

A47 Wansford to Sutton Dualling

Scheme Number: TR010039

Volume 9

9.44 Great Crested Newt Survey Report

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

January 2023

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Examination Procedure) Rules 2010**

The A47 Wansford to Sutton
Development Consent Order 202[x]

9.44 Great Crested Newt Survey Report

Regulation Number:	Regulation 8(1)(c))
Planning Inspectorate Scheme Reference	TR010039
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Author:	A47 Wansford to Sutton Project Team, National Highways

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Rev 0	January 2023	Response to the Secretary of State

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1. Scheme introduction

1.1. Purpose of this document

- 1.1.1. In July 2021, National Highways submitted an application for a development consent order (DCO) for the A47 Wansford and Sutton scheme (hereafter referred to as ‘the scheme’) in Cambridgeshire. The scheme forms an offline dual carriageway of approximately 2.6km in length, located to the west of Peterborough between the existing junction with the A1 and the Nene Way roundabout near Sutton.
- 1.1.2. This great crested newt (GCN) survey report has been produced to update the findings of the 2019 GCN surveys prior to the commencement of construction of the scheme. It is produced to fulfil requirement BD10 of the Register of Environmental Actions and Commitments (REAC) of the first iteration of the Environmental Management Plan (EMP) (application reference TR010039/APP/7.5) which is secured under Requirement 4 of the DCO.

1.2. Site description

- 1.2.1. The scheme is located on the single-carriageway section of the A47 that runs from the A1 in the west, near Wansford (Grid reference: TL 07655 99754) to the dual-carriageway section near the village of Sutton in the east (Grid reference: TL 10131 99237).
- 1.2.2. The scheme lies adjacent to the River Nene. Arable farmland is the predominant land cover in the area, divided into relatively small agricultural enclosures interconnected by narrow rural lanes, and defined by hedgerows and ditches throughout the landscape. The fields are interspersed with fragmented patches of woodland and clusters of farms and residential settlements.
- 1.2.3. There are a few residential properties adjacent to the A47. One is located on Sutton Heath Road (Heath House) and the other is north of the existing Nene Way roundabout (Lower Lodge Farm). Wansford, Sutton and Upton are the nearest residential areas to the scheme.
- 1.2.4. The scheme location is shown at Figure 1-1.

1.3. Scheme description

- 1.3.1. Whilst around half of the A47 is already dual carriageway, the Wansford to Sutton section is not, with studies having identified that the single carriageway section of the road no longer meets the needs of its users.

1.3.2. The key elements of the scheme include:

- approximately 2.6km of new dual carriageway constructed largely offline of the existing A47, including the construction of two new underpasses
- a new free-flow link road connecting the existing A1 southbound carriageway to the new A47 eastbound carriageway
- a new link road from the Wansford eastern roundabout to provide access to Sacrewell Farm, the petrol filling station and the Anglian Water pumping station
- closure of the existing access to Sacrewell Farm with a new underpass connecting to the farm from the link road provided
- a new slip road from the new A47 westbound carriageway also providing access to the Petrol Filling station
- a link road from the new A47 Sutton Heath roundabout, linking into Sutton Heath Road and Langley Bush Road
- new junction arrangements for access to Sutton Heath Road and Langley Bush Road
- closure of the existing accesses to the A47 from Sutton Heath Road, Sutton Drift and Upton Road
- new passing places and limited widening along Upton Drift (also referenced as Main Road)
- new walking and cycling routes, including a new underpass at the disused railway
- new safer access to the properties on the A1, north of Windgate Way
- installation of boundary fencing, safety barriers and signage
- new drainage systems including:
 - two new outfalls to the River Nene
 - a new outfall to Wittering Brook
 - extension of the A1 culvert at the Mill Stream
 - realignment and extension of the A47 Wansford
 - compensatory flood storage
 - drainage ditch interceptors
 - new attenuation basins, with pollution control devices, to control discharges to local watercourses
- river Nene compensatory flood storage area
- works to alter or divert utilities infrastructure such as electricity lines, water pipelines and telecommunications lines
- temporary compounds, material storage areas and vehicle parking required during construction

- ## 1.4. Scope

1.4.1. This survey and the report presented are intended as an update to previous GCN surveys as outlined in Section 3.1 This report provides a summary of the results of the GCN surveys undertaken in May 2022.

FOR DCO SUBMISSION

Development Consent Order Number: Document
TR010039/APP2.1

KEY:

- DESIGN LIMITS
- A47 WANSFORD TO SUTTON DULLING SCHEME (INCLUDES MAINLINE AND HOVERING ALTERNATIVES)
- COUNCIL & PARISH BOUNDARIES

SHEET PLAN

1. HOVERING ALTERNATIVE ROAD CONNECTION WITH ALL PLANS AND COORDINATES
2. MAINLINE ALTERNATIVE
3. HOVERING ALTERNATIVE
4. HOVERING ALTERNATIVE
5. HOVERING ALTERNATIVE
6. HOVERING ALTERNATIVE
7. HOVERING ALTERNATIVE
8. HOVERING ALTERNATIVE
9. HOVERING ALTERNATIVE
10. HOVERING ALTERNATIVE

INSET: UPTON DRIFT

CONTRACTOR

SWECO

GallifordTry

highways england

PROJECT TITLE
A47 WANSFORD TO SUTTON DULLING

PCF STAGE 4

LOCATION PLAN
REGULATION 52(a)

SUBMITTAL
SUITABLE FOR INFORMATION

PROJECT DATE
A1 AS SHOWN

STATUS
S2

REVISION
P02

PROJECT NUMBER
HE551494-GTY-HGN-000-DR-CH-38001

2. Legislation and planning policy

2.1. Legislation

2.1.1. Legislation that has a direct impact on the protection of GCN includes:

- Conservation of Habitats and Species Regulations 2017 (as amended)
- Wildlife and Countryside Act 1981 (as amended)

Conservation of Habitats and Species Regulations 2017 (as amended)

2.1.2. GCN are afforded protection under Part 3 Regulation 43 the Conservation of Habitats and Species Regulations 2017 (as amended), which applies to all of its life stages, which makes it an offence to:

- deliberately, kill, injure, take GCN
- deliberately, take or destroy GCN eggs
- deliberately damage or destroy a breeding site or resting place of GCN
- possess or control any live or dead specimen or anything derived from a GCN
- transport, sell, exchange or offer to sell or exchange any live or dead specimen or anything derived from GCN.
- deliberately disturb a GCN

2.1.3. Anyone convicted of an offence under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended) may face up to a six month imprisonment if summarily convicted, and / or an unlimited fine.

Wildlife and Countryside Act 1981

2.1.4. GCN are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to:

- intentionally kill, injure or take a GCN
- possess or control any live or dead specimen or anything derived from GCN
- intentional (or reckless) damage, destruction or disturbance of any structure or place used for shelter or protection
- intentional (or reckless) disturbance of occupied structure
- sell or offer to sell GCN or anything derived from GCN

2.1.5. Anyone convicted of an offence under Section 9(1) of the Wildlife and Countryside Act 1981 (as amended), for any of the above offences to GCN may

face up to a six month imprisonment if summarily convicted, and / or a fine not exceeding level 5 on the standard scale (i.e. £5,000).

Licensing

- 2.1.6. Without appropriate mitigation, development of areas where GCN are known to be present could result in the killing, injuring or disturbance of individuals contravening relevant wildlife legislation (detailed above). A European protected species mitigation (EPSM) licence (which could be in the form of a District Level Licence (DLL)) is likely to be required from Natural England to allow the scheme to proceed lawfully.

2.2. Planning policy

National Planning Policy Framework 2021

- 2.2.1. The National Planning Policy Framework 2021 (Ministry of Housing, Communities and Local Government, 2021) outlines how planning policies should be applied at the local authority level. Paragraphs 174, 175, 179, 180, 181, and 182 emphasise the need to conserve and enhance existing biodiversity and valuable habitats including designated sites, while preventing development that would cause significant adverse impacts to biodiversity and habitats.

National Policy Statement for National Networks 2014

- 2.2.2. The National Policy Statement for National Networks (Department for Transport, 2014) states “development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also wish to make use of biodiversity offsetting in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.”

3. Ecological background

3.1. Previous surveys

- 3.1.1. Detailed GCN surveys were undertaken by Amey in 2017 at PCF Stage 1. GCN HSI assessments were undertaken on 29 waterbodies within the 500m survey area for GCN, the results of which identified 15 ponds that required further survey work (Amey, 2017). The HSI scores of the 15 ponds recommended for further survey work included: three ponds below average, five ponds average, six ponds good and one pond excellent.
- 3.1.2. An environmental DNA (eDNA) survey was undertaken on these 15 ponds at PCF Stage 1 in 2016; the results for all 15 ponds were negative for GCN eDNA (Highways England, 2018).
- 3.1.3. Further surveys undertaken by Sweco in 2019 were reported in the GCN Survey Report (HE551494-GTY-EBD-000-RP-LB-30013) prepared for DCO Environmental Statement (application reference TR010039/APP/6.1, dated 2020). GCN were found to be absent during these surveys, however a number of ponds could not be surveyed (as detailed in Section 3.1 above).

4. Survey methodology

- 4.1.1. In May 2022, Thomson Environmental Consultants undertook an GCN (*Triturus cristatus*) habitat suitability index (HSI) and environmental DNA (eDNA) survey to assess the suitability of 20 waterbodies for GCN. The scope of 20 waterbodies comprised those previously identified as dry, were inaccessible due to lack of access permission, or were not surveyed as a result of health and safety restrictions due to the Covid-19 pandemic.
- 4.1.2. The previous surveys (see Section 3.1) covered a wider survey area prior to the DCO boundary becoming more defined as the design process progressed to PCF Stage 5. As such, some features that were previously within the survey buffer may now be outside of it; where possible these features were maintained within the survey scope, for consistency.

4.2. Habitat Suitability Index

- 4.2.1. These surveys are to assess the suitability of habitats for and to confirm the presence or likely absence of the species within 500m of the A47 Wansford to Sutton Dualling DCO (PCF Stage 5), hereafter referred to as the 'survey area'. The 20 waterbodies that were scoped in were subject to an HSI survey based on methods described by Oldham *et al.* (2000).
- 4.2.2. The surveyor recorded suitability indices (SI) for ten habitat parameters. The SI results enable an HSI score to be calculated. This score gives a quantitative assessment of each waterbody for its suitability to support GCN. The indices used are set out below:
- location (in Britain) – this accommodates the large-scale habitat features which affect GCN
 - waterbody area (m²) - GCN tend not to occur in small water bodies or large water bodies and more typically occur in fair-sized water bodies, usually greater than 100m², less than 300m² and over 0.5m deep
 - desiccation rate - (years out of ten that water body dries) GCN have to spend a large proportion of the year in water and therefore tend to occur in water bodies that are permanent and present all year round (although occasional drying may be of benefit as it kills fish populations)
 - water quality - (subjective assessment) GCN tend to occur in nutrient rich waters and the larvae need well aerated water with a number of invertebrates
 - percentage shade - GCN tend to occur in largely un-shaded water bodies
 - number of waterfowl - large numbers of waterfowl can damage the habitat and cause excessive nutrient enrichment

- fish population - (subjective assessment) GCN are vulnerable to fish predation and therefore they tend to avoid water bodies that contain fish
- number of waterbodies within 1km - GCN population persistence depends in part upon the distance separating breeding sites
- terrestrial habitat quality - GCN require more than 0.5ha of suitable and accessible terrestrial habitat for a viable population. The primary requirements for GCN terrestrial habitats are: refuge habitat for shelter and over-wintering; foraging opportunities; and connectivity to aid dispersal
- percentage macrophyte cover - GCN require aquatic vegetation for egg-laying and tend to occur in water bodies with a fair amount of aquatic vegetation

4.2.3. The SI scores (expressed as values between 0 and 1) are used to calculate the HSI of each waterbody and are determined as a geometric mean using the following equation: $HSI = (SI1 * SI2 * SI3 * SI4 * SI5 * SI6 * SI7 * SI8 * SI9 * SI10)^{1/10}$. The result of this calculation is a single number between 0 and 1. A score of 0 represents a waterbody considered to be unsuitable for GCN, a score of 1 would represent ideal habitat for GCN.

4.2.4. A suitability category was assigned the pond based on the HSI score as shown in Table 4-1:

Table 4-1: Habitat Suitability Index categories

HSI score	Suitability category
> 0.80	Excellent
0.70 – 0.79	Good
0.60 – 0.69	Average
0.50 – 0.59	Below Average
< 0.50	Poor

4.2.5. HSI scores are required to enable completion of a Natural England Licence Mitigation Method Statement should GCN be present on a site and mitigation is required. However, the HSI score is not a reliable indicator of GCN presence or absence (Sellar, 2010). Therefore, a waterbody would not be screened out of further survey based on HSI score alone.

4.3. Environmental DNA survey

4.3.1. The surveys were led by an assistant ecologist (BA MA (Oxon.) QCIEEM) who holds a Natural England level 1 class licence to survey for GCN (2022-10149-CL08-GCN), and assisted by an assistant ecologist (BSc, MSc).

- 4.3.2. Following an HSI survey, the 20 waterbodies were subject to a presence / absence survey using the eDNA technique.
- 4.3.3. Environmental DNA is DNA that is collected from the environment in which an organism lives. In aquatic environments, animals shed cellular material into the water via their saliva, urine, faeces, and skin cells. This material contains DNA which may persist for several weeks and can be collected through a water sample. The sample can then be analysed to determine the presence or absence of certain species, such as GCN, in the waterbody. It is a more effective technique for detecting the presence of GCN than conventional techniques, however, it cannot yet be used to estimate population size.
- 4.3.4. An eDNA kit was used to collect water from the pond/s at the same time as the HSI assessment was undertaken.
- 4.3.5. Before collecting water samples, the surveyor/s identified 20 eDNA sample collection points. These were spread out as evenly as possible around the edge of the waterbody, without giving cause for the surveyor to enter the water. Samples were then taken from the water in strict accordance with the published technical advice note (Biggs *et al.*, 2014) and by suitably trained and experienced licensed GCN surveyors.
- 4.3.6. Samples were then sent to a suitably equipped laboratory for analysis to determine if GCN eDNA was present.
- 4.3.7. The HSI assessment was conducted between 9 and 10 May 2022. eDNA sampling was undertaken on 11 May 2022, with samples kept in a cooler box overnight and sent for analysis on 12 May 2022.

4.4. Limitations

- 4.4.1. Access could not be obtained to three waterbodies (P20, P22 and P22a), and as such these ponds could not be surveyed. This is not deemed to be a significant limitation on the survey, due to the waterbodies' distance from site (>500m) and in the context of the lack of GCN presence elsewhere across the survey area.

5. Results

5.1.1. The results of the surveys are mapped in the figure in Appendix A.

5.2. Habitat suitability assessment

- 5.2.1. Of the 20 waterbodies where HSI surveys were scoped in, a total of 17 were undertaken. The remaining three (P20, P22 and P22a) were inaccessible, therefore no HSI was conducted (see Section 4.4).
- 5.2.2. The 17 remaining waterbodies were visited by surveyors on the 9 and 10 May 2022. Fourteen of these ponds were de-scoped from further survey as they were found to be dry during the peak GCN breeding season and therefore unsuitable for breeding.
- 5.2.3. HSI surveys were undertaken at a total of three waterbodies (P14, P16 and P21b). The results of the HSI's are presented below in Table 5-1, see Appendix B for full HSI results.

Table 5-1: Summary of HSI Scores

Waterbody	HSI Score	Suitability Category
'P14'	0.800269	Excellent
'P16'	0.631587	Average
'P21b'	0.595533	Below Average

5.3. Environmental DNA survey

- 5.3.1. Three waterbodies with standing water (P14, P16 and P21b) were surveyed and analysed for the presence of GCN eDNA. The results of the analysis were returned to Thomson Environmental Consultants on 24 May 2022.
- 5.3.2. The water sampled from the three waterbodies tested negative for GCN eDNA. The full results of the eDNA survey are provided in the Table 5-2 below:

Table 5-2: Environmental DNA results

Kit ID	Pond ID	Sampled	Arrived	Inhibition	Degradation	GCN Score
GCN-22-00582	'P14'	12-May-2022	13-May-2022	Pass	Pass	(00) Negative
GCN-22-00583	'P16'	12-May-2022	13-May-2022	Pass	Pass	(00) Negative
GCN-22-00572	'P21b'	12-May-2022	13-May-2022	Pass	Pass	(00) Negative

6. Conclusions

- 6.1.1. No presence of GCN was found during the update 2022 surveys. A large majority of ponds that were scoped out due to being dry or inaccessible in previous surveys were found to be dry again during these surveys, indicating regular unsuitability for GCN.
- 6.1.2. Therefore, in view of the negative survey results in both 2022 and in previous years, GCN are deemed to be absent from the survey area.
- 6.1.3. The site is likely absent from GCN with a low risk of GCN migrating onto the site prior to or during works. Works should be carried out under precautionary working methods within GCN habitat as best practice. A method statement will be appended to the Landscape and Ecology Management Plan (LEMP) (HE551494-GTY-ELS-000-RP-LX-50001). The LEMP will form part of the Environmental Management Plan (EMP) (second iteration) at Annex B.5.
- 6.1.4. If GCN are found during works on site, works should cease to allow for further surveys in order to inform a licence application, which would be required to continue works.

7. References

Amey (2017). Road Investment Strategy. East Area 6. Protected Species Survey Report. (Stage 2 EAR: Appendix 9.2 – A47 Wansford to Sutton PSSR).

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

Highways England (2018). A47 Wansford to Sutton Preliminary Environmental Information Report. PCF Stage 3. HE551494-MMSJV-EGN-000-RP-LX-003.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10(4), 143-155.

8. Appendices

Appendix A. GCN survey results



LEGEND

eDNA Survey Result

+

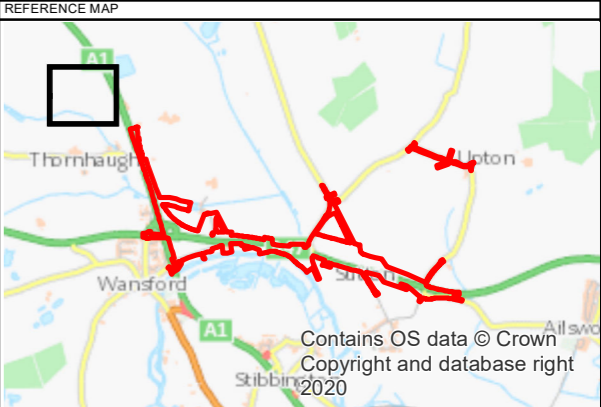
Negative

HSI Category (Pond Suitability)

Below Average

Waterbody Dry

DCO Boundary



P01	06/12/2022	FIRST EDITION	MA	AS	MV
REV	DATE	REVISION NOTE	DRG	CHKD	APPD

DESIGNER

SWECO

CONTRACTOR

GallifordTry

CLIENT

national highways

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PROJECT STAGE 5

DRAWING TITLE

GCN SURVEY RESULTS
(SHEET 1 OF 9)

SUITABILITY

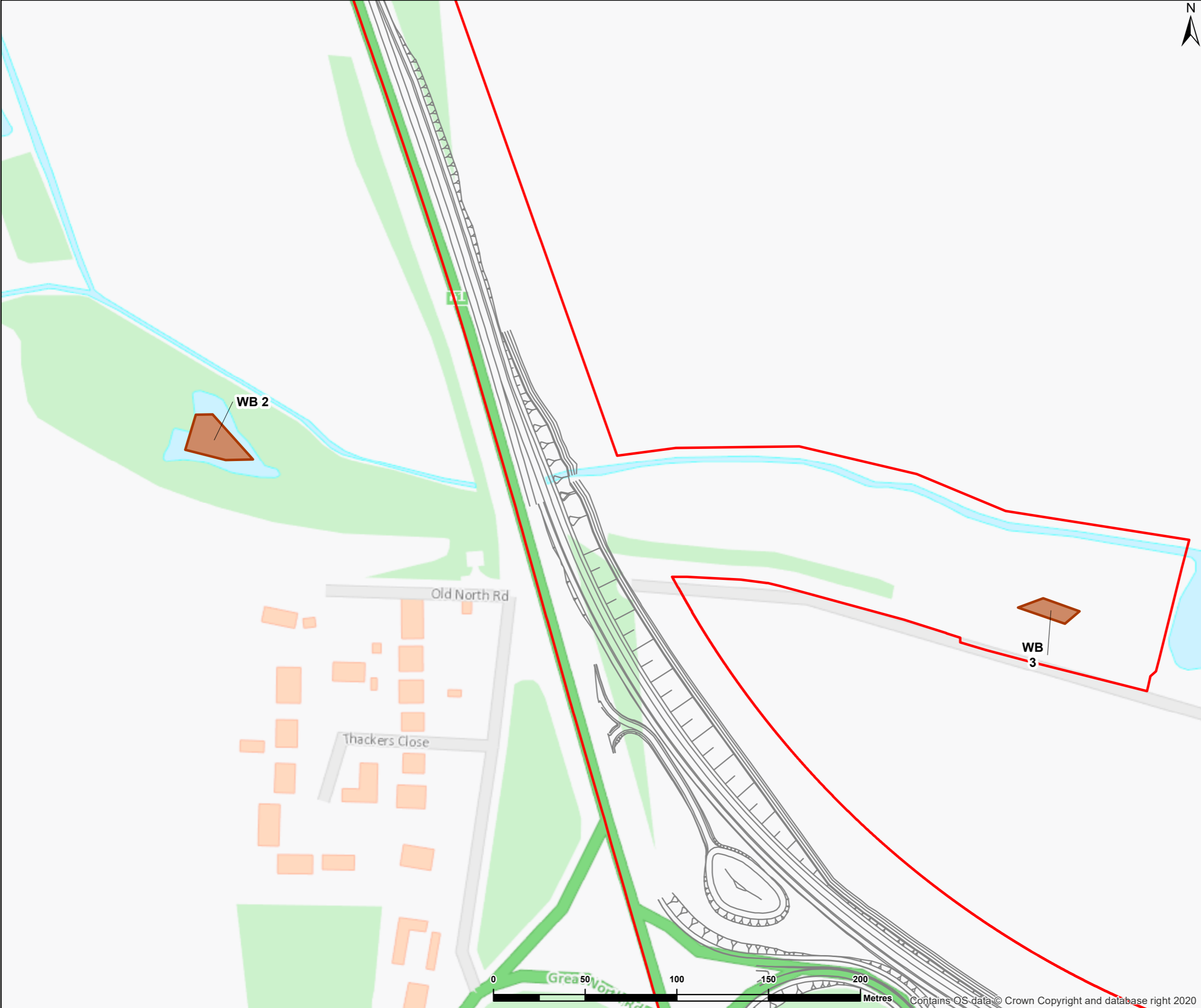
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N

LEGEND

HSI Category (Pond Suitability)

Waterbody Dry

DCO Boundary

REFERENCE MAP

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P01	06/12/2022	FIRST EDITION	MA	AS	MV
REV	DATE	REVISION NOTE	DRG	CHKD	APPD

DESIGNER

SWECO

CONTRACTOR

GallifordTry

CLIENT

national highways

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PROJECT STAGE 5

DRAWING TITLE

GCN SURVEY RESULTS
(SHEET 2 OF 9)

SUITABILITY

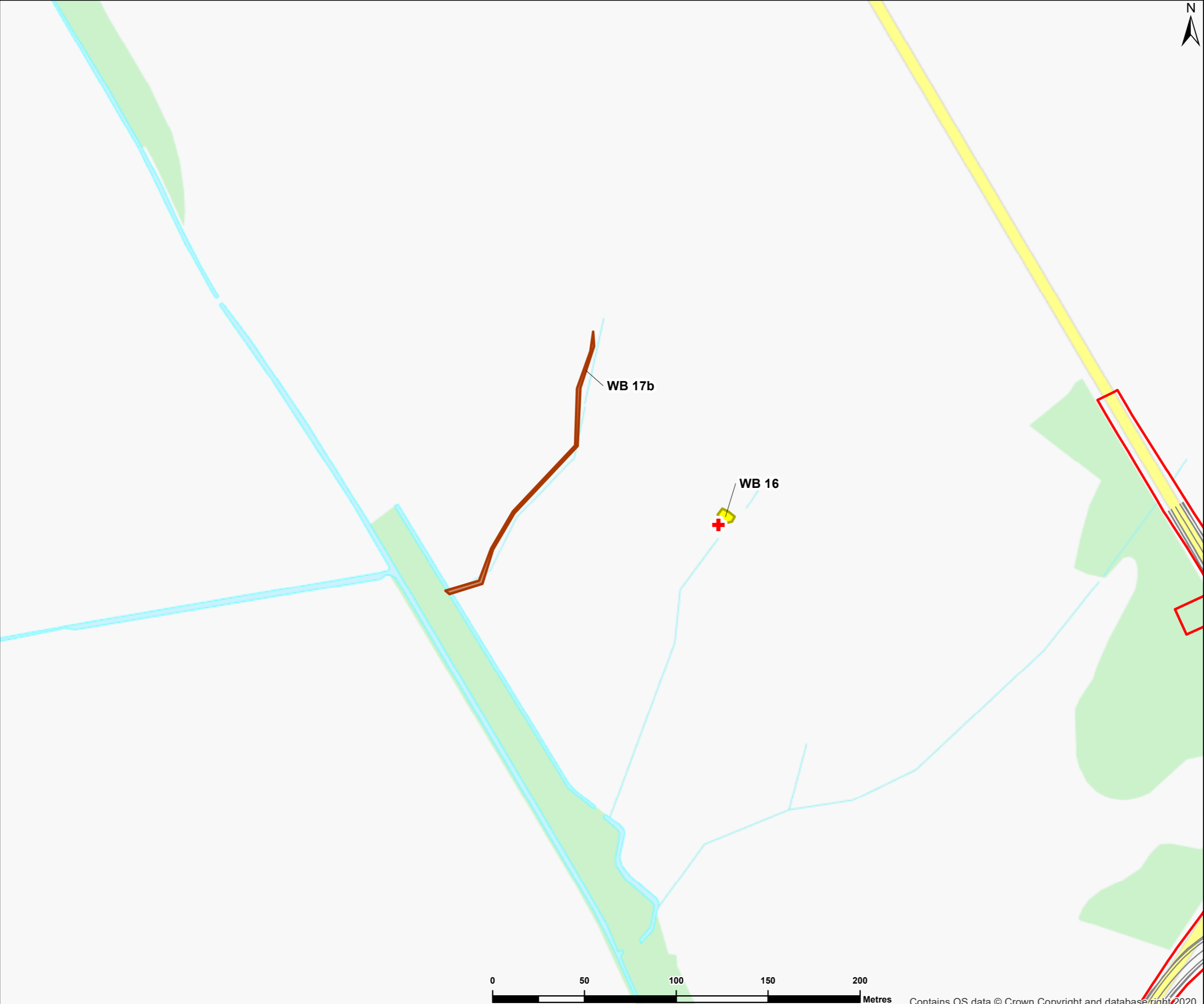
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N

eDNA Survey Result

Negative

HSI Category (Pond Suitability)

Average

Waterbody Dry

DCO Boundary

REFERENCE MAP

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P01	06/12/2022	FIRST EDITION	MA	AS	MV
REV	DATE	REVISION NOTE	ORG	CHKD	APPD

DESIGNER

SWECO

CONTRACTOR

GallifordTry

CLIENT

national highways

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PROJECT STAGE 5

DRAWING TITLE

GCN SURVEY RESULTS
(SHEET 4 OF 9)

SUITABILITY

FOR REVIEW AND COMMENT

SHEET SIZE	A3	SCALE	1:2,000	STATUS	S3
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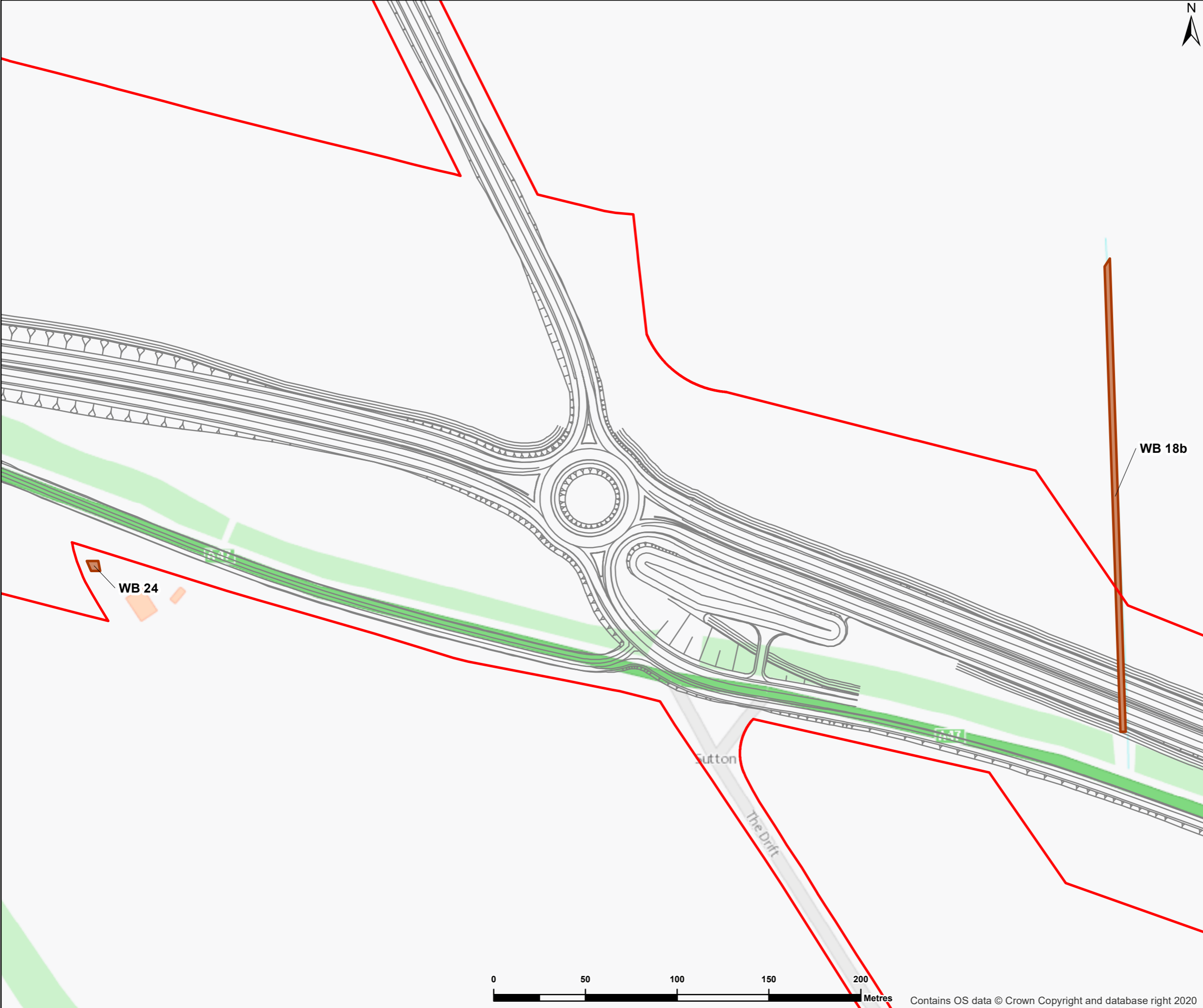
150

200

Metres

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N

LEGEND

HSI Category (Pond Suitability)

Waterbody Dry

DCO Boundary

REFERENCE MAP

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P01	06/12/2022	FIRST EDITION	MA	AS	MV
REV	DATE	REVISION NOTE	DRG	CHKD	APPD

DESIGNER

SWECO

CONTRACTOR

GallifordTry

CLIENT

national highways

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PROJECT STAGE 5

DRAWING TITLE

GCN SURVEY RESULTS
(SHEET 5 OF 9)

SUITABILITY

FOR REVIEW AND COMMENT

SHEET SIZE	A3	SCALE	1:2,000	STATUS	S3
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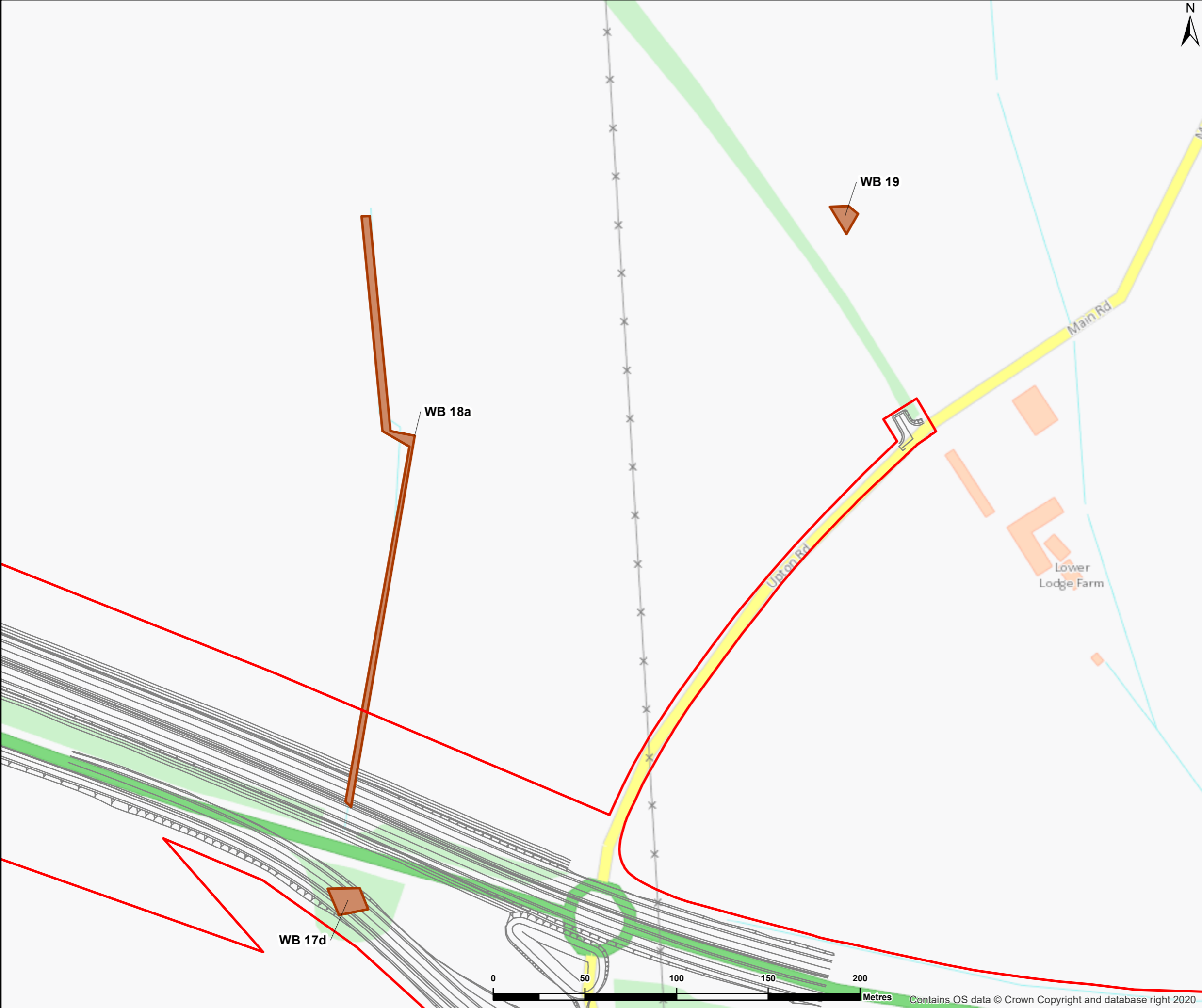
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N

LEGEND

HSI Category (Pond Suitability)

Waterbody Dry

DCO Boundary

REFERENCE MAP

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P01	06/12/2022	FIRST EDITION	MA	AS	MV
REV	DATE	REVISION NOTE	ORG	CHKD	APPD

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A47 WANSFORD TO SUTTON

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PROJECT STAGE 5

DRAWING TITLE

GCN SURVEY RESULTS
(SHEET 6 OF 9)

SUITABILITY

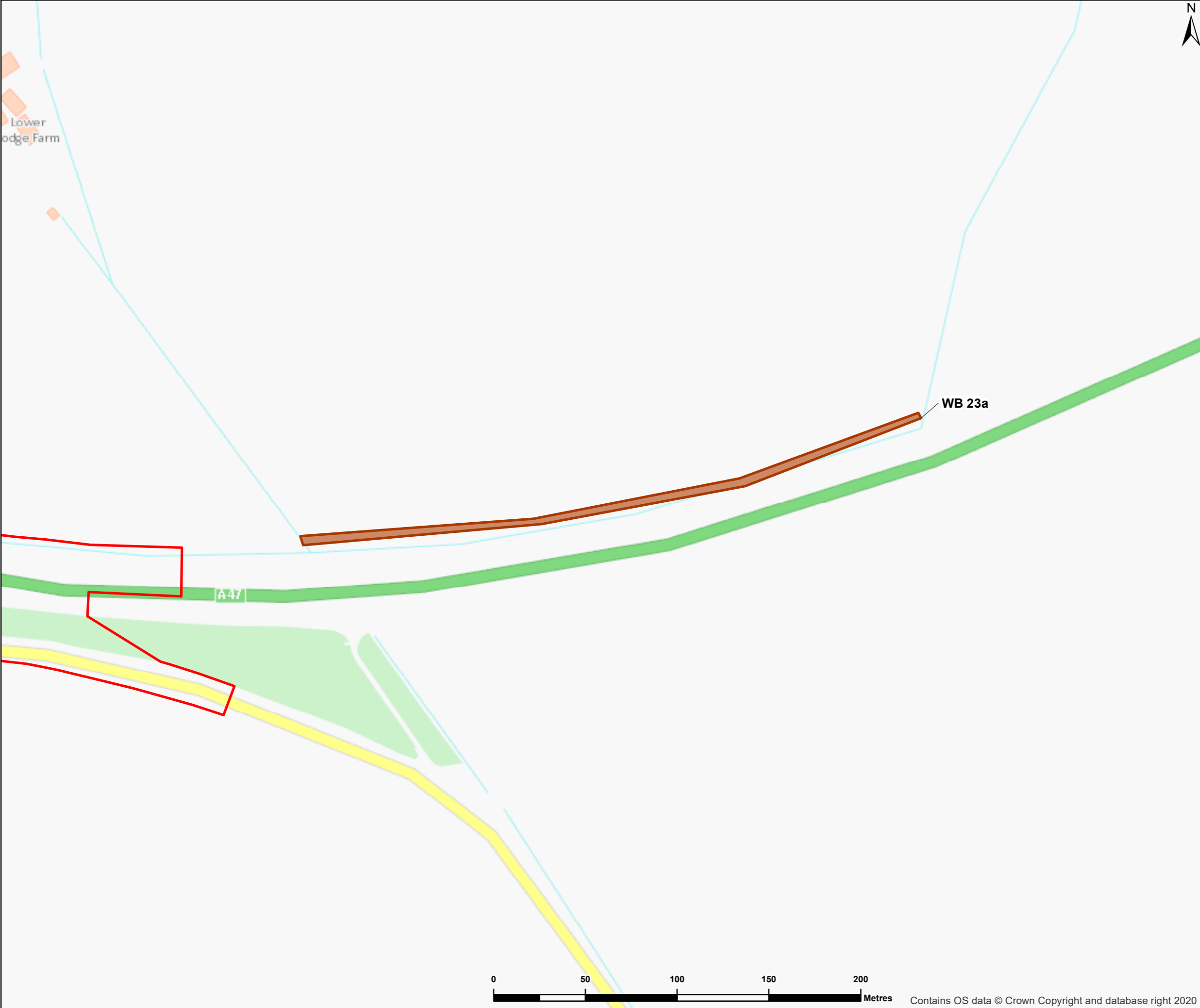
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N

LEGEND

HSI Category (Pond Suitability)

Waterbody Dry

DCO Boundary

REFERENCE MAP

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P01	06/12/2022	FIRST EDITION	MA	AS	MV
REV	DATE	REVISION NOTE	DRG	CHKD	APPD

DESIGNER

SWECO

CONTRACTOR

GallifordTry

CLIENT

national highways

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PROJECT STAGE 5

DRAWING TITLE

GCN SURVEY RESULTS
(SHEET 7 OF 9)

SUITABILITY

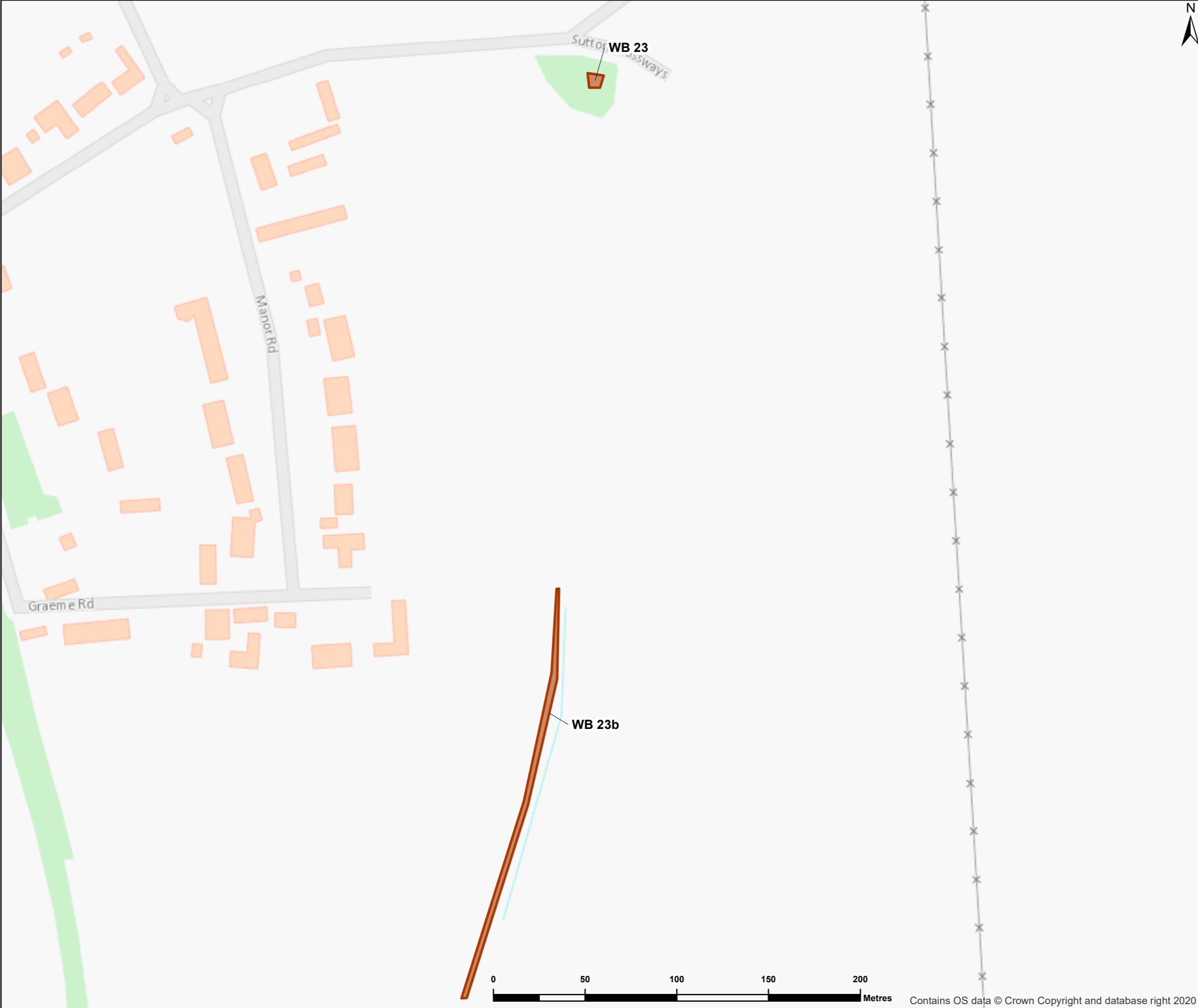
FOR REVIEW AND COMMENT

SHEET SIZE	A3	SCALE	1:2,000	STATUS	S3
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N

HSI Category (Pond Suitability)

Waterbody Dry

DCO Boundary

REFERENCE MAP

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P01	06/12/2022	FIRST EDITION	MA	AS	MV
REV	DATE	REVISION NOTE	ORG	CHKD	APPD

DESIGNER

SWECO

CONTRACTOR

GallifordTry

CLIENT

national highways

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PROJECT STAGE 5

DRAWING TITLE

GCN SURVEY RESULTS
(SHEET 8 OF 9)

SUITABILITY

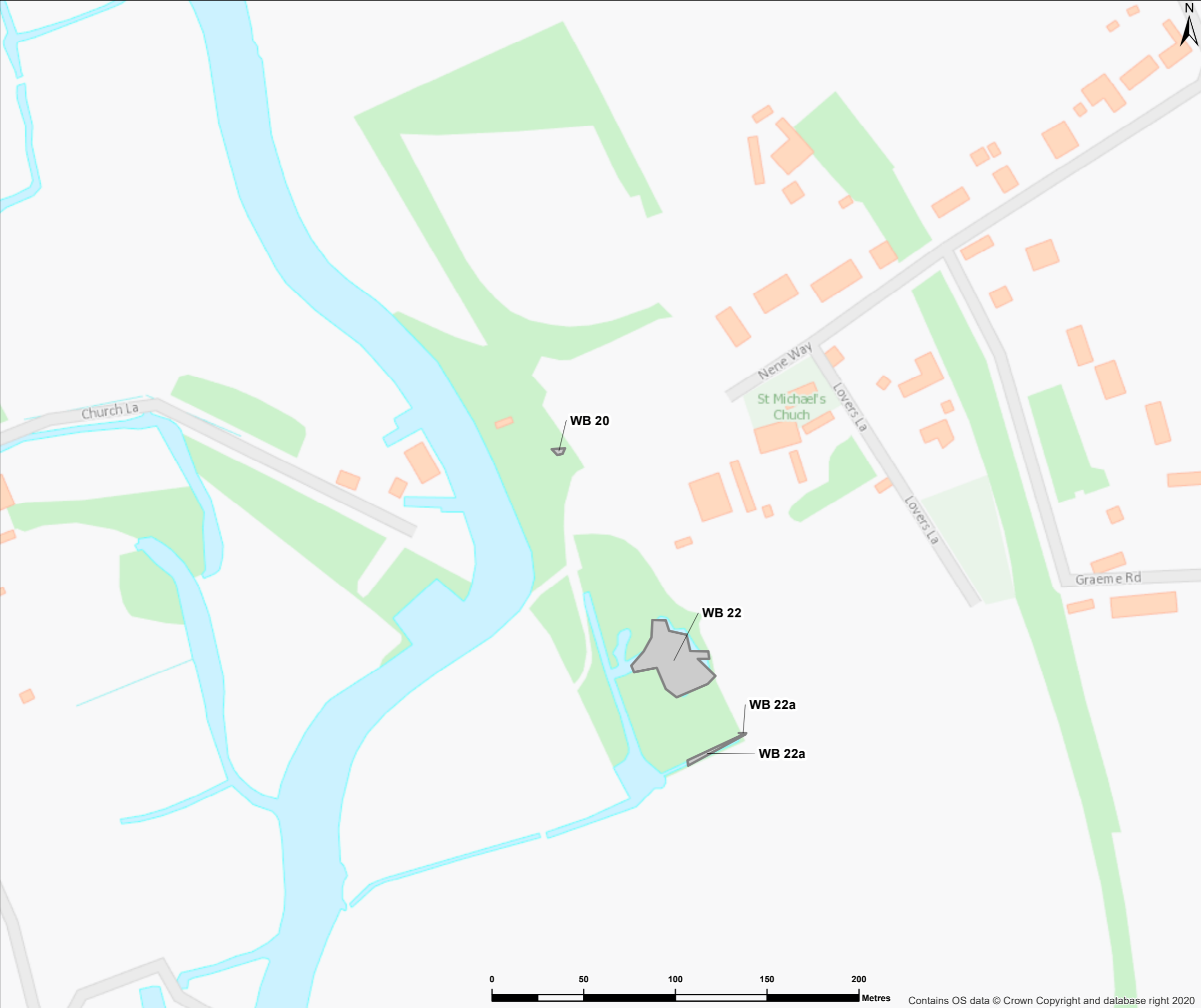
FOR REVIEW AND COMMENT

SHEET SIZE	A3	SCALE	1:2,000	STATUS	S3
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DRAWING NUMBER

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LEGEND

HSI Category (Pond Suitability)

No Access

DCO Boundary

REFERENCE MAP

P01	06/12/2022	FIRST EDITION	MA	AS	MV
REV	DATE	REVISION NOTE	DRG	CHKD	APPD

DESIGNER

CONTRACTOR

CLIENT

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PROJECT STAGE 5

DRAWING TITLE

GCN SURVEY RESULTS
(SHEET 9 OF 9)

SUITABILITY

FOR REVIEW AND COMMENT

SHEET SIZE	A3	SCALE	1:2,000	STATUS	S3
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Appendix B. HSI full results

Waterbody	'P14'	'P16'	'P21b'
Location	1.00	1.00	1.00
Pond area	1.00	0.50	0.50
Pond drying	1.00	1.00	0.50
Water quality	0.67	0.67	0.67
Shade	0.60	1.00	1.00
Waterfowl	0.67	1.00	1.00
Fish	1.00	1.00	1.00
Pond density	1.00	1.00	1.00
Terrestrial habitat	1.00	0.67	0.67
Macrophytes	0.40	0.90	0.50
HSI score	0.80	0.63	0.60