of the watercourse subject to survey is provided in Table 3 below (refer to Figure 1 for exact location).

Table 3: Habitat Descriptions

Watercourse 1 - Habitat Description	
Bank profile	Steep 4/5m high banks (up to 7m high in places), Channel approx. 10m wide.
Bank substrate	Soft earth. Evidence of undercutting.
Water depth	0.5-1.5m+
Water fluctuations?	Yes, evidence of water level changes.

Shading	Shading at ~20% from trees on banks.
Bankside Vegetation	Grassland, bramble and tall ruderal (100%).
In-channel Vegetation	Pondweed sp..(<i>Potamogeton sp.</i>)
Management	Evidence of engineered banks in places e.g. under bridges.
Constraints?	Some areas impenetrable due to dense scrub, steep banks and deep water, so surveyed from banks.
Suitable for Water Vole?	YES

4.6 The habitats were found to be mostly the same in September 2020. There is the one area near to the car park to the south where the banks have been reconstructed so had little to no vegetation present on that stretch.

4.7 During additional visits to the site in January 2021, the habitats on site were mostly found to be the same as in 2019 and 2020. Works as part of the reconfiguration of the golf course have been undertaken and the vegetation largely removed along the banks of the River Alt in the north of the site. This had revegetated by the June 2021 survey.

Survey Results

4.8 The results of the water vole presence or likely absence survey are presented in Table 4 to 6 below. The results of all the surveys have been combined into one detailed map, please refer to Figure 1 for their locations.

Table 4: Water Vole Survey Results 2019 (Round 1)

Watercourse	Date	Results (Positive/Negative for WV)*	Section	Distance**	Notes
1	17.05.19	Negative	-	-	-

Table 4 (cont): Water Vole Survey Results 2019 (Round 2)

Watercourse	Date	Results (Positive/Negative for WV)*	Section	Distance**	Notes
1	20.09.19	Positive	2	32m, 70m, 75m	Three locations with small numbers of droppings only.

Table 5: Water Vole Survey Results 2020 (Round 1)

Watercourse	Date	Results (Positive/Negative for WV)*	Section	Distance**	Notes
1	18.09.20	Negative	-	-	-

Table 6: Water Vole Survey Results 2021 (Round 2)

Watercourse	Date	Results (Positive/Negative for WV)*	Section	Distance**	Notes
1	28.06.21	Negative	-	-	-

*Positive identification of water vole within catchment in the form of latrines and droppings. Evidence such as burrows and feeding remains may be closer than the measurement given, but are not conclusive of water vole presence alone. Please refer to results maps for further information.

**Distance in metres of a positive field sign (latrine or dropping) from nearest proposed outfall/footbridge.

Relative Population Density

4.9 Based on the results of the field survey (Figures) and after reviewing Table 2, the Relative Population Density of water vole at within the catchment are presented in Table 7 below. Where there are variations of relative population sizes along a watercourse, all results have been combined.

Table 7: Relative Population Density of Water Vole based on the Survey Results

Watercourse	Relative Population density and Likely Absence Results	
	Survey 1	Survey 2
1 (2019)	No signs recorded	Water vole droppings found, not conclusive of territorial latrine.
2 (2020/2021)	No signs recorded	No signs recorded

- 4.10 Watercourse habitats within the survey area varied in their suitability; generally, they contained suitable banks for burrows with water present and sufficient herbaceous vegetation with the potential to support water vole.
- 4.11 There were access limitations on the first survey round in 2019 due to dense vegetation, steep banks and deep water and no evidence of water vole was found.
- 4.12 The second survey round in 2019 found evidence of water vole within the river, approximately 32m from the nearest proposed outfall. The evidence found (small numbers of droppings) is indicative of a transient water vole passing through the watercourse. No other evidence of water vole such as latrines, feeding remains or footprints were identified during the surveys.
- 4.13 No evidence of water vole was found during the September 2020 and June 2021 surveys. Small mammal runs and burrows were identified but as no other water vole evidence was found, these cannot be positively attributed to water vole and therefore have not been mapped.
- 4.14 The water level in the river can fluctuate considerably (over 1m) and this may be adversely affecting water vole establish territories and construct burrows at the water line, as they would be subject to frequent flooding.
- 4.15 Rat footprints and droppings were found during all of the survey visits and therefore it is considered that if water vole were residing within the survey area, then evidence would likely have been found.

5.0 Impacts and Recommendations

- 5.1 The survey identified habitats that are considered suitable to support water vole, but they are subject to significant water level changes. Presence was confirmed in 2019 in the form of a small number of droppings on the second survey round, considered to be from a transient water vole passing through the watercourse. No evidence of water vole was found during the September 2020 and June 2021 update surveys.
- 5.2 The development proposals indicate disturbance to suitable water vole habitat on the banks of the watercourse resulting from the construction of three outfalls. The proposed outfalls will be 0.3m wide, therefore, in total there will be a permanent loss of 0.9m of water vole habitat on the banks of the river. The outfall design is shown in Figure 3. There will be temporary habitat losses for working areas to construct the outfalls.
- 5.3 The proposed footbridge abutments will be located 8m from the toe of the river bank and therefore it is considered unlikely that construction will impact any burrows suitable for water vole. The bridge design is shown in Figure 4.

- 5.4 The 2019 surveys did not find water voles any signs of water voles on the western bank where the proposed outfalls are to be located. Although water vole droppings found in 2019, in relatively close proximity to the proposed outfalls, the signs were not conclusive of territorial latrine and more likely to be a water vole passing through, as such indirect impacts are considered unlikely. Mink, a predator of water vole, are known to be present on the River Alt and mink footprints were identified adjacent to the river during the updated badger survey undertaken in January 2021.
- 5.5 The 2020/21 update survey, did not find any signs of water vole. Therefore, at the time of the survey, it can be predicted with confidence, that there are no direct or indirect impacts to water vole from the proposed development.
- 5.6 Water voles can be a transient and can travel up to 1km to form new colonies if the habitat is found to be suitable. Habitats are present within the wider survey area that are connected to the site and are considered suitable to support water vole. Habitats within the site are suitable they are subject to varying water levels, however there have been historic records of water vole on the River Alt, therefore, it is recommended that a pre-development water vole survey is recommended, prior to development works.
- 5.7 As there are records of water vole in the wider survey area and the watercourse contains suitable habitat to support water vole, it is recommended in line with the NPPF that impacts on suitable water vole habitat are avoided and minimised wherever possible and net gains for biodiversity are provided. The landscape plan indicates that there will be a native species-rich grassland and trees planted between the development and the river. The development includes the creation of two lakes as part of the new development, which will include planting of aquatic and marginal plant species which, once established, these lakes will provide additional suitable habitat for water vole. The River Alt is designated as a Local Wildlife Site (LWS) and as such the impacted banks shall be allowed to naturally regenerate rather than introducing seeds that may not be of local provenance. Implementation of these measures will provide both compensation for the small loss of habitat and result in a net gain in potential water vole habitat.

6.0 References

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Strachan, R., Moorhouse, T. & Gelling, M. (2011) Water vole conservation handbook (3rd Ed.). Wildlife Conservation Research Unit, Oxford.

The Wildlife & Countryside Act 1981 (as amended)

The Natural Environment and Rural Communities Act 2006

The National Planning Policy Framework (NPPF), 2019

Figure 1:
Water Vole Survey Area Map

Figure 1: Water Vole Survey Results Map

Map Ref: (NGR) 339700, 397866
Map Scale: 1:1,200 @ A3

KEY

- Site boundary
- Water vole survey area
- Proposed footbridge
- Proposed outfall (approximate location)
- Previously proposed outfall (approximate location)

Survey Results

2019 Round 1 (17th May)

- No access

2019 Round 2 (20th September)

- Water vole droppings
- Burrow (small mammal)
- Run (small mammal)

2020 (17th September)

No evidence of water vole found

2021 (28th June)

No evidence of water vole found

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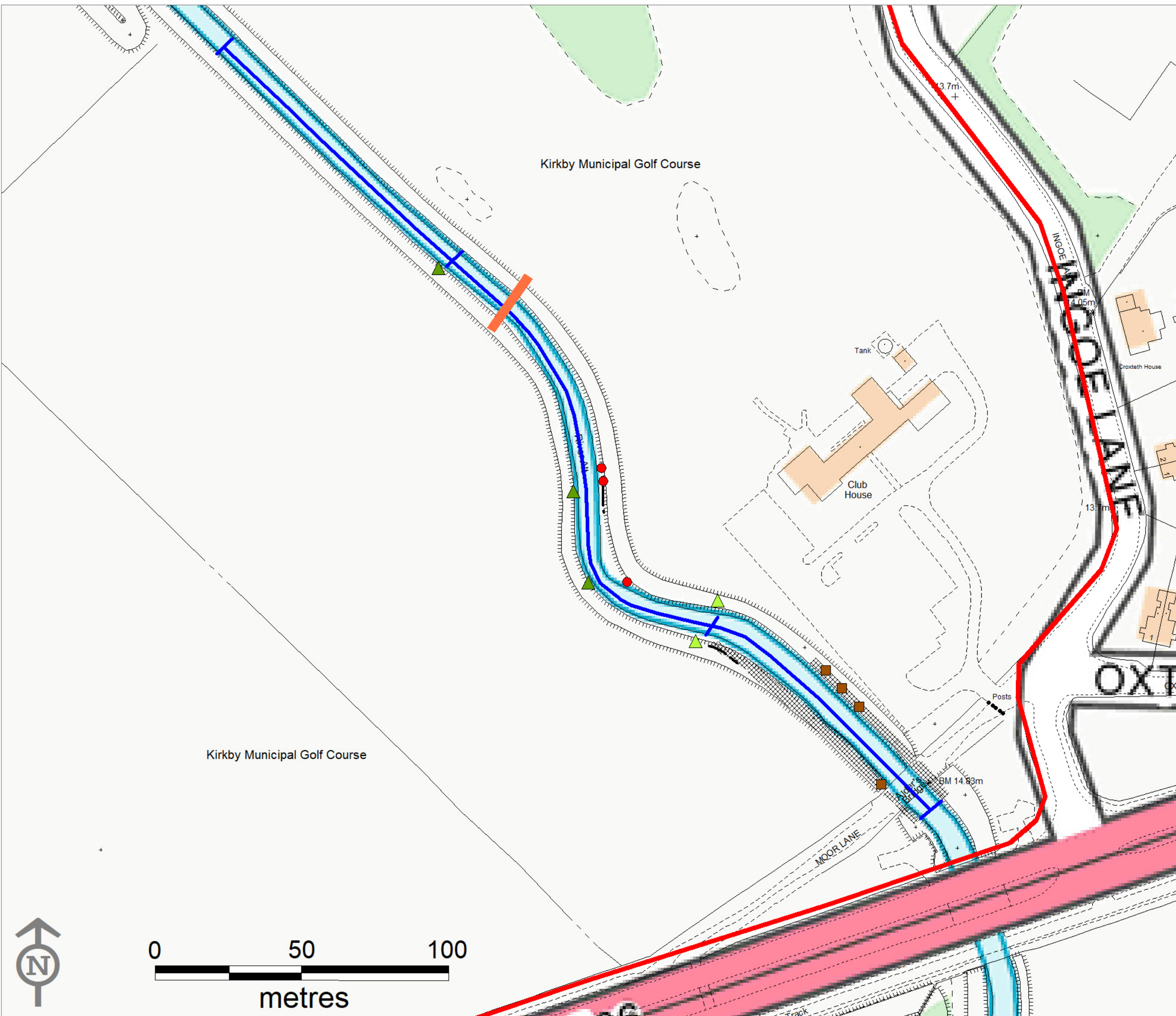


Figure 2:
9627-L22-C – Proposed Estate Plan



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SITE SPECIFIC HAZARDS

IN ACCORDANCE WITH THE REQUIREMENTS OF THE CON REGULATIONS 2015 THE FOLLOWING SIGNIFICANT RESIDUAL HAZARDS HAVE NOT BEEN DESIGNED OUT OF THIS PROJECT AND MUST BE TAKEN INTO CONSIDERATION BY CONTRACTORS PLANNING TO UNDERTAKE THE WORKS SHOWN ON THIS DRAWING

ORDNANCE SURVEY LICENCE

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NOTES

SITE BOUNDARY 80.3055 HECTARES

OTHER LAND IN THE OWNERSHIP OF THE CLIENT

SCALE 1:2500

0m 25 50 75 100 125 150

ROOT PROTECTION AREA

CATEGORY B TREE

CATEGORY C TREE

CATEGORY U TREE

CROWN SPREAD

TREE/SHRUB REMOVED

REV C 26.04.21 HIGHWAY UPDATE

SPL

REV B 16.03.21 GENERAL UPDATE

SPL

REV A 15.12.20 UPDATED

RSL

REV DATE NOTES

INT

CLIENT / PROJECT

MAGHULL DEVELOPMENTS LTD

KIRKBY GOLF CLUB - VALLEY ROAD

KIRKBY

DRAWING TITLE

PROPOSED ESTATE PLAN

STATUS

PLANNING

DATE

17.11.20

DRAWN

RSL

SCALE @ A1

1:2500

PROJECT NUMBER

UNIT

FL/COOK

CI / SPS CODE

TYPE A NUMBER

REVISION LETTER

DRAWING NO.

9627

L22

C

Site Location Plans

L

GA Plans

P

Elevations

E

Sections

S

Details

D

Prevx Colour

C

THE RATCLIFFE GROVES PARTNERSHIP

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LONDON

19 BEDFORD ROW

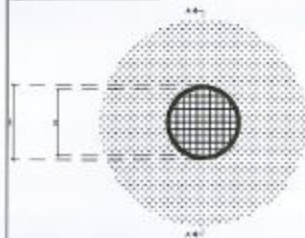
LONDON WC1R 4BS

T: 020 7600 6656 E: london@rsg-uk.com

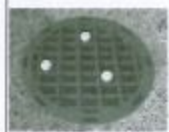
architects

Figure 3:
Outfall Design

Typical Catch Basin - Plan View

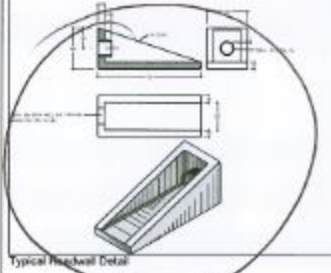
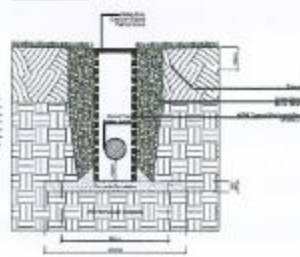


Example image of installed catch basin



Typical Catchbasin Detail

Section AA



Typical Inlet Detail

24" - 30" max of stone material above grate (minimum 24" max of cover)

18" max width and grade 1:1 in perforated drain tile

Undisturbed soil

Typical Perforated Drainage Pipe Detail

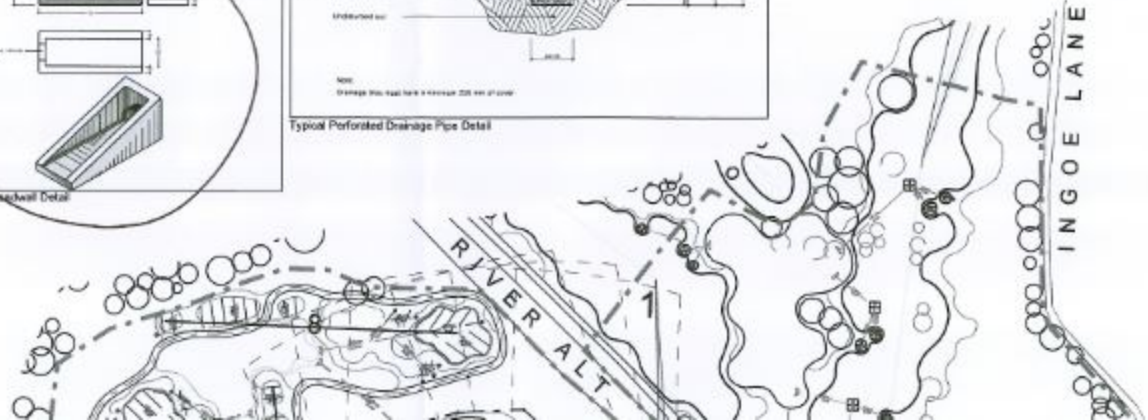
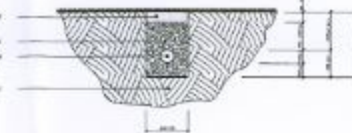
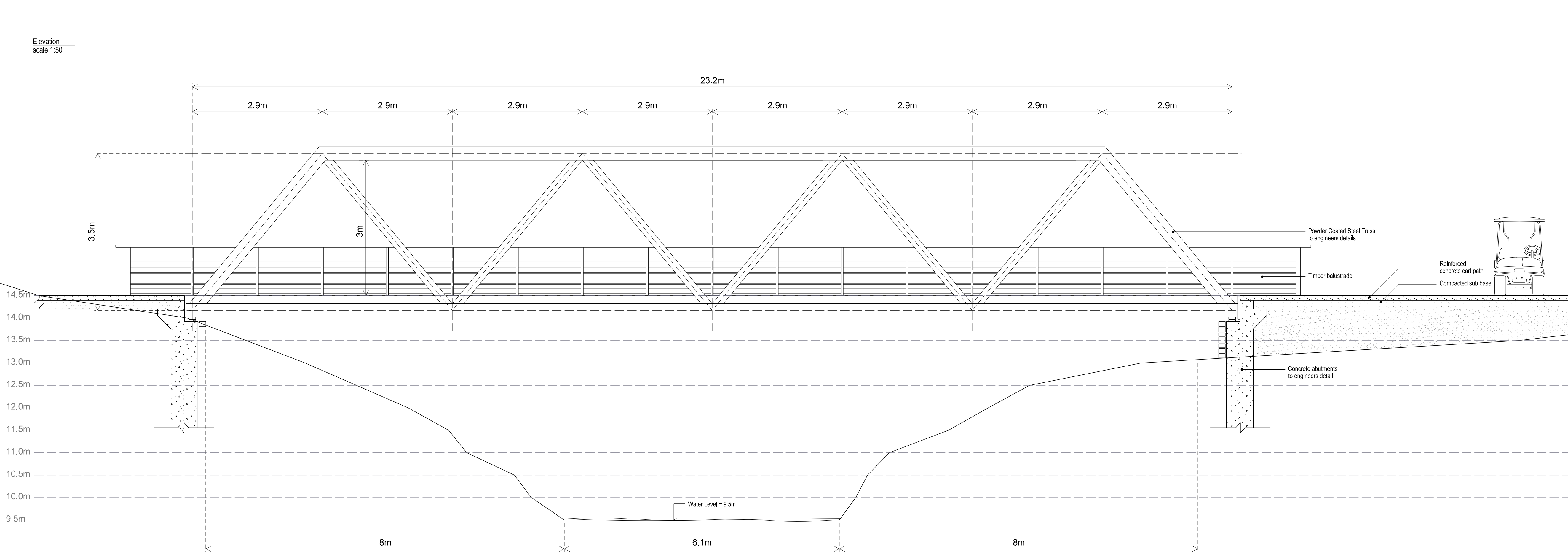
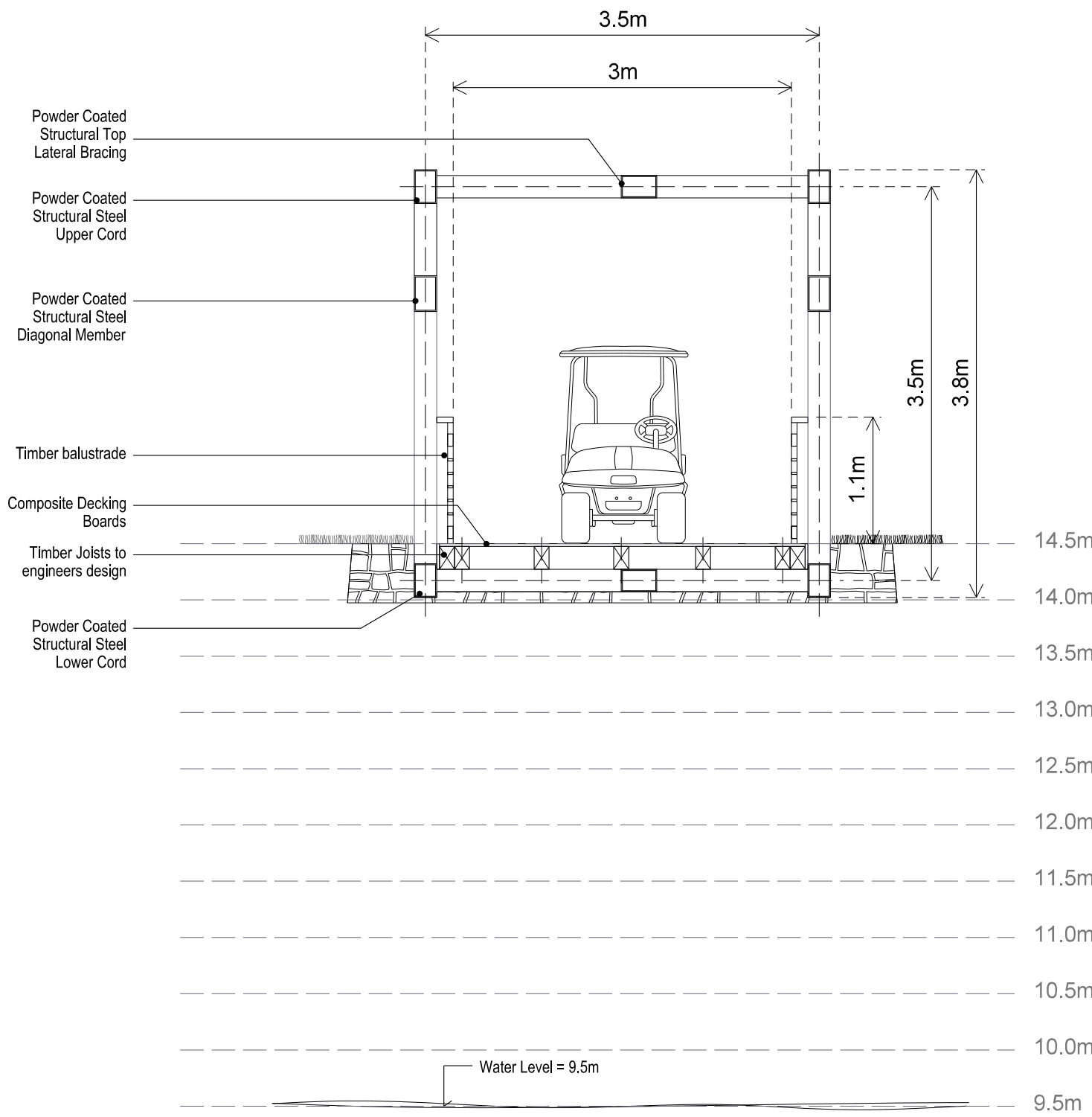


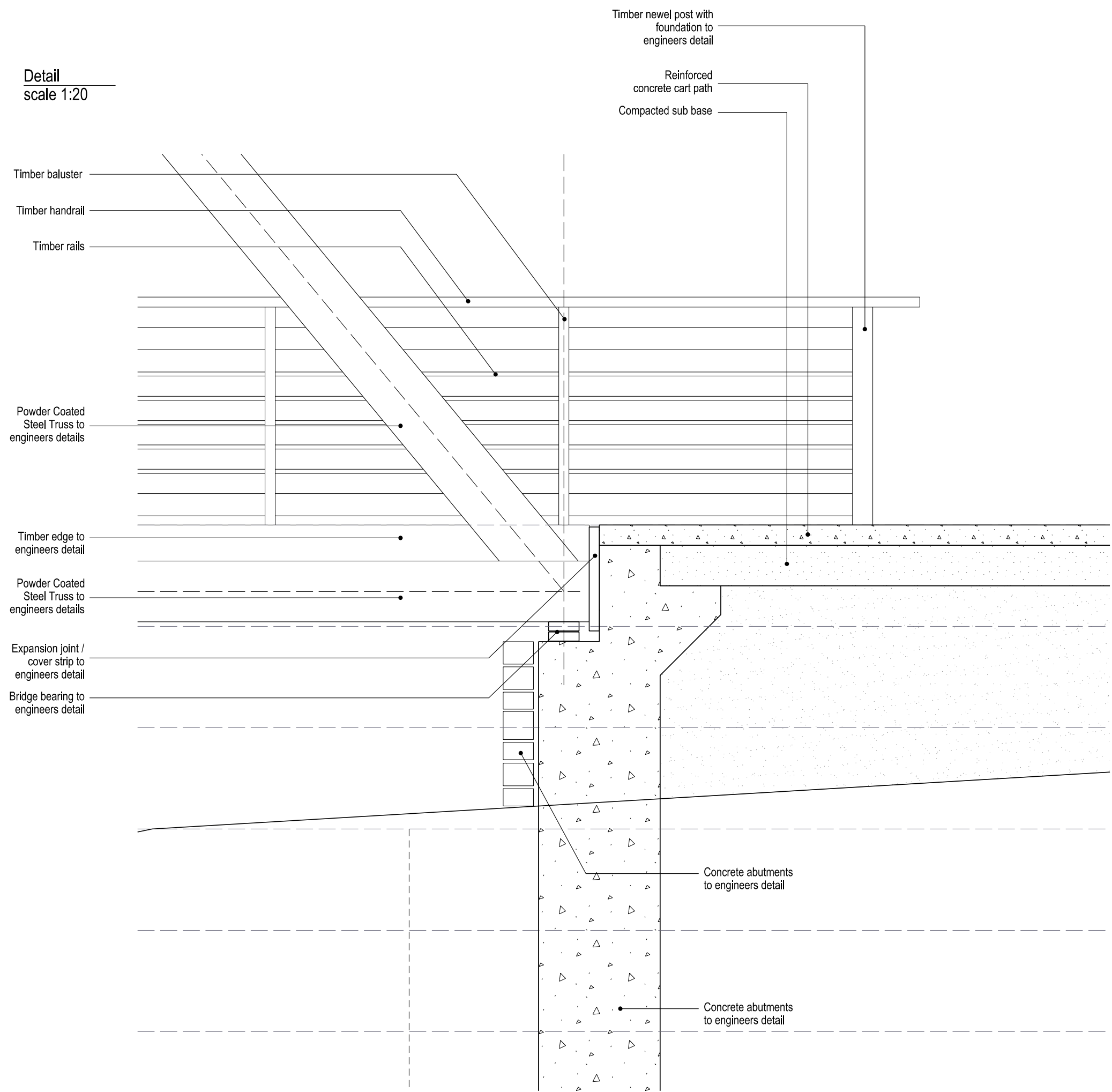
Figure 4:
G935 231 Bridge Design



Section
scale 1:50



Detail
scale 1:20



GENERAL NOTES

- 01.
- 02.
- 03.
- 04.
- 05.

REVISIONS

REV	DATE	DESCRIPTION	REV BY	CHK BY

KEY PLAN

CONSULTANT



LEAD CONSULTANT

CLIENT

ISSUED FOR

Planning Application
(90% submittal)

PROJECT

Kirkby Valley Golf Club

DRAWING TITLE

Bridge Construction Details 2 of 2

Drawn	PA	Checked	AC	Approved	JH
Date	29.08.19	Sheet Size	A1	Scale	1:50 / 1:2
Drawing No.					Rev.
G935 231 BRIDGE CONSTRUCTION DETAILS 2					—
CAD File No.			Consultant Project No.		

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Appendix 1: Licensing information

Prior to February 2016, if it could be demonstrated that any action that would otherwise have been an offence was the “incidental result” of a lawful operation and could not reasonably have been avoided, this would have constituted a defence against prosecution under the Wildlife & Countryside Act 1981 (as amended). However Natural England has reviewed their position on this and now believes that displacement activities (excluding justifiable mowing) are no longer covered by the “incidental result” defence. Therefore, any displacement activities now require a licence.

Licences cannot be issued for the specific purpose of development or any activities associated with the improvement or maintenance operations of waterways. In some circumstances Natural England will consider issuing a licence in relation to a development proposal if the licensed action is going to provide a conservation benefit for water voles.

In England, licences are available from Natural England to permit the following activities:

- Intentional disturbance and damage or destruction of water vole burrows by means of “displacement”;
- Intentional displacement of water voles by internal drainage boards to work on flood defences, water courses or drainage systems;
- For scientific or educational purposes;
- For the purpose of ringing or marking;
- Conserving wild animals or introducing them to particular areas;
- Preserving public health or public safety;
- Preventing the spread of disease; and
- Preventing serious damage to any form of property or to fisheries.

In England, displacement activities can be carried out under a Class Licence by a registered person provided that they conform to the licence conditions which include:

- Displacement over a continuous length of bank not exceeding 50m (for water courses this equates to 50m on each bank);
- Works only to be undertaken during the period of 15th February to 15th April inclusive (with some exceptions as detailed in Appendix 1 of The Water Vole Mitigation Handbook);
- Planning consent must be granted for schemes that require such consent;
- The Class Licence can only be relied upon if there is no alternative i.e. when alternative measures that do not require a licence have been considered and proved to be either impractical or impossible; and
- A report of action taken under this licence is provided to Natural England.

In certain circumstances where displacement activities do not conform to the conditions set out in the Class Licence, such as weather conditions do not allow for displacement during the above time period, displacement in these circumstances will need to be carried out under a Site-specific licence.

In England and Wales, a licence to displace water vole, be it a Class Licence or a Site-specific Licence will be issued for the purpose of conservation. The proposed project will therefore need to deliver a conservation benefit for water vole.

Appendix 2:
Survey Design. (The Water Vole Mitigation Handbook, Box 1, Page 9)

1. Type of works: Very <i>small-scale</i> works affecting up to 15m of watercourse	
Example project	Construction of an outfall, bridge repair works, or installation of pipes up to 15m long within a narrow field drains (where these do not form part of a larger development)
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas plus 100m upstream and downstream. A comprehensive desk study exercise will not necessarily be required.
Additional information (if water voles present)	Micro-mapping of the habitat and burrow locations to allow design to minimise impacts (when relevant). Further data may be needed to ensure that there is sufficient alternative habitat available to displace water voles into. This may be obtained through desktop study or a habitat assessment combined with 'spot checks' for water voles over a wider area (1-2km upstream and downstream of the works).
2. Type of works: Works <i>temporarily</i> affecting up to 50m of watercourse	
Example project	Pipeline crossing a watercourse
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 200m upstream and downstream of the works. A comprehensive desk study exercise will not necessarily be required.
Additional information (if water voles present)	Micro-mapping of the habitat and burrow locations to allow design to minimise impacts (when relevant). Further data may be needed to ensure that there is sufficient alternative habitat available to displace water voles into. This may be obtained through desktop study or a habitat assessment combined with 'spot checks' for water voles over a wider area (1-2km upstream and downstream of the works).
3. Type of works: Works <i>temporarily</i> affecting more than 50m of watercourse	
Example project	Watercourse re-profiling or repair/reinstatement of bank stabilisation structures
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus at least 200m upstream and downstream of the works. For works affecting more than 500m of watercourse, the study area should increase to 500m upstream and downstream of the works. A comprehensive desk study exercise will not necessarily be required, but would be advisable for works affecting ≥ 250 m of watercourse.
Additional information (if water voles present)	Desk study – Site and up to 2-5km around it (or a habitat assessment combined with 'spot checks' for water voles) to inform the approach to mitigation and the assessment of fragmentation effects. The study area should be proportionate to the length of habitat affected.
4. Type of works: Works with <i>permanent</i> impacts affecting 15-50m of watercourse	
Example project	Bank side revetment works
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 100-200m upstream and downstream of the works (proportionate to the length of watercourse affected). Desk study – site and up to 2km around it (or a habitat assessment combined with 'spot checks' for water voles).
Additional information (if water voles present)	Sufficient information is likely to have been provided by the 'presence/likely absence' surveys.
5. Type of works: Works with <i>permanent</i> impacts affecting more than 50m of watercourse OR Works requiring <i>permanent</i> culverting of watercourse	
Example project	Bank side revetment works, OR Highway schemes or some residential/mixed-use developments
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus 200-500m upstream and downstream of the works (proportionate to the likely fragmentation effects). Desk study – site and up to 2-5km around it, or a habitat assessment combined with 'spot checks' for water voles.
Additional information (if water voles present)	The study area for the desk study (or habitat assessment combined with 'spot checks' for water voles) may need to be increased to inform the approach to mitigation.
6. Type of works: Very large scale works	
Example project	Coastal re-alignment projects (where there are reasonable grounds to expect the presence of water voles)
To confirm presence or likely absence of water voles	Field survey – footprint of the works, including temporary work areas, plus approximately 1km around it. Desk study – site and up to 10km around it (or a habitat assessment combined with 'spot checks' for water voles).
Additional information (if water voles present)	The study area for the desk study (or habitat assessment combined with 'spot checks' for water voles) may need to be increased to inform the approach to mitigation.

Appendix 3: Field sign surveys - one site visit or two? The Water Vole Mitigation Handbook (Page 15)

Field sign surveys – one site visit or two

The water vole is a mobile species that responds to habitat changes over the course of the breeding season: a single visit can therefore be insufficient to confirm likely absence in many cases. In addition, where water voles are present, survey data based on two visits will allow a more robust assessment of the impacts of the project, particularly where water voles use different parts of a site during different parts of the breeding season. This can also be important in determining the most appropriate approach to mitigation. These guidelines therefore recommend that two field survey visits are routinely undertaken. However, it is recognised that the second visit may not be required in some cases, and it may therefore be possible to make a case for an assessment based on one visit. Examples of scenarios where a single visit (before submitting a planning application) may be sufficient as follows:

1. Water vole presence is confirmed during the first survey visit.

A second visit may not be needed where the assessment of effects on water voles can be made on a precautionary basis (i.e. water voles are present throughout the site at the maximum density that the habitat could support), **and** the approach to mitigating incidental mortality (displacement, relocation by trapping, off-site translocation, etc.) can be determined from the first visit alone.

The assessment of the quality of the habitat, and therefore the likely maximum density of water voles, will need to consider changes to the habitat in different parts of the breeding season as a result of natural processes (e.g. changes to water level) and management activities. This can be a difficult assessment to make for many sites.

2. Water vole presence is not confirmed during the first survey visit.

A second visit may not be needed where the habitat is of very low suitability for water voles and there is a very low likelihood that water voles are present in the surrounding area - up to 2km from the area of the proposed works, or less where significant barriers to water vole dispersal are present.

The assessment of the suitability of the habitats will need to consider changes to the habitat in different parts of the breeding season as a result of natural processes and management activities. This can be a difficult assessment to make for many sites. It will be difficult to make a robust case for not undertaking a second survey where access to surrounding areas is limited or impossible.

A second visit may also not be needed where the assessment of effects on water voles can be made on a precautionary basis (as per point 1 above)

In all cases, a second visit would be advisable prior to commencing works.

Appendix 4: Photographs



Photograph 1: River Alt looking North (May 2019)



Photograph 2: River Alt looking north taken from the southern end of the survey area (September 2019)



Photograph 3: Area of bank adjacent to the car park affected by works (September 2020).