A30 Chiverton to Carland Cross
Environmental Statement

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A30 CHIVERTON CROSS TO CARLAND CROSS

PHASE 1 HABITAT UPDATE SURVEY REPORT

CONFIDENTIAL

JANUARY 2018

WSP | PARSONS BRINCKERHOFF

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PHASE 1 HABITAT UPDATE SURVEY REPORT

Highways England

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1 INTRODUCTION

1.1 OVERVIEW

1.1.1 WSP was commissioned by Highways England to undertake ecological surveys in respect of the proposed A30 Chiverton Cross to Carland Cross Improvement Scheme (hereafter referred to as 'the proposed Scheme'). The proposed Scheme involves a new dual carriageway to run alongside the existing single carriageway road to relieve traffic pressures within the area. Surveys are required in order to inform an Ecological Impact Assessment (EcIA) forming part of an Environmental Statement (ES) supporting a Development Consent Order (DCO) Application for the proposed Scheme.

1.1.2 The purpose of this commission was to verify and update the findings of the Phase 1 Habitat Verification Survey[1] undertaken by WSP | Parsons Brinckerhoff in August 2015 and the 2003 Phase 1 Habitat Survey carried out by Hyder Consulting Ltd.[2]

1.1.3 The 'Phase 1 Habitat Update Survey', undertaken in 2017, recorded and mapped broad habitat types and invasive species within the proposed Scheme footprint and surrounding 100 m area. The Phase 1 Habitat Update Survey also identified habitats present that had the potential to support protected or notable species[3].

1.2 SITE CONTEXT

1.2.1 The A30 is a major trunk road running through the centre of Cornwall from West to East. The A30 forms an important route through the county of Cornwall and is under pressure during the summer months due to the high volume of tourism-related traffic. The section of road between Chiverton and Carland Cross is a traffic pinch point, where the dual carriageway narrows to single carriageway in both directions between two roundabouts. The single carriageway sits between grid references SW 74759 46978 at the western end and SW 84665 53957 at the eastern end.

1.2.2 The survey area consisted of the 12.7 km length of the proposed Scheme and a 100 m buffer either side.

1.2.3 The proposed Scheme area covers a variety of habitats; predominately arable farmland, but also including areas of heathland, woodland, wetland and grassland. The soft estate along this section of road contains hedgerows in some areas but also includes wide grass verges in others. The road at times is raised up offering panoramic views, at others it is cut into the bed rock with steep banks above. Numerous farm buildings and other residential buildings were present within the survey area.

[1] WSP|PB (2015). A30 Carland Cross to Chiverton Cross Phase 1 Habitat Verification Survey. A Report to Highways England
[2] Reported in A30 Carland Cross to Chiverton Cross Stage 3 Ecological Baseline Report (2005) Hyder Consulting Ltd.
[3] It should be noted that detailed surveys for all relevant species groups were completed as a result of the recommendations within the Phase 1 Habitat Verification Report (2015).

1.3 LEGISLATION AND PLANNING CONTEXT

1.3.1 Articles of wildlife and countryside legislation, planning policy guidance and references to both local and national biodiversity action plans and regional/local strategies and plans are referred to in this report. Their context and applicability is explained in the relevant sections of the report.

1.3.2 The key legislation of relevance are:

- The Conservation of Habitats and Species Regulations 2010 (Habitats Regulations) (as amended)
- The Wildlife and Countryside Act 1981 (as amended) (WCA)
- The Countryside and Rights of Way (CRoW) Act 2000
- The Natural Environment and Rural Communities Act (NERC) 2006
- National Planning Policy Framework 2012
- The Protection of Badgers Act 1992
- The UK Biodiversity Action Plan
- UK Post 2010 Biodiversity Framework
- The Local Biodiversity Action Plan for Cornwall

2 METHODOLOGY

2.1 DESK STUDY

2.1.1 A desk study was undertaken in 2015 to collate and review records of designated habitats and protected and notable species for the previous 10 years within 5 km of the existing A30 between Chiverton Cross and Carland Cross. This search area was extended to 10 km for records of bats and to 30 km for Special Areas of Conservation (SAC) where bats are a qualifying species within the 2015 desk study.

2.1.2 The ecological desk study provides background information on the biodiversity interest of the site, which complements data collected in the field by providing additional context for the site and its surroundings. It should be noted that an absence of desk study records for particular species or habitats does not necessarily convey an absence of such species or habitats in that area, but may be indicative of under-recording.

2.1.3 The desk-based study undertaken in 2015 included a search for all statutory and non-statutory designated sites within the respective search areas:

- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Ramsar Sites
- Sites of Special Scientific Interest (SSSI)
- National Nature Reserves (NNR)
- Local Nature Reserve (LNR)
- Sites of Nature Conservation Importance (SNCI)
- County Wildlife Sites (CWS)
- Cornwall Roadside Verge Inventory (CRVI)

2.1.4 The following source was contacted to compile baseline data: Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS).

2.1.5 The following web-based database was consulted: Multi Agency Geographic Information for the Countryside (MAGIC).

2.1.6 The desk study also included a review of Hyder (2005) reporting[4] on earlier iterations of the proposed Scheme.

2.1.7 For the purpose of this report, the above-obtained desk study results were refined in September 2017 to include consideration of the 12.7 km length of the proposed Scheme and 2 km either side only for all species. Individual species specific reports provided further detail where necessary.

2.1.8 The desk study was also refined in September 2017 to define all Habitats of Principal Importance (HPIs) (taken from the Priority Habitats Inventory[5]) and Species of Principal

[4] A30 Carland Cross to Chiverton Cross Stage 3 Ecological Baseline Report (2005) Hyder Consulting Ltd.

Importance (SPIs)[6] (obtained from the ERCCIS desk study) within 100 m and 2 km of the proposed Scheme respectively.

2.2 FIELD SURVEY

2.2.1 The Phase 1 Habitat Update Survey was undertaken by experienced WSP ecologists between 21st and 25th August 2017. The survey recorded the habitats present along the length of the proposed Scheme and surrounding 100 m area either side (hereafter referred to as 'the survey area'). Evidence of, or potential for, any protected or notable habitats and species were recorded.

2.2.2 The surveyors cross-referenced the survey findings with those obtained in 2015 to verify previous results and also completed the survey where gaps were found due to lack of access during the 2015 survey.

2.2.3 Phase 1 Habitat Survey is a standardised technique[7] for rapidly obtaining baseline ecological information over a large area of land.

2.2.4 Habitat types present are mapped with dominant plant species recorded in accordance with standard nomenclature[8] and their abundance is assessed on the DAFOR scale, as follows, where relevant:

- D Dominant
- A Abundant
- F Frequent
- O Occasional
- R Rare

2.2.5 In accordance with best practice[9], the standard Phase 1 Habitat Assessment methodology was extended to include the recording of evidence, of any protected and notable fauna that may be present within the survey area. Any incidental records or evidence were recorded and each habitat was evaluated for its potential to support protected or notable species.

2.2.6 Consideration was given to the presence of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA, 1981)[10] and the presence of any notable weeds including those covered under the Weed Act 1959[11] (where population is significant enough to be considered injurious).

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[5] https://data.gov.uk/dataset/priority-habitat-inventory-england2 accessed September 2017.
[6] HPIs and SPIs are listed on ection 41 of the NERC Act (2006)
[7] As published by the Joint Nature Conservation Committee (2010) Phase 1 Habitat Survey, a Technique for Environmental Audit. Revised Re-Print..
[8] Stace, C. (1997) New Flora of the British Isles; Second Edition. Cambridge University Press, Cambridge.
[9] CIEEM (2016) guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
[10] Act of Parliament, (1981). The Wildlife and Countryside Act 1981 (as amended), London: HMSO
[11] Act of Parliament. (1959). The Weed Act 1959. London: HMSO

2.3 SURVEY LIMITATIONS

2.3.1 The surveys were carried out between 21st and 25th August 2017 and as such it was not possible to observe full seasonal variations. There is potential for some species to have been missed as a result and only a selection of the species present will have been recorded. However, it is considered that the combination of historic records from the desk study, the previous survey results, and the survey undertaken provided an accurate representation of the various species and habitat types likely to be present at the site.

2.3.2 Cornish Hedges are not defined as a habitat type by JNCC. They were therefore identified on the Phase 1 Habitat Update Survey map as the most suitable hedgerow type. They were classified as either species-poor or species-rich (as appropriate) intact hedgerows where woody vegetation was present on top of the walls and as species-poor defunct hedgerows where there was no woody vegetation present. The locations of these features were identified and the results are presented separately within the Hedgerow Survey Report (2017)[12].

2.3.3 The Phase 1 Habitat Update Survey maps have been reproduced from field notes, and whilst this fulfils the requirements of a Phase 1 Habitat Survey, these maps are not intended to provide exact locations and distributions of key habitats, but an overview. Therefore, there may be some areas where minor boundaries are inaccurate. However, this was kept to a minimum through recording accurate field notes.

2.3.4 During this survey, residential gardens were not accessed, but were instead assessed from the external boundaries in order to update the results within the 2015 Phase 1 Verification Report. It was considered that the approach to the assessment of these features was sufficient for the purpose of obtaining broad Phase 1 Habitat classifications.

[12] WSP (2017). A30 Chiverton to Carland Cross Hedgerow Survey. A Report to Highways England.

3 RESULTS

3.1 DESK STUDY

DESIGNATED SITES

Statutory Nature Conservation Sites

3.1.1 One site designated under the Habitats Directive (Council Directive 92/43/EEC) was identified within the 2 km search area. This is Newlyn Downs SAC, which is located 150 m to the north of the proposed Scheme (refer to Table 3.1).

3.1.2 No SACs designated for bat interest were identified within the relevant 30 km search area of the proposed Scheme.

3.1.3 In addition, four SSSIs, designated under the WCA and CRoW Act 2000 were located within the 2 km search area. These are Newlyn Downs SSSI, Carrick Heath SSSI (comprised of several components located across the length of the proposed Scheme), Carnkief Pond SSSI and Ventongimps SSSI. The closest SSSI to the footprint of the proposed Scheme is a component of the Newlyn Downs SSSI which lies 138 m, to the north of the proposed Scheme in close proximity to the Carland Cross roundabout (refer to Figure 1).

3.1.4 There are no other statutorily designated sites within the 2 km search area.

3.1.5 A summary of the statutory sites is presented in Table 3.1 below, together with a brief description of the reason for designation (refer to Figure 1 for location in relation to the proposed Scheme).

Table 3.1: Statutory designated sites within the 2 km search area

SITE	REASONS FOR DESIGNATION	DISTANCE FROM PROPOSED SCHEME
Newlyn SAC	The site is primarily designated for the presence of the Annex 1 habitat Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*. This is the largest area of Dorset heath *E. ciliaris* in Cornwall and helps to represent the full geographical range of the distribution of this habitat.	150 m north at the eastern end.
Newlyn SSSI	The site sits within the same footprint as the SAC and is also designated for the presence of the Atlantic wet heath. The site supports dry and wet heath/mire communities and stands of willow scrub.	150 m north at the eastern end.
Carrick Heaths SSSI	The SSSI is comprised of ten components, six of which lie within the 2 km search area. The sites are characterised by a mosaic of wet and dry heathlands with populations of Dorset Heath which is nationally rare. Other important plant species include nationally scarce yellow centaury *Cicendia filiformis* and Cornish moneywort *Sibthorpia europea*. The sites support a range of fauna including the nationally scarce pearl-bordered butterfly *Boloria euphrosyne* and the Schedule 1 species, barn owl *Tyto alba* has been	Various, closest at 345 m centrally to the north.

	recorded at Penstraze Moor to the south west of the site.	
Carnkief Pond SSSI	The site encompasses a range of habitats including swamp vegetation, deciduous woodland, streams, herb-rich meadows, wet heath and bog. Open water areas are also present supporting red data book species balm-leaved figwort *Scrophularia scorodonia* and 12 species of dragonfly.	1910 m centrally to the north
Ventongimps SSSI	The sites is comprised mainly of wet dwarf shrub heath with areas of bog and willow-alder carr. The heath is important for the presence of Dorset heath and eyebright *Euphrasia virgursii*. The site is also important for supporting 13 species of Odonata including the nationally rare scarce blue-tailed damselfly *Ischnura pumilio* and 99 species of Lepidoptera including the narrow-bordered hawk moth *Hemaris tityus*.	1585 m centrally to the north

Non-statutory Nature Conservation Sites

3.1.6 There are 15 non-statutory CWS within the 2 km search area and four CRVI sites within 100 m of the proposed Scheme. CWS and CRVI sites are designated for their presence of habitats or species of local importance by local authorities. These sites are detailed in Table 3.2 below.

3.1.7 No other non-statutory sites, including Sites of Importance for Nature Conservation, were identified within the search area.

Table 3.2: Non-statutory designated sites found within 2 km search

SITE	REASONS FOR DESIGNATION	DISTANCE FROM PROPOSED SCHEME
Carland Moor CWS	The site runs along two valleys and the majority of this moor is within the Carrick Heaths SSSI. It is comprised largely of willow/gorse *Ulex europaeus* scrub and marshy grassland with small areas of purple moor grass *Molinia caerulea*. Mixed broadleaf woodland is also present. The site supports priority habitat wet woodland and priority species lesser horseshoe bat *Rhinolophus hipposideros*, brown long eared bat *Plecotus auritus* and otter *lutra lutra*.	204 m south east
Trenerry Wood CWS	The site occupies a sheltered valley along a stream with a variety of woodlands, these included wet woodland and mixed broadleaved woodland. Species present within these include grey willow *Salix cinerea*, downy birch *Betula pubescens*, alder *Alnus sp.*, ash *Fraxinus sp*. and oak *Quercus sp.*, with rich ground flora. Small glades and rides support butterflies and other invertebrates. Hedges occur throughout the site with mature trees present. Priority habitats include wet woodland, hedgerows, upland mixed woodland and upland oakwood. Priority species include bullfinch *Pyrrhula pyrrhula* and eel *Anguila anguilla*.	331 m south east
Treworgan Quarry CWS & Lower Tolcarne CWS	The site extends along a tributary of the River Allen with a poorly drained valley bottom, and forms a continuation between the Trenery Woods CWS and Bishops Wood CWS. The priority habitat wet woodland is dominated by grey willow, with abundant epiphytes and bryophytes throughout. The wet woodlands grade into marsh and wet meadow where soft rush dominates with greater tussock sedge *Carex paniculata* and a rich wetland flora. Priority species include linnet *Cardeulis cannabina* and otter.	1600m south
Bishop's Wood CWS	The main part of the site is comprised of commercial coniferous woodland where the management results in many intermediate habitats. Additionally some ancient woodland remains such as	2025 m south

	neglected oak coppice. The site supports priority habitats wet woodland and upland oak wood along with priority species bastard balm *Melittis melissophyllum*, slow-worm *Anguis fragilis*, song thrush *Turdus philomelos* and otter.	
Allet Bog CWS	The site lies adjacent to parts of the Carrick Heath SSSI at the head of a valley near to the River Allen. Wet willow woodland dominates in the valley bottom; two areas of rough rush-dominated pasture are present which remain waterlogged for much of the year. Some remnant heath is present supporting Dorset heath. Priority habitats are wet woodland, purple moor grass and rush pastures, and hedgerows. Priority species include a number of birds, common toad *Bufo bufo* and common lizard *Zootoca vivipara*, a number of bats including lesser horsehoes and noctule *Nyctalus noctula*, and otter.	310 m south
Carnhot CWS	The site extends along a tributary of the River Carnon, it is fast flowing with grassy margins and several shallow pools. Wetland habitats surround the site and supports a range of wildlife and is considered worthy of conservation for Ordanata alone. Priority habitats are thought to be Lowland fens and priority species include grass snake *Natrix helvetica*.	1255 m south west
Silverwell Moor CWS	The site lies adjacent to part of the Carrick Heath SSSI and is comprised of two rush dominated pastures which include some moderately rich fen communities. These pastures are enclosed by Cornish hedges which support large stands of grey willow. Priority habitats include lowland fens and hedgerows.	476 m north west
Park Hoskyn CWS	The site lies along a steep sided valley with a fast flowing stream. It is comprised of broadleaved woodland, small areas of fen, scrub, a small quarry and disused mineshaft. Priority habitat is lowland fen with priority species including 10 moth species. Badger *Meles meles* have also been recorded within the site.	781 m north west
Callestick Vean CWS	The site is a narrow sheltered valley along a stream comprising a range of habitats including broadleaved woodland, wet woodland and oak woodland. Fen is present within the site along with patches of scrub. Priority habitats are wet woodland, lowland fens and upland oakwoods, priority species are otter.	430 m north
Polvenna Wood CWS	The site sits on either side of part of the Carrick Heath SSSI. The larger section is dominated by wet willow woodland supporting rich epiphytic growth and particularly rich ground flora. The smaller section includes wet woodland and open marshy areas with a man-made pond. Priority habitat is wet woodland and priority species include greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat.	345 m north
Carnkief Pond CWS	The site is situated near to the Carnkief Pond SSSI and comprises small areas of mixed broadleaved woodland, herb rich grassland and a series of poorly drained fields separated by wide hedgerows. Priority species include common toad, grass snake and hedgehog *Erinaceus europaeus*.	1605 m north
Lelight CWS & Brickmoor Plantation CWS	The site lies adjacent to part of the Carrick Heath SSSI. Lelight Plantation is dominated by a mosaic of commercial coniferous and broadleaved plantations; it contains a number of species and includes the occasional wet flush. Brickmoor Plantation is dominated by silver birch *Betula pendula* woodland where there is a rich and diverse bryophyte and lichen flora and ferns. The site also contains a small larch *Larix* sp. plantation and wet willow woodland. Priority habitat is wet woodland, with priority species of moth being present.	1015 m north
Carn Moor CWS	The site is bisected by a disused railway and supports a diversity of habitats and species. The moor is wet and dry heathland with scattered scrub and a man-made pond. The site is poorly drained and wetland areas are present. Priority habitats are lowland heathland, purple moor grass and rush pasture, and wet woodland. Priority species include several butterflies such as pearl-bordered fritillary, reptiles such as adder *Vipera berus* and grass snake. A number of flora species are present including penny royal *Metha pulegium* and pale dog violet *Viola lactea*.	1985 m north

Goonwinnow CWS	The site is a low lying valley following a stream with well-developed and undisturbed wet willow woodland with abundant bryophytes and lichens. The priority habitat is wet woodland.	365 m north east
Benny Mill Valley CWS	The site contains a range of undisturbed habitats along a 4 km stretch of stream. The site is made up of grey willow dominated wet woodland and herb rich meadow. Drier broadleaved woodland occurs in the northern part of the site containing species such as Cornish elm *Ulmus stricta* and oak. The priority habitat is wet woodland and the site supports a number of notable species such as willow warbler *Phylloscopus trochilus* whiskered bat *Myotis mystacinus* and badger.	509 m north east
CRVI BS316	The site supports lowland heathland vegetation with Dorset heath.	Online at western end
CRVI BS214	The site supports wild parsnip *Pastinaca sativa* which is local and rare in Cornwall	Online at western end
CRVI BS315	The site supports Dorset heath.	Online, central near Callestick
CRVI BS22	The site supports Babington's leek *Allium ampeloprasum babingtonii*.	On side road centrally near to Shortlanesend

Habitats of Principle Importance (HPI)

3.1.8 The desk study identified six HPIs within the 2 km search area. These were deciduous woodland, good quality semi-improved grassland, lowland fens, lowland heathlands, purple moor grass and rush pastures, and traditional orchards. These are shown in Figure 2.

3.1.9 Of these habitats, deciduous woodland and lowland heathland are located in or within 100 m of the proposed Scheme footprint.

PROTECTED OR SPECIES OF PRINCIPAL IMPORTANCE (SPI)

3.1.10 The desk study identified a number of protected or notable SPIs within the study area these are detailed below. Where relevant, further details relating to desk data are provided within individual species reports.

Badger

3.1.11 The desk study returned 116 records of badger within 2 km of the proposed Scheme. This included four setts at Trevemper, Zelah, Tremeneth and Penhale Sands.

3.1.12 The Hyder surveys identified a total of 26 setts within 500 m of the current A30 alignment. This included three main setts and 23 outliers.

Otter

3.1.13 The desk study identified a total of 13 records of otter within the 2 km of the proposed Scheme. Of these there were seven road kill records, six of which were on the A30. The remaining records were spraints or field records.

3.1.14 The Hyder data identified four road kill records within 500 m of the current A30 (as gathered through consultation with the Environment Agency). Two of these records were at Zelah Hill, one was located near to Chybucca and one was located near to Allet Common.

Water vole

3.1.15 No records were identified for water vole *Arvicola amphibius* within the search area. It is considered that the species is absent from Cornwall apart from within localised release sites in the north of the county.

Dormice

3.1.16 No records of dormice *Muscardinus avellanarius* were returned through the desk study within the search area.

3.1.17 The Hyder surveys identified suitable habitat for dormice and carried out nest tube and nest box surveys. However, these proved inconclusive.

Bats

3.1.18 The desk study returned over one thousand records for twelve species of bat within the 10 km search area. These included the following species:

- Barbastelle *Barbastella barbastellus*
- Brown Long-Eared Bat
- Common Pipistrelle *Pipistrellus pipistrellus*
- Daubenton's Bat *Myotis daubentonii*
- Greater Horseshoe Bat
- Lesser Horseshoe Bat
- Nathusius Pipistrelles *Pipistrellus nathusii*
- Natterer's Bat *Myotis nattereri*
- Noctule
- Serotine *Eptesicus serotinus*
- Soprano Pipistrelle *Pipistrellus pygmaeus*
- Whiskered Bat

3.1.19 Many results were not distinguished to species level and were either classed as bat, bat sp. or pipistrelle.

3.1.20 Of the results obtained, a number indicated the presence of bat roosts within 10 km for species such as brown long eared bat, common pipistrelle, greater horseshoe bat, lesser horseshoe bat and natterer's bat. A number of these roosts were located within 250 m of the proposed Scheme including roosts for lesser horseshoe bat, common pipistrelle bat, and natterer's bat.

3.1.21 The Hyder surveys identified the presence of common pipistrelle, noctule, brown long-eared, and natterer's bat activity within 500 m of the current A30 alignment. Two roost sites for common pipistrelle and brown long-eared were located at Trevalso and Nancarrow Farm. Additionally a hibernation roost (species not specified) was surveyed at Little Tresawsen.

Birds

3.1.22 The desk study returned 913 records of 77 species within the search area. This included 13 Schedule 1 species such as barn owl, hobby *Falco subbuteo*, kingfisher

Alcedo atthis and peregrine falcon *Falco peregrinus*. The desk study also returned historical records of nightjar *Caprimulgus europaeus* within the search area.

3.1.23 Barn owl records numbered 19 and were noted to be roosts or nest sites, with three field records. Due to the sensitivity of these records, the grid references were not supplied for all records. However, the field records were recorded at Allet, Penny-come-quick and near to Mitchell to the east of Carland Cross.

3.1.24 Previous surveys undertaken by Hyder recorded up to 35 species on site. These included Birds of Conservation Concern red list[13] species such as skylark *Alauda arvensis*, song thrush, starling *Sturnus vulgaris*, linnet, and bullfinch. Amber listed species included kestrel *Falco tinnunculus*, house martin *Delichon urbica*, and meadow pipit *Anthus pratensis*. During the bat surveys associated with previous surveys, a barn owl was noted to fly over the A30 near to Marazanvose.

Herpetofauna

3.1.25 The desk study returned 19 records for all four common species of reptile within the search area. These were slow worm *Anguis fragilis*, common lizard, grass snake and adder. In addition, seven records were returned for the amphibian common toad.

3.1.26 Previous surveys undertaken by Hyder identified the presence of common lizard and adder within heathland south of the A30 in proximity to Carland Cross.

Fish

3.1.27 One record for fish was returned within the 2 km search area. This was eel *Anguilla anguilla*, located at the Ventongimps Nature Reserve.

3.1.28 The Hyder 2005 report identified that substantial spawning populations of SPIs Atlantic salmon *Salmo salar* and brown trout *Salmo trutta,* and important nursery habitats, were associated with water courses within their study area. Additionally eel, bullhead *Cottus gobio* and lampreys *Lampetra* spp. were reported as being recorded within the watercourses in the study area.

White clawed crayfish

3.1.29 No records were identified for white clawed crayfish *Austropotamobius pallipes* within the search area. It is considered that the species is absent from Cornwall.

Invertebrates

3.1.30 The data search returned 853 records for invertebrates within the 2 km search area. This included 26 SPIs. These included sallow moth *Xanthia ictertitia*, cinnabar moth *Tyria jacobaeae* and wall butterfly *Lasiommata megera* and a Schedule 5 species the silver studded blue butterfly *Plebejus argus*.

3.1.31 Previous Hyder studies identified the fragmented heathland site near to Carland Cross as potentially being of importance to invertebrates. A preliminary assessment was made in September 2004, with little interest being identified. It is possible that the timing of this survey may have affected the suitability of this survey.

[13] Eaton *et al*. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708-746.

Other Species of Principal Importance

3.1.32 The desk study also identified two further species listed as SPIs within 2 km of the proposed Scheme. These were hedgehog and harvest mouse *Micromys minutus*. The records identified 32 hedgehog records throughout the search area and one harvest mouse record near Chacewater.

Flora

3.1.33 The desk study returned a large volume of records for plants within the 2 km search area. This included the Schedule 8 WCA species bluebell *Hyacinthoides non-scripta* and seven SPIs. These were yellow centaury, lead moss *Ditrichum plumbicola*, heath lobelia *Lobelia urens*, the toothed mushroom *Phellodon confluens*, three lobed crowfoot *Ranunculus tripartitus*, tongue-leaf copper moss *Scopelophila cataractae* and pale dog violet.

3.1.34 The Newlyn Downs SSSI/SAC is designated for the presence of the largest area of Southern Atlantic wet heath with Dorset heath and cross-leaved heath in Cornwall. Previous surveys from Hyder indicated that these species were present in a fragment of heathland near to Carland Cross and may therefore represent a remnant section of this habitat. The Dorset heath was described as being in the south western tip of the heathland fragment.

3.2 FIELD SURVEY

GENERAL HABITAT TYPES

3.2.1 The survey area supported a number of habitat types as defined by the JNCC standard methodology for Phase 1 Habitat Assessment. The code used for the associated categorisation is included in brackets after the habitat type to allow for cross reference.

3.2.2 The proposed Scheme passes through largely arable and pastoral farmland areas, with hedgerows and belts of trees bisecting the fields. Some areas of woodland are present within the survey area, along with heathland, marshy grassland, scrub and wet areas such as streams and ponds. The field survey updated information mapped during the 2015 Phase 1 Verification Survey[1]. The results are shown on Figure 3 and detailed below. Full species lists are included in Appendix A.

3.2.3 Minor differences were identified between the 2015 verification report and this update survey. The majority of these differences were related to fields previously being identified as arable or grassland and changing as part of farming rotations. A number of areas were different due to the inability to fully access these areas in 2015, which resulted in a classification of semi-improved grassland or improved grassland and upon closer inspection in 2017 required amending.

3.2.4 One area identified as a change was located within the fields to the west of Penny-come-quick. This habitat had been classified as poor semi-improved and was upgraded to rich semi-improved neutral grassland. Another area at Carland Cross was re-classified to semi-natural broadleaved woodland, when it was previously classed as scrub. To the north of Carland Cross one field was previously classified as arable. Due to changes in the farming regime of the field, it was now only partly arable, with a mixture of tall ruderals and semi-improved neutral grassland.

3.2.5 Due to the high level survey approach in 2015, semi-improved grassland was classified as acid grassland (B2). During the 2017 survey, further details were gathered through the species lists and it was determined that these grasslands were neutral (B1).

Semi-natural broadleaved woodland (A.1.1.1)

3.2.6 This habitat was found throughout the site in small and larger sections. They were often linear belts associated with streams or forming larger blocks that connected to wider habitats. The broad-leaved woodland within the survey area contained common and widespread deciduous trees, including sycamore *Acer pseudoplatanus*, oak, holly *Ilex quifolium*, and hawthorn *Crataegus monogyna*, goat willow *Salix caprea*, ash and beech *Fagus sylvatica*. A full species list is provided in Appendix A.

Semi-natural coniferous woodland (A.1.2.1)

3.2.7 This habitat was found in a few small areas across the site including an area identified which encompassed the waterbody within the area of heathland to the west of Carland Cross. The woodland was predominately Monterey pine *Pinus cf. radiata* and grey willow *Salix cinera*. Small areas of semi-natural coniferous woodland and scattered coniferous trees present across the site were formed by Scot's pine *Pinus slyvestris* and Leylandii sp. A full species list is in provided Appendix A.

Semi-natural mixed woodland (A.1.3.1)

3.2.8 This habitat was found in two areas to the east of the site. These included an area adjacent to the services at Carland Cross formed by Scot's pine, sycamore, ash, elder *Sambucus nigra* and wild privet *Ligustrum vulgare*, and area adjoining the semi-natural coniferous woodland within the heathland west of Carland Cross.

Coniferous Plantation Woodland (A.1.2.2)

3.2.9 Two distinct areas of coniferous plantation woodland were identified, these were formed by an area of plantation larch woodland to the south of the A30 and west of the Chybucca junction, see Appendix A.

Scrub (A.2.1 / A.2.2)

3.2.10 Scrub was present across the site forming small areas of transitional fringe habitat often associated with woodlands or hedgerows or larger areas where it has become dominant, including large unmanaged areas south of Town and Country Motor Centre and land south of Chiverton Cross. Species identified included dominating bramble *Rubus fruticosus agg.* European gorse, goat willow and blackthorn *Prunus spinosa*. A full species list is provided in Appendix A.

Broadleaved Scattered Trees (A.3.1)

3.2.11 To the west of the quarry pond in the remnant heathland near to Carland Cross there was a small area of scattered broadleaved trees. These were primarily willow and oak.

Coniferous Scattered Trees (A.3.2)

3.2.12 A small number of scattered coniferous trees were present at Trevissome Park towards the western end of the site.

Semi-improved neutral grassland (B.2.2)

3.2.13 Areas of semi-improved neutral grassland were largely limited to low intensity management field compartments, which are located sporadically across the survey area. The sward was dominated by common bent-grass *Agrostis capillaris*, Yorkshire

fog *Holcus lanatus* and sweet vernal grass *Anthoxanthum odoratum*. Full species lists, relative abundance and locations are presented in Appendix A.

3.2.14 Semi-improved field margins and verges were typically comprised of a similar sward to the adjacent habitat with cock's foot *Dactylis glomerata* and false oat-grass *Arrhenatherum elatius* generally forming the dominant species.

Improved grassland (B.4)

3.2.15 This habitat was fairly dominant across the site, with numerous fields supporting livestock. The species identified included perennial rye grass *Lolium perenne* and Yorkshire fog. A full species list and locations are provided in Appendix A.

Marshy grassland (B.5)

3.2.16 This habitat was found in a few small areas across the site, usually associated with unmanaged fields neighbouring a watercourse. The habitat was characterised by large areas of soft rush *Juncus effusus* and Yorkshire fog. A full species list and locations are presented in Appendix A.

Poor semi-improved grassland (B.6)

3.2.17 This habitat was located across the site in slightly lower abundance than improved grassland, and was dominated by common bent-grass and Yorkshire fog. A full species list is presented in Appendix A.

Bracken (C.1.1 / C.1.2)

3.2.18 Bracken *Pteridium aquilinum* was located in two discreet areas within the site. A scattered block was located along a Cornish hedge bank near to the four burrows wind farm. A dense patch of bracken was located at the eastern end of the scheme surrounding the remnant of heathland near to Carland Cross.

Tall ruderals (C.3.1)

3.2.19 Scattered stands of tall ruderals were found throughout the site, often associated with the edges of fields or buildings and larger area within unmanaged field compartments, namely north of Carland Cross and east of the Chybucca junction. Species present included spear thistle *Cirsium vulgare*, creeping thistle *Cirsium arvense*, hogweed *Heracleum sphondylium*, teasel *Dipsacus fullonum*, ragwort *Senecio jacobaea*, nettle *Urtica dioica*, broad-leaved dock *Rumex obtisifolius* and cock's foot, with sections of ruderal adjacent the A30 carriageway being comprised of rosebay willowherb *Chamerion angustifolium*. A full species list is presented in Appendix A.

Dry Dwarf Shrub Heath (D.1)

3.2.20 This habitat was located at the eastern end of the site, adjacent to the road and to the north of the road associated with the Newlyn Downs SSSI and SAC. This habitat was dominated by bell heather *Erica cinerea*, common heather *Calluna vulgaris*, cross leaved heather, purple moor grass and western gorse *Ulex galli*. A full species list is presented in Appendix A.

Standing water (G.1)

3.2.21 Standing water was located in two locations across the site as ponds, one within the heathland area south of Carland Cross, which was not accessible due to dense

vegetation, and secondly, to the east of Mount Pleasant. Emergent vegetation recorded at the second pond included, brooklime *Veronica beccabunga*, marsh marigold *Caltha palustris* and meadow sweet *Filipendula ulmaria*. A full species list is presented in Appendix A.

Running water (G.2)

3.2.22 A number of slow running water systems were present across the site. These were largely narrow or ephemeral agricultural drainage ditches or ditches leading to the River Allen and surrounding catchment. Species composition observed was dependent on flow rate and depth of the channel, with the ditches observed hosting a variation of the following species: wavy bittercress *Cardamine flexuosa*; hemlock water dropwort *Oenanthe crocata*; mare's-tail *Hippuris vulgaris*; common figwort *scrophularia nodosa*; opposite-leaved golden saxifrage *Chrysosplenium oppositifolium;* meadowsweet; pendulous sedge *Carex pendula;* and hemp agrimony *Eupatorium cannabinum*. A full species list is presented in Appendix A.

Arable land (J.1.1)

3.2.23 This habitat was co-dominant across the site with improved grassland. The majority of arable land was formed by ploughed fields or crops such as barley *Hordeum vulgare* and wheat *Triticum sp*.. These fields were largely monocultures with sporadic area of arable weeds, including scentless mayweed *Tripleurospermum inodorum*, knotgrass *polygonum aviculare*, nipplewort *Lapsana communis* and groundsel *Senecio vulgaris*. A full species list is presented in Appendix A.

Amenity grassland (J.1.2)

3.2.24 Amenity grassland was present primarily around junctions and houses across the site. Larger areas were present around the service stations at either end of the site. Species present included Yorkshire fog, common mouse ear *Cerastium fontanum*, ribwort plantain *Plantago lanceolata*, sheep sorrel (*umex acetosella*, common knapweed *Centaurea nigra*, dandelion *Taraxacum officinale*, daisy (*Bellis perennis*), white clover *Trifolium repens*, creeping buttercup *Ranunculus repens*, creeping cinquefoil *Potentilla reptans*, selfheal *Prunella vulgaris*, and hawkbeard sp. *Crepis sp*.. A full species list is presented in Appendix A.

Introduced shrubs (J.1.4)

3.2.25 Small areas of introduced shrubs were located adjacent to houses and gardens, they were associated with species such as cotoneaster *Cotoneaster sp*., rhododendron *Rhododendron ponticum* and hydrangea *Hydrangea sp*..

Species-rich intact hedge (J.2.1.1)

3.2.26 A total of 29 species-rich hedgerows with infrequent or no standard trees were recorded from across the survey area, the locations of which are presented in Figure 3.

3.2.27 Individual hedgerows were comprised of various woody species compositions, with the more numerous species present including, hawthorn, blackthorn, hazel, grey willow, goat willow, sycamore, holly, pedunculated oak, elder, spindle *Euonymus europaeus*, gorse and dog rose *Rosa canina,* with less frequently recorded hedgerow species including, alder, apple sp. *Malus domestica*, bird cherry *Prunus padus*, field maple *Acer campestre*, elm species *Ulmus* spp., beech and wild privet. In addition to the woody species forming the hedgerow, a number of other species were recorded, including honeysuckle *Lonicera periclymenum*, bramble and ivy *Hedera helix*. A full species list is presented in Appendix A.

Species poor intact hedge (J.2.1.2)

3.2.28 A total of 73 species-poor intact hedges (excluding un-vegetated Cornish hedges, see Hedgerow Survey Report, 2017) were recorded across the survey area. The composition included varied selections of the species listed for species-rich intact hedgerows with blackthorn and hawthorn forming the majority of hedgerows assessed. A full species list is presented in Appendix A.

Species poor defunct hedge (J.2.2.2)

3.2.29 Four species-poor defunct hedgerows without either fence or bank, or those hedges that livestock had damaged or degraded the hedge or bank were recorded on site. These were largely formed by heavily degraded Cornish Hedges with few woody species, namely blackthorn, hawthorn and gorse.

3.2.30 A further 126 largely un-vegetated Cornish Hedges are included within this species-poor defunct hedgerows category, due to their low woody species composition and degraded banks largely reducing their stock proofing abilities. A full species list is presented in Appendix A.

Species-rich hedge with trees (J.2.3.1)

3.2.31 In total 40 species-rich hedgerows with two or more trees per 100 m were recorded across the survey area. The number of species within the hedgerow and the trees included varied selections of the species listed for species-rich intact hedges, with ash and pedunculated oak being the dominant standard trees across the survey area. A full species list is presented in Appendix A

Species-poor hedge with trees (J.2.3.2)

3.2.32 A total of 33 species-poor hedgerows with less than two trees per 100m were recorded from across the survey area. These hedgerows largely comprised of the same woody species forming species-poor intact hedgerows, with the addition of frequent standard trees, commonly oak and ash. A full species list is presented in Appendix A

Invasive species

3.2.33 Japanese knotweed *Fallopia japonica* was present in two areas within the survey area to the south of Chiverton Cross and was evidently undergoing weedkiller treatment *in situ*. This plant infers no ecological value but is a Schedule 9 species on the Wildlife and Countryside Act 1981 (as amended). Therefore, it is an offence to plant or otherwise cause the species to grow in the wild. In addition, under the Environmental Protection Act 1990 it is considered controlled waste and therefore has to be disposed safely at a licensed landfill.

3.2.34 Other Schedule 9 species identified included Montbretia *Crocosmia x crocosmiiflora*, Japanese Rose *Rosa rugosa*, Rhododendron *Rhododendron sp.*, cotoneaster *Cotoneaster sp.*, three-cornered garlic *Allium triquetrum* and variegated archangel *Lamiastrum galeobdolon*, locations of which are presented in Figure 3 and Table 3.3.

Table 3.3: Invasive species map number

NUMBER OF INVASIVE SPECIES FEATURE AS IDENTIFIED ON FIGURE 3	DESCRIPTION
1	This indicates the presence of the Wildlife and Countryside Act Schedule 9 listed plant Montbretia *Crocosmia x crocosmiiflora* which was located at numerous positions within the survey area. This species was recorded in 42 locations across the survey area, they were often associated with residential gardens or roadside verges.
2	This indicates the presence of the Wildlife and Countryside Act Schedule 9 listed plant Rhododendron which was located at numerous positions within the survey area. This was recorded in six locations across the survey area, this included Chyverton Park within the woodland where it was a dominant species.
3	This indicates the presence of the Wildlife and Countryside Act Schedule 9 listed plant Japanese knotweed which was located at two positions within the survey area to the south west of Chiverton Cross.
4	This indicates the presence of the Wildlife and Countryside Act Schedule 9 listed plant Japanese rose which was located at several positions within the survey area. This was associated with residential gardens near to Chiverton Cross.
5	This indicates the presence of the Wildlife and Countryside Act Schedule 9 listed plant Cotoneaster which was located south of Chiverton Cross.
6	This indicates the presence of the Wildlife and Countryside Act Schedule 9 listed plant Three-cornered garlic to the east of Zelah.
7	This indicates the presence of the Wildlife and Countryside Act Schedule 9 listed plant variegated archangel within the woodland at Chyverton Park.

PROTECTED SPECIES

3.2.35 During the field survey, habitat was assessed for the potential to support protected species. Any incidental records or evidence found during this survey were also noted. This information was gathered in support of the Phase 1 Verification Survey 2015, which identified the need for further species surveys. The species-specific survey reports detail the locations of evidence. A summary of the species supported by the habitats present on site is detailed in Table 3.4 below.

Table 3.4: Protected species potential habitats

SPECIES	HABITAT DESCRIPTION
Badger	The survey area provided optimal habitat for badger activity, with a mixture of arable and pastoral fields, woodland, and hedgerows, often with banks. The habitat mosaic throughout the survey area provided key foraging areas and good opportunities for sett building. During the survey, a number of badger setts, latrines and mammal tracks were noted, particularly around the fields to the east of Penny-come-quick, and around the fields between Tolgroggan Farm and Trevalso Farm.
Otter	The survey area provided suitable habitat for dispersing otter, however no field signs were noted during the survey and the survey area was considered largely unsuitable for breeding otter. A road kill otter was noted on the A30 near to Zelah at the Henver Lane junction on 23rd August 2017. This incidental sighting provided evidence of use of the area by otter, and it was considered that the otter population move between river catchments across the A30.
Dormice	Suitable habitat in the form of thick hedges and woodland blocks or belts was present throughout the site. No evidence was identified during the survey period, but it was considered that the network of habitat corridors could support dormice.
Bats	The mosaic of habitats including farmland, gardens and woodlands, along with a network of hedgerows and lanes with trees forming canopies overhead provide good foraging areas for bats. A variety of potential tree and building roost sites were still present as described in the 2015 survey.
Birds	The survey area included habitats suitable of supporting a range of breeding birds and wintering birds. Hedgerows and woodland offered nesting opportunities along with open grassland and arable fields for ground nesting birds such as skylark. Buildings within the survey area also provided nesting opportunities with species such as house sparrows and

	barn owls. The habitats also provided suitable foraging for birds throughout the year. The heathland habitat nearby at Newlyn Downs SSSI/SAC was considered suitable to offer potential for breeding nightjar.
Reptiles	The habitats within the survey area were considered to still support reptiles, habitats such as heathland, wet areas near boxheater junction and Cornish hedges provided suitable foraging and hibernation sites.
Fish	The water courses within the survey were considered to still support the potential for fish species to be present, although the majority were considered to be small, they may provide links between the bigger catchment areas of the associated rivers.
Invertebrates	The grassland, woodland edges and hedgerows were still considered to support the potential for invertebrate species to be present.

OTHER S41 SPI NOTABLE SPECIES

3.2.36 Species specific surveys were not undertaken for the Section 41 Species of Principal Importance (as listed under the NERC Act 2006). However, habitat suitable to support a number of notable species was identified during the survey.

3.2.37 The survey area covered a variety of habitats, including networks of gardens within Zelah and near to Chiverton Cross roundabout. These habitats provide suitable habitat for hedgehog. Whilst no evidence was recorded during the survey of this species, the habitat was extensive enough to support a healthy population.

3.2.38 The network of arable and pastoral fields with good boundaries in the form of Cornish hedges provided suitable habitat for harvest mice throughout the survey area. The tussocky grass along the non-woody vegetated Cornish hedges may provide suitable nesting sites. No evidence was recorded during the survey.

3.2.39 It was considered that the arable habitat within the survey area had the potential to support brown hare *Lepus europaeus,* however none were noted during the survey. No records were returned from the desk study.

3.2.40 The wet areas within the survey area provided suitable habitat for common toad. These areas were located along the length of the proposed Scheme, with notable areas near to Nanteague Farm, at Marazanvose, within the woodland at Chyverton Park, within the fields associated with Trevalso Farm near to Zelah, and within the fields either side of Penny-come-quick. The disused quarry located within the remnant of heathland south of the current A30 also provided habitat for both species. However, this is an isolated area with the A30 to the north and farmland to the south.

INCIDENTAL RECORDS

3.2.41 During the week of the surveys, a dead otter was observed on the A30 to the north of Zelah at the Henver Lane junction on 23rd August 2017. It had apparently been killed by a car.

4 SUMMARY

4.1.1 This report updated the information gathered in 2015 as part of the Phase 1 Verification Report. Consistent with the Verification Report, this study identified the area surrounding the proposed Scheme as supporting a wide range of habitats that potentially supported a number of fauna species. The desk study was reassessed with a search area of 2 km for the purpose of this report, and the field survey was consolidated to 100 m either side of the proposed Scheme, and included potential site compounds and work areas.

4.1.2 The desk study identified five statutory designated sites within the search area comprising one SAC and four SSSIs. The proposed Scheme will not involve any land take of a statutory site. Additionally, there were 15 non-statutory sites (CWS) within 2 km and four CRVIs within 100 m. The proposed Scheme will not involve any land take of a non-statutory site. Further assessment is required to establish the extent of any indirect impacts as a result of the construction and operation of the proposed Scheme.

4.1.3 The field survey identified numerous habitat types. However, the area was predominantly arable farmland or pasture. The dominant habitat types were poor semi-improved grassland, improved grassland, arable and hedgerows. Blocks of woodland were present. However, they were scattered in some areas. One area of heathland was identified within the survey area near to Carland Cross, within the footprint of the proposed Scheme.

4.1.4 Minor changes were identified between the two surveys, primarily the change of arable to poor semi-improved or improved grassland vice versa due to farming land use changes. Other changes included small areas of grassland reclassification such as semi-improved acid grassland to semi-improved neutral grassland, scrub to woodland, and arable to semi-improved neutral grassland with tall ruderals.

4.1.5 The survey identified suitable habitat to support a number of fauna species, consistent with those identified in 2015. These were badger, otter, dormice, bats, breeding and wintering birds, barn owls, nightjar, reptiles, fish and invertebrates. Additionally, habitat was considered suitable for SPIs including hedgehog, harvest mice, brown hare and common toad.

4.1.6 The field survey also identified the presence of invasive species including Japanese knotweed, Montbretia, Japanese Rose, Rhododendron, cotoneaster, three-cornered garlic and variegated archangel. The majority of these were associated with residential properties.

N

Benny Mill Valley CWS
Newlyn Downs SSSI & SAC
Newlyn Downs SSSI & SAC
Newlyn Downs SSSI & SAC
Goonwinnow CWS
Carrick Heaths SSSI
Carland Moor CWS
Boswiddle CWS
Trenerry Wood CWS
Carnkief Pond CWS
Leigh & Brickmoor Plantation CWS
Carnkief Pond SSSI
Carrick Heaths SSSI
Heaths SSSI
Chyverton Reserve CWT
Treworgan Quarry & Lower Tolcarne CWS
Ventongimps Moor SSSI
Carrick Heaths SSSI
Ventongimps Moor CWT
Polvenna Wood CWS
Park Hoskyn CWS
Callestick Vean CWS
Carrick Heaths SSSI
Park Hoskyn The Hayman Reserve CWT
Silverwell Moor CWS
Allet Bog CWS
Allet Bog Reserve CWT
Carrick Heaths SSSI
Carrick Heaths SSSI
Two Burrows Reserve CWT
Five Acres Reserve CWT
Bishops Wood CWS
Carrick Heaths SSSI
Carrick Heaths SSSI
Carrick Heaths SSSI
Carnhot CWS

Propsed Route
2km Study Area
Cornwall Roadside Inventory Sites
Site of Special Scientific Interest
Special Area of Conservation
County Wildlife Site
Cornwall Wildlife Trust Reserve
Ancient Woodland

0 0.5 1 2
Kilometres

Rev	Date	Description	By	Chk	App

Notes:

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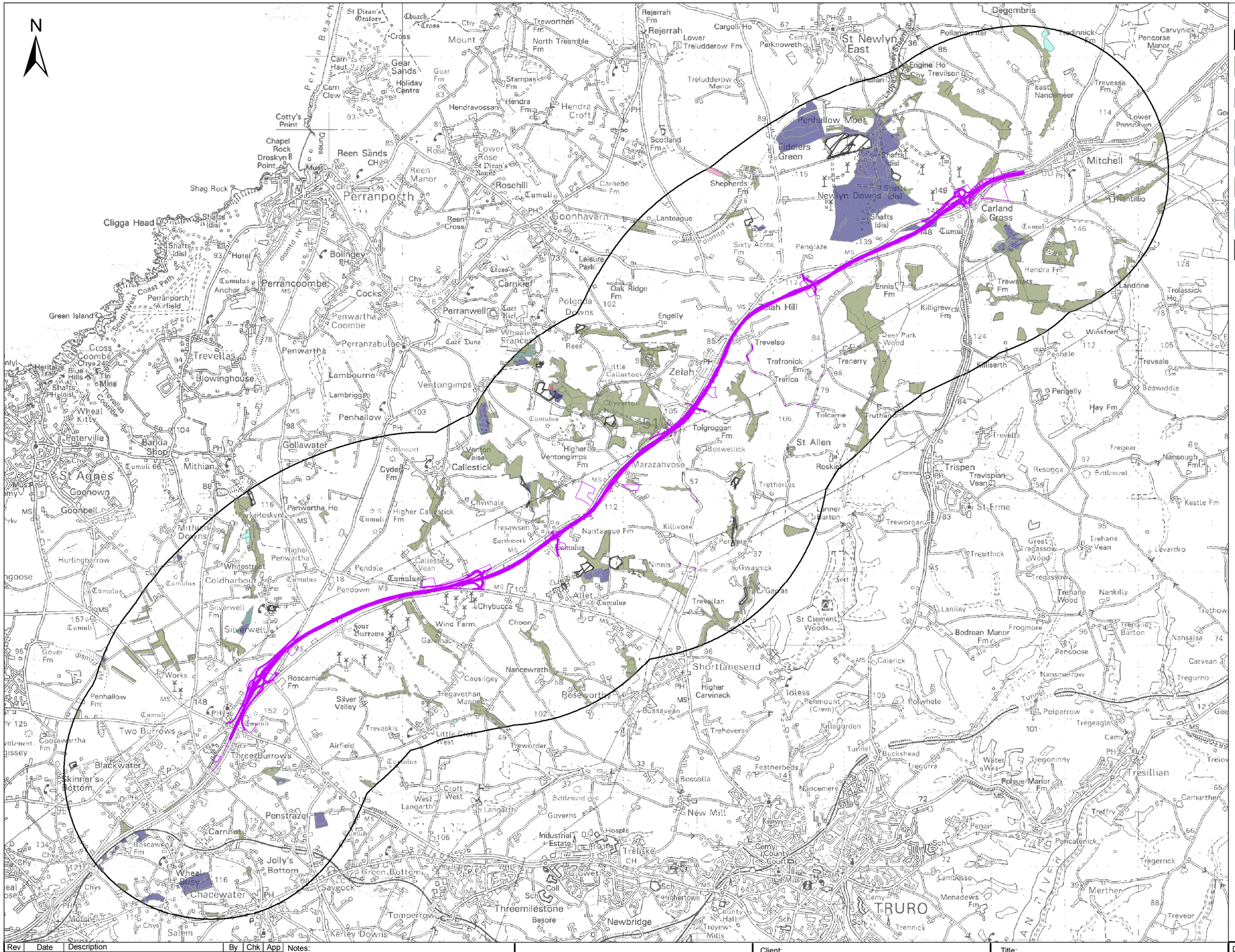
Client: WSP

Project: A30 CHIVERTON TO CARLAND CROSS

Title: STATUTORY AND NON-STATUTORY SITES WITHIN 2km

Drawn: JSdS		Checked: ET	
Designed: GH		Approved: UD	
Date: 03/11/2017	Scale:	A3	Sheet:
Project Number:	Drawing Number:		Revision:
70004582	FIGURE 1		

Login: DeSouzaJ
Plot Date: 03/11/2017
File Name: \\uk.wspgroup.com\central data\Projects\70004xxx\70004582 - A30 Chiverton to Carland Cross PCF Stage 2E Models and Drawings\GIS\Third Party\Ben Smith 20-09-17\Phase 1\Figure 1 - Statutory and non-statutory sites within 2km.mxd



Rev	Date	Description	By	Chk	App

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Client: WSP

Project: A30 CHIVERTON TO CARLAND CROSS

Title: HABITATS OF PRINCIPAL IMPORTANCE WITHIN 2km

Drawn: JSdS		Checked: ET	
Designed: GH		Approved: UD	
Date: 02/10/2017	Scale:	A3	Sheet:
Project Number: 70004582		Drawing Number: FIGURE 2	Revision:

Login: DeSouzaJ
Plot Date: 02/10/2017
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Notes:

ID	Invasive Species
1	Montbretia
2	Rhododendron
3	Japanese knotweed
4	Japanese rose
5	Cotoneaster
6	Three-cornered garlic
7	Variegated archangel

Rev	Date	Description	By	Chk	App

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Project: A30 CHIVERTON TO CARLAND CROSS

Title: PHASE 1 HABITAT SURVEY UPDATE REPORT PAGE 1 OF 11

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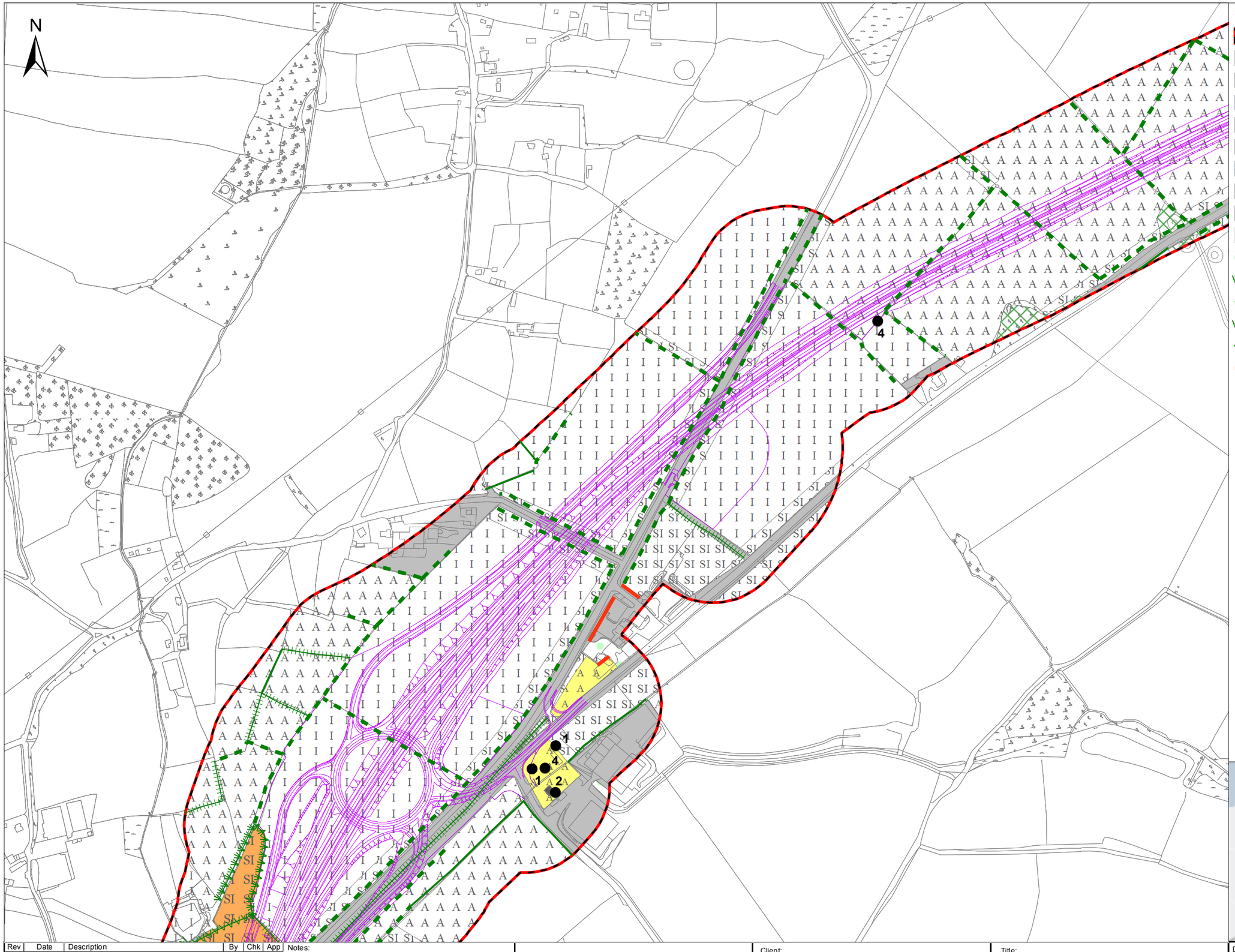
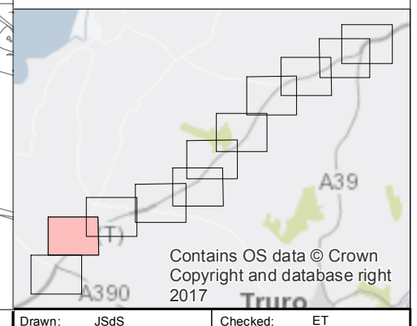


- Proposed Route
- 100m Survey Area
- Buildings (J3.6)
- Coniferous scattered trees (A3.2)
- Amenity grassland (J1.2)
- Arable land (J1.1)
- Improved grassland (B4)
- Semi-improved neutral grassland (B2.2)
- Poor semi-improved grassland (B6)
- Dense/continuous scrub (A2.1)
- Hard standing
- Species poor defunct hedge (J2.2.2)
- Species-rich hedge with trees (J2.3.1)
- Species-poor hedge with trees (J2.3.2)
- Species-rich intact hedge (J2.1.1)
- Species-poor intact hedge (J2.1.2)
- Wall (J2.5)
- Invasive Species



Rev	Date	Description	By	Chk	App

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Title: PHASE 1 HABITAT SURVEY UPDATE REPORT PAGE 2 OF 11

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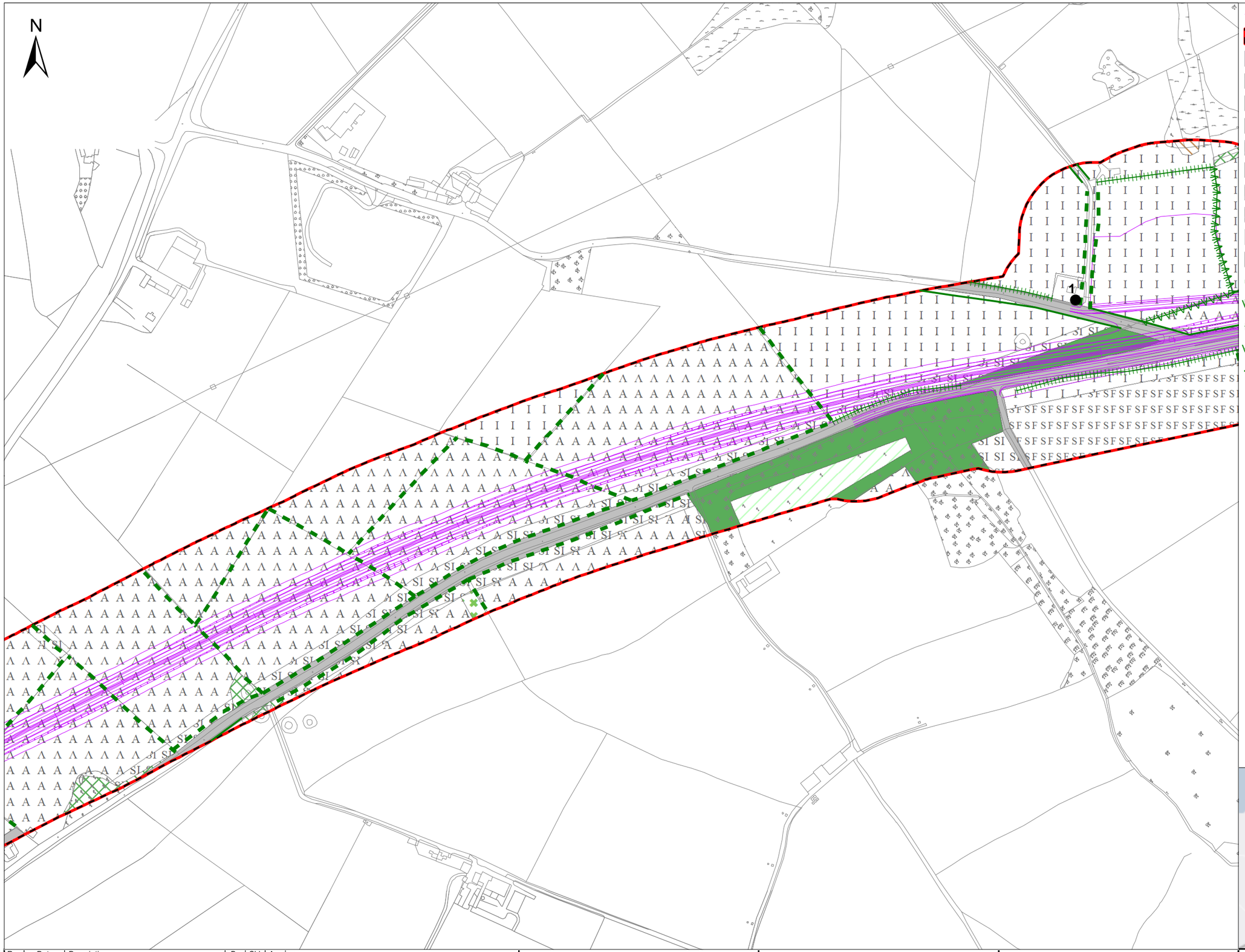
Login: DeSouzaJ
Plot Date: 03/01/2018
File Name: \\uk.wspgroup.com\central data\Projects\70004xxx\70004582 - A30 Chiverton to Carland Cross PCF Stage 2\E Models and Drawings\GIS\Third Party\Ben Smith 20-09-17\Phase 1\Figure 3 - Phase 1 Habitat Survey Update report.mxd



Proposed Route
100m Survey Area
Semi-natural broadleaved woodland (A1.1.1)
Coniferous woodland plantation (A1.2.2)
Arable land (J1.1)
Improved grassland (B4)
Tall ruderals (C3.1)
Poor semi-improved grassland (B6)
Dense/continuous scrub (A2.1)
Scattered scrub (A2.2)
Hard standing
Solar Farm
Species poor defunct hedge (J2.2.2)
Species-rich hedge with trees (J2.3.1)
Species-poor hedge with trees (J2.3.2)
Species-rich intact hedge (J2.1.1)
Species-poor intact hedge (J2.1.2)
Invasive Species

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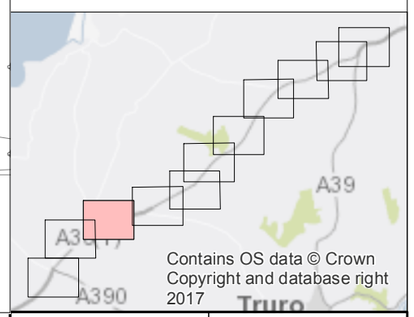
Metres



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Date: 03/01/2018	Scale: 1:200,995 A3	Sheet:	
Project Number:		Drawing Number:	Revision:
70004582		FIGURE 3	

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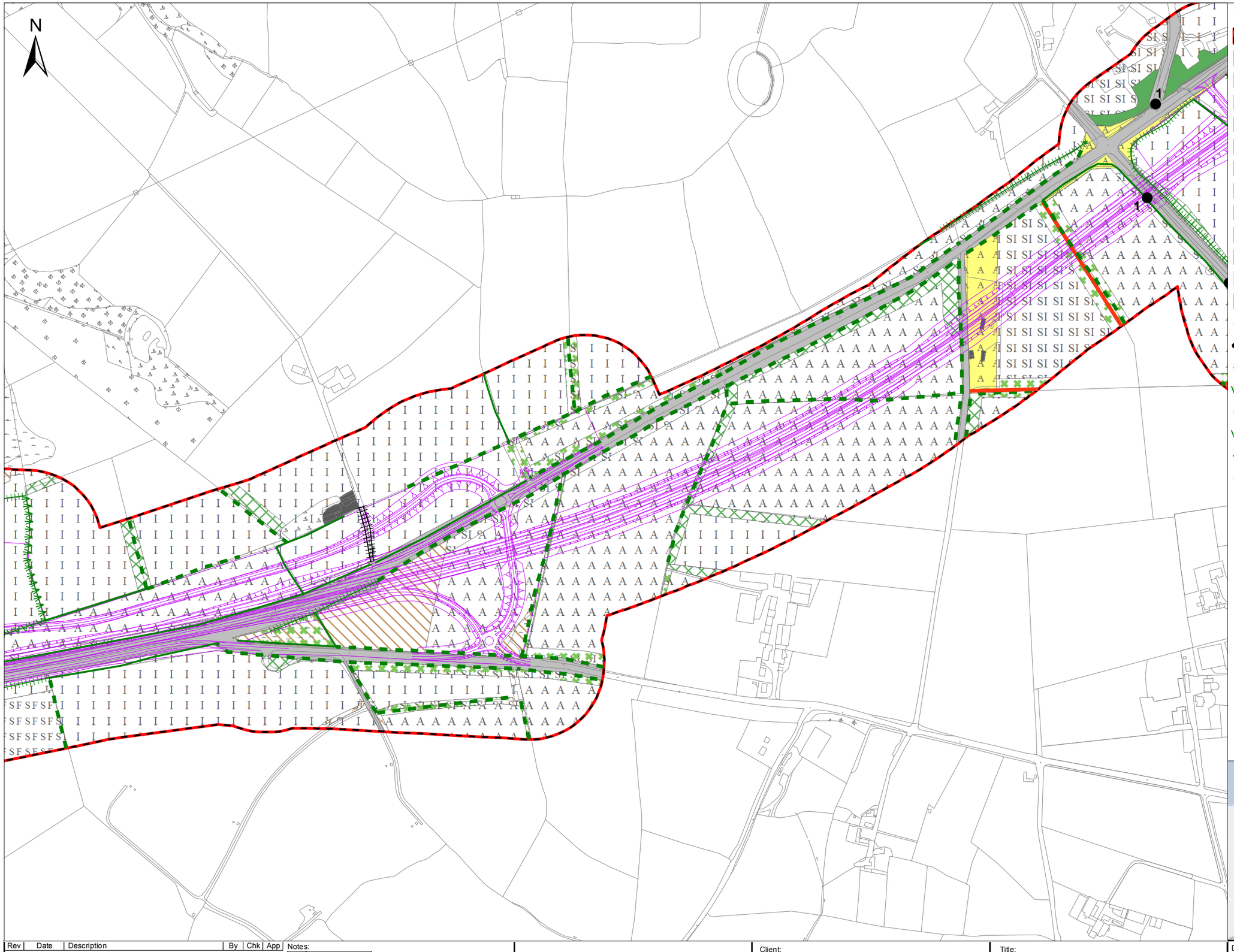
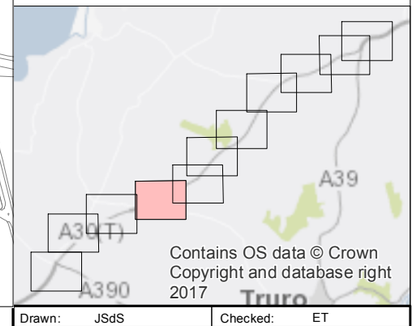
Login: DeSouzaJ
Plot Date: 03/01/2018



- Proposed Route
- 100m Survey Area
- Scattered bracken (C1.2)
- Semi-natural broadleaved woodland (A1.1.1)
- Buildings (J3.6)
- Amenity grassland (J1.2)
- Arable land (J1.1)
- Improved grassland (B4)
- Tall ruderals (C3.1)
- Poor semi-improved grassland (B6)
- Dense/continuous scrub (A2.1)
- Scattered scrub (A2.2)
- Hard standing
- Solar Farm
- Species poor defunct hedge (J2.2.2)
- Earth bank (J2.8)
- Fence (J2.4)
- Species-rich hedge with trees (J2.3.1)
- Species-poor hedge with trees (J2.3.2)
- Species-rich intact hedge (J2.1.1)
- Species-poor intact hedge (J2.1.2)
- Wall (J2.5)
- Invasive Species

0 62.5 125 250

Metres



Rev	Date	Description	By	Chk	App

Notes:

ID	Invasive Species
1	Montbretia
2	Rhododendron
3	Japanese knotweed
4	Japanese rose
5	Cotoneaster
6	Three-cornered garlic
7	Variegated archangel

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Project: A30 CHIVERTON TO CARLAND CROSS

Title: PHASE 1 HABITAT SURVEY UPDATE REPORT PAGE 4 OF 11

Drawn: JSdS		Checked: ET	
Designed: GH		Approved: UD	
Date: 03/01/2018	Scale: 1:200,995	A3	Sheet:
Project Number: 70004582	Drawing Number: FIGURE 3		Revision:

Login: DeSouzaJ
Plot Date: 03/01/2018
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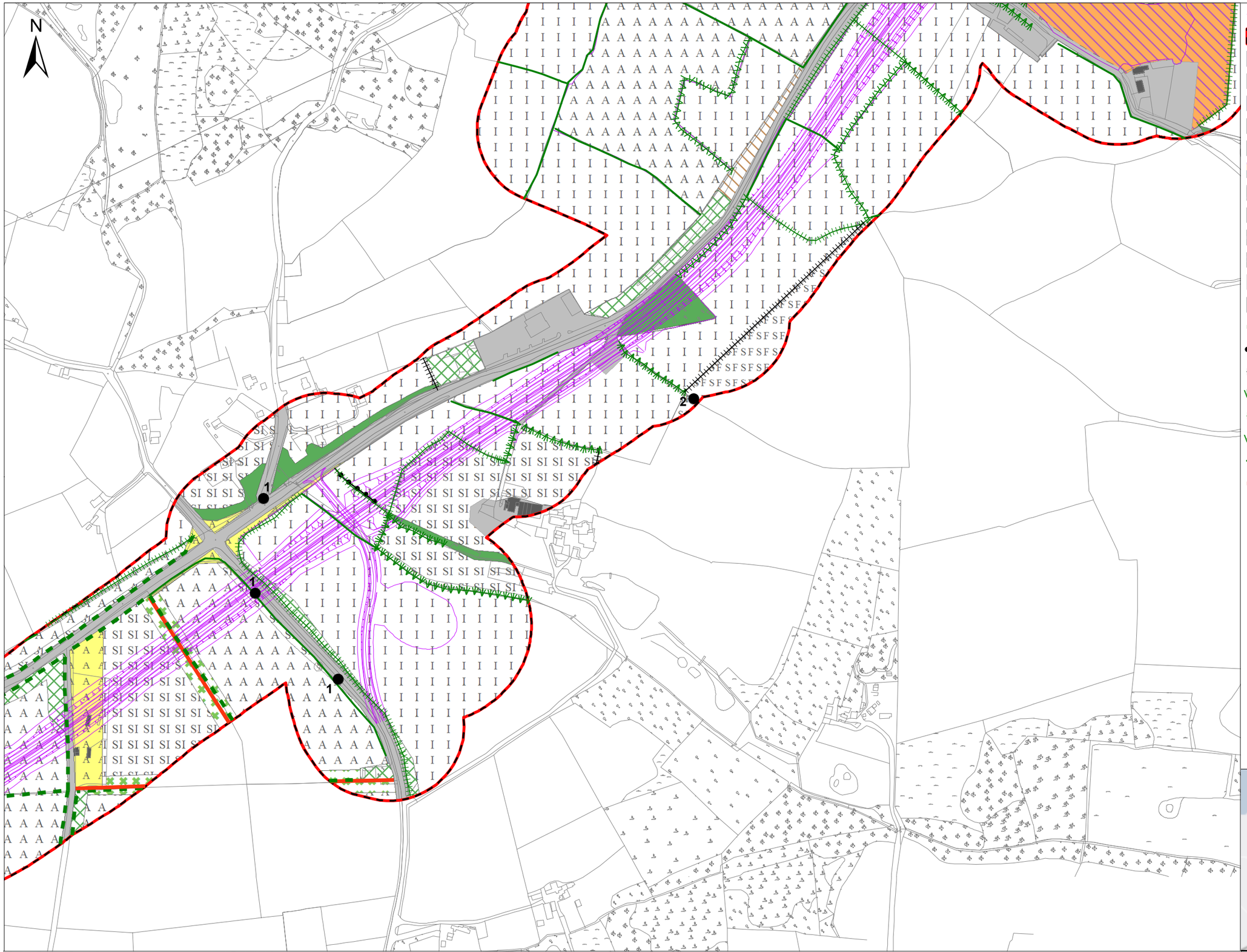

Proposed Route
100m Survey Area
Semi-natural broadleaved woodland (A1.1.1)
Buildings (J3.6)
Amenity grassland (J1.2)
Arable land (J1.1)
Improved grassland (B4)
Marshy grassland (B5)
Tall ruderals (C3.1)
Poor semi-improved grassland (B6)
Dense/continuous scrub (A2.1)
Scattered scrub (A2.2)
Hard standing
Solar Farm
Species poor defunct hedge (J2.2.2)
Earth bank (J2.8)
Fence (J2.4)
Species-rich hedge with trees (J2.3.1)
Species-poor hedge with trees (J2.3.2)
Species-rich intact hedge (J2.1.1)
Species-poor intact hedge (J2.1.2)
Wall (J2.5)
Invasive Species

Rev	Date	Description	By	Chk	App

Notes:

ID	Invasive Species
1	Montbretia
2	Rhododendron
3	Japanese knotweed
4	Japanese rose
5	Cotoneaster
6	Three-cornered garlic
7	Variegated archangel

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Title: PHASE 1 HABITAT SURVEY UPDATE REPORT PAGE 5 OF 11

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Project Number:		Drawing Number:	Revision:
70004582		FIGURE 3	

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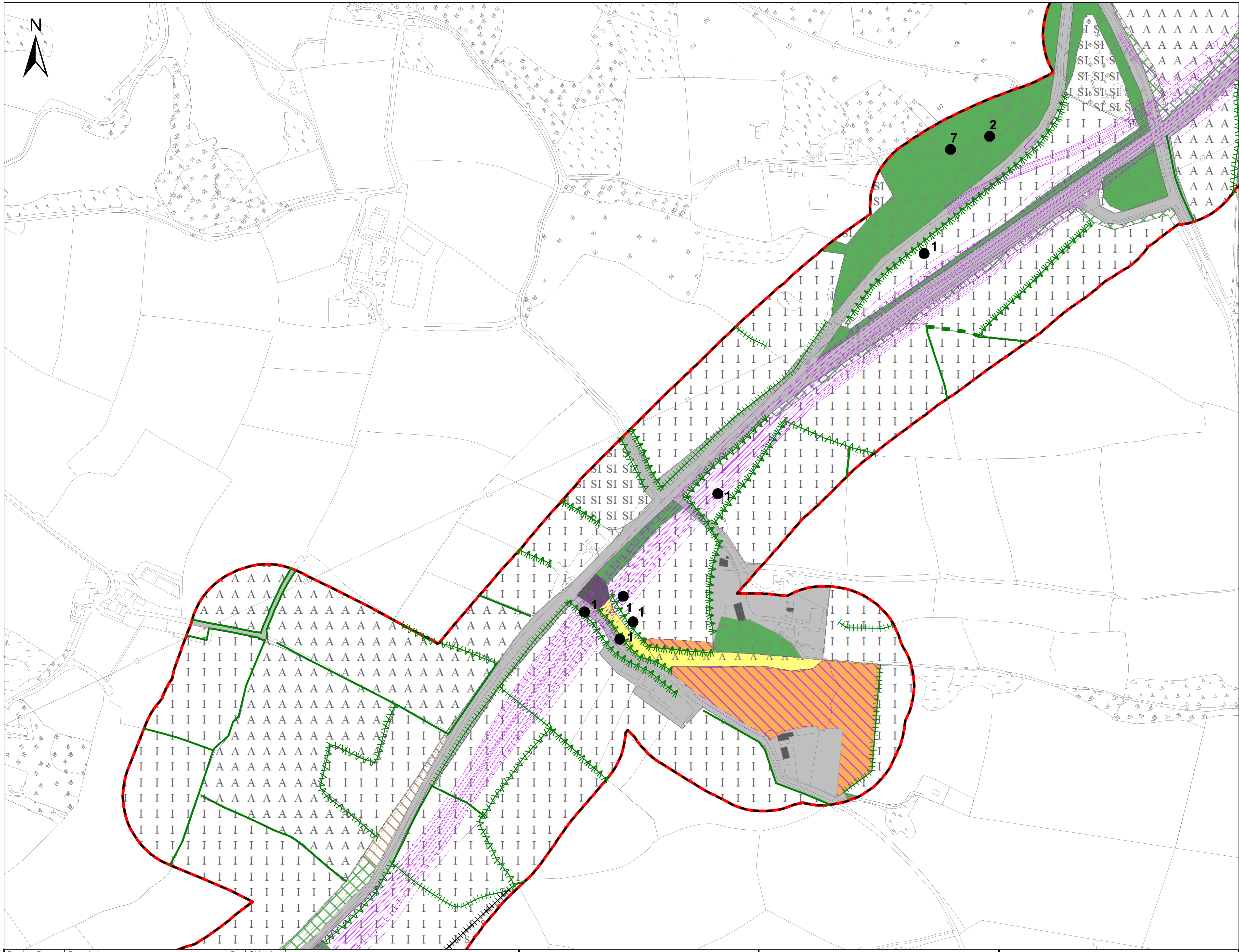
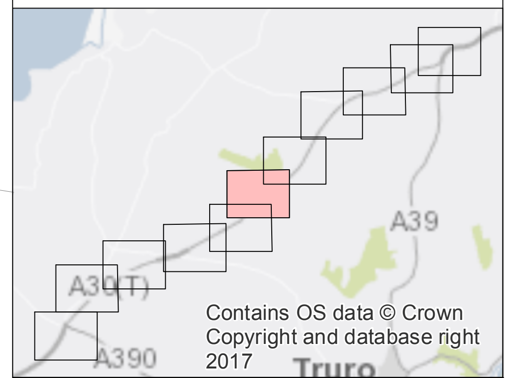


Proposed Route
100m Survey Area
Semi-natural broadleaved woodland (A1.1.1)
Buildings (J3.6)
Amenity grassland (J1.2)
Arable land (J1.1)
Improved grassland (B4)
Marshy grassland (B5)
Tall ruderals (C3.1)
Poor semi-improved grassland (B6)
Dense/continuous scrub (A2.1)
Hard standing
Solar Farm
Species poor defunct hedge (J2.2.2)
Fence (J2.4)
Species-rich hedge with trees (J2.3.1)
Species-poor hedge with trees (J2.3.2)
Species-rich intact hedge (J2.1.1)
Species-poor intact hedge (J2.1.2)
Invasive Species

0 62.5 125 250
Metres



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Login: DeSouzaJ
Plot Date: 03/01/2018

Rev	Date	Description	By	Chk	App

Notes:

ID	Invasive Species
1	Montbretia
2	Rhododendron
3	Japanese knotweed
4	Japanese rose
5	Cotoneaster
6	Three-cornered garlic
7	Variegated archangel

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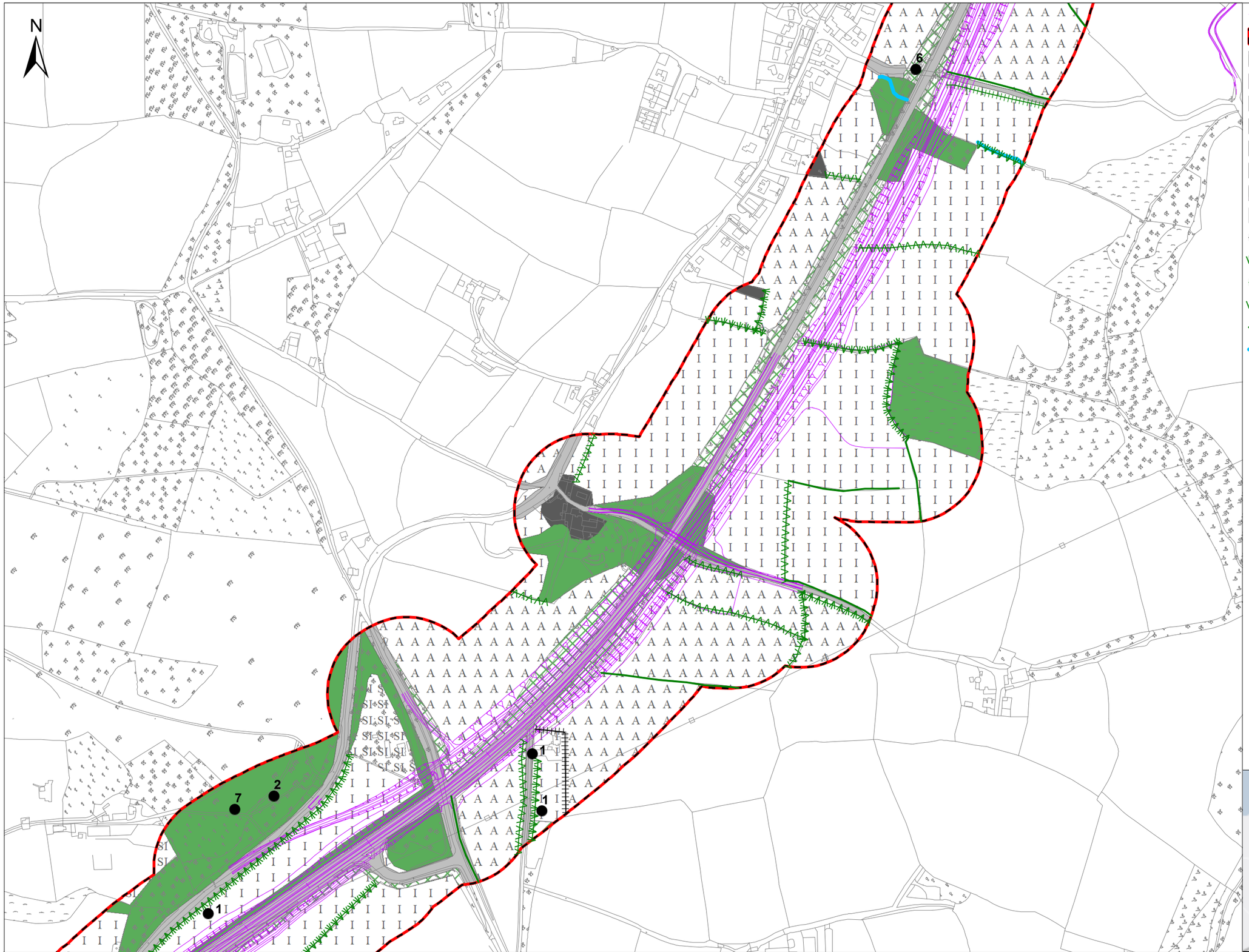
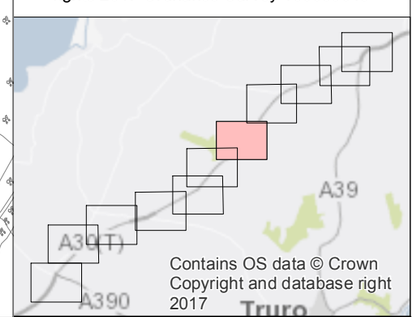
Project: A30 CHIVERTON TO CARLAND CROSS

Title: PHASE 1 HABITAT SURVEY UPDATE REPORT PAGE 6 OF 11

Drawn: JSdS	Checked: ET
Designed: GH	Approved: UD
Date: 03/01/2018	Scale: 1:200,995 A3 Sheet:
Project Number: 70004582	Drawing Number: FIGURE 3 Revision:



- Proposed Route
- 100m Survey Area
- Semi-natural broadleaved plantation (A1.1.2)
- Semi-natural broadleaved woodland (A1.1.1)
- Buildings (J3.6)
- Arable land (J1.1)
- Improved grassland (B4)
- Poor semi-improved grassland (B6)
- Dense/continuous scrub (A2.1)
- Hard standing
- Fence (J2.4)
- Species-rich hedge with trees (J2.3.1)
- Species-poor hedge with trees (J2.3.2)
- Species-rich intact hedge (J2.1.1)
- Species-poor intact hedge (J2.1.2)
- Running water (G2)
- Invasive Species



Notes:

ID	Invasive Species
1	Montbretia
2	Rhododendron
3	Japanese knotweed
4	Japanese rose
5	Cotoneaster
6	Three-cornered garlic
7	Variegated archangel

Rev	Date	Description	By	Chk	App

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Project Number: 70004582	Drawing Number: FIGURE 3	Revision:	

Login: DeSouzaJ
Plot Date: 03/01/2018
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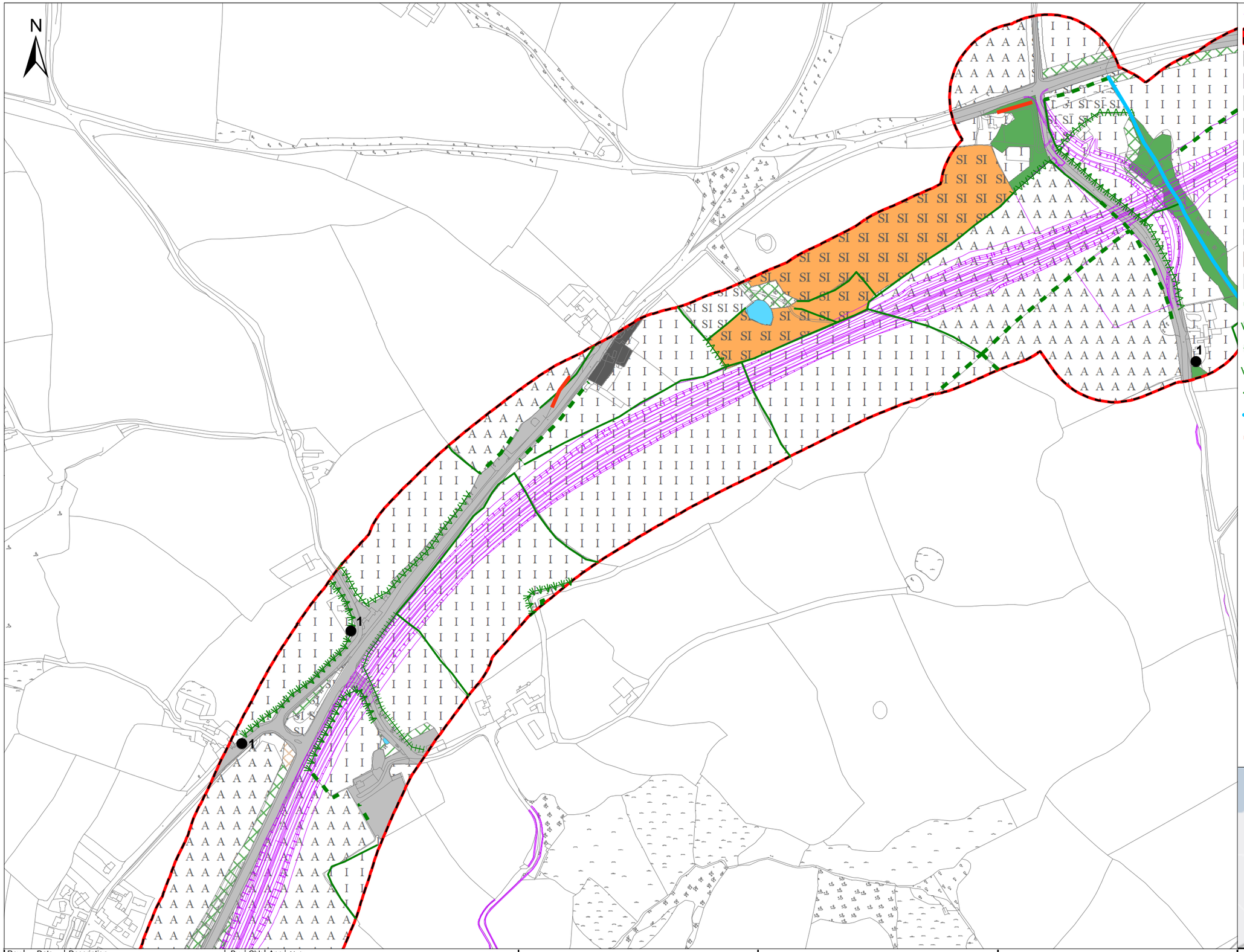
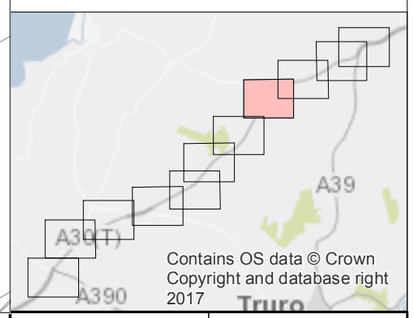


- Proposed Route
- 100m Survey Area
- Semi-natural broadleaved plantation (A1.1.2)
- Semi-natural broadleaved woodland (A1.1.1)
- Buildings (J3.6)
- Arable land (J1.1)
- Improved grassland (B4)
- Introduced shrubs (J1.4)
- Semi-improved neutral grassland (B2.2)
- Poor semi-improved grassland (B6)
- Dense/continuous scrub (A2.1)
- Standing water (G1)
- Hard standing
- Species poor defunct hedge (J2.2.2)
- Species-rich hedge with trees (J2.3.1)
- Species-poor hedge with trees (J2.3.2)
- Species-rich intact hedge (J2.1.1)
- Species-poor intact hedge (J2.1.2)
- Running water (G2)
- Wall (J2.5)
- Invasive Species

0 62.5 125 250

Metres



Rev	Date	Description	By	Chk	App

Notes:

ID	Invasive Species
1	Montbretia
2	Rhododendron
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5	Cotoneaster
6	Three-cornered garlic
7	Variegated archangel

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Title: PHASE 1 HABITAT SURVEY UPDATE REPORT PAGE 8 OF 11

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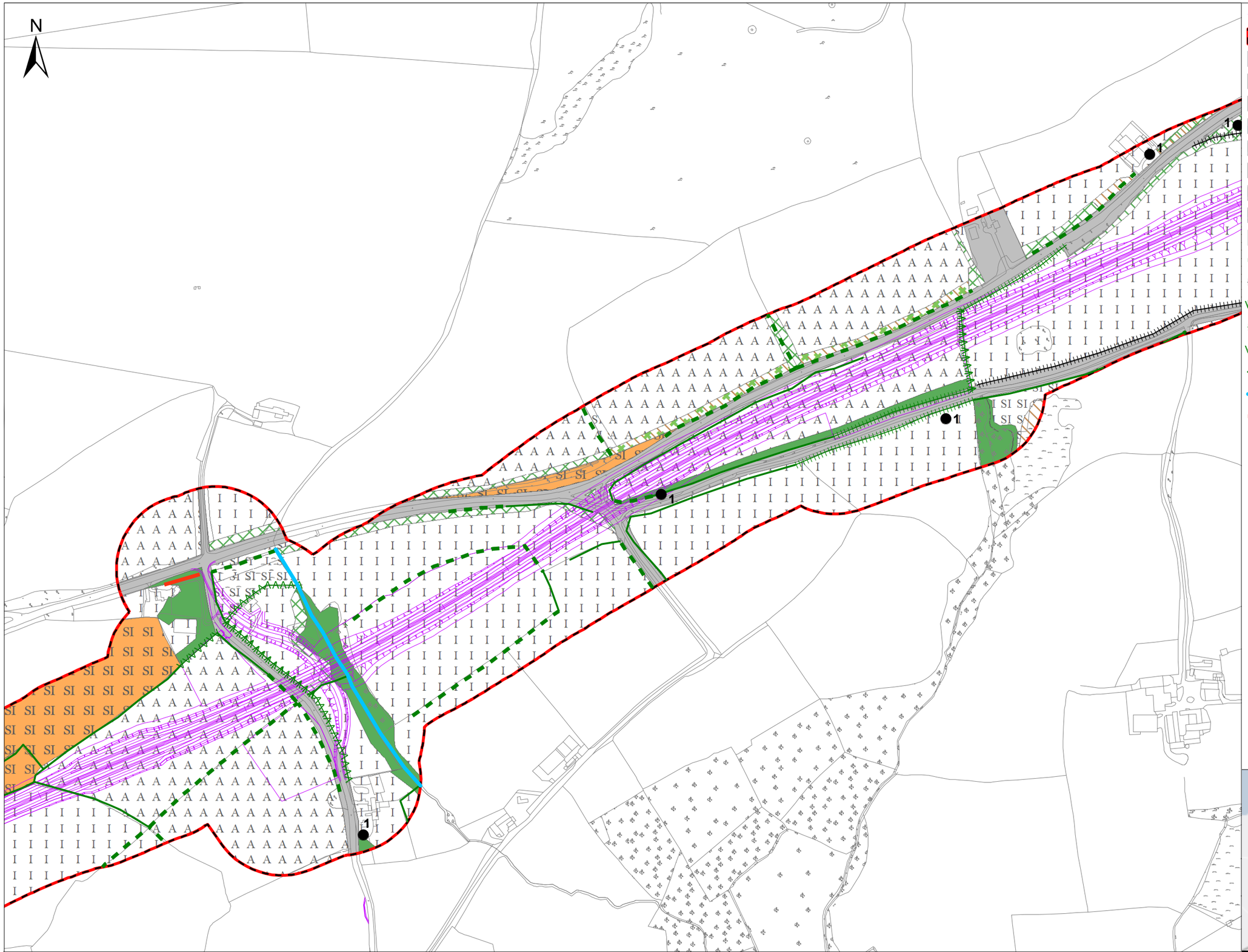
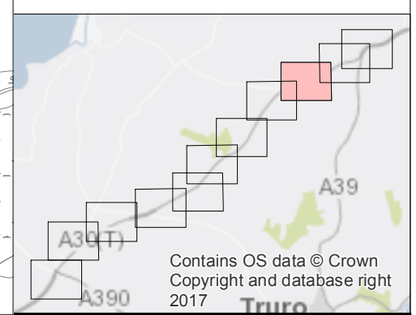


- Proposed Route
- 100m Survey Area
- Semi-natural broadleaved woodland (A1.1.1)
- Arable land (J1.1)
- Improved grassland (B4)
- Semi-improved neutral grassland (B2.2)
- Tall ruderals (C3.1)
- Poor semi-improved grassland (B6)
- Dense/continuous scrub (A2.1)
- Scattered scrub (A2.2)
- Hard standing
- Species poor defunct hedge (J2.2.2)
- Fence (J2.4)
- Species-rich hedge with trees (J2.3.1)
- Species-poor hedge with trees (J2.3.2)
- Species-rich intact hedge (J2.1.1)
- Species-poor intact hedge (J2.1.2)
- Running water (G2)
- Wall (J2.5)
- Invasive Species

0 62.5 125 250

Metres



Rev	Date	Description	By	Chk	App

Notes:

ID	Invasive Species
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Title: PHASE 1 HABITAT SURVEY UPDATE REPORT PAGE 9 OF 11

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70004582	FIGURE 3		

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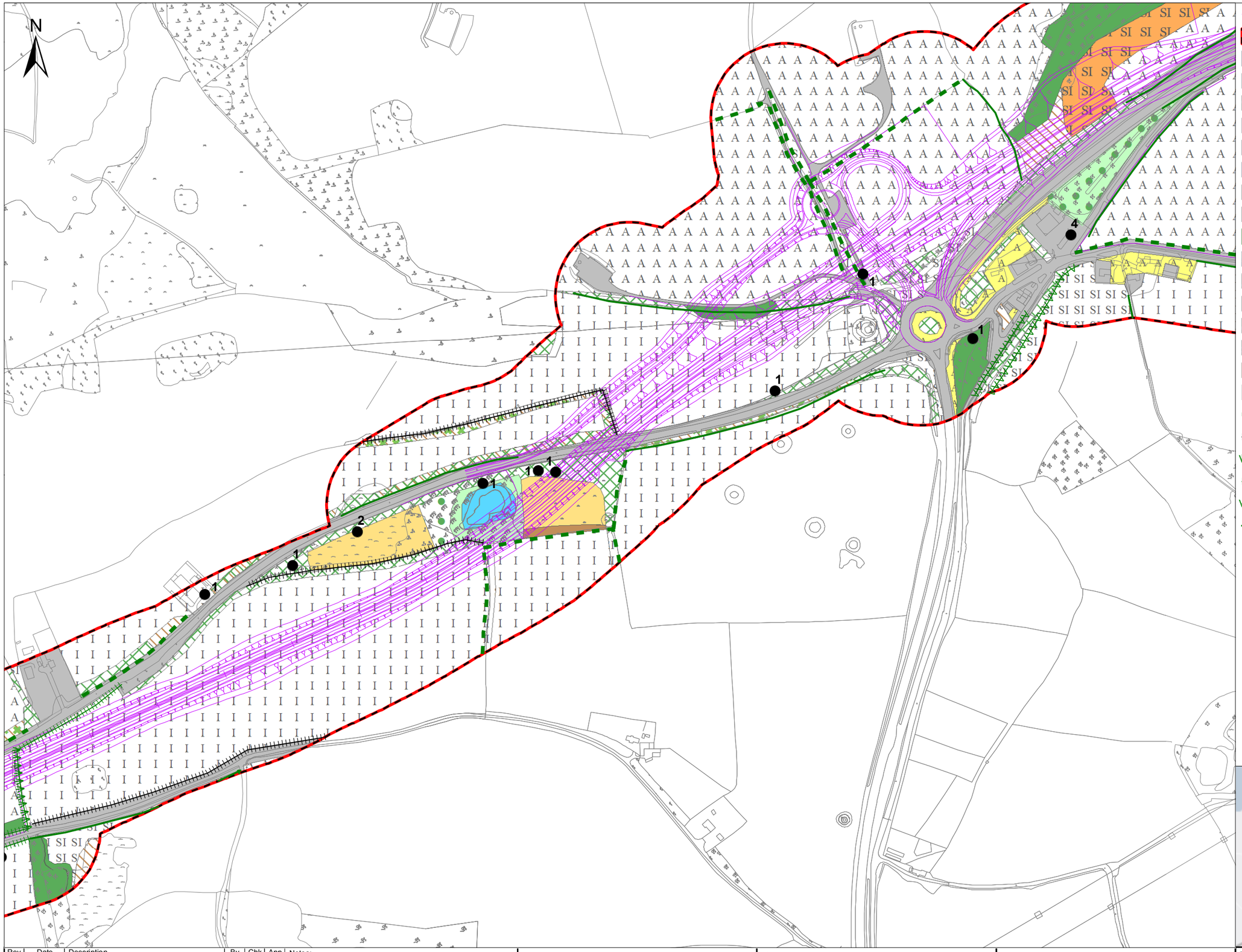

- Proposed Route
- 100m Survey Area
- Dry Dwarf Shrub Heath (D1)
- Continuous bracken (C1.1)
- Broadleaved Parkland/scattered trees (A3.1)
- Semi-natural broadleaved woodland (A1.1.1)
- Semi-natural Coniferous woodland (A1.2.1)
- Amenity grassland (J1.2)
- Arable land (J1.1)
- Improved grassland (B4)
- Semi-natural mixed woodland (A1.3.1)
- Semi-improved neutral grassland (B2.2)
- Tall ruderals (C3.1)
- Poor semi-improved grassland (B6)
- Dense/continuous scrub (A2.1)
- Scattered scrub (A2.2)
- Standing water (G1)
- Hard standing
- Species poor defunct hedge (J2.2.2)
- Fence (J2.4)
- Species-rich hedge with trees (J2.3.1)
- Species-poor hedge with trees (J2.3.2)
- Species-rich intact hedge (J2.1.1)
- Species-poor intact hedge (J2.1.2)
- Invasive Species

0 62.5 125 250

Metres

Rev	Date	Description	By	Chk	App

Notes:

ID	Invasive Species
1	Montbretia
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Title: PHASE 1 HABITAT SURVEY UPDATE REPORT PAGE 10 OF 11

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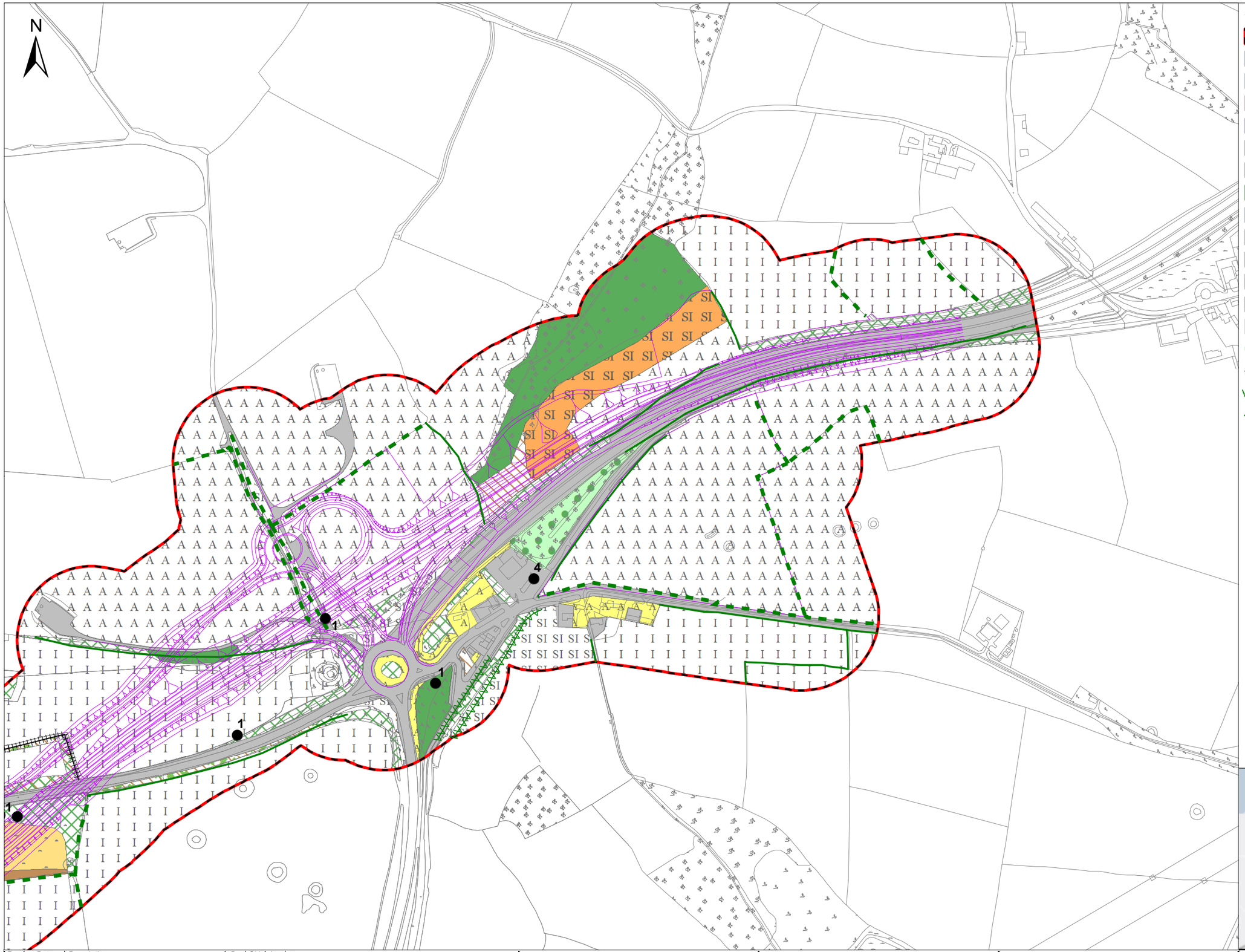
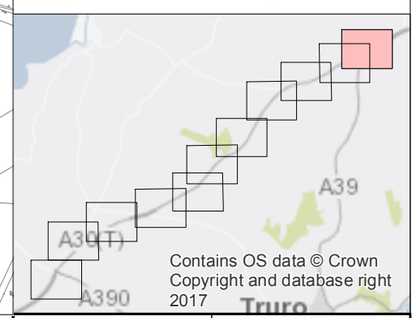


- Proposed Route
- 100m Survey Area
- Dry Dwarf Shrub Heath (D1)
- Continuous bracken (C1.1)
- Semi-natural broadleaved woodland (A1.1.1)
- Amenity grassland (J1.2)
- Arable land (J1.1)
- Improved grassland (B4)
- Semi-natural mixed woodland (A1.3.1)
- Semi-improved neutral grassland (B2.2)
- Tall ruderals (C3.1)
- Poor semi-improved grassland (B6)
- Dense/continuous scrub (A2.1)
- Scattered scrub (A2.2)
- Hard standing
- Species poor defunct hedge (J2.2.2)
- Fence (J2.4)
- Species-rich intact hedge (J2.1.1)
- Species-poor intact hedge (J2.1.2)
- Invasive Species

0 62.5 125 250

Metres



Rev	Date	Description	By	Chk	App

Notes:

ID	Invasive Species
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