highways england

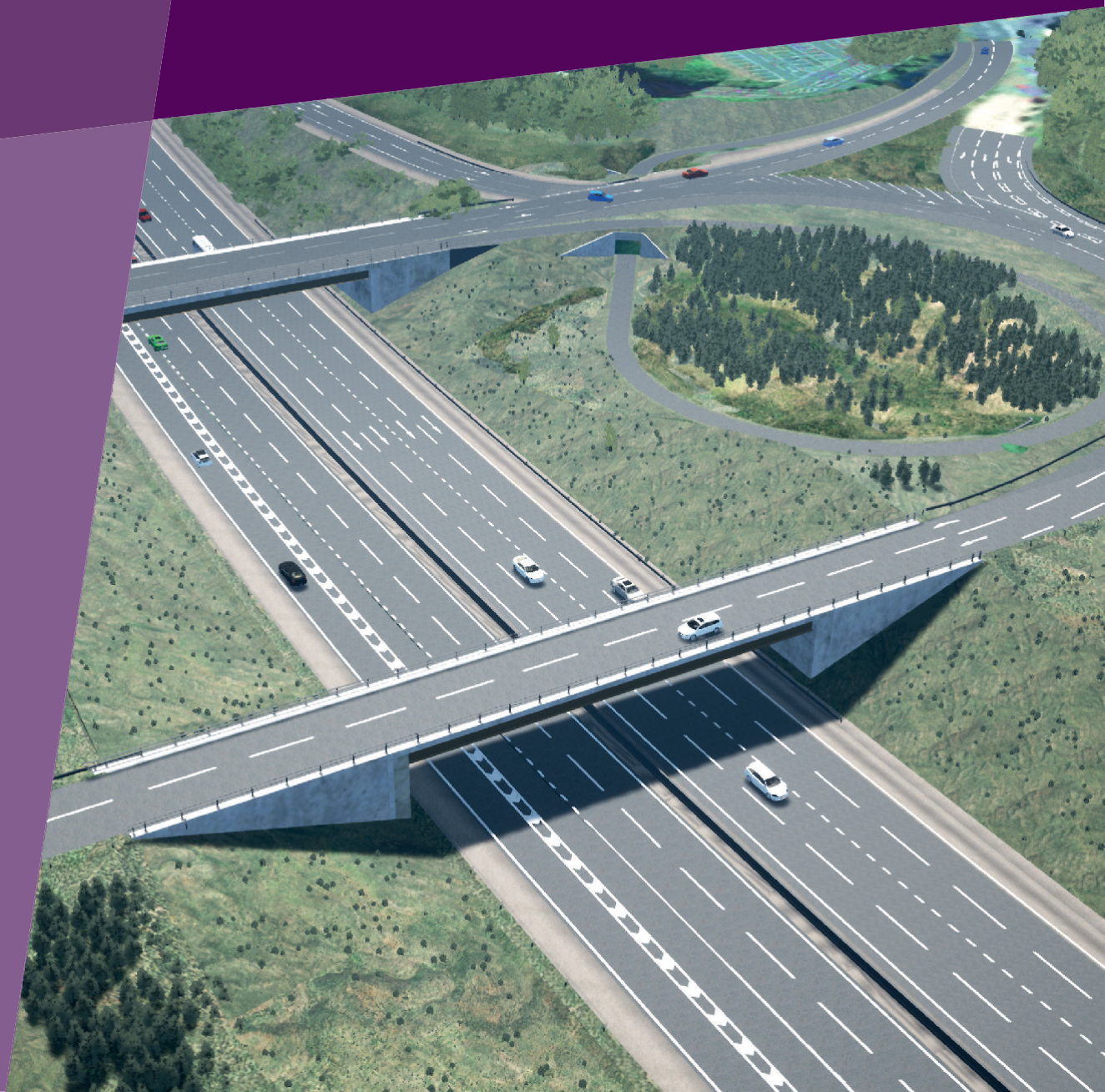
M3

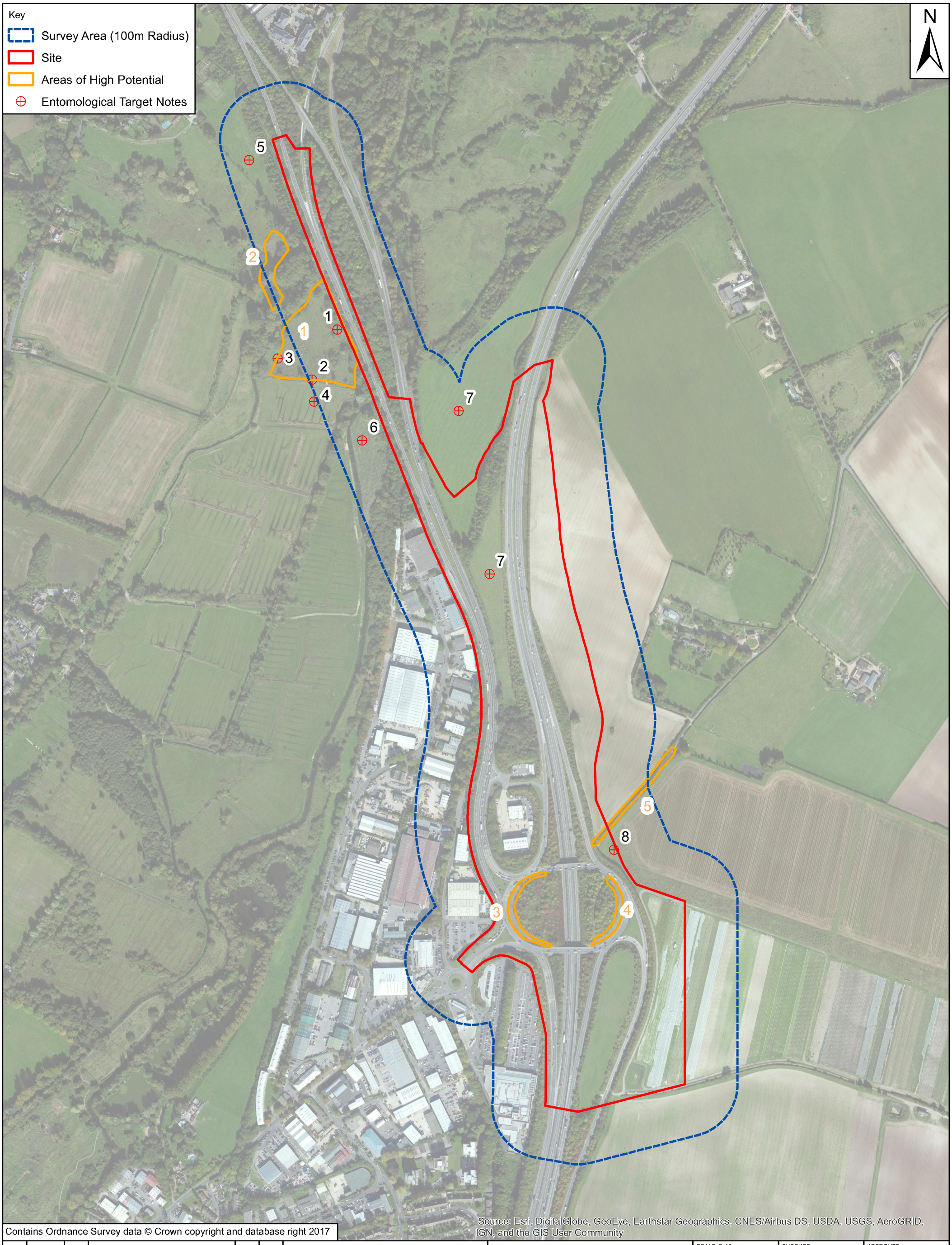
junction 9 improvement scheme

Preliminary Environmental Information Report

Appendix 8.2 – Baseline Reports (Part 4 of 5)

May 2021





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TITLE: Entomological Survey Results

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FILE: A3 Template	DRAWN: BW	DATE: August 2017
PROJECT No: 70016638	DRAWING No: 1	REV: A

M3 Junction 9 Improvements

Habitat Verification And Orchid Survey

HE551511-JAC-EGN-0_00_00-RP-LE-0028 | P01
07/08/20

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Contents

1. Introduction

1.1 Proposed Scheme

M3 Junction 9 is a key transport interchange which connects South Hampshire and the wider sub-region, with London via the M3 and the Midlands/North via the A34. A significant volume of traffic currently uses the grade separated, partially signalised gyratory (approximately 6,000 vehicles per hour during the peak periods) which acts as a bottleneck on the local highway network and causes significant delay throughout the day. Northbound and southbound movements between the M3 and A34 are particularly intensive, with downstream queues on the northbound off-slip of the M3 often resulting in safety concerns during peak periods.

On 22nd August 2019, post Project Control Framework (PCF) Stage 3 consultation, the M3 Junction 9 Improvements scheme ('the Proposed Scheme') entered a design review period following concerns of risks significant enough to likely impact a successful outcome of a Development Consent Order (DCO) application. The key issues impacting the Proposed Scheme are local stakeholder safety perception concerns, traffic capacity, operational safety and the DCO process.

An integrated design workshop was held on 22nd October 2019 to discuss alternative design solutions for four keys areas, aimed at removing or reducing these risks and issues. The workshop identified various potential design solutions in each of the four key areas which require further investigation to determine:

- whether there is a permutation of those solutions that leads to a viable option which addresses the risks; and
- what is an adequate and acceptable permutation that leads to a successful DCO application, and also meets project objectives in relation to budget and programme as best as possible?

The recommendation for the Proposed Scheme to proceed with PCF Stage 3 preliminary design in two further phases are detailed below and were endorsed at a Highways England Major Projects Investment Decision Committee on 16 December 2019.

Highways England commissioned Jacobs in February 2020 to undertake Stage 3A, which involves an assessment of the potential design solutions and a review of the viability of the design solutions, taking cognisance of the key issues identified during PCF Stage 3.

On the basis of the Stage 3A solutions assessment process, the outcome was that Solution 2 was the best performing solution overall and recommended that it be taken forward as the preferred solution for the Proposed Scheme.

A plan of the Red Line Boundary (RLB) of the Proposed Scheme is provided in Figure 1.

1.2 Background

A habitat survey of the Proposed Scheme was undertaken in 2017 (Highways England, 2018) following the Phase 1 habitats survey methodology (JNCC, 2010). A detailed botanical survey of selected areas was also undertaken (Highways England, 2017). Due to the intervening time, changes in the extent of the Proposed Scheme and updates to habitat survey methodology, a habitat verification survey was commissioned and undertaken in June 2020. Following consultation with local stakeholders, a survey for orchid species was also commissioned and undertaken in parallel with the habitat survey.

1.3 Purpose of this report and survey objectives

The purpose of this report is to present the results of the habitat verification and orchid survey undertaken for the Proposed Scheme.

The objectives of the habitat verification survey were to:

- update habitat information within and around the RLB up to a distance of 250m;
- survey areas not previously surveyed due to land access restrictions or changes in the extent of the Proposed Scheme;
- follow the methodology of the UK Habitat Classification (UK Habitat Classification Working Group, 2018), in order that the results can be used for future calculations using the Defra Biodiversity Metric 2.0 (Defra, 2019);
- identify any priority habitats present (i.e. those listed as habitats of principal importance in England); and
- make a comparison of the survey results gathered in 2017 in order to validate the subsequent protected and notable species-specific surveys undertaken in 2017-2019.

The objective of the orchid survey was to map populations of orchid species within and around the RLB.

During the survey, where additional notable plant species were identified, these were also recorded and are included in this report.

2. Methodology

2.1 Survey timing

The survey was carried out on the 15th, 16th and 18th of June 2020 and was led by Senior Ecologist David Morris.

2.2 Survey area

The survey area comprised land within approximately 250m of the RLB, shown in Figure 1. This area included parts of units 56-64, 107, 123 and 124 of River Itchen Site of Special Scientific Interest (SSSI). Residential and other heavily developed land within this area was not surveyed.

The survey area included a previously unsurveyed area around a proposed construction compound to the north of M3 J9.

The central reservations and verges of the A34 and M3 were not accessed for safety reasons. Where available, these were viewed from bridges and other vantage points using binoculars (shown in Figure 1).

2.3 Habitat survey

The survey identified and mapped the habitats within the survey area following the methodology of the UK Habitat Classification (UKHab; UK Habitat Classification Working Group, 2018). Detailed methods are described below.

Prior to the survey, Google Earth satellite imagery and results of previous habitat survey (Highways England, 2018) were reviewed to identify an appropriate spatial resolution for habitat mapping, i.e. a minimum mappable unit (MMU) and other rules for mapping point, line and polygon habitat features. Based on this, two mapping scales were adopted:

- a fine scale for the heavily developed M3 J9 roundabout and road verges within the RLB, using the detailed mapping rules recommended as part of the UKHab methodology, i.e. an MMU of approximately 25m^2 and 1m maximum width for linear features; and
- a coarser scale for the wider landscape outside the RLB, using the standard mapping rules recommended as part of the UKHab methodology, i.e. an MMU of approximately 400m^2 and 5m maximum width for linear features.

Field survey maps were prepared in QGIS (QGIS Development Team, 2020) and printed for field use. Maps comprised Google satellite imagery covering the survey area printed on A4 sheets at a scale of 1:5,000, overlain with the RLB and an OS grid overlays comprising a 100m major grid and 10m minor grid.

Habitat mapping was undertaken in the field by annotating the field survey maps and using a Garmin eTrex® 10 handheld Global Positioning System (GPS) unit to locate position. Habitat features were classified using the Professional edition of UKHab and, where applicable, were identified to Level 5 of the Primary Hierarchy. The following secondary habitat code groups were recorded: Habitat Mosaic; Origin; Management; Land Use; and Green Infrastructure.

Additional information about recorded habitat features was collected in the form of target notes and photographs. Target notes recorded information on habitat structure and management, and vegetation composition. Nomenclature for vascular plants follows Stace (2010) throughout this report.

Habitat mapping produced in the field was digitised in ArcGIS for Desktop (ESRI, 2018), with data stored in a geodatabase with point, polyline and polygon feature classes representing target notes and habitat features of the relevant geometries. The field maps were georectified and habitat features digitized using the OS MasterMap Topography® vector dataset as base map.

2.4 Orchid survey

All populations of any orchid species encountered during the survey were recorded. For each population the following information was recorded:

- species;
- number of stems (flowering or not); and
- ten figure grid reference of population location.

On the roundabout of M3 J9, some locations recorded comprised individuals spread over many square metres; for such populations, the recorded grid reference is the approximate central point for the whole population.

2.5 Notable plants

In addition to orchid species, any other plant species were recorded if listed on the red list of vascular plants for England (Stroh, *et al*., 2014) or species that were rare within the survey area and indicative of good quality habitat. Populations of such species were recorded as target notes, including information about population size and location.

2.6 Invasive non-native species

Invasive non-native plant species (INNS) were searched for during the survey. Species were considered to be INNS if:

- listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), or
- considered to be invasive non-native species, based on professional judgement and information from the Great Britain Non-native Species Secretariat (NNSS, 2020).

INNS identified during the survey were recorded as target notes, including information about population size and location.

2.7 Limitations

The following land within the survey area could not be accessed during the survey:

- access permission was not available to Winnall Moors, a nature reserve owned by Hampshire and Isle of Wight Wildlife Trust, extending along the River Itchen south from the A34 at Kings Worthy. Although access was granted later in July, by this time the area had been cut for hay; and
- the central reservations and verges of the A34 and M3 were not accessed for safety reasons but were viewed from bridges and other vantage points where available, shown in Figure 1.

A member of the public had informed the project that the orchid white helleborine (*Cephalanthera damasonium*) grew in the car park of the Tesco supermarket by J9, under a stand of beech (*Fagus sylvatica*) trees. Shortly before the survey, the area under the trees had been mown and was therefore not possible to fully survey orchids at this location.

3. Results

3.1 Habitat verification survey

The habitat verification survey found a diversity of habitats, including seven priority habitat types, and a range of non-priority habitats. A plan of habitats is provided in Figure 2. Target notes and photographs are detailed in Appendix A. Additional vantage point photographs are presented in Appendix B.

Priority and other habitat types are described separately below. Secondary UKHab codes recorded are summarised in table C.1 in Appendix C.

Differences between results of this survey and results of previous survey (Highways England, 2018) are discussed in Section 4.1.

3.1.1 Priority habitats

The eight priority habitat types recorded are described below. Most of the priority habitat types were restricted to the River Itchen SSSI. The following priority habitats are present within the RLB outside of the SSSI:

- hedgerows;
- lowland Calcareous Grassland; and
- lowland Mixed Deciduous Woodland.

3.1.1.1 Hedgerows

The survey area included two hedgerows (UKHab primary habitat type '*h2a Hedgerow (priority habitat)*'), comprising parallel hedgerows along Easton lane to the east of the M3, bounding arable fields. Both hedgerows were species rich, supporting a diversity of native woody and herbaceous plant species (see target note 11).

3.1.1.2 Lowland Calcareous Grassland

Calcareous grassland (UKHab primary habitat type '*g2a Lowland calcareous grassland*') was present on the thin Chalk soils on the east side of the M3 J9 roundabout, in parts of the roundabout on the west side, by the entrance to Tesco off Easton Lane, on the narrow verge of the A272 and to the north of the Easton Lane Highways England depot (target notes 8, 6, 2, 10 and 4, respectively). These stands of calcareous grassland were dominated by a range of calcicolous forbs, including greater knapweed (*Centaurea scabiosa*), wild basil (*Clinopodium vulgare*) and wild marjoram (*Origanum vulgare*), with abundant pyramidal orchid (*Anacamptis pyramidalis*) around the roundabout.

3.1.1.3 Lowland Fen

Stands of fen habitat (UKHab primary habitat type '*f2a Lowland fens*') were found in unmanaged areas along the River Itchen (target notes 27 and 28) and other low-lying parts of the SSSI. This habitat comprised of wetland tall herb vegetation, dominated by large grasses and sedges, such as common reed (*Phragmites australis*) and reed canary-grass (*Phalaris arundinacea*), with wetland forbs such as common comfrey (*Symphytum officinale*) and hemlock water-dropwort (*Oenanthe crocata*).

3.1.1.4 Lowland Meadows

Stands of species-rich neutral grassland (UKHab primary habitat 'g3a *Lowland hay meadows*') were present in unit 60 of the River Itchen SSSI (target notes 25 and 26). These meadows supported a range of neutral grassland and wetland species, including sedges such as carnation sedge (*Carex panicea*) and lesser pond-sedge (*C. acutiformis*), rushes such as blunt-flowered rush (*Juncus subnodulosus*), and forbs such as marsh thistle (*Cirsium palustre*), meadowsweet (*Filipendula ulmaria*), ragged robin (*Silene flos-cuculi*), southern marsh-orchid (*Dactylorhiza praetermissa*) and water avens (*Geum rivale*). The water meadows to the south were not accessed but likely support similar Lowland Meadows priority habitat.

3.1.1.5 Lowland Mixed Deciduous Woodland

Stands of Lowland Mixed Deciduous Woodland priority habitat (UKHab primary habitat type '*w1f7 Other Lowland mixed deciduous woodland*') were found along the River Itchen (target notes 13, 29). These were unusual in being dominated by hazel (*Corylus avellana*) coppice stools, with occasional trees.

3.1.1.6 Reedbeds

Where the River Itchen flows under the A34 to the north of Winnall Industrial Estate, was a large stand of common reed. This area was not directly accessed due to health and safety consideration but appeared, from its edges, to be a reedbed (UK Hab primary habitat type '*f2e Reedbeds*').

3.1.1.7 Rivers

The survey area included the floodplain of the River Itchen, including the main Itchen channel and numerous tributary channels, which are crossed by the A34 between Kings Worthy and Winnall. The vegetation of the river and tributaries was typical of Chalk streams, with very clear water and abundant aquatic vegetation, in the areas surveyed mostly comprised of fool's-watercress (*Apium nodiflorum*) and water starworts (*Callitriche* spp.), and marginal vegetation with tall wetland species such as greater tussock-sedge (*Carex paniculata*).

This type of Rivers priority habitat is referable to the Annex I habitat[1] '3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation' (UKHab primary habitat type '*r2a5 Rivers with floating vegetation (H3260)*') and is a qualifying feature of the River Itchen Special Area of Conservation (SAC).

3.1.1.8 Wet Woodland

Wet Woodland priority habitat was present along the River Itchen, north and south of the A34, in units 56, 57 and 63 (target notes 14, 21 and 29). Dominated by canopy of alder (*Alnus glutinosa*) and willows (*Salix* spp.), this habitat is referable to the Annex I habitat '91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)' (UKHab primary habitat '*w1d5 Alder woodland on floodplains (H91E0)*'). The large area of woodland within units 56 and 57 to the south-east of Kings Worthy also comprised this habitat.

[1] Habitats of European Community importance, listed on Annex I of Council Directive 92/43/EEC ('Habitats Directive')

3.1.2 Other habitats

A range of other habitats were recorded during the survey. These are described below.

3.1.2.1 Grassland

Most of the grassland within the survey area outside of the River Itchen SSSI and not referable to grassland priority habitat types comprised neutral grassland (UKHab primary habitat '*g3c Other neutral grassland'*), most often comprised of stands of vegetation dominated by false oat-grass (*Arrhenatherum elatius*) (UKHab primary habitat '*g3c5 Arrhenatherum neutral grassland'*). Species associated with this habitat varied largely with land use.

The meadows along the M3 were grass-dominated and species-poor (target notes 15 and 17). The coarse false oat-grass-dominated grassland around the M3 J9 roundabout, traffic islands and verges supported a diversity and abundance of associated forb species, including Chalk fragrant-orchid (*Gymnadenia conopsea*) and pyramidal orchid, with abundant scrub and tall ruderal herbs on the western side of the roundabout (target notes 5, 6, 7 and 9).

Most of the grassland on the verges and central reservations of the A34 and M3 could not be surveyed directly but were viewed from vantage points and appeared to comprise false oat-grass-dominated grassland similar to habitat around the roundabout, including stands with pyramidal orchid, and stands of tall ruderal vegetation (UKHab secondary code '*15 Tall herb*').

3.1.2.2 Scrub

Dense scrub habitat (UKHab primary habitat '*h3 Dense scrub*') was recorded along the A34 and M3, the J9 roundabout, and in the proposed construction compound to the north of the Proposed Scheme. Types of scrub were generally not determined to level 4 or further in the UKHab hierarchy, except for stands of more diverse mixed scrub (UKHab primary habitat '*h3h Mixed scrub*') around the J9 roundabout, which comprised a more diverse mix of woody species typical of Chalk soils, including dogwood (*Cornus sanguinea*), hawthorn (*Crataegus monogyna*), wayfaring tree (*Viburnum lantana*) and wild privet (*Ligustrum vulgare*), with flower-rich edges.

3.1.2.3 Woodland

Most of the woodland within the survey area comprised of broadleaved woodland that is not priority habitat (UKHab primary habitat '*w1g7 Other broadleaved woodland types*). This included stands of planted woodland (UKHab secondary code '*36 Plantation*') and semi-natural woodland of recent origin along the A34 and M3 (UKHab secondary code '*38 Secondary woodland*').

3.1.2.4 Cultivated land

Land under arable cultivation predominates to the east of the M3 (UKhab primary habitat '*c1c Cereal crops*').

3.2 Orchid survey

The locations and sizes of the populations of orchids recorded are shown in Figure 3. Seven species of orchid were recorded during the survey, listed with total numbers recorded in Table 3.1.

Table 3.1 Orchid species and numbers recorded

Common name	Scientific name	Total number recorded
Bee orchid	*Ophrys apifera*	30
Broad-leaved helleborine	*Epipactis helleborine*	13
Chalk fragrant-orchid	*Gymnadenia conopsea*	3
Pyramidal orchid	*Anacamptis pyramidalis*	286
Southern marsh-orchid	*Dactylorhiza praetermissa*	11
Twayblade	*Neottia ovata*	2
White helleborine	*Cephalanthera damasonium*	33

Of the orchid species recorded, white helleborine is a species of principal importance for the conservation of biodiversity[2]. The other species have no legal or conservation status.

Bee orchid was recorded on the grass verge by the entrance to the Tesco supermarket off Easton Lane (target note 2), and from grassland in the proposed compound location in the north of the Proposed Scheme (target note 33). A total of 15 plants were recorded form each location.

Broad-leaved helleborine was recorded from the edge of an arable field to the south-east of J9, and in the grass verge to the north of the Highways England Easton Lane depot (target note 4). The former population comprised one small clump of 11 flowering stems, with two stems at the second location.

Chalk fragrant orchid was found growing on the roundabout of J9. Three stems were found in the grassland around the western side of the roundabout, growing adjacent to the footpath (target note 5).

Pyramidal orchid was the most frequently encountered and abundant orchid species. Most plants were recorded from around the roundabout of J9, with a total of 216 plants recorded in grassland all around the roundabout (e.g. target note 6) and along the cycle path through the eastern part of the junction (target note11). Smaller numbers of plants were recorded occasionally from grassland elsewhere, including in grassland in the central reservation and verges of the M3.

Southern marsh-orchid was recorded only from lowland meadows habitat in the River Itchen SSSI (target note 26). Hundreds of plants were encountered within the SSSI and as they were present in a designated site outside of the RLB, populations locations and sizes were not completely recorded.

Two plants of twayblade were recorded from the roundabout of J9, growing in scrub in an area cleared for ground investigations.

White helleborine was recorded from the stand of beech trees in the car park of the Tesco supermarket in Winnall, from the verge by the entrance to Tesco (target note 2) and from the verge to the north of the Highways England Easton Lane depot (target note 4). The largest population recorded was by the entrance to Tesco, where 28 plants were recorded. The

[2] Listed in accordance with Section 41 of the Natural Environment and Rural Communities Act 2006

population under the beech trees in the Tesco car park had been mown, although remains of this species were found, and one plant had not been mown.

3.3 Notable plants

The locations of notable plants are shown in Figure 4. Five species listed on the red list of vascular plants for England were recorded:

- dwarf spurge (*Euphorbia exigua*);
- field scabious (*Knautia arvensis*);
- sainfoin (*Onobrychis viciifolia*);
- stinking chamomile (*Anthemis cotula*); and
- wild strawberry (*Fragaria vesca*).

Dwarf spurge, sainfoin and stinking chamomile are listed as Vulnerable, and field scabious and wild strawberry are listed as Near Threatened.

Dwarf spurge and stinking chamomile were recorded from the edges of a large arable field to the north-east of M3 J9. There was a population of thousands of plants of the latter species in the southern corner of the field, around where a borehole had been installed (Photo 17; target note 19).

Approximately 15 plants of sainfoin were recorded in grassland in the corner of the field to the south of the above field.

Field scabious was recorded in several places, including the bank of the hedgerows along Easton Lane, on the east side of M3 J9 (Photo 12).

Wild strawberry was recorded from grassland on the west side of the roundabout of M3 J9.

In addition to the above red-listed plants, several species indicative of good quality calcareous grassland habitat were recorded locally from around the roundabout, including common broomrape (*Orobanche minor*), dwarf thistle (*Cirsium acaule*), hairy violet (*Viola hirta*), kidney vetch (*Anthyllis vulneraria*) and yellow-wort (*Blackstonia perfoliata*). Hairy violet was also recorded at the proposed compound location in the north of the Proposed Scheme, where imperforate St John's-wort (*Hypericum maculatum*) was also recorded. One plant of knapweed broomrape (*Orobanche elatior*) was also recorded from a chalk bank across the field gate at the southern end of Easton Lane, on the east side of M3 J9.

3.4 Invasive non-native species

The locations of INNS recorded are shown in Figure 4. Six INNS were recorded:

- giant bramble (*Rubus armeniacus*);
- goat's-rue (*Galega officinalis*);
- Himalayan cotoneaster (*Cotoneaster simonsii*);
- Michaelmas daisy (*Aster* sp.);
- red-osier dogwood (*Cornus sericea*); and
- wall cotoneaster (*Cotoneaster horizontalis*).

Of these the Himalayan and wall cotoneaster are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) making it an offence to plant or otherwise cause to grow in the wild these species.

All the invasive non-native species recorded were rare across the survey area, and most comprised very small populations. However, giant bramble was abundant along a footpath through open woodland by the A34 north-west of M3 J9 (target note 22), and goat's-rue was abundant in calcareous grassland on the eastern side of the roundabout of M3 J9 (target note 8).

4. Discussion

4.1 Comparison with previous habitat survey

The main differences between the results of the previous habitat survey (Highways England, 2018) and those of the habitat verification survey reported here are a result of the habitat classification and survey methodology used, i.e. Phase 1 and UKHab, respectively. The latter method is designed to identify priority and Annex I habitats, while the former does not, and priority habitats were not identified from the Phase 1 results in the 2017 report. However, the priority habitats identified in this report, such as Lowland Calcareous Grassland, Lowland Meadows and Wet Woodland, are clearly identifiable from the results of the previous survey and in most cases appear to have changed little in extent between surveys. Some small changes appear to have occurred around the roundabout and verges of connecting slip roads, where some areas previously mapped as semi-improved calcareous grassland were found to comprise scrub during the habitat verification survey.

The previous survey covered some areas to which the habitat verification survey did not have access, such as the verges of the M3 and Winnall Moors. As it is managed for nature conservation, it is unlikely that habitats in Winnall Moors would have changed significantly since 2017. In terms of habitats in the UK Habitat Classification, this area is likely to support '*g3a Lowland meadows*' and '*f2a Lowland fens*' habitats, similar to the areas of the River Itchen SSSI that were covered by the habitat verification survey.

4.2 Protected and notable species

The minor differences and changes to habitats in areas previously surveyed do not alter previous assessment of the potential and extent of the survey area for supporting populations of protected or notable species.

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Figures

N

LEGEND

- Proposed Order Limits
- Survey
- Vantage Points

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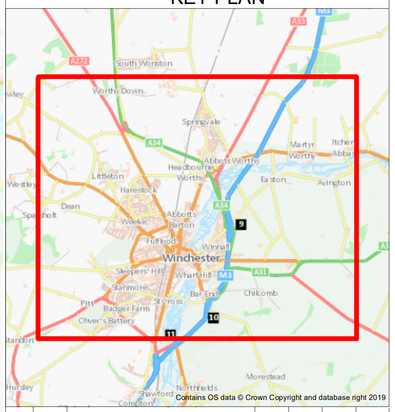
KEY PLAN



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P01	05/08/20	Initial Issue	JC	LG	LW	HR

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SCHEME TITLE

M3 JUNCTION 9 IMPROVEMENTS

DRAWING TITLE

FIGURE 1
SURVEY AREA

DRAWING UNITS U.N.O.	SCALE AT A1 (841 x 594mm)
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE	1:15000

DRAWING No.	REV.
HE551511-JAC-EGN-0_00_00-DR-GI-0020	P01

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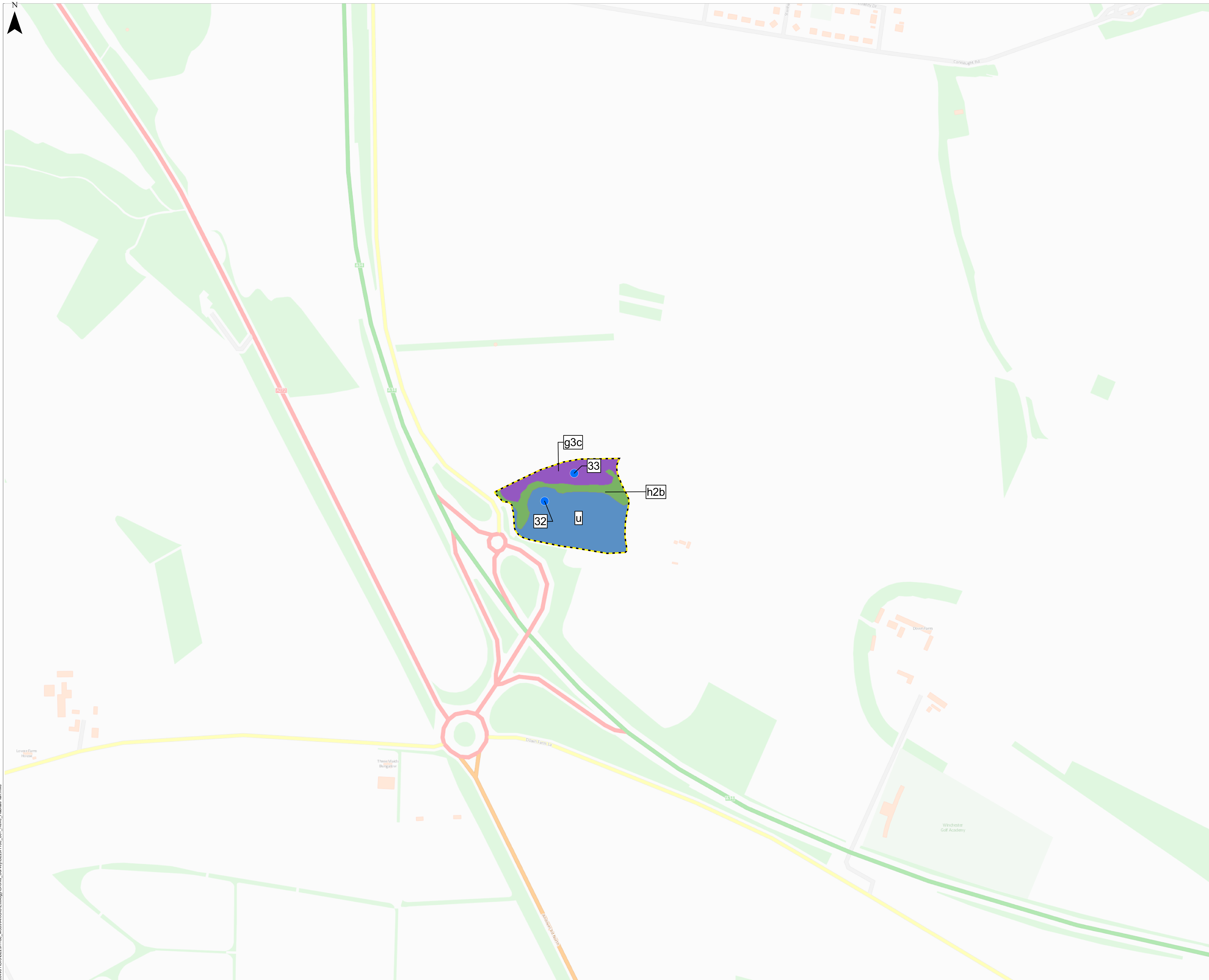

LEGEND

- Proposed Order Limits
- Survey Area
- Target Note

Primary Habitats Code*

- g3c - Other neutral grassland
- h2b - Other hedgerows
- u - Urban
- h2a - Hedgerow (priority habitat)
- w1g6 - Line of trees

* Refere to Table C.1 for the UKHab secondary codes

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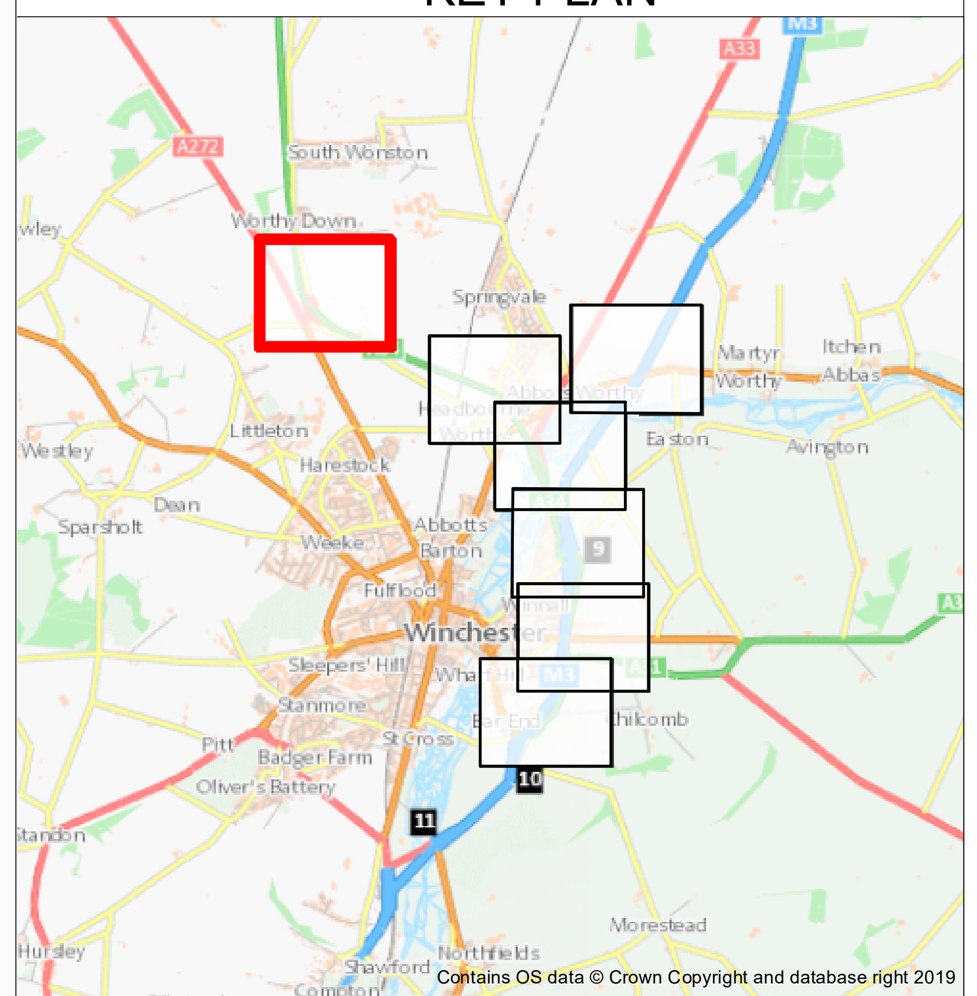
KEY PLAN



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M3 JUNCTION 9 IMPROVEMENTS

DRAWING TITLE

FIGURE 2
HABITAT PLAN

Sheet 1 of 7

DRAWING UNITS U.N.O.

ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)

1:3000

DRAWING No.

HE551511-JAC-EGN-0_00_00-DR-GI-0021

REV.

P01

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N

u1e

w1d5

r2a5

u1e

w1g7

23

u1e

w1h

g4

24

w1d5

g3c

f2a

w1g7

w1d5

25

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LEGEND

- Proposed Order Limits
- Survey Area
- Target Note

Primary Habitats Code*

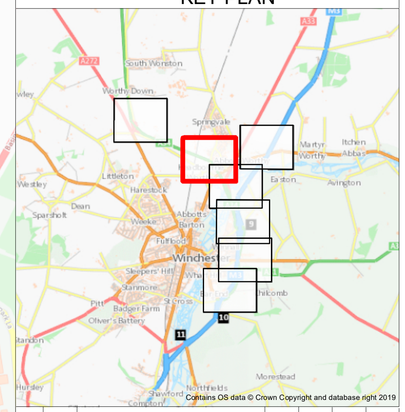
- f2a - Lowland fens
- g3a - Lowland meadows
- g3c - Other neutral grassland
- g3c5 - Arrhenatherum neutral grassland
- g4 - Modified grassland
- r2a5 - Rivers with floating vegetation (H3260)
- u1e - Built linear features
- w1d5 - Alder woodland on floodplains (H91E0)
- w1g7 - Other broadleaved woodland types
- w1h - Other woodland; mixed
- h2a - Hedgerow (priority habitat)
- w1g6 - Line of trees

* Refere to Table C.1 for the UKHab secondary codes

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN



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P01	05/08/20	Initial Issue	MK	LG	LW	HR

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SCHEME TITLE

M3 JUNCTION 9 IMPROVEMENTS

DRAWING TITLE

FIGURE 2
HABITAT PLAN

Sheet 2 of 7

DRAWING UNITS U.N.O.
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)
1:3000

DRAWING No.
HE551511-JAC-EGN-0_00_00-DR-GI-0022

REV.
P01

LEGEND

Proposed Order Limits
Survey Area
Target Note

Primary Habitats Code*

u1e - Built linear features
w1g7 - Other broadleaved woodland types
h2a - Hedgerow (priority habitat)
w1g6 - Line of trees

* Refere to Table C.1 for the UKHab secondary codes

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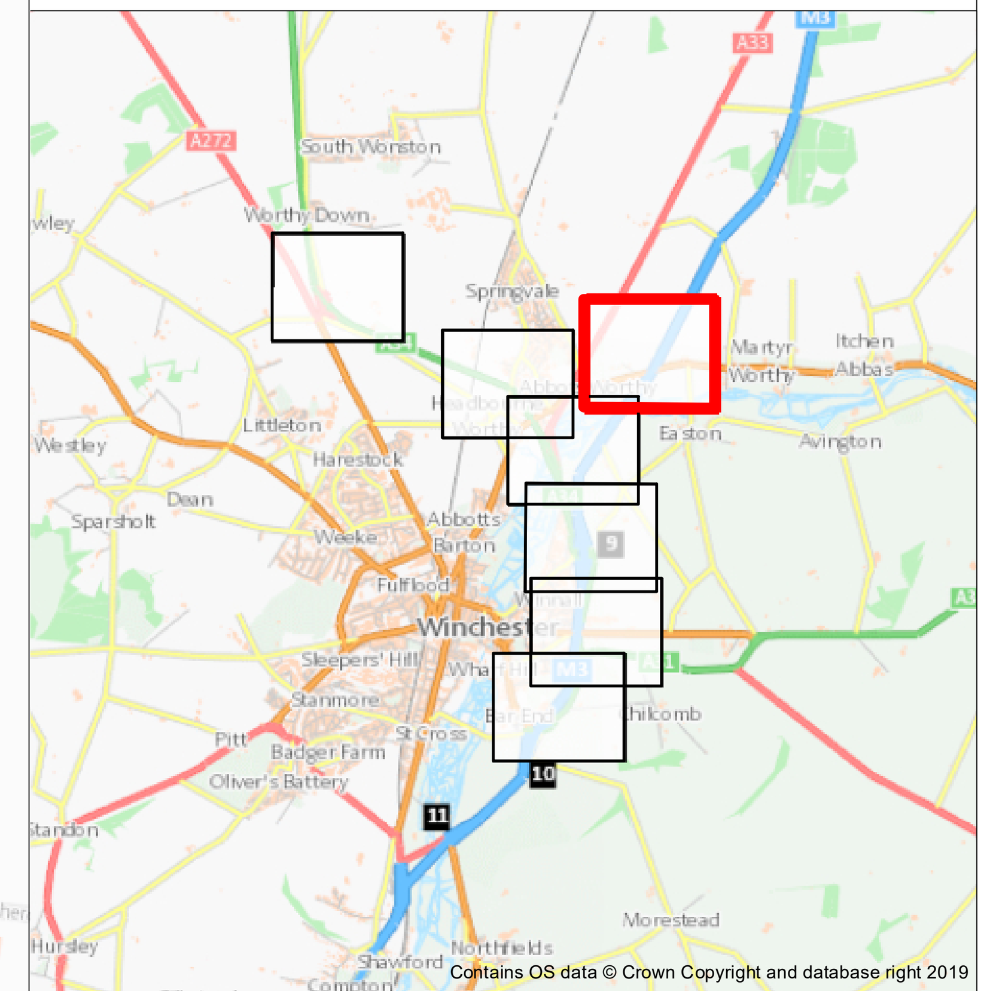
SCALE 1:3,000

KEY PLAN



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M3 JUNCTION 9 IMPROVEMENTS

DRAWING TITLE

FIGURE 2
HABITAT PLAN

Sheet 3 of 7

DRAWING UNITS U.N.O.
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)
1:3000

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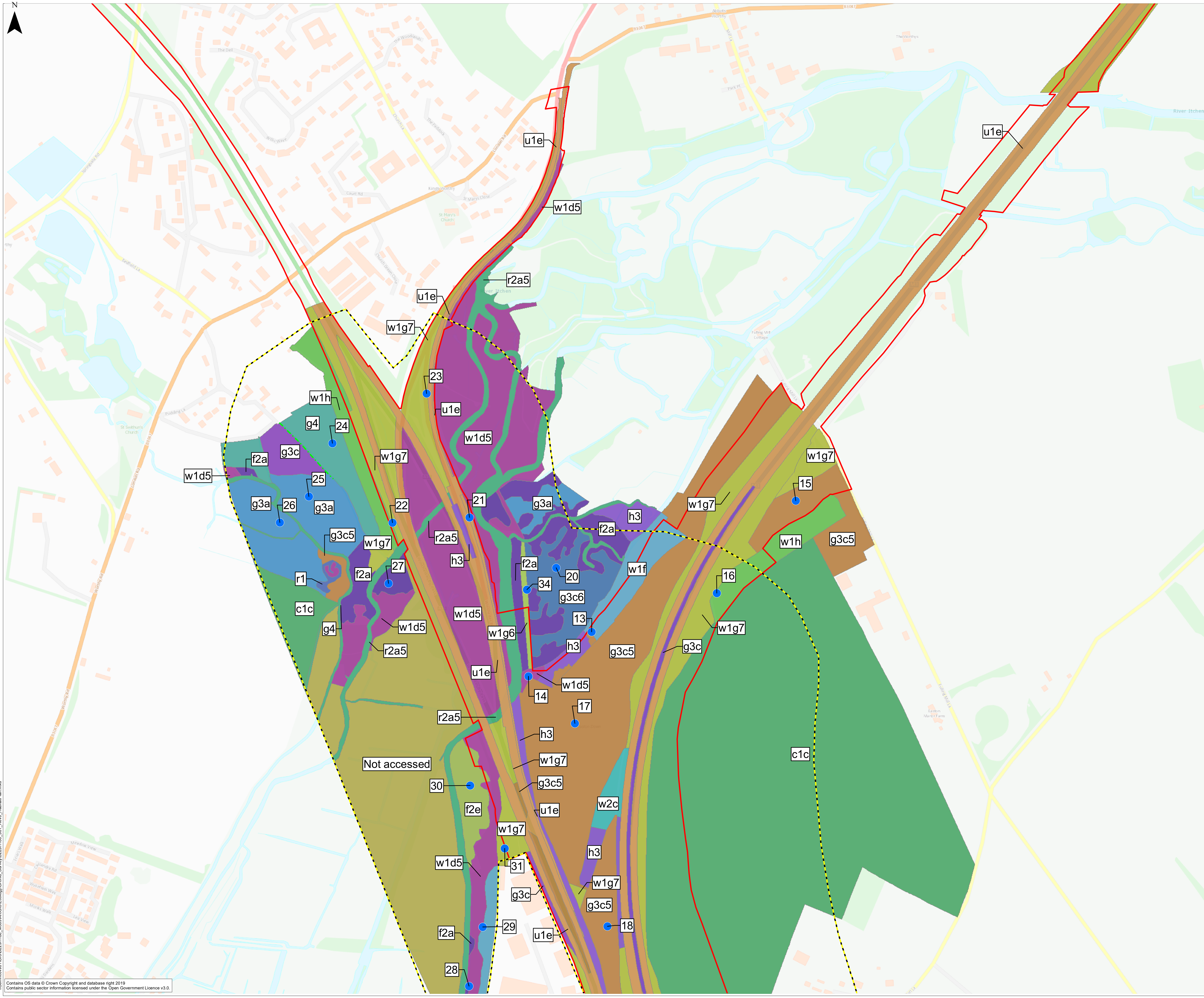


LEGEND

- Proposed Order Limits
- Survey Area
- Target Note

Primary Habitats Code*

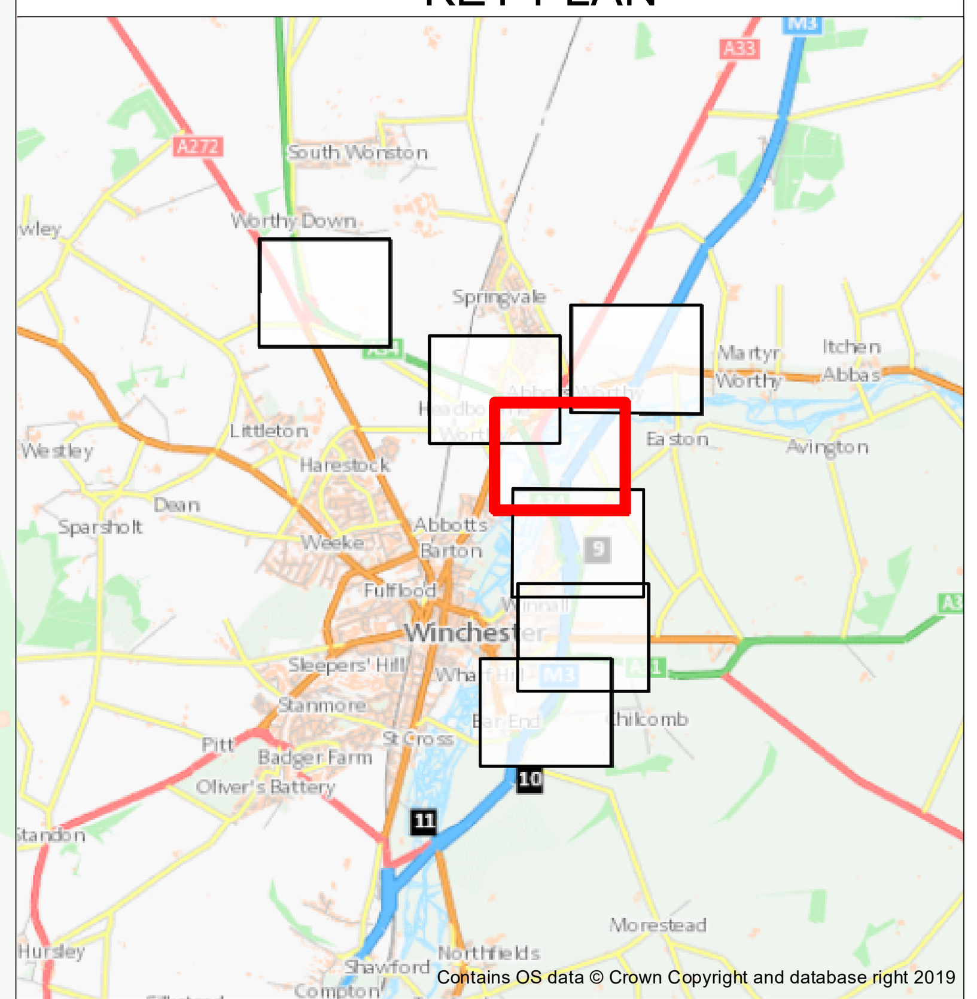
- Not accessed
- c1c - Cereal crops
- f2a - Lowland fens
- f2e - Reedbeds
- g3a - Lowland meadows
- g3c - Other neutral grassland
- g3c5 - Arrhenatherum neutral grassland
- g3c6 - Lolium-Cynosurus neutral grassland
- g4 - Modified grassland
- h3 - Dense scrub
- r1 - Standing open water and canals
- r2a5 - Rivers with floating vegetation (H3260)
- u1e - Built linear features
- w1d5 - Alder woodland on floodplains (H91E0)
- w1f - Lowland mixed deciduous woodland
- w1g6 - Line of trees
- w1g7 - Other broadleaved woodland types
- w1h - Other woodland; mixed
- w2c - Other coniferous woodland
- h2a - Hedgerow (priority habitat)
- w1g6 - Line of trees

* Refere to Table C.1 for the UKHab secondary codes

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN



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M3 JUNCTION 9 IMPROVEMENTS

DRAWING TITLE

FIGURE 2
HABITAT PLAN

Sheet 4 of 7

DRAWING UNITS U.N.O.

ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)

1:3000

DRAWING No.

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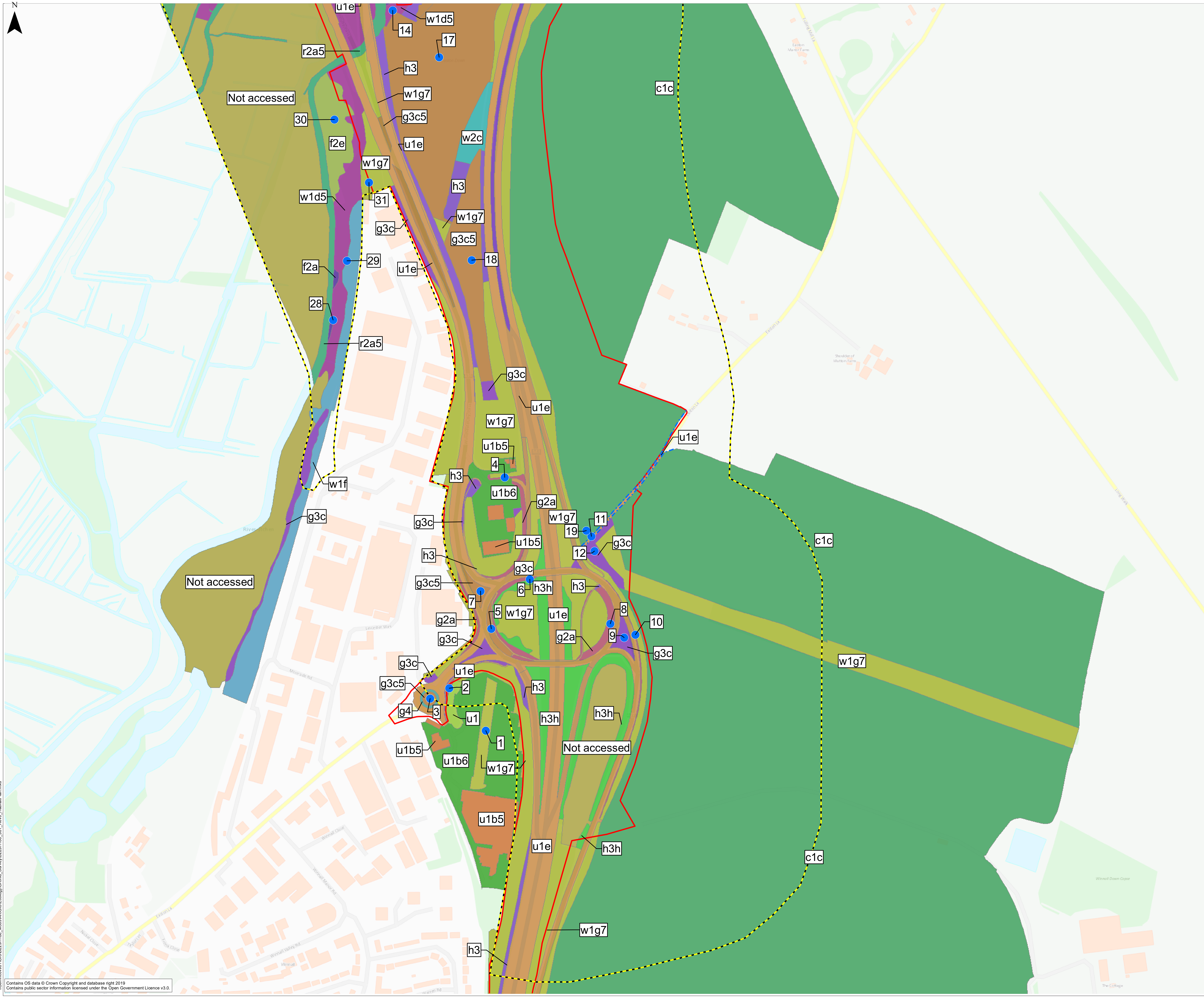
REV.

P01



LEGEND

- Proposed Order Limits
- Survey Area
- Target Note

Primary Habitats Code*

- Not accessed
- c1c - Cereal crops
- f2a - Lowland fens
- f2e - Reedbeds
- g2a - Lowland calcareous grassland
- g3c - Other neutral grassland
- g3c5 - Arrhenatherum neutral grassland
- g4 - Modified grassland
- h3 - Dense scrub
- h3h - Mixed scrub
- r2a5 - Rivers with floating vegetation (H3260)
- u1 - Built-up areas and gardens
- u1b5 - Buildings
- u1b6 - Other developed land
- u1e - Built linear features
- w1d5 - Alder woodland on floodplains (H91E0)
- w1f - Lowland mixed deciduous woodland
- w1g7 - Other broadleaved woodland types
- w2c - Other coniferous woodland
- h2a - Hedgerow (priority habitat)
- w1g6 - Line of trees

* Refere to Table C.1 for the UKHab secondary codes

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN

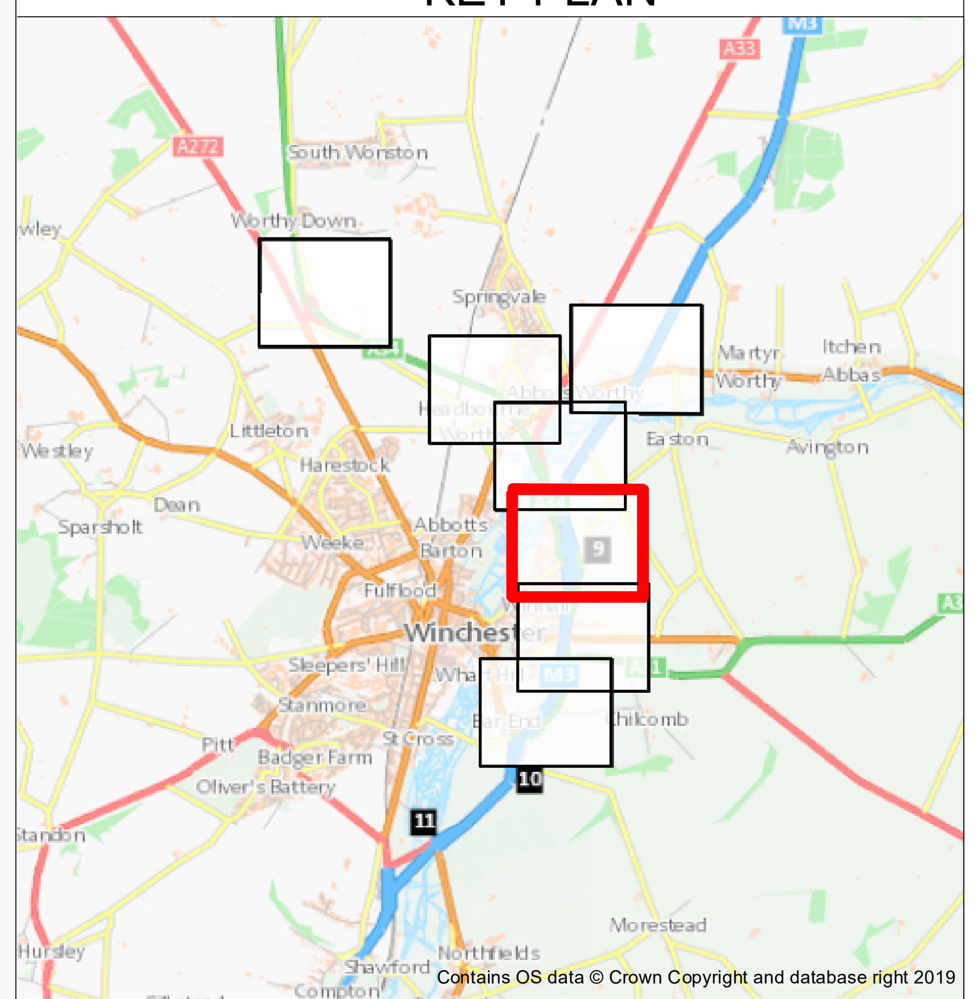


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FIGURE 2
HABITAT PLAN

Sheet 5 of 7

DRAWING UNITS U.N.O.

ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)

1:3000

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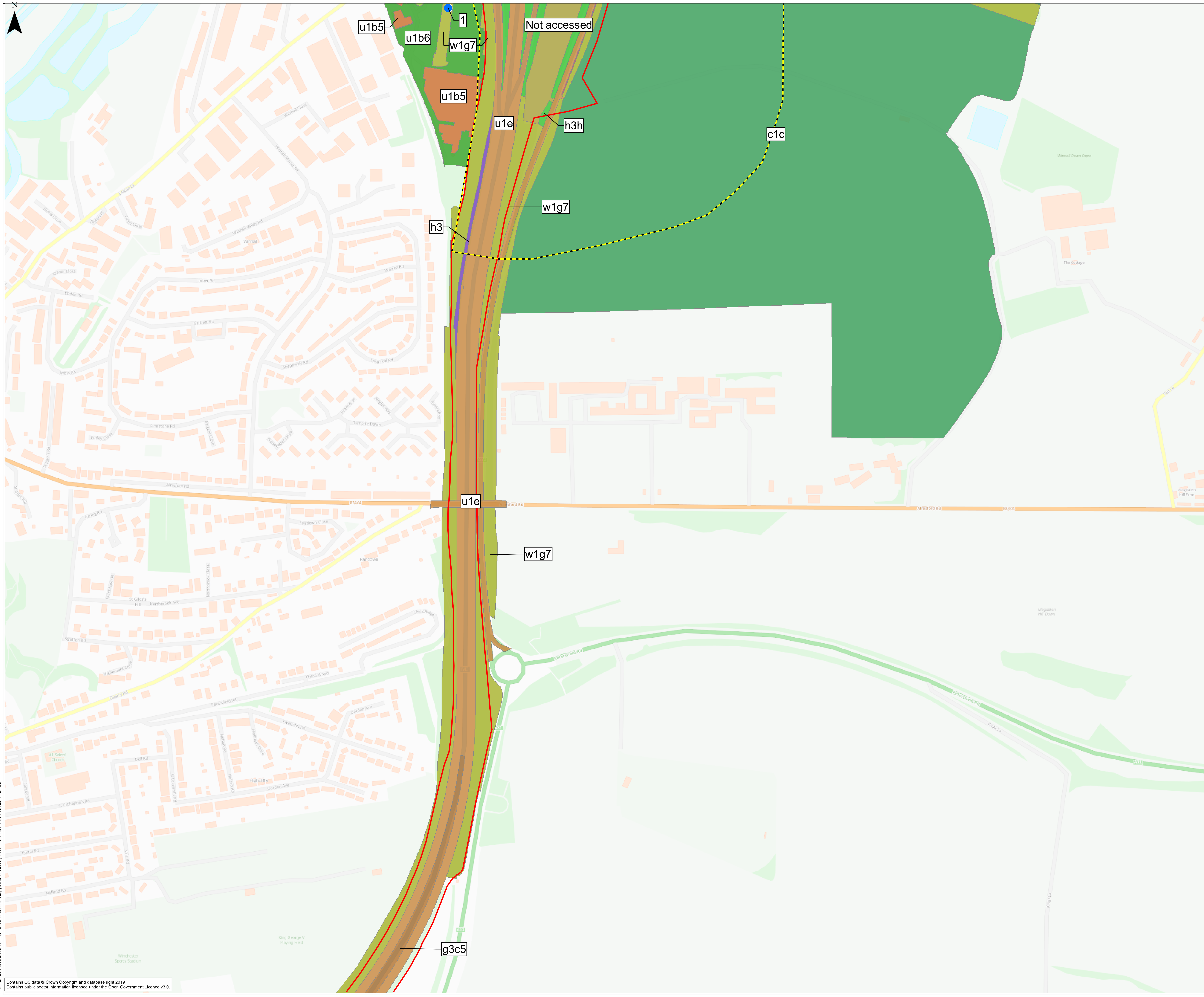
P01



LEGEND

- Proposed Order Limits
- Survey Area
- Target Note

Primary Habitats Code*

- Not accessed
- c1c - Cereal crops
- g2a - Lowland calcareous grassland
- g3c5 - Arrhenatherum neutral grassland
- h3 - Dense scrub
- h3h - Mixed scrub
- u1 - Built-up areas and gardens
- u1b5 - Buildings
- u1b6 - Other developed land
- u1e - Built linear features
- w1g7 - Other broadleaved woodland types
- h2a - Hedgerow (priority habitat)
- w1g6 - Line of trees

* Refere to Table C.1 for the UKHab secondary codes

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN

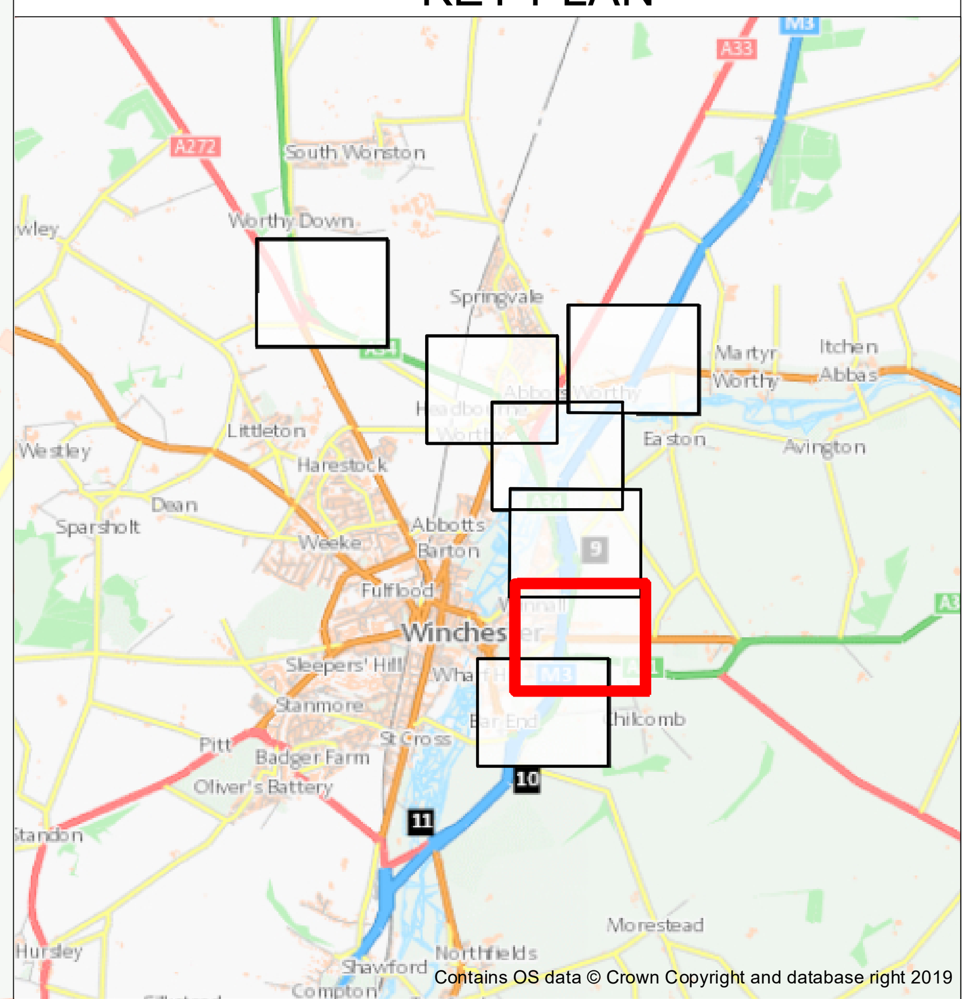


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FIGURE 2
HABITAT PLAN

Sheet 6 of 7

DRAWING UNITS U.N.O.

ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)

1:3000

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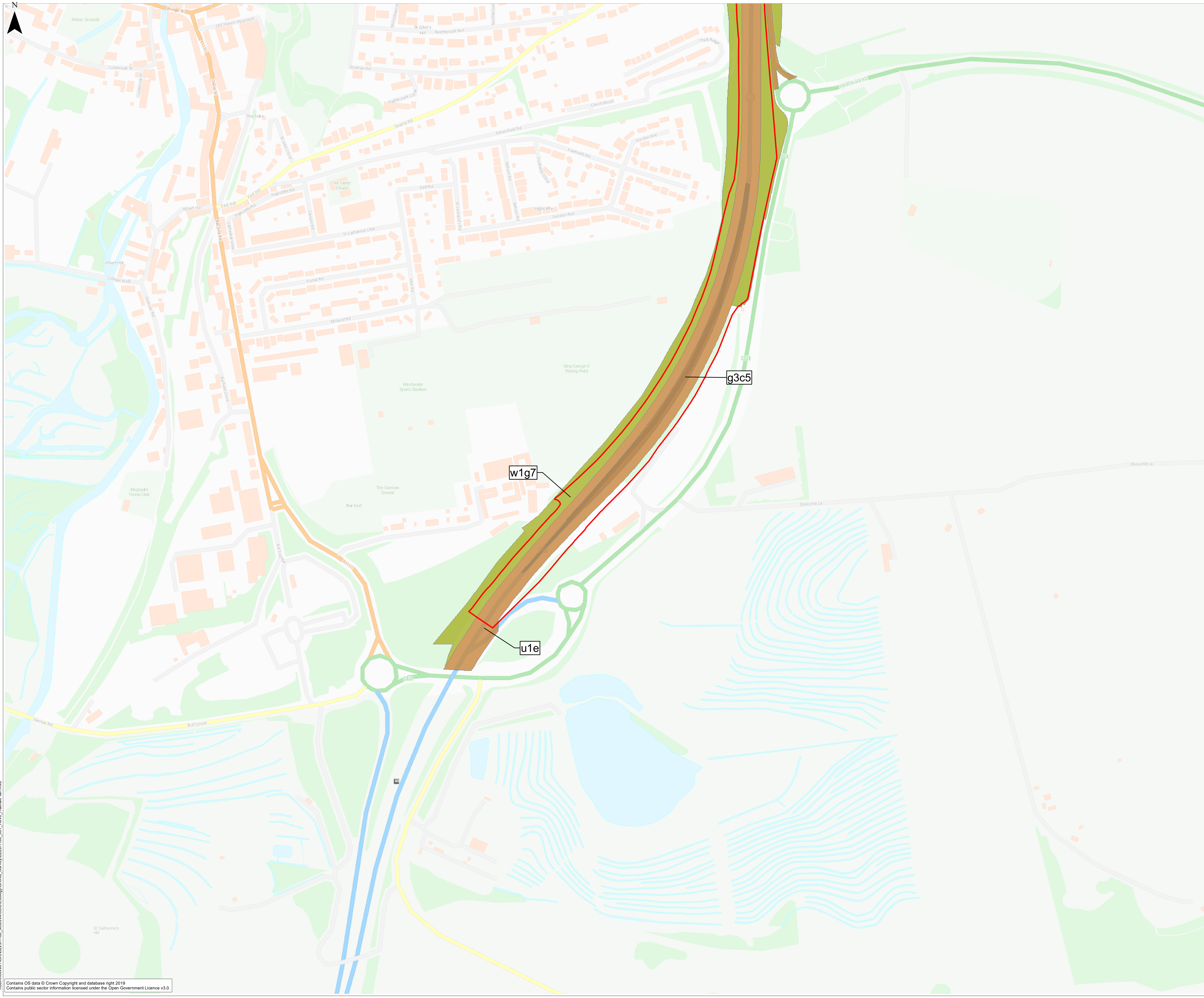
P01



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LEGEND

- Proposed Order Limits
- Survey Area
- Target Note

Primary Habitats Code*

- g3c5 - Arrhenatherum neutral grassland
- u1e - Built linear features
- w1g7 - Other broadleaved woodland types
- h2a - Hedgerow (priority habitat)
- w1g6 - Line of trees

* Refer to Table C.1 for the UKHab secondary codes

0 50 100 200 300 m

SCALE 1:3,000

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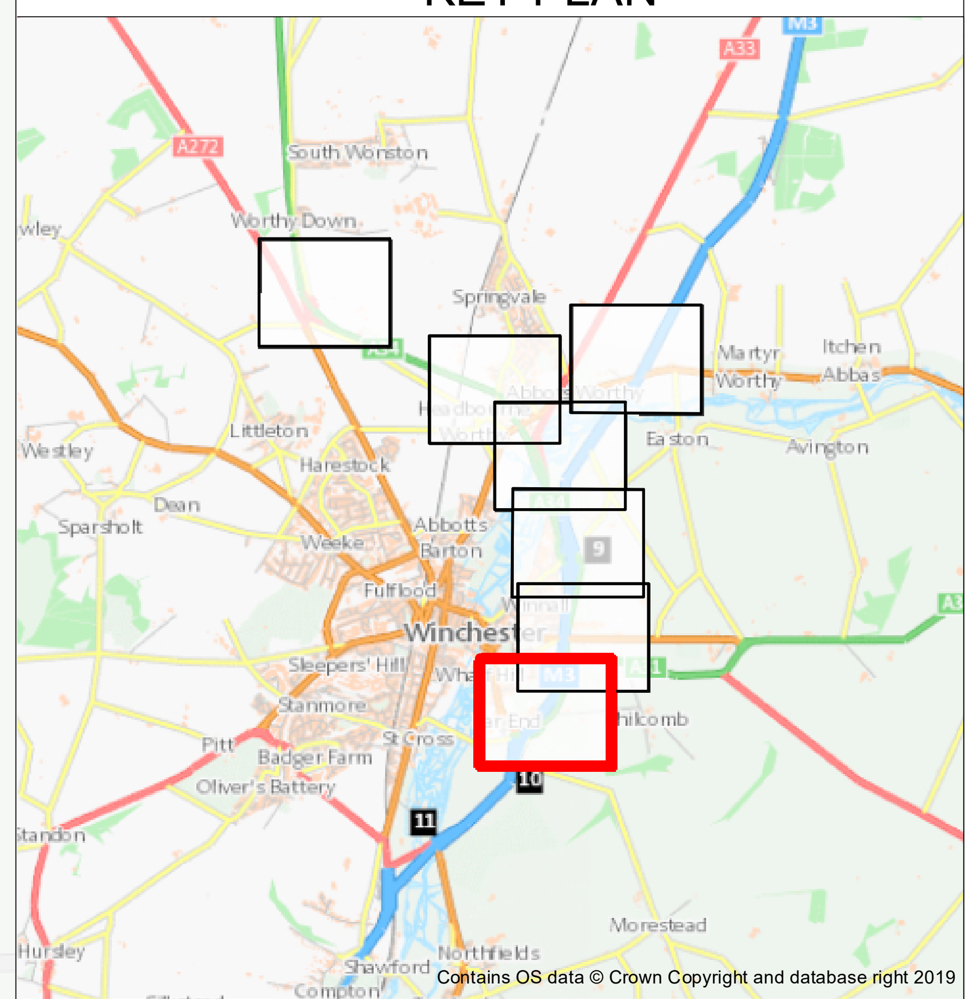

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FIGURE 2
HABITAT PLAN

Sheet 7 of 7

DRAWING UNITS U.N.O.

ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)

1:3000

DRAWING No.

HE551511-JAC-EGN-0_00_00-DR-GI-0027

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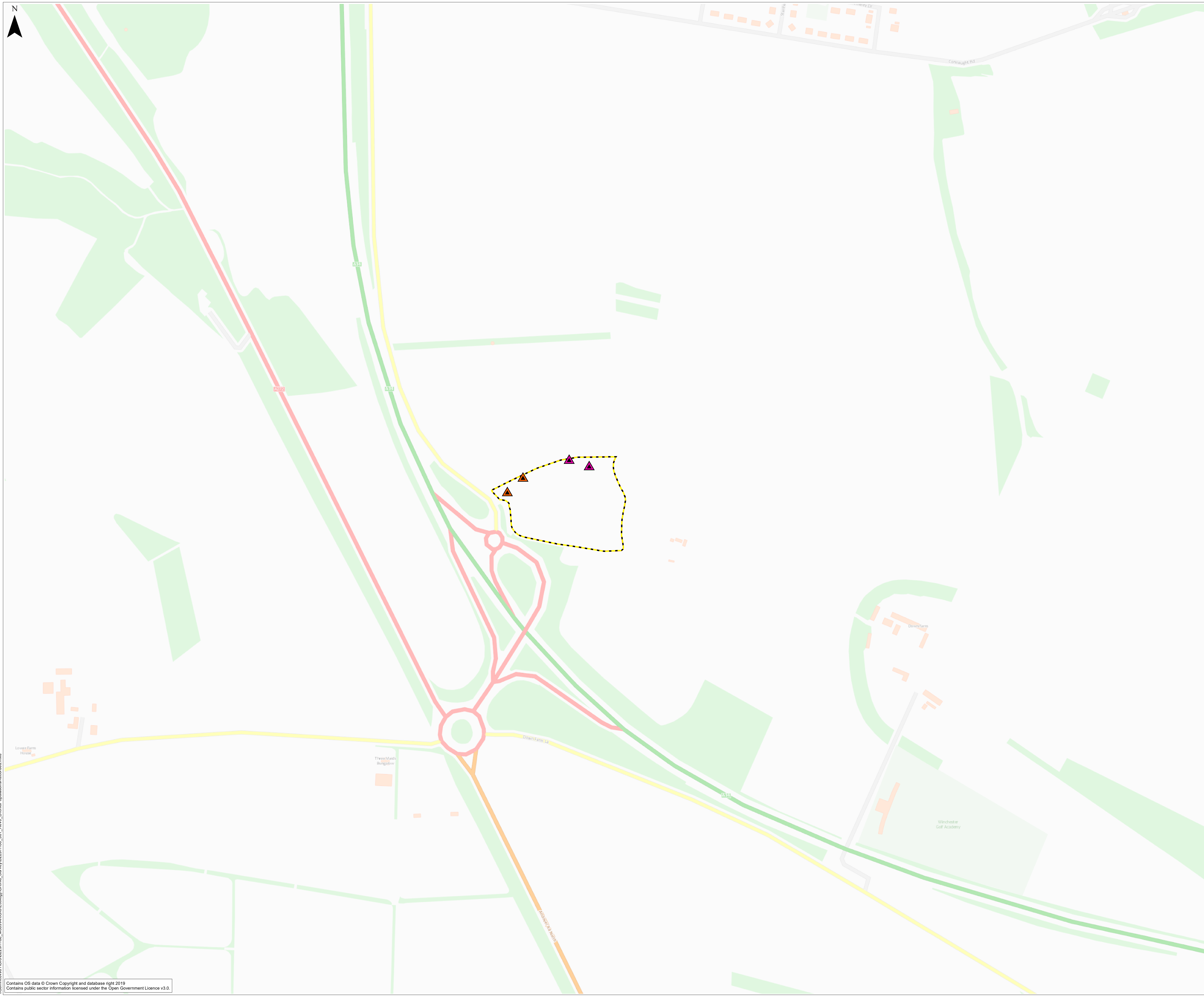
P01



LEGEND

- Proposed Order Limits
- Survey

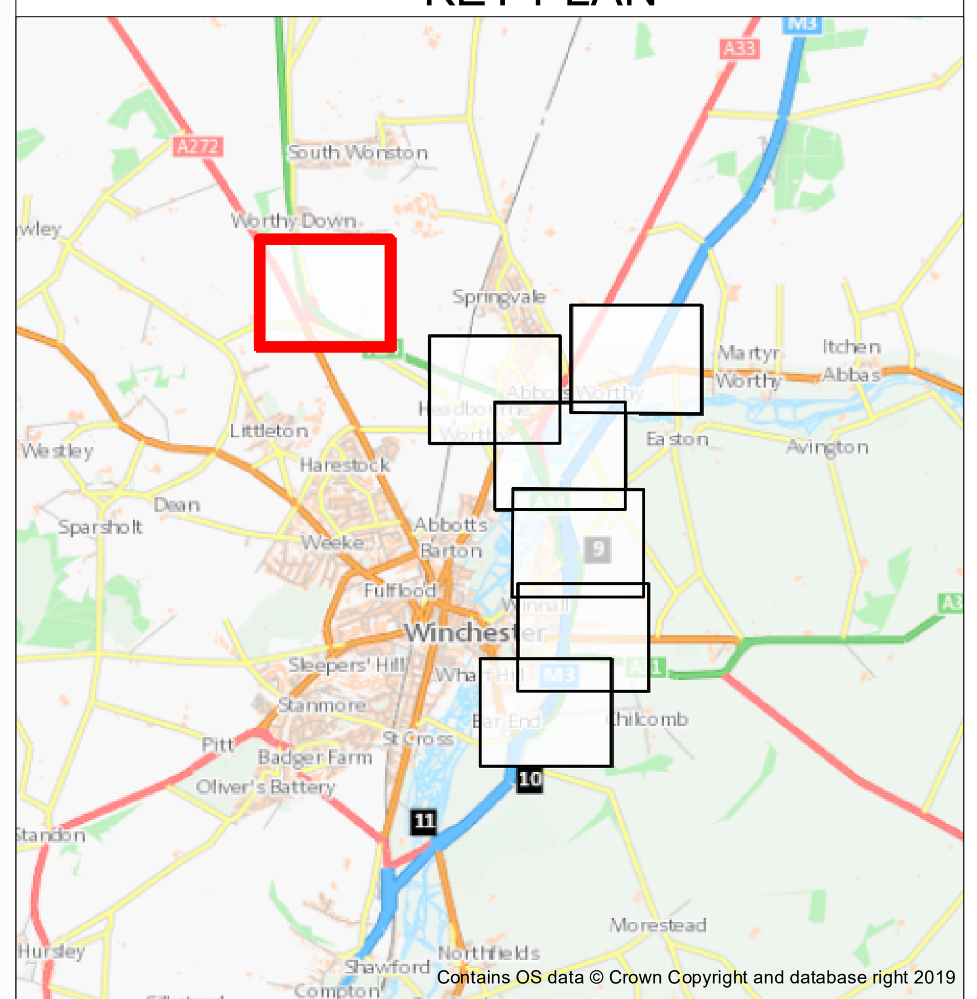
Orchid Records

- Anacamptis pyramidalis
- Cephalanthera damasonium
- Dactylorhiza praetermissa
- Epipactis helleborine
- Gymnadenia conopsea
- Neottia ovata
- Ophrys apifera

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN



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DRAWING TITLE

FIGURE 3
ORCHID POPULATIONS RECORDED

Sheet 1 of 7

DRAWING UNITS U.N.O.

ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)

1:3000

DRAWING No.

HE551511-JAC-EGN-0_00_00-DR-GI-0028

REV.

P01

N

LEGEND

Proposed Order Limits

Survey

Orchid Records

Anacamptis pyramidalis

Cephalanthera damasonium

Dactylorhiza praetermissa

Epipactis helleborine

Gymnadenia conopsea

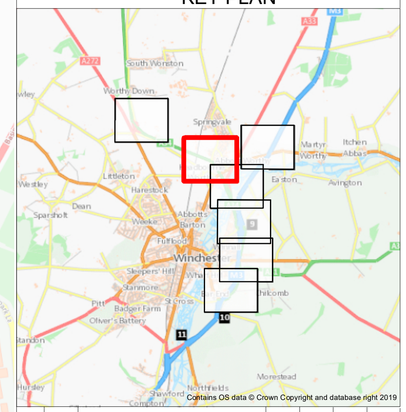
Neottia ovata

Ophrys apifera

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN



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DRAWING TITLE

FIGURE 3
ORCHID POPULATIONS RECORDED

Sheet 2 of 7

DRAWING UNITS U.N.O.

ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)

1:3000

DRAWING No.

HE551511-JAC-EGN-0_00_00-DR-GI-0029

REV.

P01

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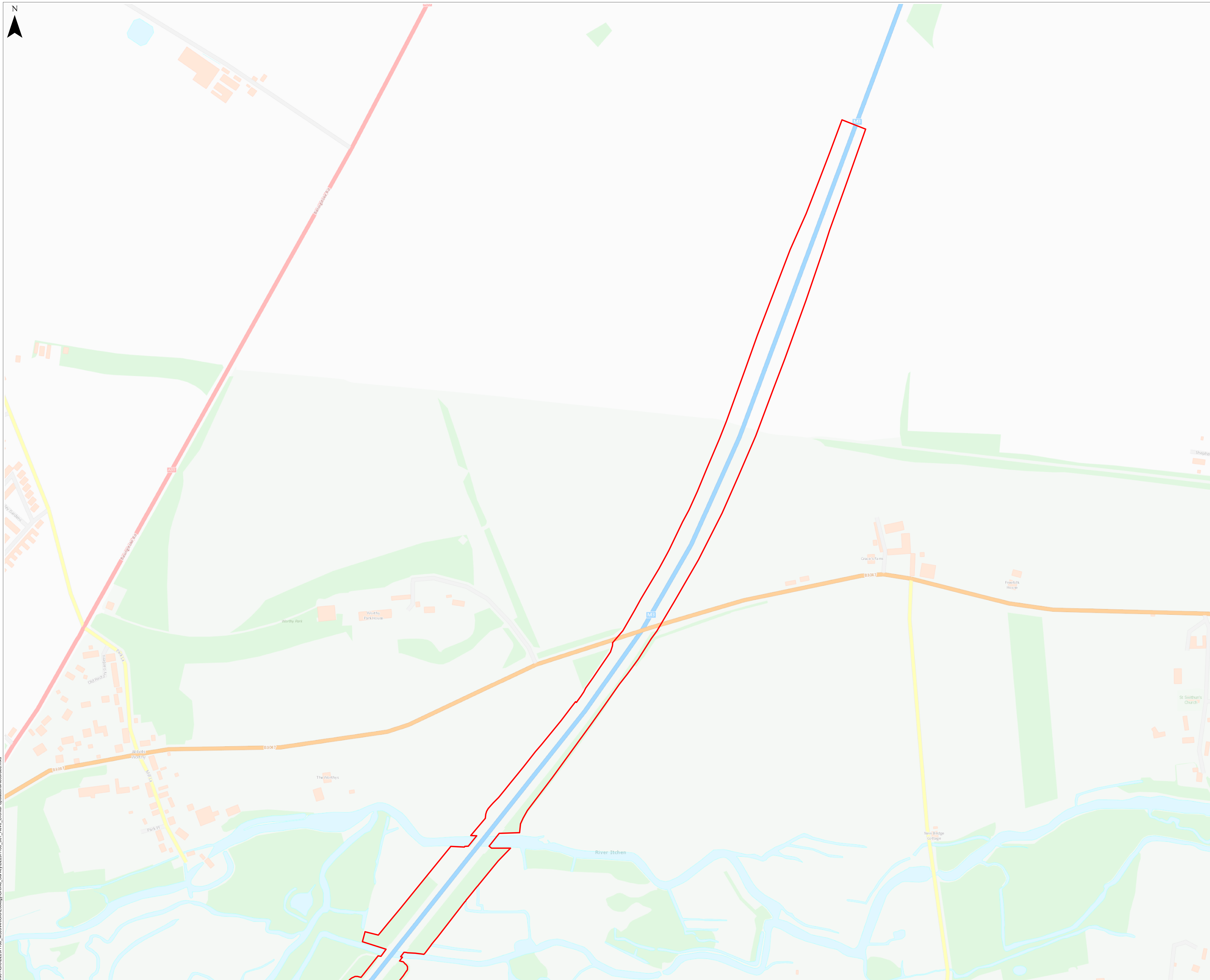


LEGEND

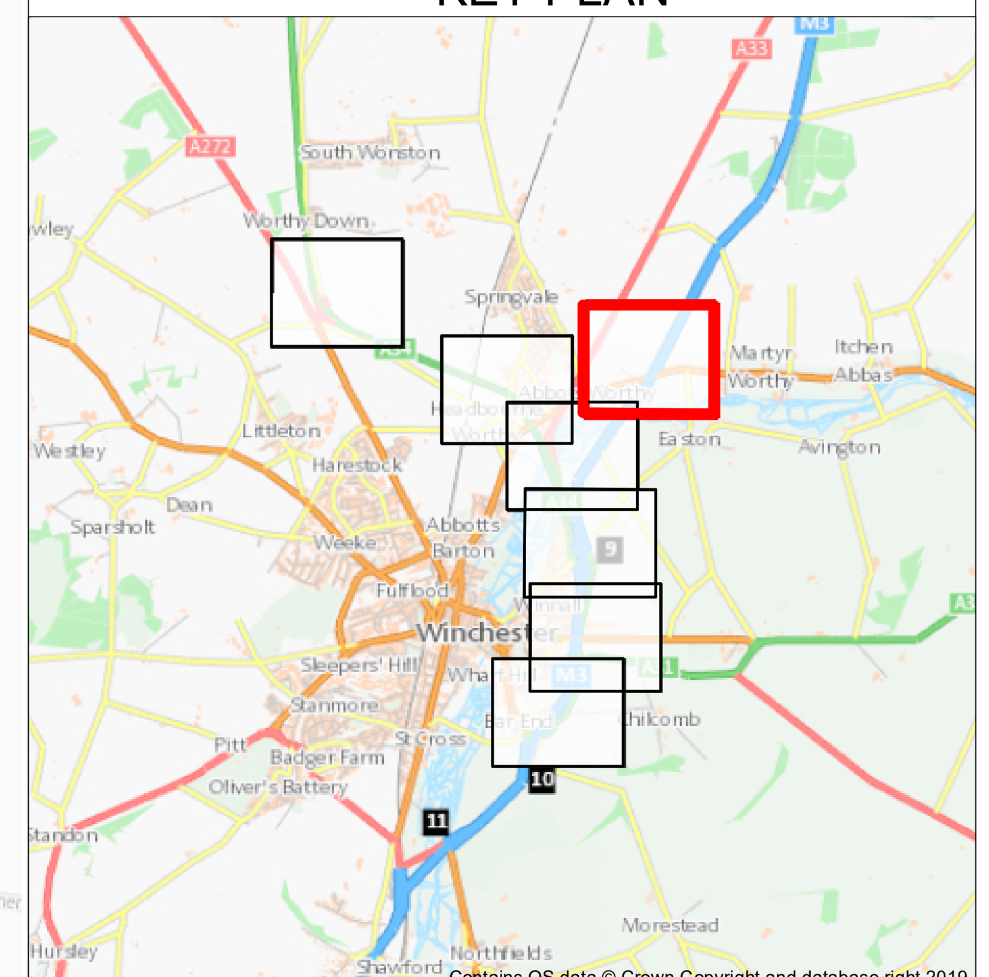
Proposed Order Limits
Survey

Orchid Records

- Anacamptis pyramidalis
- Cephalanthera damasonium
- Dactylorhiza praetermissa
- Epipactis helleborine
- Gymnadenia conopsea
- Neottia ovata
- Ophrys apifera

0 50 100 200 300 m
SCALE 1:3,000

KEY PLAN



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M3 JUNCTION 9 IMPROVEMENTS

DRAWING TITLE

FIGURE 3
ORCHID POPULATIONS RECORDED

Sheet 3 of 7

DRAWING UNITS U.N.O.
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)
1:3000

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REV.
P01

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N

LEGEND

Proposed Order Limits

Survey

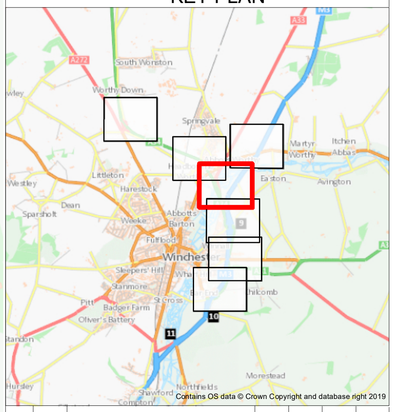
Orchid Records

- Anacamptis pyramidalis
- Cephalanthera damasonium
- Dactylorhiza praetermissa
- Epipactis helleborine
- Gymnadenia conopsea
- Neottia ovata
- Ophrys apifera

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN



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DRAWING TITLE

FIGURE 3
ORCHID POPULATIONS RECORDED

Sheet 4 of 7

DRAWING UNITS U.N.O.
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)
1:3000

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HE551511-JAC-EGN-0_00_00-DR-GI-0031

REV.
P01

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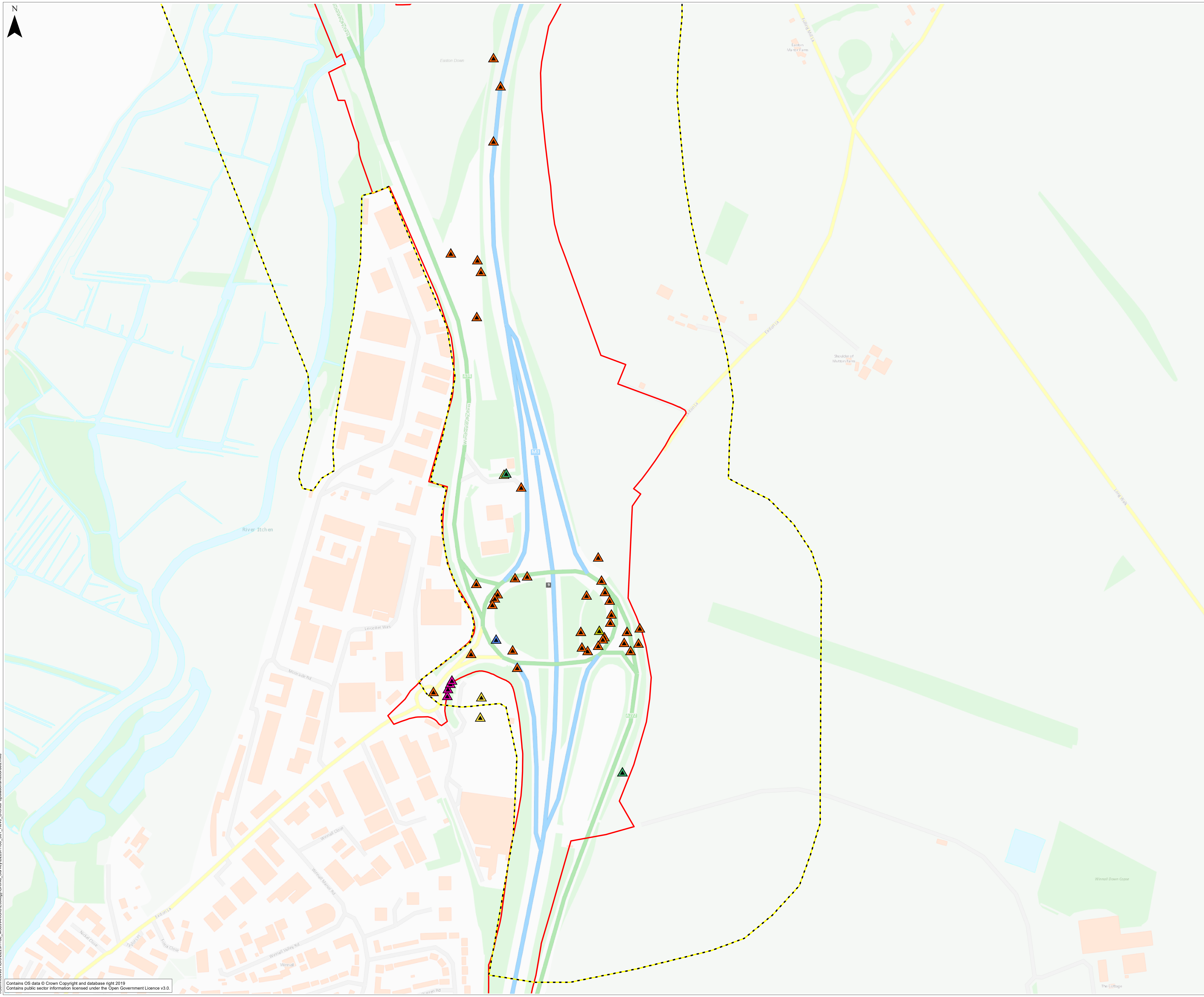


LEGEND

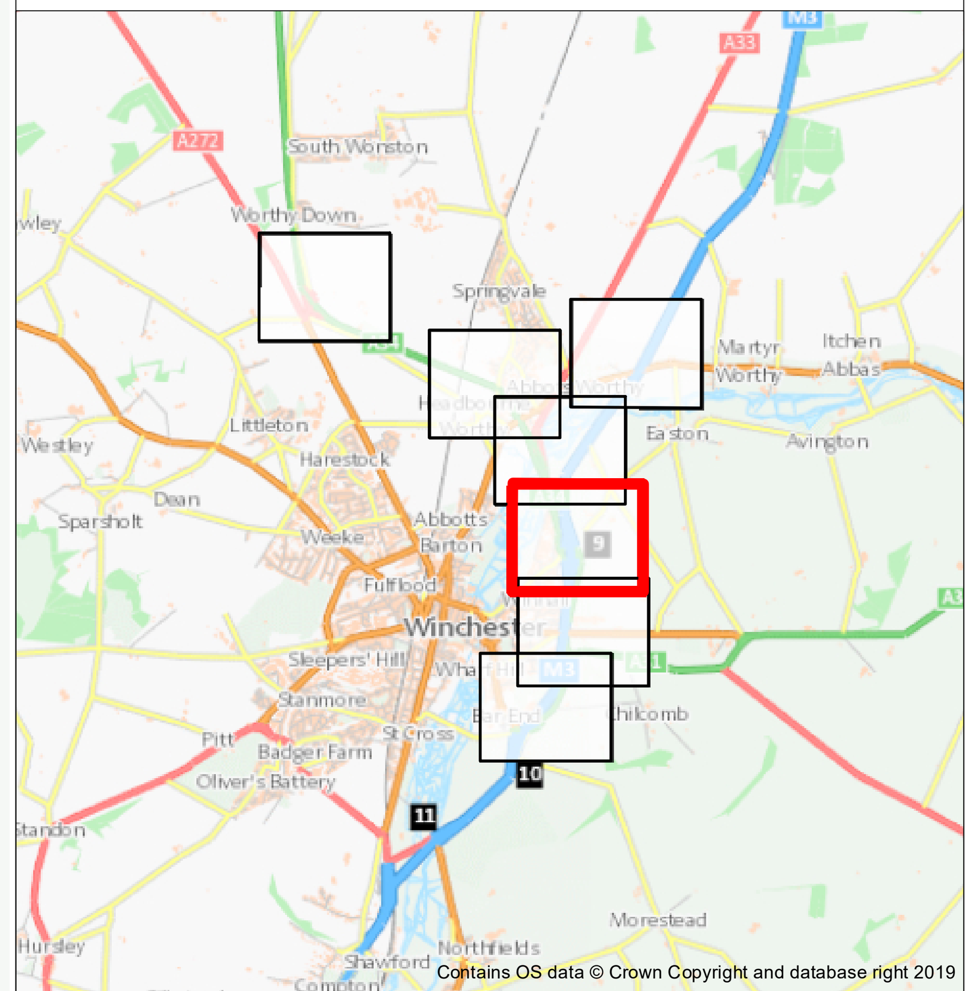
- Proposed Order Limits
- Survey

Orchid Records

- Anacamptis pyramidalis
- Cephalanthera damasonium
- Dactylorhiza praetermissa
- Epipactis helleborine
- Gymnadenia conopsea
- Neottia ovata
- Ophrys apifera

0 50 100 200 300 m
SCALE 1:3,000

KEY PLAN



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DRAWING TITLE

FIGURE 3
ORCHID POPULATIONS RECORDED

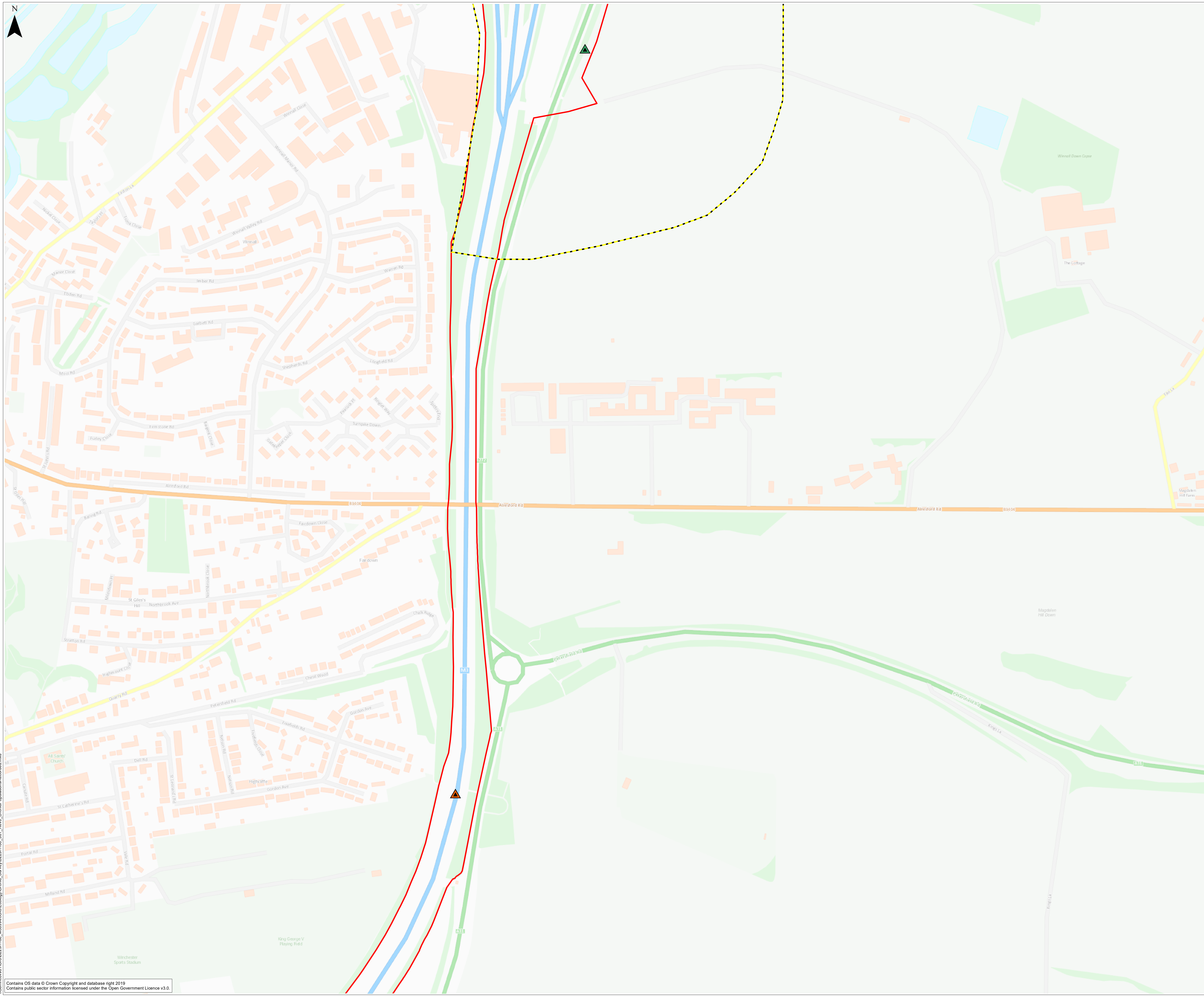
Sheet 5 of 7

DRAWING UNITS U.N.O.
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)
1:3000

DRAWING No.
HE551511-JAC-EGN-0_00_00-DR-GI-0032

REV.
P01



LEGEND

- Proposed Order Limits
- Survey

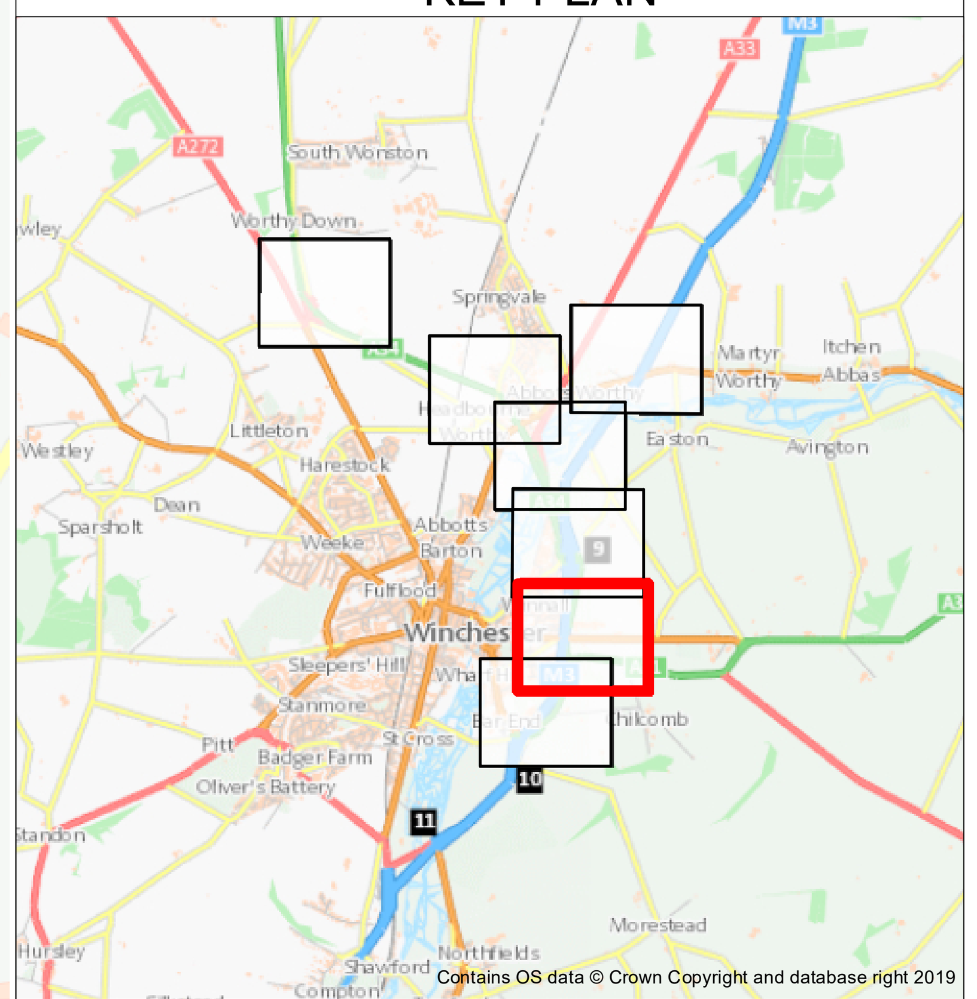
Orchid Records

- Anacamptis pyramidalis
- Cephalanthera damasonium
- Dactylorhiza praetermissa
- Epipactis helleborine
- Gymnadenia conopsea
- Neottia ovata
- Ophrys apifera

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN



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M3 JUNCTION 9 IMPROVEMENTS

DRAWING TITLE

FIGURE 3
ORCHID POPULATIONS RECORDED

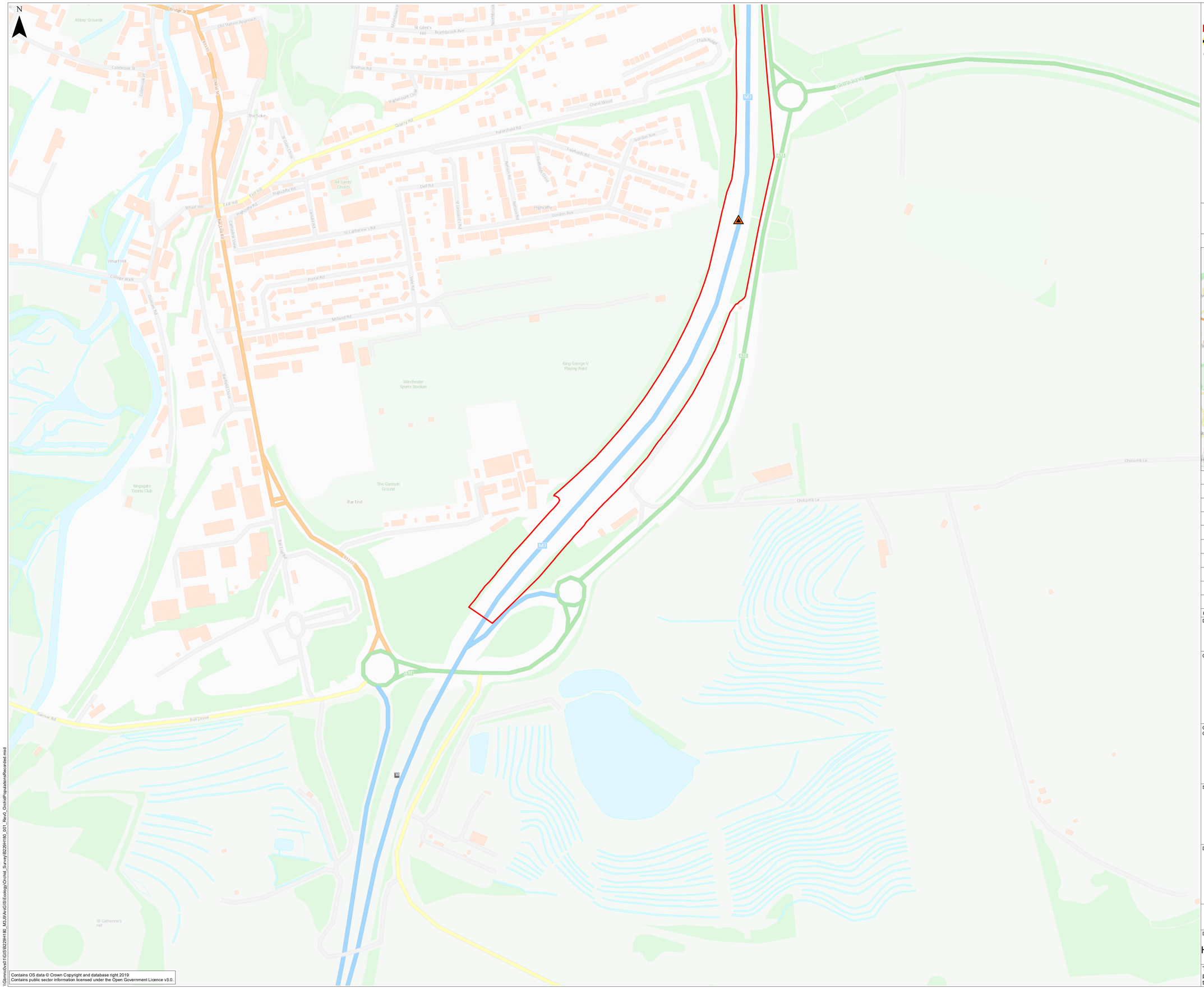
Sheet 6 of 7

DRAWING UNITS U.N.O.
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)
1:3000

DRAWING No.
HE551511-JAC-EGN-0_00_00-DR-GI-0033

REV.
P01



LEGEND

- Proposed Order Limits
- Survey

Orchid Records

- Anacamptis pyramidalis
- Cephalanthera damasonium
- Dactylorhiza praetermissa
- Epipactis helleborine
- Gymnadenia conopsea
- Neottia ovata
- Ophrys apifera

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN

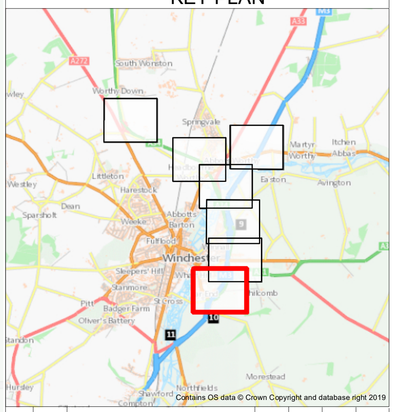


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FIGURE 3
ORCHID POPULATIONS RECORDED

Sheet 7 of 7

DRAWING UNITS U.N.O.	SCALE AT A1 (841 x 594mm)
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE	1:3000

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LEGEND

- Proposed Order Limits
- Survey Area

Notable Plants

- Anthemis cotula
- Anthyllis vulneraria
- Blackstonia perfoliata
- Cirsium acaule
- Euphorbia exigua
- Fragaria vesca
- Hypericum maculatum
- Knautia arvensis
- Onobrychis viciifolia
- Orobanche elatior
- Orobanche minor
- Viola hirta
- Galega officinalis
- Rubus armeniacus

INNS

- Aster
- Cornus sericea
- Cotoneaster horizontalis
- Cotoneaster simonsii

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN

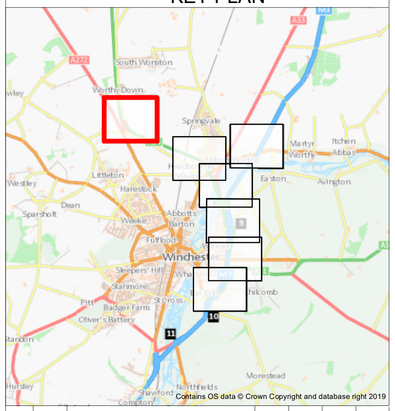

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FIGURE 4
NOTABLE PLANTS AND INVASIVE NON-NATIVE SPECIES (PLANTS)

Sheet 1 of 7

DRAWING UNITS U.N.O.	SCALE AT A1 (841 x 594mm)
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE	1:3000

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N

LEGEND

- Proposed Order Limits
- Survey Area

Notable Plants

- Anthemis cotula
- Anthyllis vulneraria
- Blackstonia perfoliata
- Cirsium acaule
- Euphorbia exigua
- Fragaria vesca
- Hypericum maculatum
- Knautia arvensis
- Onobrychis viciifolia
- Orobanche elatior
- Orobanche minor
- Viola hirta

INNS

- Aster
- Cornus sericea
- Cotoneaster horizontalis
- Cotoneaster simonsii
- Galega officinalis
- Rubus armeniacus

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN

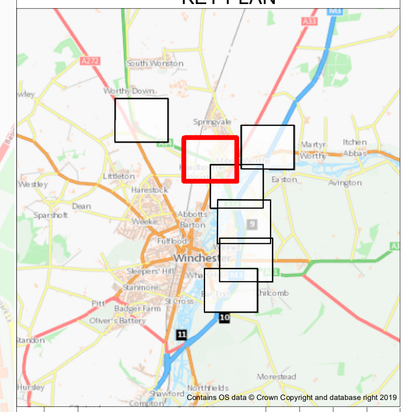

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FIGURE 4
NOTABLE PLANTS AND INVASIVE NON-NATIVE SPECIES (PLANTS)

Sheet 2 of 7

DRAWING UNITS U.N.O.

ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)

1:3000

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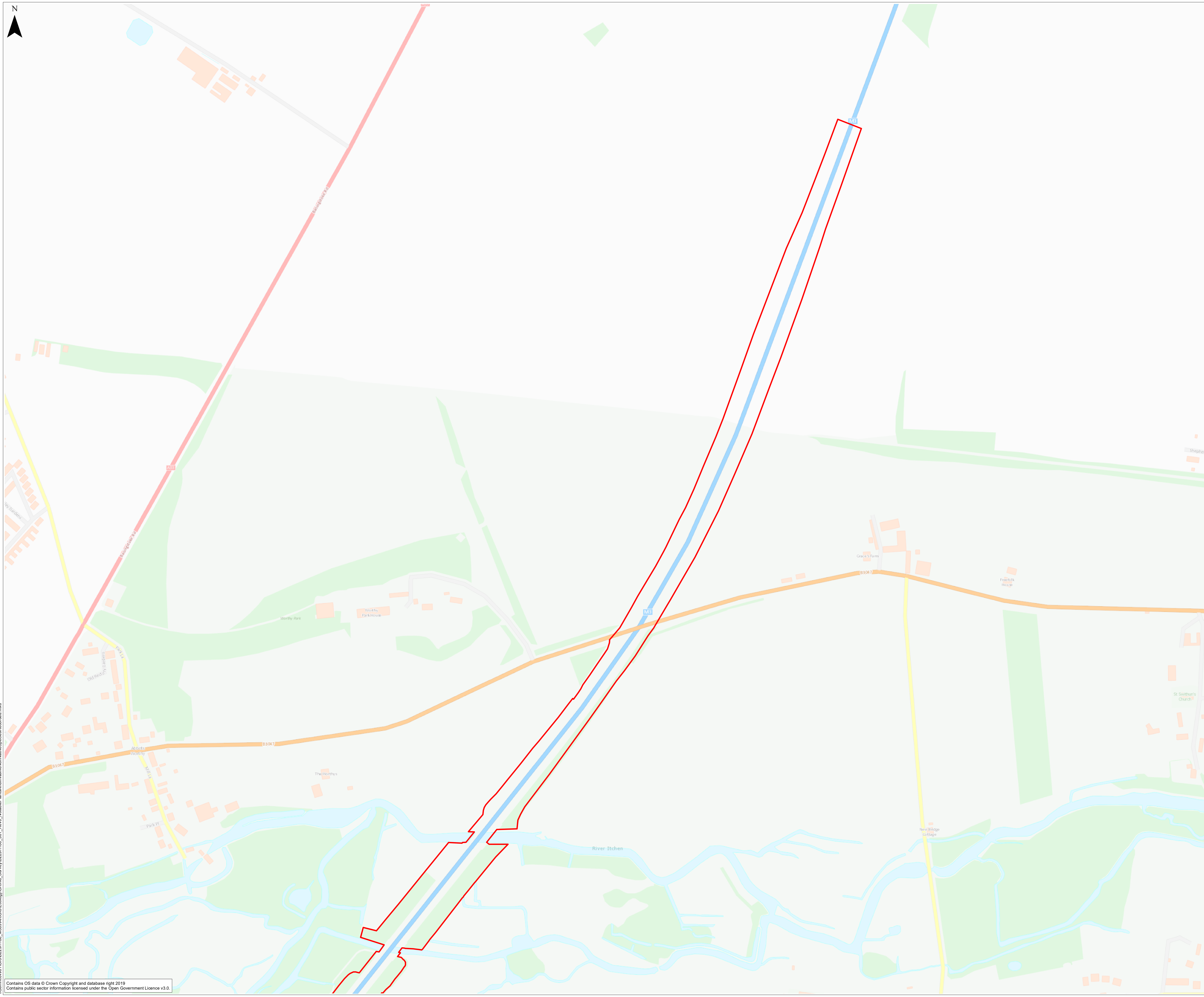

LEGEND

Proposed Order Limits
Survey Area

Notable Plants

Anthemis cotula
Anthyllis vulneraria
Blackstonia perfoliata
Cirsium acaule
Euphorbia exigua
Fragaria vesca
Hypericum maculatum
Knautia arvensis
Onobrychis viciifolia
Orobanche elatior
Orobanche minor
Viola hirta

INNS

Aster
Cornus sericea
Cotoneaster horizontalis
Cotoneaster simonsii
Galega officinalis
Rubus armeniacus

0 50 100 200 300 m

SCALE 1:3,000

KEY PLAN

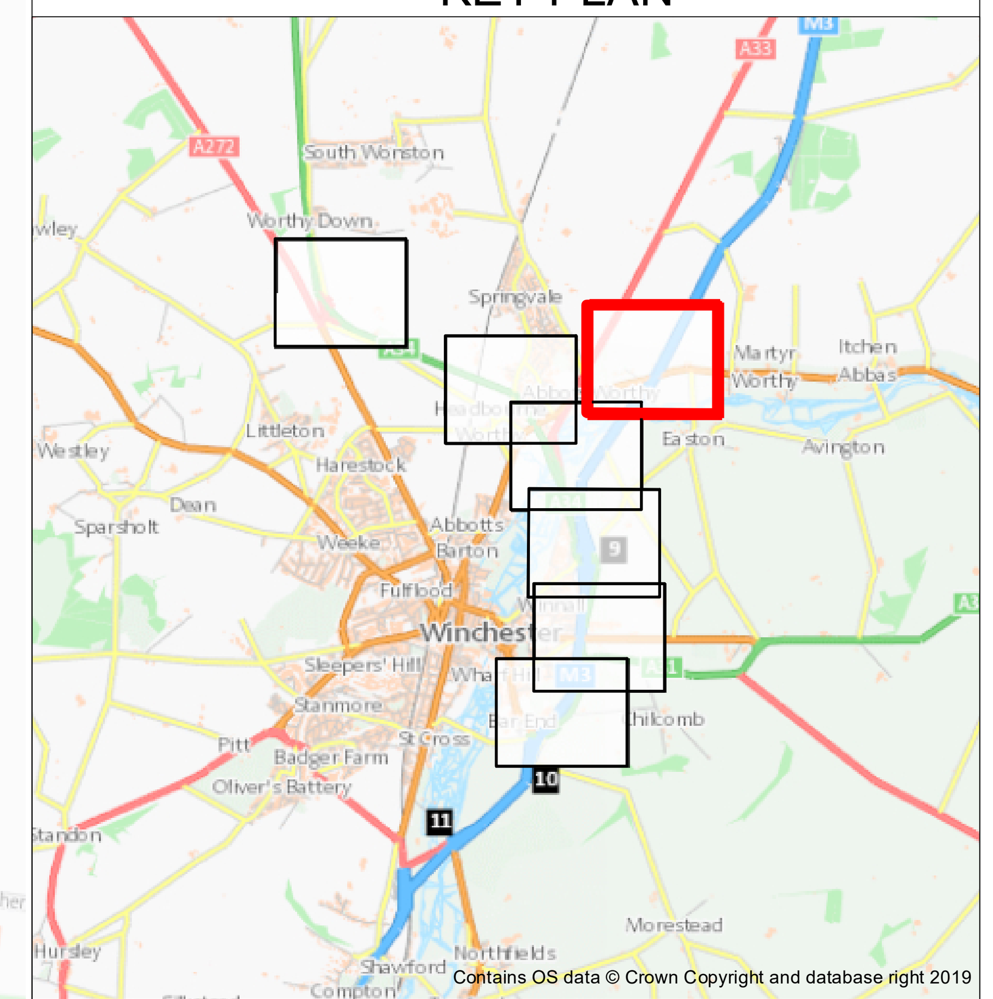

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FIGURE 4
NOTABLE PLANTS AND INVASIVE NON-NATIVE SPECIES (PLANTS)

Sheet 3 of 7

DRAWING UNITS U.N.O.
ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE

SCALE AT A1 (841 x 594mm)
1:3000

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