A358 Taunton to Southfields Dualling

Otter Surveys Technical Report

PCF Stage 2

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Executive summary

The proposed A358 Taunton to Southfields Dualling scheme (hereafter referred to as 'the scheme') would provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the A303 at Ilminster to the M5 motorway to the north. The scheme would include grade separated junctions and, with the purpose of providing a high-quality free flow journey for those using the route, the removal of at-grade junctions and direct accesses.

A desk study was undertaken in April 2016 to obtain existing records of otter *Lutra lutra*. A total of 444 records within 2 kilometres of the scheme were returned by Somerset Environmental Records Centre (SERC). Four records of road casualties were returned from the Environment Agency (EA). Habitat assessments and field sign surveys to identify the presence of otters were undertaken by Mott MacDonald Sweco Joint Venture between 2017 and 2020. The habitat assessments identified a total of 21 watercourses within 2 kilometres of the scheme which were deemed suitable for otters. Field sign surveys were undertaken on all of these watercourses, of which otter use was confirmed on 14, through identification of evidence such as visual sightings, spraint (faeces), footprints, feeding remains and resting sites. The watercourses within the southern part of the scheme, closer to the Southfields Roundabout, exhibited higher otter activity and presence.

Some watercourses did not receive an initial habitat assessment to determine suitability for otters.

At the time of writing, the scheme is still within the early design phase. Therefore, the full extent of potential impacts of the scheme on the otter populations is yet to be confirmed. An impact assessment, and mitigation and compensation measures to alleviate any potential impacts will be detailed within the Biodiversity chapter of the scheme Environmental Statement, when published.

1. Introduction

1.1. Background

1.1.1. The A303 / A358 corridor is a vital connection between the south-west of England, London and the south-east of England. Due to the population density, employment opportunities, urban concentrations and tourist attraction of the Southwest, the A303 / A30 / A358 corridor experiences a wide range of traffic flows which lead directly to severe and regular instances of congestion and delay.

1.1.2. The A303 / A30 is part of the strategic road network (SRN) and together with the A358 forms a key strategic link between the South West Peninsular (SWP) and the rest of the south, south-east and London. Although it is dualled over much of its length there are several unimproved single carriageway sections between the M3 motorway at Basingstoke and the M5 at Taunton and Exeter which cause congestion, especially during summer weekends.

1.1.3. The A358 between Taunton and Southfields Roundabout is predominantly single carriageway with a short (1.1 miles) dual carriageway section in the vicinity of Thornfalcon and a 3 lane (2+1) section (0.3 miles) immediately to the south of the traffic lights at the A378 junction. It has many side roads and private accesses which directly adjoin the A358. The national speed limit applies between Southfields and Henlade where it reduces to 30mph; the speed limit increases to 40mph north of Henlade on the approach to the M5 junction 25. A plan showing the existing route between Taunton and Southfields is provided in Figure 1:1.

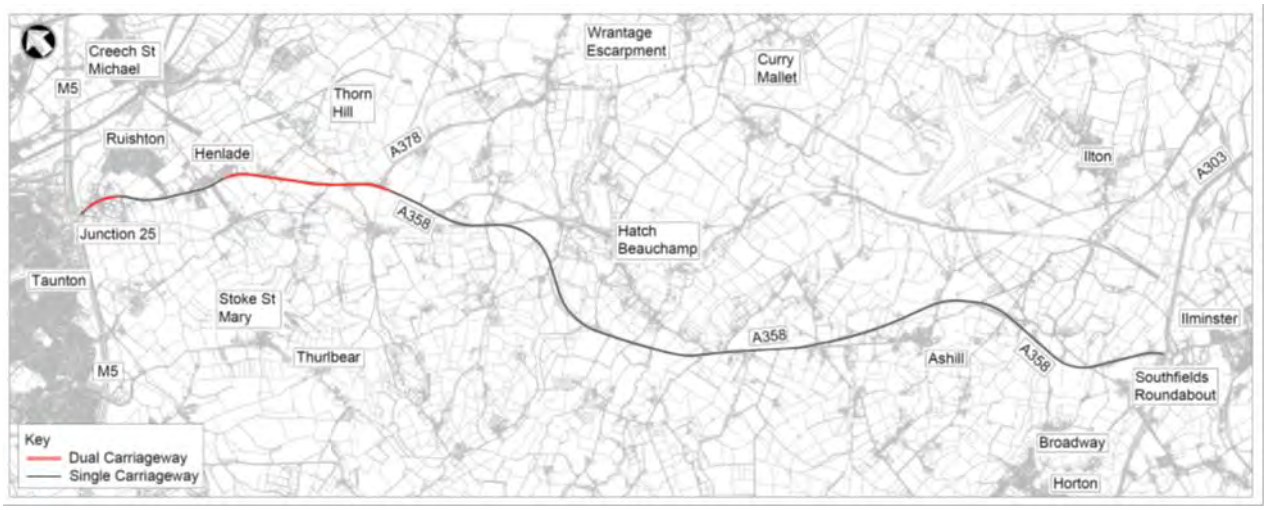


Figure 1:1 : A358 Taunton to Southfields existing road layout.

1.1.4. Following the most recent public consultation in 2018, the following three route options were presented; Pink, Blue and Orange route options are described below and depicted in Figure 1:2.

- The **Pink option** commences at a new junction on the M5 approximately 1.2 miles (2 kilometres) south of junction 25. South-facing slip roads from the M5 would combine to become the new dual carriageway, which runs eastwards and north of Stoke Hill. Here a limited-movement junction is proposed with east-facing slip road connections to the new road which would allow traffic to travel between the new A358 and junction 25 via a new 0.9 mile (1.5 kilometre) dual carriageway link past the planned Nexus 25 site. The proposed route would then follow the existing A358 to Southfields Roundabout enabling the existing road to be upgraded from a single to a dual carriageway. The total length of the Pink option is 9 miles (14.6 kilometres), plus the 0.9 miles (1.5 kilometres) spur leading to M5 junction 25.
- The **Blue option** commences at the M5 approximately 1.2 miles (2 kilometres) south of junction 25 and runs eastwards on a more southerly alignment. At Stoke Hill a junction is proposed similar to that with the Pink option, which would allow traffic to travel between the road and junction 25 via a new 1.2 miles (2 kilometres) dual carriageway link past the planned Nexus 25 site. The road would then continue in a south-easterly direction to West Hatch Lane, where an all-movement, grade-separated junction is proposed to allow access to Hatch Beauchamp, Henlade and surrounding communities, and the A378. This option is identical to the Pink option from this point onwards to Southfields Roundabout. The total length of the Blue option is 8.7 miles (14.1 kilometres), plus the 1.2 miles (2 kilometres) spur leading to M5 junction 25.
- The **Orange option** commences at the M5 approximately 2.1 miles (3.5 kilometres) south of junction 25 at a proposed new 2-bridge roundabout which would form a new all-movements junction between the new A358 and the motorway. The proposed road initially takes a north-easterly course towards Henlade before arching around the north of Stoke Hill. In contrast to the Blue option, there is no link to junction 25 from this location, and therefore no junction at Stoke Hill. This option is identical to the Blue option from this point onwards. The total length of the Orange option is 9.5 miles (15.3 kilometres).

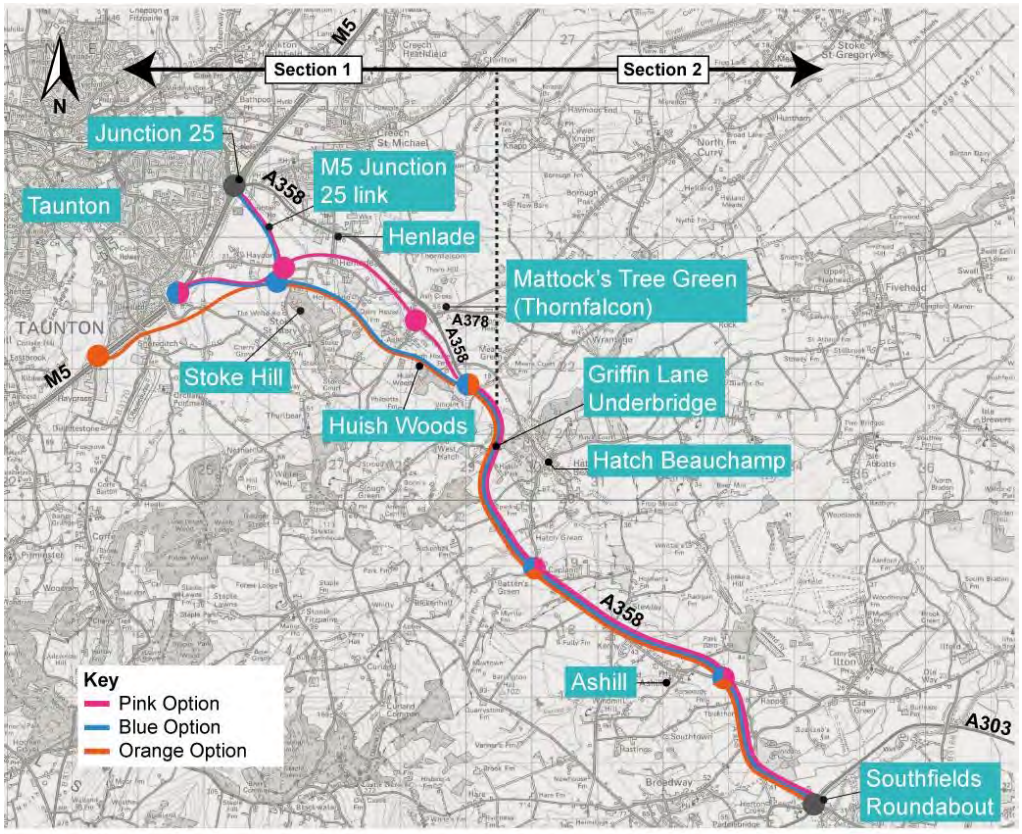


Figure 1:2: Route options presented at the 2018 public consultation

Source: Mott MacDonald Sweco Joint Venture. This Map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Highways England 100030649 2016.

1.2. Scheme proposal

1.2.1. The proposed scheme would provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the A303 at Ilminster to the M5 motorway to the north. The scheme would include grade separated junctions with the purpose of providing a high-quality free flow journey for those using the route, with the removal of at-grade junctions and direct accesses.

1.2.2. The Preferred Route Announcement (PRA) on the 13 June 2019 identified the Pink Modified option as the preferred route option (refer to the Scheme Appraisal Report (SAR) for details of the development of the Pink option to the Pink Modified option). This is hereby referred to as 'the scheme'.

1.2.3. The scheme would comprise online widening between West Hatch Lane and Southfields Roundabout. This would involve the re-use of a large amount of the existing A358 corridor, and between West Hatch Lane and Henlade the route would pass close to the A378 junction at Mattocks Tree Green. This would enable direct interchange between the proposed road and the A378. The scheme retains the bypass at Henlade, connects

with the A378, and connects directly to junction 25 on the M5. A plan showing the scheme is shown in Figure 1:3 below.

1.2.4. The scheme would provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the A303 at Ilminster to the M5 motorway to the north. The scheme would include grade separated junctions and, with the purpose of providing a high-quality free flow journey for those using the route, the removal of at-grade junctions and direct accesses.

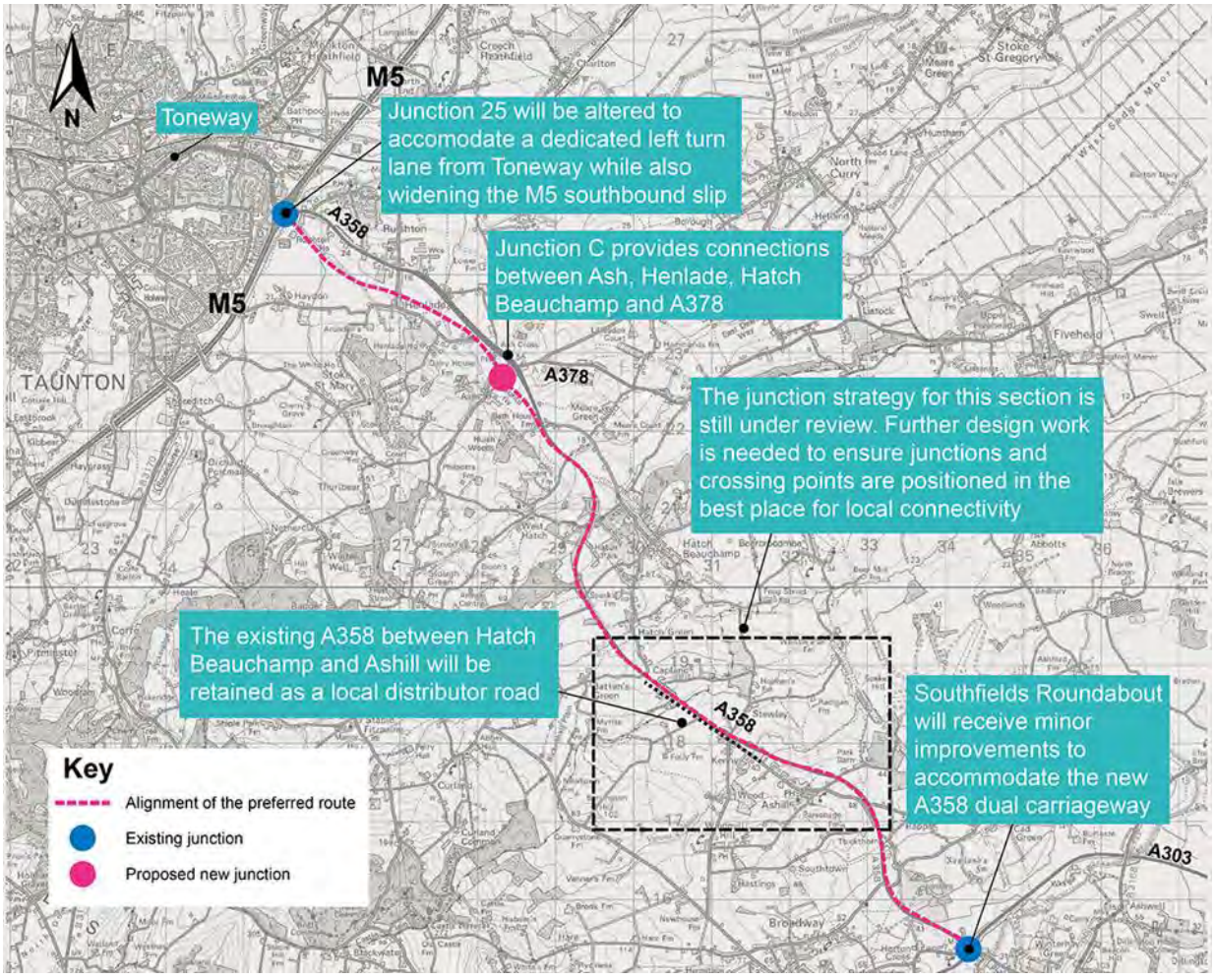


Figure 1:3: The preferred scheme option

1.3. Scope of report

1.3.1. This otter *Lutra lutra* Technical Report has been prepared during Stage 2 of the Highway England's Project Control Framework (PCF).

1.3.2. The objectives of this report are:

- to collate and review existing records for otters
- to present the methods, constraints and results of otter habitat assessments and field signs surveys undertaken between 2017 and 2020
- to inform the Biodiversity chapter of the Environmental Statement

1.3.3. Only results relevant to the scheme route are detailed, although records and field signs recorded which are not relevant to this preferred route are presented within the respective appendices.

1.4. Study area

1.4.1. Guidance on ecological assessments recommends that all ecological features that occur within a zone of influence (ZoI) for a proposed scheme are investigated[1]. The ZoI includes:

- areas directly within the land take for the proposed scheme and access that could cause loss of otter resting sites and barriers to dispersal through the landscape
- areas that would be temporarily affected during construction that could cause loss or disturbance to otter resting sites
- areas where there is a risk of noise disturbance during construction and/or operation

1.4.2. The ZoI for otters encompasses all aquatic and riparian habitat within 100m of the scheme, in accordance with guidance provided in the *Design Manual for Roads and Bridges* (DMRB) for the construction of new roads[2].

1.4.3. All areas of extensive concealing habitat greater than one hectare (ha) in area and within 100m of a watercourse constitute suitable terrestrial and breeding habitat for otters and are within the ZoI if also within 100m of the scheme.

1.4.4. It is acknowledged that the DMRB advice HA 81/99 referenced above was withdrawn in November 2019 and replaced with new guidance on biodiversity design for new roads[3]. This new guidance states that the ZoI remains as described in HA 81/99.

1.5. Legislation

1.5.1. Otters are a European protected species (EPS) protected under the *Conservation of Habitats and Species Regulations 2017*. In summary, it is an offence to:

[1] Chartered Institute of Ecology and Environmental Management (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal.
[2] DMRB (1999). Nature Conservation Advice in Relation to Otters. Volume 10 Section 1 Part 9 HA81/99.
[3] DMRB (2020). LD 118 Biodiversity design [online] available at: https://www.standardsforhighways.co.uk/prod/attachments/9317652b-4cb8-4aaf-be57-b96d324c8965?inline=true. Last accessed March 2021.

- deliberately kill or injure this species
- deliberately disturb this species so as to impair its ability to survive, to breed or reproduce, or to rear or nurture its young
- damage or destroy a breeding site or resting place used by this species

1.5.2. Otters are partially protected under the *Wildlife and Countryside Act 1981* (as amended). In summary, it is an offence to:

- intentionally kill or injure this species
- intentionally or reckless disturb this species whilst occupying any structure or place used for shelter or protection
- intentionally or recklessly obstruct access to any structure or place used by this species for shelter or protection

1.5.3. Otters are listed as species of principal importance under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*. Section 40(1) of the Act states that 'every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Section 40(3) explains that conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

1.6. Status of otters

National Status

1.6.1. The otter is widespread and localised within the United Kingdom. The population of otters is currently recovering from dramatic declines during the 1950s, when otters were restricted to isolated populations in Scotland, Wales and the south-west of England. As a result of improving water quality, strategic conservation efforts and sensitive river management, along with a successful release programme, the otter is returning to much of its former range and in 2011 the Environment Agency (EA) reported that otters had been recorded in all counties in England[4].

1.6.2. The GB population is estimated at 11,000, a 50% increase from the estimated 7,350 in 1995[5]. Within the UK, otters use a wide range of aquatic habitats including clean rivers, lakes and coastlines, and less commonly, marshy areas.

1.6.3. The expanding population is at risk from an increasing number of otter road casualties, with the Cardiff University Otter Project receiving around 200 dead otters for

[4] Otters are back – in every county in the UK (2011). [online] available at: https://www.theguardian.com/environment/2011/aug/18/otters-return-british-rivers. Last accessed November 2020.
[5] Mathews, F. et al. (2018). A review of the Population and Conservation Status of British Mammals: Technical Summary. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.

post-mortem from around the UK per year, of which 80-90% have been killed as a result of road traffic accidents.

Somerset County Status

1.6.4. Otters are widespread within the county of Somerset and are a *Local Biodiversity Action Plan* (LBAP) species with a species action plan[6]. The Somerset Otter Group undertake an annual survey of watercourses to monitor the County's otter population. In the 2019 survey, recent otter activity was recorded at a total of 244 out of 464 survey sites, representing 53% positive results[7]. This is up from 49% positive results in 2018 (243 out of 496).

1.6.5. A total of 55 otter ranges were detected, although the breakdown of catchments was unavailable unlike previous years. In 2018, 58 ranges were identified; six on the River Exe, eight on the coastal streams, 12 on the River Tone, 12 on the River Parrett, nine on the River Brue, none on the River Axe, three on the South Coast (Yarty, Culm and Otter), one on the River Cary, six on the River Frome, and one on the River Stour.

1.7. Otter ecology

1.7.1. Otters are largely nocturnal creatures that lie up in "holts" (a cavity in a bank among tree roots or in brash or log-piles) or in above ground cover (in reeds or other vegetation) during the day. They might use more than 30 of these resting places within their home territory. Their long slender bodies and tail, together with their webbed feet, make them smooth swimmers and divers. As such their principal habitat in the south-west is fresh water with banks where there is suitable cover.

1.7.2. Linear territories can be as long as 40 kilometres, particularly for the males, although this is exceptional. Hunting takes place in 3-10 kilometre stretches per night. Otters feed primarily on fish such as eel and other fish species, but they are also known to take vertebrates such as water-birds, as well as amphibians and invertebrates including crayfish and crabs.

1.7.3. Otters may use any source of water within their home range for foraging or exploring. This includes many of the smaller streams which provide an invaluable source of food and secluded areas for cover especially for females when rearing cubs. These streams are also used by dispersing juveniles or adults to travel from one catchment to

[6] Somerset otter species action plan. (2008) [online] available at: wwwold.somerset.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=43053. Last accessed November 2020.
[7] Somerset Otter Group. (2019). Two day event summary 2019 [online] available at: http://www.somersetottergroup.org.uk/archives/2850. Last accessed November 2020.

the next, searching for new areas to colonise. All watercourses have potential to provide otter habitat[8],[9].

1.7.4. Otters are solitary, territorial animals, nearly always found beside water. Adults live alone and claim a stretch of river which they defend against rivals by fighting. In Somerset, DNA studies on the River Tone showed that each dog otter covered about 12 miles of the main river. Bitch otters used about 7 miles. They patrol their territories constantly, so have many dwelling places (holts). Only when a bitch has young cubs will an otter remain in one place for a longer period of time. Because of this need for territorial space, they regulate their own population and prevent a high density[10].

1.7.5. The otter uses many different sites for shelter, such as holts and couches, depending on availability. Holts are rarely constructed by the otter. Instead the animal utilises any suitable structure within its range such as a hole in the riverbank, hollow trees, the crowns of pollard willows, cavities in rock piles or tree roots. Many otters will seek shelter above ground, using couches which are usually formed from vegetation used as bedding which are located in areas of scrub, reed beds or long grass. Large stands of riparian gorse and other scrub or tussock sedge and extensive reedbeds are particularly important habitats.

Holts and couches are used to rest during nocturnal foraging and for lying up during the day. They are also important for breeding. Female otters prefer to use areas that are secluded to avoid disturbance by man and other species and both holts and couches are equally important for this purpose. These areas also tend to be away from main rivers up to a kilometre away on a small tributary and can also be up to 500m away over land.

1.8. Planning policy

1.8.1. In 2012, the *UK Post-2010 Biodiversity Framework* superseded the *UK Biodiversity Action Plan (BAP) 2007*[11]. Consequently, the otter, which was historically listed as a UKBAP priority species, is now listed as a species of principal importance for the conservation of biodiversity in England under Section 41 (S41) of the *Natural Environment and Rural Communities (NERC) Act 2006*.

[8]Chanin, P. (2003). Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough.
[9] The Mammal Society (2020). Species – Otter *Lutra* [online] available at: https://www.mammal.org.uk/species-hub/full-species-hub/discover-mammals/species-otter/. Last accessed November 2020.
[10] Otters in Somerset: A factual guide for anglers and pond owners [online] available at: http://www.somersetottergroup.org.uk/wp-content/uploads/2018/05/Otters-in-Somerset-A-factual-guide-for-anglers-and-pond-owners.pdf. Last accessed November 2020.
[11] UK Government (2007). UK Biodiversity Action Plan [online] available at: http://jncc.defra.gov.uk/PDF/UKBAP_ConBio-UKApproach-2007.pdf (last accessed November 2020).

1.8.2. Following the production of *Biodiversity 2020*[12], a new strategy for biodiversity legislation, actions were identified by experts to help the recovery of populations of the S41 species of principal importance. Actions identified which are directly relevant to the recovery of otters include the following:

- Provide advice on preventing otter access to sensitive still water fisheries and fish farms
- Continue to monitor otter recolonisation across the UK in periodic national surveys, augmented with annual surveillance where possible
- Develop methods for assessing the abundance of otters as well as monitoring distribution. Further work is required to refine techniques using DNA fingerprinting and/or scent analysis.
- Maintain surveillance of otter health and impacts of toxic chemicals through a programme of post-mortem and tissue analysis work
- Continue to work towards meeting water quality objectives on all rivers across the UK so they can support healthy fish stocks
- Ensure the otter continues to receive strong legal protection and advice is given about appropriate fishing methods that will not cause otter mortality. The species needs strong protection because of potential conflicts with still water fisheries interests as numbers and distribution of otters continue to increase.

Highways England Biodiversity Action Plan

1.8.3. *Highways England BAP* identifies their approach to meeting the key performance indicator identified within the Roads Investment Strategy of "*no net loss of biodiversity by 2020*". Biodiversity is required to be fully considered during the building of any new roads and opportunities sought to work with stakeholders and enhance the network for wildlife[13].

South Somerset District Council Local Plan 2006 - 2028

1.8.4. Policy EQ4 (Biodiversity) within *South Somerset District Council's Local Plan 2006 – 2028*[14] contains the following which are relevant to the conservation of otter:

[12] Department for Environment, Food and Rural Affairs (DEFRA) (2011). Biodiversity 2020: A strategy for England's wildlife and ecosystem services [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf . Last accessed November 2020.
[13] Highways England (2015). 'Our plan to protect and increase biodiversity' [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/441300/N150146_-_Highways_England_Biodiversity_Plan3lo.pdf (last accessed November 2020).
[14] South Somerset District Council (2015). South Somerset Local Plan [online] available at: https://www.southsomerset.gov.uk/media/1250/j-plan_pol-web-site-2018-1-local-plan-local-plan-2006-2028-south_somerset_local_plan_2006-2028_adoption_version_march_2015.pdf (last accessed November 2020).

1.8.5. "All proposals for development, including those which would affect sites of regional and local biodiversity, nationally and internationally protected sites and sites of geological interest, will:

- *Protect the biodiversity value of land and buildings and minimise fragmentation of habitats and promote coherent ecological networks*
- *Maximise opportunities for restoration, enhancement, and connection of natural habitats*
- *Incorporate beneficial biodiversity conservation features where appropriate*
- *Protect and assist recovery of identified priority species*
- *Ensure that Habitat Features, Priority Habitats, and Geological Features that are used by bats and other wildlife are protected and that the design including proposals for lighting does not cause severance or is a barrier to movement*

1.8.6. Where there is a reasonable likelihood of the presence of protected and priority species development design should be informed by, and applications should be accompanied by, a survey and impact assessment assessing their presence. If present, a sequential approach to the design of the proposal should be taken that aims first to avoid harm, then to lessen the impact, and lastly makes compensatory provision for their needs.

1.8.7. Development will not be allowed to proceed unless it can be demonstrated that it will not result in any adverse impact on the integrity of national and international wildlife and landscape designations, including features outside the site boundaries that ecologically support the conservation of the designated site."

Taunton Deane Borough Council Adopted Core Strategy 2011 – 2028

1.8.8. The former Taunton Deane Borough Council has now merged with West Somerset to form the new Somerset West and Taunton Council. The previous Core Strategy has been adopted by the new joint council until a new Local Plan is published. As a result, the following information is still applicable to the conservation of otters.

1.8.9. Policy CP8 (Environment) within *Taunton Deane Borough Council's Core Strategy 2011 – 2028*[15] contains the following which is relevant to the conservation of otter:

1.8.10. "The Borough Council will conserve and enhance the natural and historic environment and will not permit development proposals that would harm these interests or the settings of the towns and rural centres unless other material factors are sufficient to override their importance.

[15] Taunton Deane Borough Council. (2011). Taunton Deane Adopted Core Strategy 2011 – 2028 [online] available at: https://www.somersetwestandtaunton.gov.uk/media/1061/adopted-core-strategy-2011-2028.pdf Last accessed November 2020.

1.8.11. Development will be supported at sustainable locations to improve green infrastructure, public access, visual amenity and the overall quality of the natural environment. Development will need to mitigate and where necessary, compensate for adverse impacts on landscape, protected or important species, important habitats and natural networks, river and ground water quality and quantity so that there are no residual effects."

2. Methodology

2.1. Desk study

2.1.1. A biological records data search was requested from Somerset Environmental Records Centre (SERC) on 7 April 2016, obtaining records of otter within 2 kilometres of the scheme. Additionally, the Environment Agency (EA) were contacted for records of otter road casualties within the vicinity of the A358, also in April 2016.

2.1.2. Records from prior to April 2006 were omitted from the desk study results. Any record over 10 years old was not considered to be recent enough to inform subsequent survey efforts.

2.2. Habitat assessment

2.2.1. An initial habitat suitability assessment was undertaken along all rivers and joining tributaries, including streams and ditches, within 2 kilometres of the proposed scheme footprint; this included all original route options, but those watercourses outside of the zone of influence (ZoI) of the Pink Modified option are not referenced hereafter. These were identified using 1:10,000 Ordnance Survey mapping data. A total of 41 waterbodies were identified within 250m of the scheme and were assessed for their potential to support otter.

2.2.2. The habitat suitability survey assessed the quality of the watercourse and riparian habitat for supporting otters, based on the following:

- physical properties of the watercourse including the type of watercourse, depth, flow and channel width
- presence of suitable terrestrial habitat and level of dense cover
- food supply
- adjoining land use
- disturbance and pollution
- barriers to dispersal
- connectivity to other suitable areas of habitat and the wider landscape

2.3. Field signs surveys

2.3.1. Each watercourse was surveyed along a 2 kilometre length where access was available. This equated to 1 kilometre upstream and 1 kilometre downstream of the scheme. Field signs surveys were carried out using the standard methodology[16] at the same time as habitat assessment, where sufficient access, time and suitable weather allowed (no heavy rainfall or flooding in preceding days). Shelter provided by bankside

[16] Joint Nature Conservation Council (JNCC) (2004). Common Standards Monitoring Guidance for Mammals.

habitat and stable water levels allowed a few field signs surveys to be undertaken despite rainfall. Otter field signs were not thought to have been washed away preceding or during these surveys and as such surveys were confidently carried out.

2.3.2. At this stage of the project (stage 2), repeat surveys of watercourses were not necessary. At least one survey was undertaken on each watercourse, covering all sections up to 1 kilometre upstream and 1 kilometre downstream from the scheme.

2.3.3. Smaller sections of a watercourse were surveyed when and where access was available to record field signs. These were typically undertaken alongside water vole surveys, or other species' assessments for which a representative section of watercourse was accessible, such as badger surveys. This resulted in more than one survey being undertaken on the same part of a watercourse on occasions.

2.3.4. The otter survey involved an assessment of the channels, bank and bordering terrestrial habitat, looking for signs of otters, such as:

- natal holts, holts and potential holt sites
- couches / lying up sites
- spraints
- anal jelly
- tracks / footprints
- silt / sand heaps and slides
- feeding remains

2.3.5. All field signs found were photographed, mapped with a GPS (accurate to <5m) and with a standardised survey and location reference code.

2.3.6. When recording otter signs, levels of activity were used to categorise the status of any resting site, as per the methodology discussed in Basset and Wynn (2010)[17]. Resting sites were defined as having low, medium or high levels of activity.

2.3.7. Spraints were categorised as fresh, recent, or old as described by Devon Biodiversity Records Centre[18], as follows:

- Fresh spraint - usually black, tarry and sticky. It will have a distinct sweet musky smell.
- Recent spraint - will be starting to dry out, it may be turning grey and crumble when touched. It may still smell slightly of otter.

[17] Basset, S. and Wynn, J. (2010) Otters in Scotland - How Vulnerable are they to disturbance. In Practice, No 70, December 2010.
[18] Devon Biodiversity Records Centre (2017) Otter surveying [online] available at: http://www.dbrc.org.uk/otter-and-mink-signs/ (last accessed October 2017)

- Old spraint - completely dried becoming very pale and crumbly. It may have crumbled completely, leaving a grey ashy deposit, with some fish bones still present.

2.3.8. All surveys were undertaken by experienced Mott MacDonald Sweco ecologists meeting the Chartered Institute of Ecology and Environmental Management (CIEEM) competencies for otter survey.

2.3.9. Any additional watercourses which were identified during field signs surveys were subject to an initial habitat assessment and subsequent field signs surveys where necessary. Additional watercourses were classified as such if they themselves existed within 250m of the scheme or were connected to watercourses within 250m of the scheme, up to a distance of 2 kilometres from the construction area.

2.3.10. Survey dates and weather conditions are provided in Table 2:1 .

Table 2:1 : Otter field sign survey dates and weather conditions

Watercourse	Date	Air temperature (°C)	Rain (0-5)	Cloud cover (0-8)	Wind (Beaufort scale)	Significant rain in preceding week
14a	15/09/2017	11	0	2	2	Yes
14a	30/04/2019	-	0	5	-	No
14a	20/05/2019	18	0	3	1	No
14a	04/06/2019	15	1	7	2	No
15a	20/05/2019	15	0	4	1	No
15a	17/09/2019	15	0	1	1	No
15bcd	23/05/2019	18	0	3	1	No
17	12/09/2017	16	0	4	2	Yes
17	22/05/2018	15	0	7	2	No
19	14/09/2017	15	1	6	2	Yes
19 (two surveys in different locations	23/05/2019	19	0	1	1	No
19	14/01/2020	12	0	5	4	No
20 (one land parcel only)	24/06/2019	-	-	-	-	-
20	13/09/2019	-	-	-	-	-
24	13/09/2017	15	1	4	3	Yes
24	01/05/2019	13	1	4	1	No
24	11/09/2019	18	0	7	2	Yes
24b	11/09/2019	-	-	-	-	-
24b	11/08/2020	-	-	-	-	-
30	28/06/2017	16	2	8	4	Yes
30	11/09/2017	18	0	6	3	No
30	02/05/2019	14	0	-	2	-
30	09/05/2019	11	0	7	0	No
30 (two surveys in different locations)	04/06/2019	15	1	7	2	No

Watercourse	Date	Air temperature (°C)	Rain (0-5)	Cloud cover (0-8)	Wind (Beaufort scale)	Significant rain in preceding week
30	12/09/2019	17	0	4	1	Yes
30	07/10/2019	14	0	8	3	Yes
31	21/05/2019	16	0	3	1	No
31	17/09/2019	21	0	0	1	No
31	18/10/2019	-	2	6	-	Yes
31	06/10/2020	14	2	4	2	Yes
33	17/09/2019	-	-	-	-	-
33	12/08/2020	-	-	-	-	-
34	21/06/2017	21	0	1	1	No
34	09/05/2019	16	0	7	2	No
34	04/09/2019	19	0	3	1	Yes
34	18/09/2019	19	0	3	1	No
34	12/08/2020	29	0	0	2	No
36	23/06/2017	21	0	7	1	No
36	13/09/2017	14	2	4	3	No
36	03/09/2019	19	0	7	1	No
36	19/09/2019	18	0	0	0	No
36	11/10/2019	15	2	8	2	Yes
39	27/09/2017	21	0	0	1	No
39	10/05/2018	11	0	5	2	Yes
39	03/09/2019	19	0	7	1	No
39	10/10/2019	14	0	5	2	Yes
39	13/08/2020	26	2	7	0	No
52	19/09/2017	16	3	8	2	Yes
52	25/06/2019	20	0	3	1	No
54	25/09/2017	18	0	4	1	No
54	25/06/2019	18	0	5	2	No
55	25/09/2017	18	0	4	1	Yes
55	27/06/2019	20	0	0	2	No
55	11/09/2019	15	1	6	2	No
57	29/06/2017	17	0	8	1	Yes
57	19/07/2017	18	0	7	3	Yes
57	26/09/2017	17	1	6	2	Yes
57a	09/05/2018	16	0	7	3	No
59	16/09/2019	18	0	0	1	No
60	23/05/2019	18	0	0	1	No

2.4. Constraints

2.4.1. Although otter field signs indicate presence, there is no clear relationship between the density of signs and density of otters. Therefore, there is no reliable way of estimating otter density and consequently the magnitude of any adverse effects from scheme construction.

2.4.2. On watercourses where field signs were not found, these cannot be ruled out for presence of otters. Repeat surveys are required along the entirety of a watercourse in order to confirm likely absence of otters.

2.4.3. Land access was not granted for all land parcels between 2017 and 2020 and, therefore some surveys will be required to be carried out in 2021 in order to sufficiently assess the impact of the scheme on otters. Watercourse 32 did not receive any access and was not subject to an initial habitat assessment.

2.4.4. Sections of watercourses were often obscured by dense bankside vegetation, and some banks were too steep to transverse, the water was too deep to wade through the channel or too fast to use a rowing boat. In these situations, binoculars were used where conditions allowed. Therefore, a definitive conclusion to the absence of otter cannot be made where field signs were not recorded. Field sign surveys are merely an indication to the likely absence of otters.

2.4.5. In addition, the presence of otters along a watercourse will react to changes in the management of watercourses and the associated riparian and bankside habitat (changes in habitat structure, food quantity and quality). For this reason, changes in habitat should be monitored. It is recommended that any watercourse, or section of watercourse, currently scoped out, that has potential for otters to use now or in the future, should be resurveyed prior to works commencing if the data is more than a season old.

2.4.6. Information relating to survey conditions, such as in Table 2:1 above, has been extracted from the original proformas. Where information was not recorded by the surveyor(s) at the time, it has not been possible to provide this information within the report. However, this does not reflect a constraint to the robustness of the survey effort.

3. Results

3.1. Desk study

3.1.1. A total of 444 records of otters were returned from within 2 kilometres of the scheme. This includes sightings and records of field signs submitted to Somerset Environmental Records Centre (SERC). It must be noted that this data search encompasses all of the original scheme route options. All records returned are shown in Appendix A, with a 2 kilometre buffer to indicate which are related to the scheme.

3.1.2. A total of four road casualty records were returned from the Environment Agency (EA). These are all towards the south end of the scheme and also shown within Appendix A.

3.2. Habitat assessment

3.2.1. During field surveys, additional adjoining watercourses were identified within the 2 kilometre buffer of the scheme, and as such were subject to habitat assessments due to habitat connectivity. A revised total of 61 watercourses exist within 2 kilometres of the scheme. This includes watercourses which are themselves within 250m of the scheme, but also tributaries or streams, for example, which are connected to habitat within 250m of the scheme and within 2 kilometres; 21 of these were assessed as being potentially suitable for otters and targeted for field sign surveys.

3.2.2. Thirty-eight of these watercourses were scoped out as unsuitable for otters for being dry, isolated, comprising poor habitat, low water levels, a lack of food supply, high levels of pollution, or regular disturbance. A further two watercourses were not accessible for habitat assessment and so their suitability for otters remains unknown.

3.2.3. Watercourses were not scoped out of field sign surveys unless the entirety of the watercourse was deemed unsuitable for otters. In some cases, sections of a watercourse may not be suitable, but access was not granted for the whole extent to determine its suitability, as was the case for watercourses 17 and 24a. An additional habitat assessment is required for 24a before it can be scoped in or out of field signs surveys. Watercourse 17 has confirmed presence of otter from subsequent field signs recorded during targeted water vole surveys.

3.2.4. Watercourse 57b has not received any habitat assessment and potential suitability for otters needs to be determined. This watercourse was only identified as being a tributary to the River Isle (watercourse 57) in November 2020. As such, access was not arranged for surveys due to time constraints.

3.2.5. The status of watercourse 32, near Hatch Beauchamp, remains unknown due to land access issues.

3.2.6. The details for all watercourses subject to a habitat assessment within 2 kilometres of the scheme is tabulated in Appendix B, with their location and survey status on shown in Appendix C.

3.3. Field signs survey

3.3.1. Field signs surveys were carried out on 21 watercourses (Table 2:1), all of which were surveyed along a distance of 1 kilometre upstream and 1 kilometre downstream from the scheme on at least one occasion.

3.3.2. Otter presence was confirmed on 14 of the 21 watercourses surveyed. Table 3:1 below details all field signs recorded, although not all observations were recorded during otter or water vole field signs surveys. Observations of otters themselves in January and February 2020 during badger surveys are included as supplementary evidence. All field signs are also shown within Appendix D to provide context of their location within the watercourses, with the photos in Appendix E.

3.3.3. No otter field signs were recorded for watercourses 15bcd, which have been combined due to their size. Otter fields signs were also not recorded on watercourses 20, 24b, 31, 33, 54 or 59. However, watercourse 59 (River Tone) has confirmed otter territories and records from the SERC data records.

3.3.4. Three potential holts / couches may be within 30m of the works area and as such, could be permanently or temporarily destroyed and/or disturbed by construction works.

3.3.5. The potential couch / lying up site on watercourse 15a (Appendix D page 2) and potential holts on watercourses 30 (Appendix D page 5) and 34 (Appendix D page 6) could be at risk of being disturbed.

Table 3:1: Otter field signs and observations

Watercourse	Date	Field Sign	Easting (X)	Northing (Y)	Details	Photo Reference (Appendix E)
14a	15/09/2017	Spraint	325004	123455	Three spraints under bridge.	1
15a	20/05/2019	Spraint	325937	125311	Three spraints of different ages under bridge.	2
	20/05/2019	Other	325937	125311	Two tar spots under bridge.	3
	20/05/2019	Slide	325937	125311	Slide located near other signs so assumed otter.	N/A
	17/09/2019	Spraint	325718	125075	Two spraints on rock.	4
	17/09/2019	Spraint	325652	124853	Fresh spraint on rock.	5
	17/09/2019	Couch/Lying Up Site	325623	124888	A site on the riverbank provides cover and may potentially be used as a resting site.	6
	17/09/2019	Spraint	325614	124869	Fresh spraint.	7
	15/01/2020	Otter	325356	124413	Three kits seen on brook by M5 culvert, not during otter survey.	N/A
17	22/05/2018	Spraint	326021	123954	Old, dry spraint but still smells strongly.	8
	22/05/2018	Spraint	326031	123918	Dry but still fragrant, consisting of primarily arthropod shells.	9
	22/05/2018	Footprint	326032	123919	None.	N/A
19	14/01/2020	Slide	325678	124831	North side of the ditch on steep bank.	10
	14/01/2020	Footprint	325678	124831	Possible otter footprint within slide above but could be badger due to nearby setts.	11
	14/01/2020	Slide	325681	124864	Adjacent to potential holt, south bank.	12
	14/01/2020	Potential Holt	325684	124864	Complex structure of brash, deadwood and large tree branches on south bank. Area of flattened dead wood and dry grass used as bedding. No spraints or footprints but slide nearby has many claw marks.	13
	14/01/2020	Slide	325698	124889	Traverses watercourse, leading to badger sett.	14
24	11/09/2019	Spraint	327696	124331	On edge of the watercourse, fresh digging.	15
	11/09/2019	Footprint	327700	124343	In mud under bridge.	16
30	02/05/2019	Spraint	329249	121417	Found on bank by shingle.	17
	02/05/2019	Potential Holt	329249	121417	Potential holt location within roots of overhanging tree.	18

Watercourse	Date	Field Sign	Easting (X)	Northing (Y)	Details	Photo Reference (Appendix E)
	11/08/2020	Spraint	329287	121737	Old spraint on a rock next to confluence, stream splits and becomes reinforced on one side.	19
	22/09/2020	Spraint	330533	122772	Under stone bridge.	20
34	21/06/2017	Footprint	329715	119292	Under A358, in dirt along footpath. Inconclusive.	21
	21/06/2017	Couch / Lying Up Site	329960	119406	Exposed roots from overhanging sycamore on south bank.	22
	13/09/2017	Spraint	329714	119293	On footpath under A358, adjacent to watercourse.	23
	09/05/2018	Couch / Lying Up Site	328420	118448	Potential area, currently disused. Flattened area of vegetation adjacent to watercourse with slipway into river. No other signs nearby.	N/A
	09/05/2018	Footprint	328662	118534	Possible footprint, no claws or webbing visible.	N/A
	04/09/2019	Spraint	328801	118705	Older spraint on rock, plenty of fish bones.	N/A
	04/09/2019	Spraint	328799	118712	Fresh spraint on rock.	N/A
	04/09/2019	Potential Holt	328808	118714	Fallen tree with exposed roots and holes, providing a possible resting place on the riverbank.	24
	04/09/2019	Spraint	329091	118971	Fresh spraint on rock.	25
	04/09/2019	Spraint	329183	118996	Two spraints on rock, plenty of fish bones. One fresh.	26
	04/09/2019	Spraint	329219	219015	Fresh spraint on rock.	27
	04/09/2019	Spraint	329288	119068	Fresh spraint on rock.	28
	04/09/2019	Anal Jelly	329285	119071	Possible anal jelly next to spraint.	29
	04/09/2019	Spraint	330139	119476	Two fresh spraints on rock.	30
	04/09/2019	Anal Jelly	330141	119476	Two fresh anal jelly on rock.	31
	04/09/2019	Spraint	330165	119474	Unknown age, on rock.	N/A
	18/09/2019	Spraint	329676	119246	Fresh spraint.	32
	18/09/2019	Spraint	329724	119290	Underneath A358 on concrete bank.	33
	18/09/2019	Couch / Lying Up Site	329722	119290	Underneath A358 on concrete bank.	33
	18/09/2019	Footprint	329723	119291	Adult and juvenile footprints underneath the A358 at lying up site.	34
	18/09/2019	Slide	329765	119313	Possible path along ledge with access into water.	N/A
	18/09/2019	Potential Holt	329802	119321	Possible holt within tree roots on riverbank.	35

Watercourse	Date	Field Sign	Easting (X)	Northing (Y)	Details	Photo Reference (Appendix E)
	18/09/2019	Spraint	329992	119408	Two fresh spraints with fish bones underneath road bridge. Another older spraint in the same location.	36
	18/09/2019	Couch / Lying Up Site	329978	119466	Possible resting place under tree roots on watercourse bank.	37
	18/09/2019	Couch / Lying Up Site	331144	119626	Fallen trees offer resting opportunities.	N/A
	12/08/2020	Spraint	329679	119265	On edge of sloped concrete channel.	38
36	03/09/2019	Couch / Lying Up Site	331869	118841	Possible resting place under brash and tree roots.	39
	03/09/2019	Couch / Lying Up Site	332494	118947	Large hole with vegetation cover, potential for use as a resting place but could become flooded when water levels are high.	40
	19/09/2019	Footprint	330668	118557	Possible footprints in soft mud.	41
39	10/05/2018	Spraint	331529	117835	Underneath Kenny Bridge on brick above the water line.	42
	10/05/2018	Footprint	330023	116549	Under Venners Water bridge on western side. Several wet footprints in the mud, with evidence of webbing.	43
	10/05/2018	Spraint	330011	116538	Old spraint on a rock under the southern entrance of Venners Water bridge. Much has been washed away.	44
	03/09/2019	Spraint	332681	119063	Old spraints mostly washed away next to the bridge.	45
	03/09/2019	Spraint	332745	118836	Fresh spraint on rock.	46
	03/09/2019	Couch / Lying Up Site	332709	118963	Fallen trees and branches next to bank provides dense cover and a suitable resting place.	47
	13/08/2020	Spraint	331530	117835	Old, dry spraint of concrete sided stream. Full of fish bones.	48
	13/08/2020	Spraint	331531	117837	More spraints on the north side of the watercourse.	49
52	19/09/2017	Spraint	333349	116596	Spraint under Bow Bridge.	50
55	25/09/2017	Footprint	336048	116549	Under the footpath bridge.	51
	27/06/2019	Spraint	333920	115697	On a rock in the middle of the watercourse. Fairly fresh with lots of fish bones.	52
	27/06/2019	Spraint	334008	115699	On a rock in the watercourse, most washed away.	53

Watercourse	Date	Field Sign	Easting (X)	Northing (Y)	Details	Photo Reference (Appendix E)
	27/06/2019	Slide	334523	115925	Possibly otter, connected to mammal path.	N/A
	27/06/2019	Spraint	335176	115979	None.	54
	11/09/2019	Slide	335605	116444	Possible otter, with claw marks on the bank.	55
57	29/06/2017	Spraint	334483	114823	On rock on west bankside shore.	56
	29/06/2017	Couch / Lying Up Site	334499	115060	In reed bed channel near division in river.	57
	29/06/2017	Couch / Lying Up Site	334355	114801	In reed bed near channel bend.	58
	19/07/2017	Couch / Lying Up Site	335730	116161	Possible couch within rushes upstream of weir.	59
57a	09/05/2018	Spraint	336247	116456	Deposited under bridge in several places at the top of sediment banks. Fish scales and bones visible within.	60
	09/05/2018	Footprint	336247	116456	In same place as spraint, some evidence of webbing.	61
	09/05/2018	Footprint	336197	116447	Fresh footprints on muddy river island.	62
	09/05/2018	Spraint	336163	116453	Potential spraint on weir wall structure 0.3m above water line.	63
	09/05/2018	Couch / Lying Up Site	336032	116417	Flattened area of grass / reed sp. located on alluvial deposit area on the Southern side of the watercourse. Also, a potential spraint.	N/A
	09/05/2018	Footprint	336040	116416	Located on river island.	N/A
	09/05/2018	Footprint	335830	116336	Potential otter footprints on muddy confluence between main channel and drainage ditch.	64
	09/05/2018	Feeding Remains	335845	116212	Potential feeding remains, 3x discarded shellfish, shells on stone / gravel river island.	N/A
	09/05/2018	Spraint	335737	116169	Spraint on rock on drainage ditch at confluence with main channel.	N/A
	09/05/2018	Spraint	335655	116127	Spraint under footpath bridge over a drainage channel confluence with the main channel. Scales visible and sweet smelling.	N/A

Watercourse	Date	Field Sign	Easting (X)	Northing (Y)	Details	Photo Reference (Appendix E)
60	23/05/2019	Spraint	325435	126034	Spraint and old remnants along canal path, either knocked by the public or eaten.	65
N/A	26/02/2020	Otter	331754	118311	Adult otter seen in small woodland by pond. Not during otter survey, possible breeding habitat in between watercourse 36 and 39.	N/A

4. Conclusion

4.1.1. The presence of otters in the south-west of England is well-documented, and a total of 444 records were returned from a biological records search within 2 kilometres of the scheme in 2016. An initial habitat assessment of watercourses within 2 kilometres of the scheme was undertaken between 2017 and 2020, scoping in 21 watercourses which were deemed suitable for otters and, therefore recommended for field signs surveys.

4.1.2. All of these watercourses were subject to at least one survey which spanned a distance of 1 kilometre upstream and 1 kilometre downstream of the scheme between 2017 and 2020, with otter use confirmed on 14 of these from the presence of field signs. The areas of greatest activity were seen towards the south of the scheme (Appendix C, page 2), in those watercourses with connectivity to main rivers such as the Fivehead River and the River Isle. These rivers provide high quality habitats, commuting routes and rich food supply, as well as connections to the wider environment and the Somerset Levels to the north. Watercourses 34, 36, 39, 52, 55, 57 and 57a are all connected via these main rivers.

4.1.3. Regular otter signs were also recorded on the Broughton (watercourse 15a) and Black Brooks (watercourse 19) and their connected streams; these watercourses are connected to the River Tone and the Taunton and Bridgwater Canal, which have historically strong otter populations and connectivity to other main Somerset rivers such as the River Parrett and extensive wetland habitat.

4.1.4. There is evidence that otters are crossing the current A358 using the watercourses and signs have been found in close proximity to the scheme. Four records of otter road mortality on the A358 were provided by the Environment Agency (EA) and found on the watercourses within the southern extents of the scheme (Appendix A).

4.1.5. There are potential resting sites on watercourses 15a, 30 and 34 which may be at risk of disturbance from construction activities due to their proximity to the scheme.

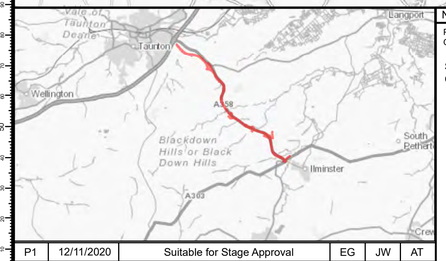
4.1.6. It is not possible to conclude likely absence of otters on watercourses from which evidence was not found. Repeat surveys within the 2 kilometre buffer area from the scheme are required. Due to the expansion of otter populations, it is possible that watercourses which do not currently support otters may do so in the future.

4.1.7. Full details of the potential impacts to otters and ecological mitigation measures will be included within the ecology and nature conservation chapter of the Environmental Statement for the project.

Appendices

Appendix A: Otter biological records

NTS 0 1 2 3 Kilometres



REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	12/11/2020	Suitable for Stage Approval	EG	JW	AT

Notes

Pink Modified Scheme, Mott MacDonald (2018)
Otter SERC, Mott MacDonals (2018)

Service Layer Credits: Contains OS data © Crown Copyright and database right 2020

Key to symbols

- Pink Modified Scheme Option
- 2km Buffer
- Otter SERC records
- Main rivers
- Otter road mortality

References drawings

Drawing Status	Suitable for Stage Approval
Suitability	S4

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Client: highways england

Project Title	A358 Taunton to Southfields
Drawing Title	Otter Somerset Environmental Records Centre

Scale	Designed	Drawn	Checked	Approved
NTS	EG	EG	JW	AT
Original Size	**Date**	**Date**	**Date**	**Date**
A4	12/11/2020	12/11/2020	12/11/2020	12/11/2020

Drawing Number: HE PIN | Originator | Volume | Location | Type | Role | Number
HE551508 - MMSJV - EBD - 000 - DR - LB - 0075

Project Ref. No.: 370774

Revision: P1

Appendix B: Watercourse habitat assessment

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
11	324699, 122765	324762, 122562	0-5	Low	1-1.5	Ditch	No	The stream is partially dry, with hedges on both banks. The ditch is overgrown with fool's watercress and nettles. Hedgerows are predominantly hazel, elm and hawthorn.	Low	Scoped Out
	324762, 122562	324697, 122454	0	0	0.5-1	Ditch	No	The drainage ditch is dry, situated between arable fields and semi-improved grassland. Dense nettles and hemlock water dropwort in the ditch itself. Surrounding hedgerows are dominated by hazel and hawthorn.	None	Scoped Out
14	324721, 123186	324831, 122914	0	0	2-2.5	Ditch	No	Dry drainage ditch between two arable fields. In the north to south direction the ditch is heavily shaded by herbaceous vegetation. From east to west the habitat is dense scrub, dominated by hawthorn and bramble.	None	Scoped Out
	324982, 123489	324832, 123146	0	0	2-2.5	Ditch	No	Dry drainage ditch between two arable fields. The banks are vertical and dominated by herbaceous vegetation and frequent trees. Within the ditch itself, hemlock water dropwort dominates.	None	Scoped Out
14a	324992, 122896	324991, 122290	0-5	Moderate	2-2.5	Stream	Yes	Assessment undertaken from bank with no access due to dense vegetation and steep banks. The stream sits between two arable fields. Numerous bends create a variable flow. Suitable terrestrial habitat comprises <50% but >20% of the area; an overhanging tree line with ivy understory, dense bramble scrub and nettles border the banks. There is slight disturbance at this location from the Public Rights of Way (PRoW) and adjacent arable land. The culvert along Stoke Road is not considered to be a barrier to dispersal and the watercourse is well connected to other areas of suitable habitat.	Low	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	325001, 123448	324997, 123049	0-5	Moderate	3.5-4	Stream	Yes	The stream has vertical banks and is situated between two arable fields. There is a short section of riparian vegetation along the assessed extent. Suitable terrestrial habitat comprises <50% but >20% of the area; tall grasses and herbaceous species exist along the embankments, with some short sections of overhanging tall grasses and trees. There is slight disturbance from the adjacent PRoW and arable fields. The culvert along Haydon Lane is not considered a barrier to dispersal, with moderate connectivity to other areas of suitable habitat.	Low	Scoped In
	324987, 122280	324779, 121708	0-5	Low	2.5-3	Stream	Yes	The stream has vertical, bare earth banks, shaded by mature trees, and sits between arable fields. There is little understory vegetation although some areas are covered in ivy. On the top of the banks short grass and herb is present throughout this section.	Low	Scoped In
	324995, 123016	324996, 123494	0-5	Moderate	0.5-1	Stream	Yes	This part of the watercourse is shallow with occasional deep pools. The banks are steep, situated between arable land in the immediate surrounds. Suitable habitat is present in <50% but >20% of the area, with woodland present further upstream. This area isn't subject to disturbance, with good connectivity to other areas of suitable habitat. Pollution levels are low, with small fish seen; bullhead and stickleback.	Low	Scoped In
	325000, 123503	324996, 123052	0-5	Low	2-2.5	River	Yes	The nearby road may provide a barrier to dispersal, but this area is only subject to low disturbance. There is moderate connectivity to other areas of suitable habitat, but moderate pollution within the watercourse. The immediate habitat is agricultural land, but the watercourse itself has some shrub coverage on the banks. A spraint was also recorded during the habitat assessment, under the bridge.	Low	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
15	324732, 122968	324721, 123186	0	0	2-2.5	Ditch	No	A dry ditch with varying width between 1m and 4m, situated between arable fields. Abundant bankside trees and dense scrub provide heavy shading to the ditch, which is dominated itself by tall ruderals and species typically found in damp habitats.	None	Scoped Out
15a	325937, 125311	325608, 124849	0-5	Moderate	2-2.5	Stream	Yes	Broughton Brook is a tributary of the River Tone which runs parallel to the M5. This section exhibits steep banks and dense scrub consisting of bramble, bindweed, blackthorn and nettle with some willow lining the banks. The stream is shallow with deep pools and gravel beaches; large rocks and ledges are present throughout. Although low water levels and the presence of culverts and weirs act as barriers to fish, fish presence was recorded throughout the stream. The terrestrial habitat comprises <50% but >20% of the area and is rarely disturbed. Dense areas of ruderal vegetation such as willowherb are present and the immediate canopy consists of willow species, field maple and hawthorn. The M5 is culverted to the west, where Broughton brook and Black Brook meet. Connectivity to other suitable habitats is high, via the River Tone catchment to the north.	Low	Scoped In
16	324649, 122881	324655, 122842	0	0	1-1.5	Ditch	No	The drainage ditch is dry and situated north of a species-poor improved grassland. Planted trees and scrub on the north bank provide heavy shading.	None	Scoped Out
17	326053, 124053	325805, 123189	0-5	Low	2-2.5	Ditch	No	This section exhibits a variety of shallow and steep banks, with some areas bare but others shaded by trees and shrubs. The bankside vegetation is dominated by herbs and tall grasses. Scattered scrub and short hedgerows border the western bank. Less than 20% of the area is considered to be suitable terrestrial habitat, with immediate land use primarily arable and amenity grassland; no dense cover exists. This watercourse is connected to the Broughton Brook and the wider River Tone catchment but is	None	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
								regularly disturbed by agricultural activities and a nearby PRoW.		
18	326370, 122473	325801, 123194	0-5	Moderate	1-1.5	Stream	Yes	A small, shallow woodland stream, this watercourse has very steep banks. There is suitable terrestrial habitat in <50% but >20% of the area, which includes the surrounding woodland; improved grassland and pasture also adjoins. Connectivity to other areas of suitable habitat is moderate, but there is some pollution and regular disturbance from dog walkers on the adjacent PRoW. Dense vegetation in the northern sections' limits travel along the watercourse.	Low	Scoped Out
18	326818, 121672	326837, 121670	0	0	<0.5	Ditch	No	A dry ditch filled with leaves, in the middle of residential gardens and pasture fields. This feature is unsuitable for otters.	None	Scoped Out
18	326466, 122042	326624, 121766	0	0	0	Ditch	Yes	No water present in the ditch within this section and no evidence of water regularly flowing. Less than 20% of the area provides good cover, although areas of rough grassland, scrub and hedgerow in adjacent fields may provide some refuge. The stream in Stoke St. Mary has run dry before this section and is too small to support otters, with poor connectivity to other watercourses and suitable habitats.	None	Scoped Out
19	326864, 123575	326495, 123856	0	0	2-2.5	Ditch	No	The water course is often under dense vegetation with vertical and shallow banks. The immediately terrestrial habitat of arable and amenity grassland offers little cover for otters, with proximity to the road resulting in a small barrier to dispersal.	None	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	326043, 124287	325747, 124604	0-5	Low	2-2.5	Stream	Yes	The shallow, slow-flowing stream is heavily shaded by mature tree borders on both sides with very little understory. Banks are shallow and the stream appears quite silty. Terrestrial habitat is present on the north side of the bank, where dense scrub with some mature trees exists between the watercourse and the park & ride; long, rough grassland also provides some cover. Less than 50%, but >20% of the terrestrial habitat provides opportunities for refuge. Land use to the south of the watercourse is predominantly arable, which will also mean regular disturbance. This section runs alongside a PRoW and to the northern extent extensive disturbance is currently being caused by M5 junction 25 developments. Some tree clearance has occurred and so it is unlikely that otters are currently using this watercourse. Connectivity to additional areas of suitable habitat is good, with the watercourse running close to the Broughton Brook, connected to the River Tone.	Low	Scoped In
	325647, 124796	325723, 124945	0-5	Low	2-2.5	Stream	Yes	This part of the watercourse runs north of the culvert under the existing A358 and connects to the River Tone north of Ruishton. As a result, there is excellent connectivity to the wider river network and other suitable habitats. The water is shallow and the course itself narrow, with high, steep sides. The banks are not vegetated, but there is an area of woodland on the east side between the watercourse and the public house car park which comprises 50% of the surrounding area. On the west side is an arable / pasture field which extends to the M5. The habitat opens up to be bordered by arable fields to the north, being significantly more exposed until the confluence with the Tone. Despite its proximity to the public house and major roads, the woodland and scrub area only experiences slight disturbance, but possibly moderate pollution from the road and potentially the ongoing developments. During the assessment	Low	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
								potential otter signs were recorded, including slides, footprints and potential rest sites.		
20	326329, 124028	326601, 123576	0-5	Low	0.5-1	Stream	No	A shallow stream at the edge of arable fields, draining into watercourse 19. As a result, there is moderate connectivity to suitable habitats and the wider landscape. This watercourse is bordered by a woodland edge (less than 20% of the area) and rough grassland but will experience slight disturbance from agricultural activities within the adjacent fields. There is likely to be agricultural run-off and pollution due to such activities. The dense vegetation surrounding the watercourse itself provides a lot of cover and it is difficult to determine any signs within. The developments at the motorway junction mean that dispersal through this watercourse may be reduced currently.	None	Scoped In
	326314, 124023	326663, 123594	0-5	Low	1-1.5	Stream	No	At this location the stream is overgrown with dense in-channel vegetation and overhanging scrub and trees. There are earthy banks and a mud / silt bottom within the stream. There is no suitable terrestrial habitat as the watercourse flows through arable / pasture fields, even though woodland edge borders the northern bank. The potential for agricultural activities and associated run-off means that disturbance and pollution may be at moderate levels. The developments at the motorway junction mean that dispersal through this watercourse may be reduced currently.	Low	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
21	326174, 123564	326362, 123750	0	0	1.5-2	Ditch	No	The drainage ditch is dry and situated between arable fields. The earth banks are steep and bordered by a hedgerow on the east side; hawthorn, field maple and hazel dominate. The ditch itself supports hogweed, horsetail, hemlock water dropwort, sorrel and pendulous sedge amongst others. There is little to no food supply and no immediate suitable terrestrial habitat to provide cover. The potential for agricultural activities and associated run-off means that disturbance and pollution may be at moderate levels.	None	Scoped Out
22	326064, 123539	326268, 123556	0	0	1.5-2	Ditch	No	The dry drainage ditch is situated adjacent to Haydon Lane and arable fields. Whilst there is some hedgerow cover, there are no other suitable habitats to provide cover for otters. Herbaceous vegetation dominates the north bank, with ivy, on the south bank under a dense hedgerow.	None	Scoped Out
23	327269, 123427	327107, 123488	0	0	1.5-2	Ditch	No	A dry ditch with earth banks parallel to the road. The immediate surrounding habitat is comprised of pasture, residential and gardens, offering little cover. The ditch itself is not connected to any other watercourses and may be impacted by slight pollution from the road and properties.	None	Scoped Out
24	327563, 123685	327545, 123469	0-5	Low	2-2.5	River	Yes	A thin strip of woodland borders the river within this land parcel, but the A358 immediately to the north presents a significant barrier to dispersal - culvert status here is unknown. To the north this watercourse connects with the River Tone, therefore connectivity is good to other areas of suitable habitat. This section of the watercourse only offers cover from the immediate woodland edge, as the wider landscape is predominantly arable fields with hedgerow boundaries; there will be slight disturbance as a result.	Moderate	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	327580, 123715	327580, 123890	0-5	Low	0.5-1	Ditch	No	This wet ditch is dense vegetated but provides no suitable terrestrial habitat nor cover for otters. The nearby road and farm may result in disturbance and/or pollution into this part of the watercourse. However, connectivity the River Tone in the north means that it is used to commute.	Low	Scoped Out
	327680, 123139	327653, 123683	0-5	Low	2-2.5	Stream	Yes	Along this length the stream is shallow with earth banks and situated between pasture fields. A small wooded area along the stream provides a little bit of dense cover but constitutes <20% of the area. The watercourse is not separated from the fields and a lack of dense vegetation means that there is cattle poaching and regular disturbance. Despite this, connectivity to the wider landscape and river network is moderately good.	Low	Scoped In
	327586, 123803	327705, 124343	0-5	Low	1-1.5	Stream	No	The shallow, silty stream has very steep banks and is enclosed by brambles and scrub, providing good immediate cover. However, with it being situated in between arable fields, there is little suitable terrestrial habitat. Disturbance will be minimal, but agricultural run-off means that pollution may be at moderate levels. Accessibility for otters in and out of the watercourse is better in the northern part of this section, where connectivity to the wider environment is good; in the south connectivity and accessibility are both poor.	Moderate	Scoped In
	327695, 123131	327766, 122970	0-5	Low	1-1.5	Stream	Yes	The shallow stream has a silty bottom and fairly steep, earth banks. Suitable terrestrial habitat in the southern part of this section provides some dense cover from overgrown banks and impenetrable scrub, but the majority of the watercourse flows through managed gardens and horse pasture. As a result, aside from some large trees, it remains exposed. There is a high level of disturbance from dogs and water quality becomes progressively worse from south to north.	Low	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
24a	326716, 124980	327029, 124943	0-5	0	0.5-1	Ditch	No	This ditch has standing water covered in duckweed. There is no suitable terrestrial habitat, with surrounding areas primarily residential and amenity grassland. Lipe Lane presents a small barrier to dispersal, although it is a minor road. The ditch is full of litter and is unsuitable for otters. The watercourse to the east of Lipe Lane was inaccessible to survey and suitability remains unknown. Terrestrial habitat provided by the old railway cutting which is now woodland may be suitable and is in close proximity to the River Tone, where otter presence is confirmed.	None	Scoped Out
24b	327948, 122970	327939, 122400	0-5	Low	<0.5	Stream	Yes	The shallow stream runs through Ashe Farm campsite. Banks are shallow and heavily shaded by mature trees and bordering hedges; cover is good in places but only constitutes <20% of the area. Adjacent vegetation varies between grassland, hedgerow with trees and arable fields. There is little disturbance, but some pollution from fly-tipping. The old railway cutting to the east provides some dense scrub and woodland edge which could be suitable terrestrial habitat, with moderate connectivity to other suitable areas.	Low	Scoped In
25	327559, 123688	327336, 123653	0-5	Low	1-1.5	Ditch	No	The ditch here is densely vegetated and the water level very low. The watercourse as a whole is well connected to the wider environment via the River Tone, but this particular location may be too disturbed by the road and surrounding agricultural activities / pollution to be suitable for otters. The water level is likely to dry completely and doesn't provide suitable dense cover.	Low	Scoped Out
26	327547, 123391	327630, 123219	0	0	2.5-3	Ditch	No	The dry ditch is partially fenced off from surrounding cattle pasture. There is no suitable terrestrial habitat in the immediate or surrounding area and connectivity to other areas is poor.	None	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
27	328027, 123178	327940, 123138	0	0	1-1.5	Ditch	No	The dry ditch is at the side of the road and bordered by a hedgerow. There is a small woodland stand on the north side of the adjacent road and additional suitable terrestrial habitat provided by the old railway cutting to the west, but no suitable habitat provided at this feature.	None	Scoped Out
28	327455, 122892	327138, 122557	0-5	Low	1.5-2	Ditch	No	This ditch is heavily shaded by herbaceous vegetation at the southern extent, but within broadleaved woodland to the north. It is connected to a pond but doesn't provide connectivity to the wider aquatic environment nor suitable terrestrial habitat for otters.	None	Scoped Out
29	328992, 121747	329114, 121648	0	0	2-2.5	Ditch	No	Predominantly dry drainage ditch adjacent to the existing A358 and arable fields. The ditch itself is heavily shaded by bankside trees, bramble scrub and hedgerows. Disturbance from the road and no terrestrial habitat means this is unsuitable for otters.	None	Scoped Out
30	329234, 121569	328916, 121057	0-5	Low	1-1.5	Stream	Yes	The stream has a silty bottom and low water levels at the time of assessment. The height of the earth / stone banks and overhanging trees indicates that water levels rise, and food supply is moderate. There are lots of rocky areas currently exposed. This part of the watercourse flows through a woodland, with >50% of the area constituting suitable terrestrial habitat. The wider landscape is comprised of arable / pasture fields and other small woodland stands, meaning connectivity to other areas of terrestrial habitat via hedgerows is good. The watercourse itself is eventually connected to the Somerset levels, an area of excellent otter commuting / foraging habitat.	Moderate	Scoped In
	328133, 120521	328366, 120651	0-5	Moderate	1.5-2	Ditch	Yes	The ditch is bordered by pasture fields and hedgerows, with wider scrub and woodland covering <50% but more than 20% of the area. Water quality appears to be good, but potential pollution from agricultural run-off and the road is possible.	Low	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	329507, 121857	330228, 122030	0-5	Low	1-1.5	Stream	No	The shallow stream has steep earth banks with some sediment on the substrate. Less than 20% of the area provides suitable terrestrial habitat, with some scrub and ruderal in places offering limited dense cover. The surrounding landscape is largely intensive agriculture, and cattle poaching of the watercourse is regular. Aside from this, disturbance is minimal. However, potential run-off from agricultural activities may increase pollution levels. Proximity to other watercourse and the Somerset levels provides good connectivity and this watercourse may be used as a commuting route, rather than foraging, for otters.	Low	Scoped In
	329483, 121838	329246, 121575	0-5	Low	3-3.5	Stream	Yes	The stream is surrounded by pasture, hedgerows and bankside trees at this location. The water is very shallow, but quality is good and stickleback observed in the pools. Stone cages of rocks are used as hard engineering and straightening of the watercourse. Less than 50% but >20% of this extent provides suitable terrestrial habitat in the form of managed woodland; mature trees provide dense shade and cover and possible opportunities for holts where they overhang. Notable log piles could also be used as resting sites. Connectivity to other areas of suitable habitat is high and no pollution was seen in the area; general disturbance is also very low.	Moderate	Scoped In
31	328469, 119907	329317, 120669	0	0	1-1.5	Ditch	Yes	The ditch is dry, with little to no bankside vegetation. Grassland pasture and arable fields are present to the north, with Bickenhall Wood to the south, which offers an extensive area of suitable terrestrial habitat. The ditch itself is unsuitable for further survey but Bickenhall Wood and the watercourse to the north may provide good habitat.	None	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	329926, 121219	330632, 122334	0-5	Moderate	1-1.5	Ditch	No	The ditch / drain has a moderate flow and is typically narrow. It follows Oldway Lane, running adjacent to the road and at some points within the surrounding arable fields. No dense cover is present, with only bordering hedgerows and occasional rough grassland. There may be regular disturbance from dog walkers and poaching from cattle in some locations. Agricultural run-off was observed in some locations as well as litter. A large extent of mature ancient woodland exists approximately 100m to the south, but connectivity to other suitable habitats, both aquatic and terrestrial, is limited to the northern extent where this watercourse runs close to watercourse 30.	Low	Scoped Out
	329842, 121072	329000, 120342	0-5	Low	0.5-1	Stream	Yes	This section of the watercourse has a stony substrate and appears to vary in depth seasonally; it was very shallow at the time of assessment. It lies within Bickenhall Wood; the earth banks are very steep and heavily shaded by vegetation, providing good cover. Immediate terrestrial habitat is good, covering <50% but >20% of the area. Further afield, land use is predominantly arable and pasture, but pollution and disturbance in this location are low. Immediate connectivity to additional areas of suitable aquatic habitat is poor, but woodland stands connected by hedgerows offer good, secluded, breeding habitat.	Low	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	330715, 122379	331003, 122241	0-5	Moderate	0.5-1	Ditch / Stream / Pond	Yes	This section of the watercourse starts off as a ditch adjacent to the A378, which is heavily overgrown with herbaceous vegetation running alongside a farm access track and PRoW. The water level is very shallow, with a moderate flow and silty substrate largely due to recent rain. The ditch is downstream from the old Chard Canal and bordered by a dense hedgerow but offers no cover. Upstream the watercourse is bordered by woodland edge and dense scrub before opening out onto two ponds surrounded by pasture and arable fields. There is evidence of cattle poaching and run-off in the ponds, which may support moderate levels of fish although nothing was observed. The area immediately surrounding the pond provides some impenetrable cover and reasonable terrestrial habitat, which is connected to the large ancient woodland to the south. However, the waterbodies themselves are unlikely to be used by otters due to their isolation from other suitable aquatic habitats.	Moderate	Scoped Out
33	329527, 119195	328942, 119134	0-5	0	1-1.5	Stream	No	The stream is partially dry at the time of assessment, with numerous pebble bars and fallen trees / deadwood along the length, which have created shallow pools of standing water. The bankside is heavily shaded by trees and dense scrub, provide good cover in places. To the western extent there is little cover as the immediate surrounds are dominated by herbaceous vegetation and trees are rare. There is good connectivity to other watercourses to the west and south, and this watercourse may not be dry during the winter months, thus offering potential foraging opportunities.	Low	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
34	329969, 119398	329011, 118986	0-5	High	3.5-4	Stream	Yes	The majority of the stream has earth and rock banks. The substrate is formed from pebble bars, with a shallow flow over the pebbles and deep pools in places. The bankside is heavily shaded by trees, bushes and fallen debris, offering potential resting sites. Nettles and brambles dominate the understory vegetation. Terrestrial habitat comprises <50% but >20% of the area. There is no indication of much disturbance or pollution, with good connectivity to the west into the wider landscape.	Low	Scoped In
	328178, 118475	331373, 119680	0-5	Moderate	4-4.5	River	Yes	The river in this section has varying banks with some very steep and other shallow. Pebble bars are present, and pools of slower moving water provide a variety of habitats. The substrate is rocky with larger boulders present to offer possible sprainting features. Some of the banks have been reinforced with gabions to offer flood protection nearer the properties. There are no obvious indicators of pollution and some emergent vegetation despite heavy shading provided by the wooded banks. Fish were observed during the assessment. Suitable terrestrial habitat encompasses >50% of the area, whilst the wider landscape is predominantly arable and pasture.	Moderate	Scoped In
35	330190, 118946	330485, 119125	0-5	0	0.5-1	Ditch	No	A narrow wet ditch with small pools of standing water on the section nearest the A358. The majority of the ditch is dry and unsuitable for otters. Connectivity is poor and no terrestrial habitat is available, as the immediate surrounds are pasture fields where cattle poaching causes disturbance.	Low	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
36	330424, 118395	330925, 118676	0-5	Moderate	3.5-4	Stream	Yes	The open, wide channel has steep vertical banks and is largely dry except for some pools. The channel consists of pebble but with some silt with overhanging and fallen mature trees and deadwood. Frog tadpoles and small fish were observed adjacent to the residential properties. Terrestrial cover consists of bankside tree, bushes and scrub which provide heavy shading and some opportunities for secluded resting sites. The adjacent land is comprised of arable and pasture fields, grassland and residential; disturbance from properties and cattle poaching is minimal but present, particularly on the west side of the A358. There is excellent connectivity to other areas of suitable habitat, including the River Isle to the south and east.	Moderate	Scoped In
	331779, 118730	331012, 118605	0-5	Moderate	2-2.5	Stream	Yes	The area of this section west of Stewley Lane is open with a wide channel, but to the east it becomes narrower. The west extent is heavily shaded by mature bankside trees, with some overhanging herbaceous vegetation. The east is heavily shaded too but contains less understory. Terrestrial cover is approximately 50% of the watercourse extent here, with some impenetrable habitat to offer secluded resting sites for otters. The watercourse provides excellent connectivity to the River Isle and the wider environment, offering good commuting and foraging habitat.	Moderate	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	331309, 118642	333138, 119616	0-5	Low	0.5-1	Ditch	Yes	The stream becomes a ditch throughout this extent, which is mainly dry aside from some small pools. The channel consists of pebble and silt towards the south-east, but transitions into earth as the watercourse dries. The banks are covered in dense nettles, ivy and sedge and there is evidence of nutrient enrichment from the surrounding agricultural fields. Bankside trees, bushes and dense scrub provide cover, but there is not enough space between the channel and the surrounding fields for resting sites. Coupled with disturbance from agricultural activities / livestock, it is unlikely that the terrestrial habitats are used by otters. There is good terrestrial connectivity to other waterbodies such as ponds, so it is possible that this part of the watercourse is used as a commuting route to and from the River Isle when wet.	None	Scoped Out
37	331012, 118605	330869, 118492	0	0	0.5-1	Ditch	No	This is a dry ditch between arable fields, with some bank erosion. The channel is dominated by hemlock water dropwort. A hawthorn hedgerow borders the northwest embankment and herbaceous vegetation along the rest of the banks. This provides no suitable habitat nor cover for otters.	None	Scoped Out
38	331291, 117984	331453, 117863	0	0	0.5-1	Ditch	No	The dry ditch is overgrown with bramble, nettles and willowherb, with hawthorn and blackthorn scrub present towards the western end. The A358 is adjacent to the northern hedge line, providing high disturbance levels. No suitable aquatic or terrestrial habitat is present, but this ditch does flow into watercourse 39 when wet.	None	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
39	332675, 119018	330001, 116535	0-5	Low	2.5-3	Stream	Yes	This slow-flowing, meandering watercourse is a stream connected to the Fivehead River called Venners Water. The banks are typically steep-sided, sometimes with earth cliffs; a few areas of pebble deposition exist in the main channel. The riparian boundary between the watercourse and the surrounding agricultural land is generally narrow with often less than 3m between. Suitable terrestrial habitat is very limited (less than 20% of the area); although the borders are heavily shaded by mature trees and scrub, the only area of dense woodland is Island Copse. As such, there are not many opportunities for resting sites. Potential for agricultural run-off and disturbance from nearby footpaths further reduce the likelihood of otter use. Although some otter evidence has been found, a plentiful food source and connectivity to the Fivehead River and subsequently the River Isle means that this watercourse is more likely used for commuting and foraging purposes rather than a breeding territory.	Moderate	Scoped In
40	331472, 117629	331701, 117410	0-5	Low	1.5-2	Ditch	No	This overgrown wet drainage ditch is comprised mostly of nettles and is shaded by a hedgerow on the south embankment. The water level is very shallow with some flow in places. No terrestrial habitat is present, and this watercourse is unsuitable for otters despite being connected to watercourse 39 and the wider aquatic environment.	None	Scoped Out
41	332210, 117608	332153, 117668	0	0	0.5-1	Ditch	No	This dry ditch is partially within woodland, with sparse bankside vegetation at the northern end. There is no connectivity to other watercourses, and it is isolated by the surrounding roads. The area of woodland provides some cover from mature trees and dense understory bramble scrub but is unsuitable for otters.	None	Scoped Out
48	332951, 116783	333018, 116741	0	0	1-1.5	Ditch	No	This drainage ditch is dry and shallow, shaded by hedgerow and tree line. Amenity grassland and pasture surrounds the ditch, and it isn't suitable for otters.	None	Scoped Out

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
50	333172, 116672	333235, 116249	0	0	1.5-2	Ditch	No	This dry ditch lies adjacent to the A358 verge. It is heavily shaded by scrub and trees with some understory in places. Unsuitable for otters.	None	Scoped Out
52	332812, 116072	333404, 116688	0-5	Low	1-1.5	Stream	No	The westernmost extent of this section is very shallow and overgrown, but some deep pools are present for fish. Wooded banks and tall bankside herbaceous vegetation provide some cover, but there is no opportunity for secluded resting sites. Immediately east of the A358 underpass the arable land is open and exposed, with no cover at all except from the in-channel vegetation. Moderate levels of pollution may occur from run-off and slight disturbance from agricultural activities and the nearby road. This part of the watercourse may still be used as a commuting route, despite the low water level.	Low	Scoped In
	333404, 116688	333682, 116817	0-5	Low	3-3.5	Stream	No	This part of the stream is heavily shaded by dense tree cover and hedgerows bordering the adjacent arable fields. The watercourse opens out, offering opportunities to enter and exit on the south side. Large parts were not visible due to dense vegetation. There is potential for some agricultural run-off, but disturbance should be low in this area. There is no terrestrial habitat present to provide resting sites due to the proximity of the watercourse to arable fields. This watercourse is potentially used as a commuting and foraging route.	Low	Scoped In
	333834, 116837	334195, 116780	0-5	Low	2-2.5	Stream	Yes	The watercourse here runs alongside a rarely used overgrown track, meaning disturbance is kept to a minimum until it is culverted under Cross Keys road. On the north side the banks are high and steep, offering little opportunity for access and egress. The south side has a shallower gradient and will provide access to the surrounding arable fields. There is considerable cover provided by the wooded banks for foraging and commuting otters, but little opportunity for resting sites due to the proximity to fields / roads and the steep banks.	Moderate	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	334227, 116757	335385, 116944	0-5	Moderate	2-2.5	Stream	Yes	This section of the stream runs through a woodland area before opening out and passing through the back of properties. The banks are shallow, and access is easy, but the accessible woodland doesn't provide any dense cover for otter resting sites. Through one of the properties the watercourse is open, but some cover is provided by herbaceous vegetation and steeper banks. Wooded banks at the back of other properties provide additional cover in this area, with some debris and larger rocks which would be typical locations for spraint. There are very few places where suitable resting sites are possible, so the majority of this watercourse is more suitable for commuting and foraging. The immediate surroundings to the north consist of residential properties whilst arable fields and hedgerows exist to the south. However, a dense strip of woodland runs from north to south, connecting this stream to watercourse 54 and the wider Rivers Isle and Ding.	Low	Scoped In

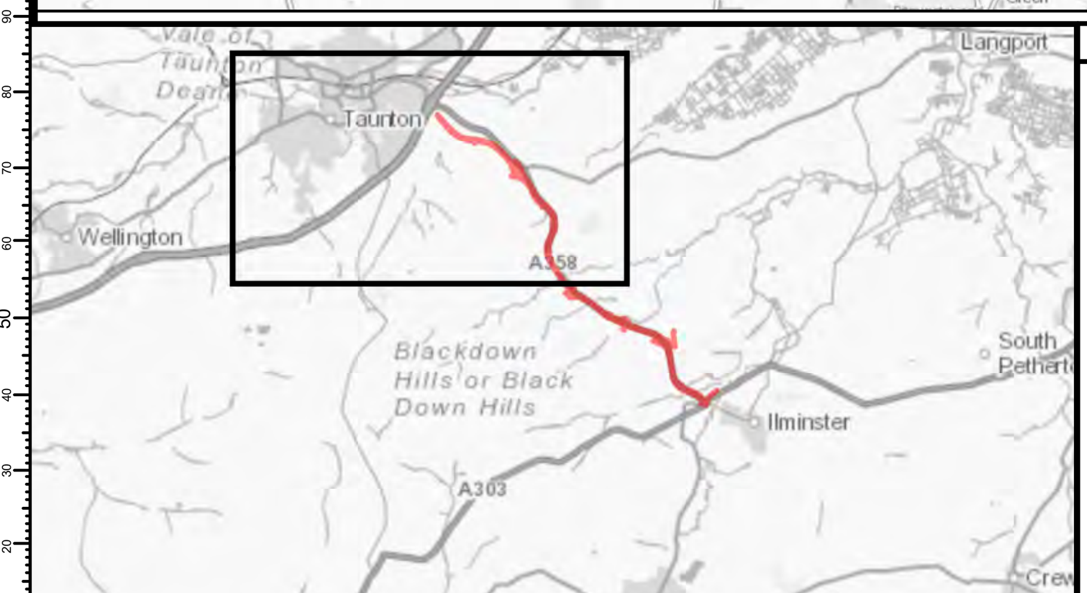
Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
54	331392, 114978	334328, 116251	0-5	Moderate	2-2.5	River	Yes	This section of the stream has a gravel substrate and shallow banks, bordered by woodland for the vast majority of its length. The majority of the surrounding habitat is agricultural, but the river also passes through residential areas where the watercourse is reinforced. Overhanging trees and scrub provide good cover, but very little areas of sufficient density for resting sites; the width of the wooded border is very narrow between the river and arable habitats in many places. There is one area of extensive woodland to the east of the A358 underpass, which may provide suitable resting sites subject to little disturbance. Passage through this watercourse has been made more difficult with the presence of weirs and canalisation, so it is more likely that it is used for foraging and commuting; fish have been observed and connectivity to the wider river network to the east is good. It is possible that some agricultural run-off from the adjacent fields makes it into the watercourse.	Moderate	Scoped In
55	333476, 115485	335561, 116425	0-5	Moderate	1.5-2	Stream	Yes	This stream is a tributary of watercourse 54, which is diverted by a weir immediately south of the A358 before joining the River Isle next to the A303. The stream bed is pebble with some silt and the water typically shallow with riffles and deeper pools. Whilst there is bankside vegetation in the form of mature trees and scrub to provide cover, there is little in the way of dense vegetation and therefore resting place opportunities. The wider landscape is comprised of arable fields, but a small woodland area exists adjacent to the A358 where this watercourse splits from the River Ding (wc 54). There is excellent connectivity to the Rivers Ding and Isle, making this watercourse a potentially good foraging and commuting route for otters. There will be slight disturbance from the nearby main roads - A358 and A303 - as well as agricultural activities; the latter may also result in some agricultural run-off.	Moderate	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	336282, 116540	335582, 116404	0-5	Moderate	3-3.5	Stream	Yes	This section of the stream covers the extent between the east side of A303 and the B3168 overbridge where it joins the River Isle. The stream is bordered by woodland and has a pebble substrate but then becomes reinforced concrete. The surrounding woodland provides enough dense cover to facilitate resting sites, and despite its proximity to the A303 would remain undisturbed in general. There may be slight pollution from the surrounding agricultural land. Connectivity to the wider aquatic environment via the River Isle is excellent.	Moderate	Scoped In
56	334314, 115394	334750, 115816	0-5	Low	2-2.5	Ditch	No	A wet ditch running parallel to the A303, this waterbody is heavily overgrown with bankside trees and scrub. Ground vegetation is dominated by nettles and bindweed. The immediate habitat to the west is arable fields. The banks are steep but low. There are small pools of water, but the ditch is predominantly dry, fed by an inlet pipe. Unsuitable for otters.	None	Scoped Out
57	334692, 115443	334305, 114596	0-5	High	>5	River	Yes	The River Isle is wide with deep water and tall, bare earth cliffs which are vegetated on top. The meandering river exhibits a variation in flow. A weir under Station Road bridge may prevent dispersal; there is a hard-standing ledge but no clear access to the bankside vegetation here. There is angling upstream which may provide occasional disturbance. Some areas of the bank are shaded by semi-mature trees such as willow, with much of the tall grass, nettle and bramble scrub also providing cover and the opportunity for resting sites. This section of the river has cover in approximately 50% of the extent. Connectivity to the wider environment is good and the watercourse appears to be free of pollution. The surrounding habitat is typically grassland, arable and brownfield sites, with some urban and industrial towards Ilminster. Otter signs were seen during the habitat assessment.	Moderate	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
	334692, 115443	336258, 116519	0-5	Moderate	4.5-5	River	Yes	This section of the River Isle follows the watercourse north to the A303, where it is joined by watercourse 55. The banks are predominantly steep, but there is access to the water's edge at some locations - pebble bars, cattle poaching and erosion from vehicle crossing. A sluice and culvert have the potential to prevent dispersal in the north-east area. The bankside is dominated by Indian balsam and nettles. The presence of herons suggests fish and a plentiful supply. The surrounding habitat is dominated by grassland and pasture, with very little dense terrestrial habitat for resting places. There is an area of scrub / woodland south of the sewage works, but this is less than 20% of the extent.	Low	Scoped In
57a	336144, 116449	335775, 116292	0-5	High	>5	River	Yes	This separated section of the Rive Isle flows past the sewage treatment plant and exhibits high water quality; invertebrate density and fish species noted in particular. Plenty of cover is provided by overhanging vegetation and an area of woodland / scrub exists between this channel and the main Isle; tall ruderal vegetation in multiple set aside areas also provide opportunities for resting areas under cover. The wider environment consists of arable fields, which may be disturbed by associated activities and livestock. There is possible discharge from the sewage treatment plant in times of heavy rainfall which could temporarily increase pollution. Connectivity to the wider river network is good and otter signs were recorded during the assessment.	Moderate	Scoped In

Watercourse	Start (XY)	End (XY)	Average Depth (m)	Estimated Flow	Estimated Width	Habitat Type	Suitable Terrestrial Habitat	Habitat Description	Food Supply	Scoped In or Out?
59	324144, 125623	328703, 125250	0-5	Moderate	>5	River	No	The River Tone is known to have a number of confirmed otter territories and is well connected to other watercourses which cross the scheme, as well as the wider environment including the River Parrett and the Somerset levels. This section of the Tone is wide with plenty of fish present. There is no terrestrial habitat present, with surrounding land use consisting of arable land, amenity grassland, tall ruderal and scrub, which does provide some cover. There are culverts along the river, which may prevent dispersal in some cases, but the surrounding terrestrial habitat is easily accessible from the shallow banks. Pollution is low, but disturbance is high with the presence of roads and public footpaths running adjacently.	High	Scoped In
61	325657, 125805	326096, 125643	0-5	Low	2-2.5	Ditch	No	This watercourse is an offshoot of the Taunton and Bridgewater Canal, which possibly connects with the River Tone. There is very little, if any, flow on this polluted watercourse. The banks are quite steep in places with the only cover provided by bordering hedgerows. Due to the water quality, it is difficult to assess whether fish are present and additional run-off from roads may occur. There is regular disturbance from footpaths, properties and nearby roads, but this may provide a commuting route between the canal and River Tone. Due to the distance from the scheme and lack of habitat, this watercourse has been scoped out for field sign surveys.	None	Scoped Out

Appendix C: Watercourse survey status



REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	02/12/2020	Suitable for Stage Approval	ER	JW	AT

Notes

Pink Modified Scheme, Mott MacDonald (2018)
Otter survey data, Mott MacDonals (2018)

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Key to symbols

- Pink modified scheme option
- 500m buffer
- 1km buffer
- 2km buffer

Otter status

- Evidence of field signs
- No field signs found
- Habitat assessment required
- Scoped out

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Client: highways england

Project Title: A358 Taunton to Southfields

Drawing Title: Otter presence in watercourses
Page 1 of 2

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size A1	Date 02/12/2020	Date 02/12/2020	Date 02/12/2020	Date 02/12/2020

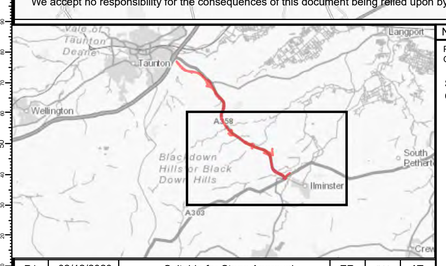
Drawing Number: HE PIN | Originator | Volume
HE551508 - MMSJV - EBD -
000 - DR - LB - 0076
Location | Type | Role | Number

Project Ref. No. 370774

Revision P1

NTS

0 1,000 2,000 m



REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	02/12/2020	Suitable for Stage Approval	ER	JW	AT

Notes

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Key to symbols

- Pink modified scheme option
- 500m buffer
- 1km buffer
- 2km buffer

References drawings

Otter status

- Evidence of field signs
- No field signs found
- Habitat assessment required
- Scoped out

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Project Title: A358 Taunton to Southfields

Drawing Title: Otter presence in watercourses
Page 2 of 2

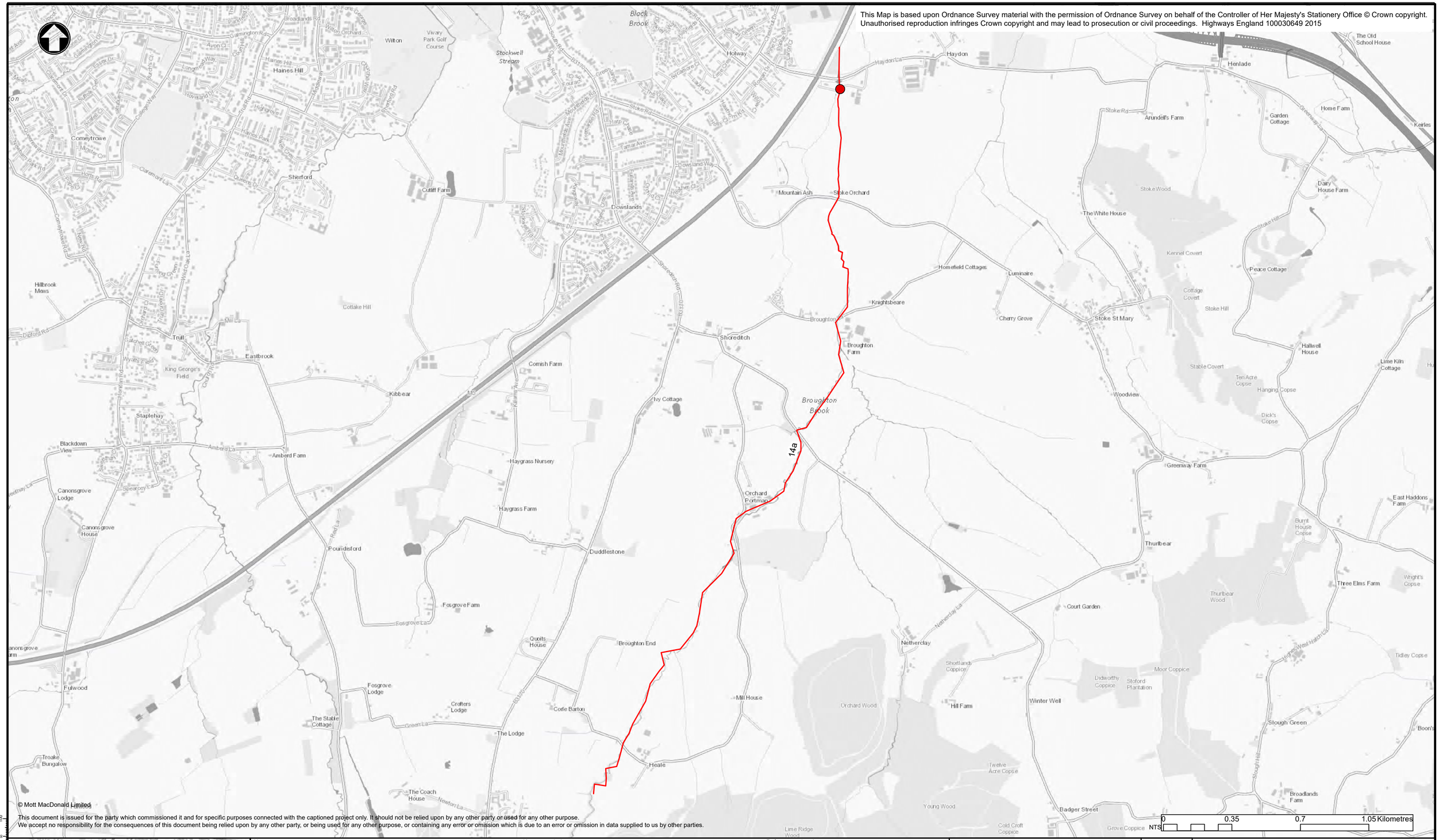
Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size: A1	Date: 02/12/2020	Date: 02/12/2020	Date: 02/12/2020	Date: 02/12/2020

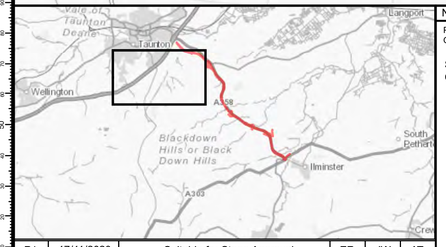
Drawing Number: HE PIN | Originator | Volume
HE551508 - MMSJV - EBD -
000 (Location) - DR (Type) - LB (Role) - 0077 (Number)

Project Ref. No.: 370774

Revision: P1

Appendix D: Confirmed field signs and observations





Notes

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Key to symbols

Pink modified scheme option

Otter field signs

Spraint

References drawings

REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 14a

Page 1 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size	**Date**	**Date**	**Date**	**Date**
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Drawing Number: HE551508 - MMSJV - EBD - 000 - DR - LB - 0078
(HE P/N | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1

15a

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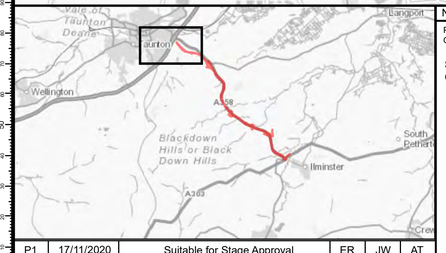

REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

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Otter field signs, Mott MacDonals (2018)

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Key to symbols

Pink modified scheme option

Otter field signs

- Couch/Lying Up Site
- Other
- Otter
- Slide
- Spraint

References drawings

Drawing Status: Suitable for Stage Approval
Suitability: S4

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Client: highways england

Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 15a

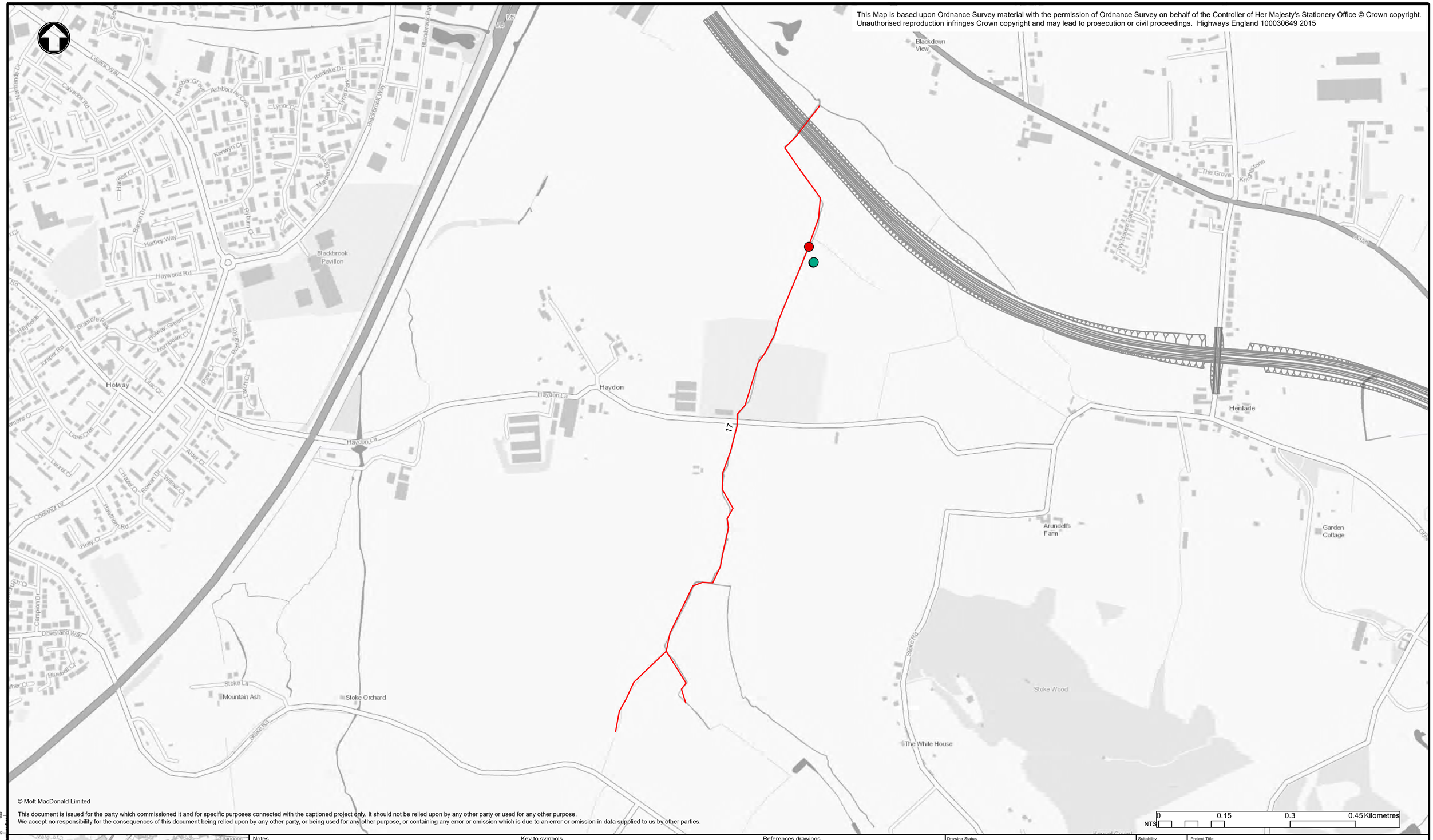
Page 2 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size: A4	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020

Drawing Number: HE551508 - MMSJV - EBD - 000 - DR - LB - 0079
(HE PIN | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1



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Notes

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Key to symbols

Pink modified scheme option

Otter field signs

Footprint

Spraint

References drawings

REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 17

Page 3 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size: A4	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020

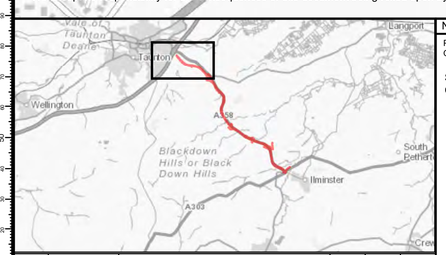
Drawing Number: HE551508 - MMSJV - EBD - 000 - DR - LB - 0080
(HE PIN | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1

19

0 0.2 0.4 0.6 Kilometres
NTS



REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

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Otter field signs, Mott MacDonals (2018)

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Key to symbols

Pink modified scheme option

Otter field signs

Footprint

Potential Holt

Slide

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 19

Page 4 of 4 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size: A4	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020

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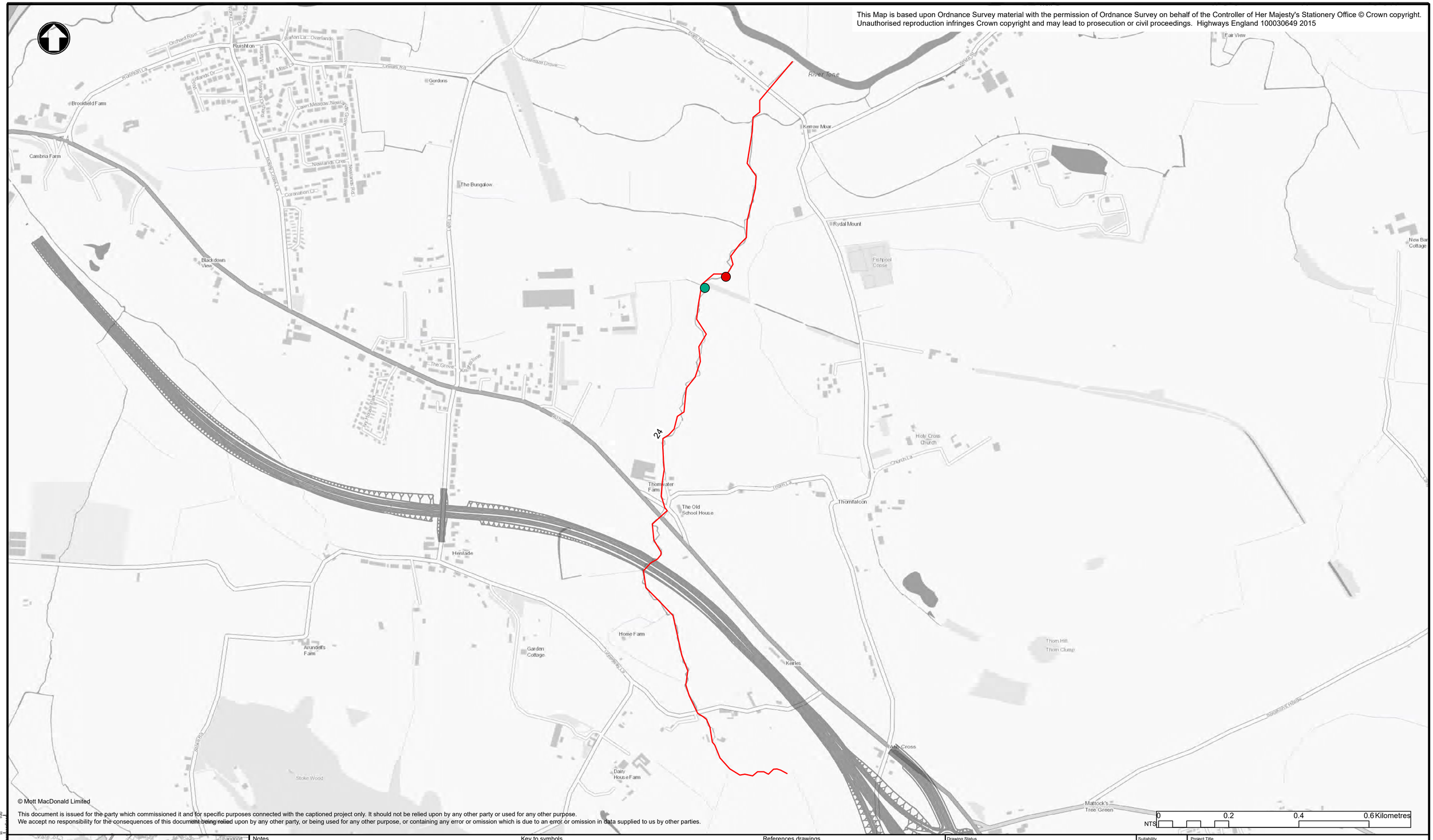
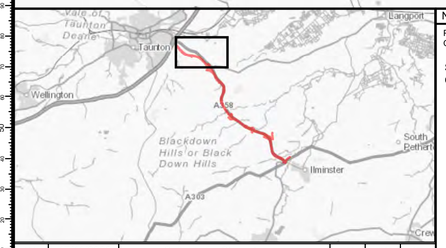
(HE PIN | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1





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Key to symbols

Pink modified scheme option

Otter field signs

Footprint

Spraint

References drawings

REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

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Suitability: S4

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Drawing Title: Otter field signs: watercourse 24

Page 5 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size	**Date**	**Date**	**Date**	**Date**
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Drawing Number: HE551508 - MMSJV - EBD - 000 - DR - LB - 0082
(HE PIN | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1

30

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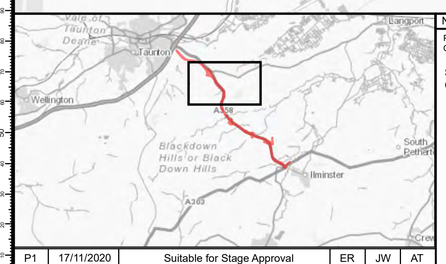
NTS



REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

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Pink modified scheme option

Otter field signs

Potential Holt

Spraint

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Drawing Title: Otter field signs: watercourse 30

Page 6 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size	**Date**	**Date**	**Date**	**Date**
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Drawing Number: HE PIN | Originator | Volume
HE551508 - MMSJV - EBD -
000 Location | - DR - Type | LB - Role | 0083 Number

Project Ref. No.: 370774

Revision: P1

34

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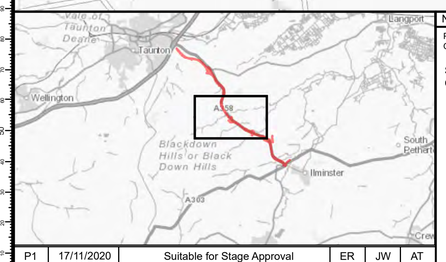
NTS



Notes

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Key to symbols

Pink modified scheme option

Otter field signs

- Anal Jelly
- Couch/Lying Up Site
- Footprint
- Potential Holt
- Slide
- Spraint

References drawings

REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 34

Page 7 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT

Original Size	Date	Date	Date	Date
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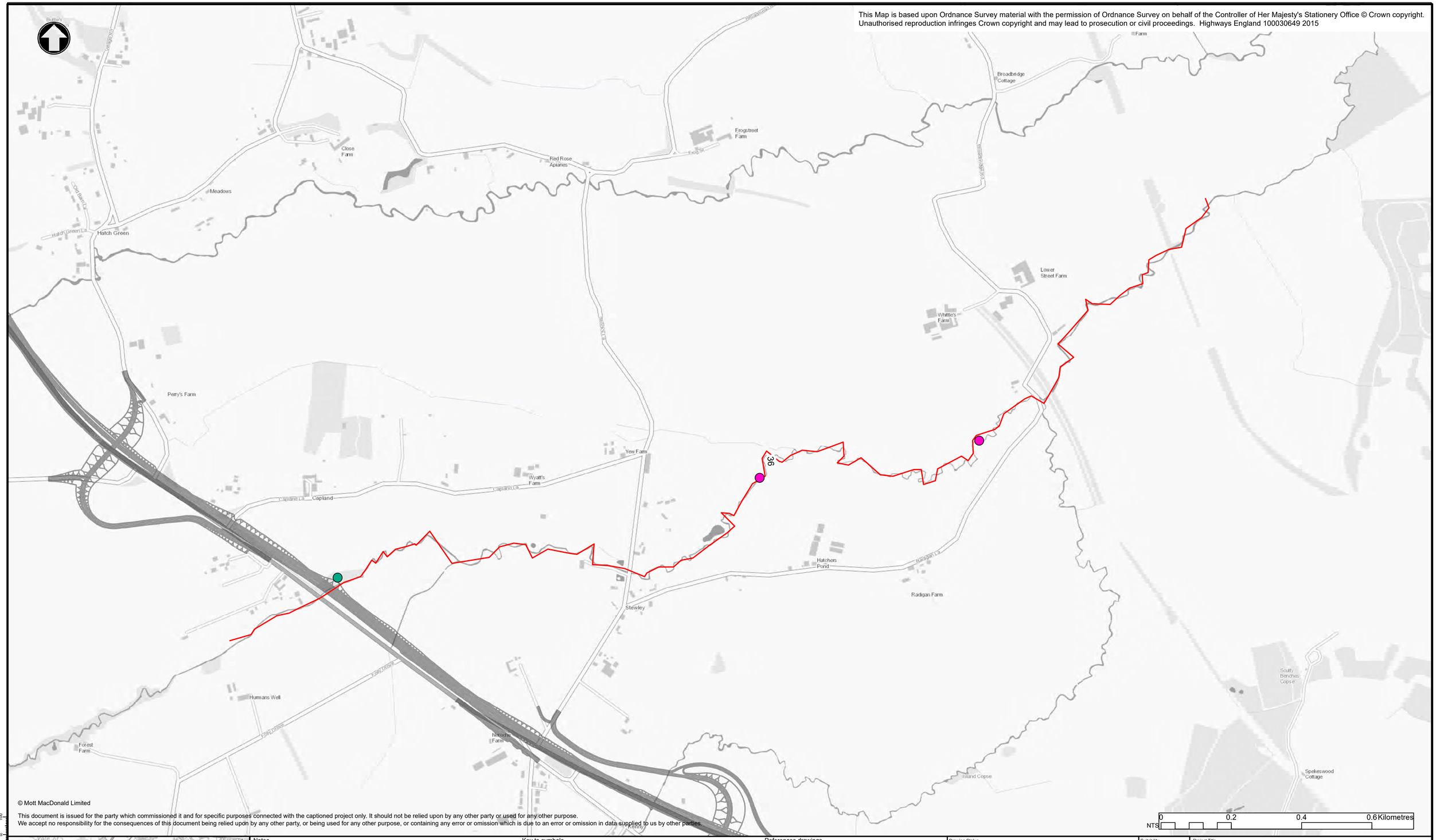
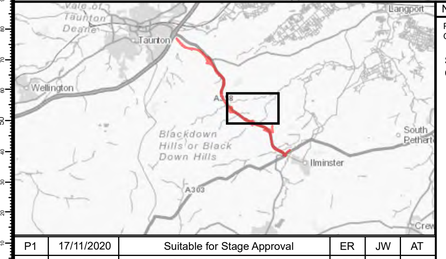
(HE PIN | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1





REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

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Key to symbols

Pink modified scheme option

Otter field signs

Couch/Lying Up Site

Footprint

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 36

Page 8 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size	**Date**	**Date**	**Date**	**Date**
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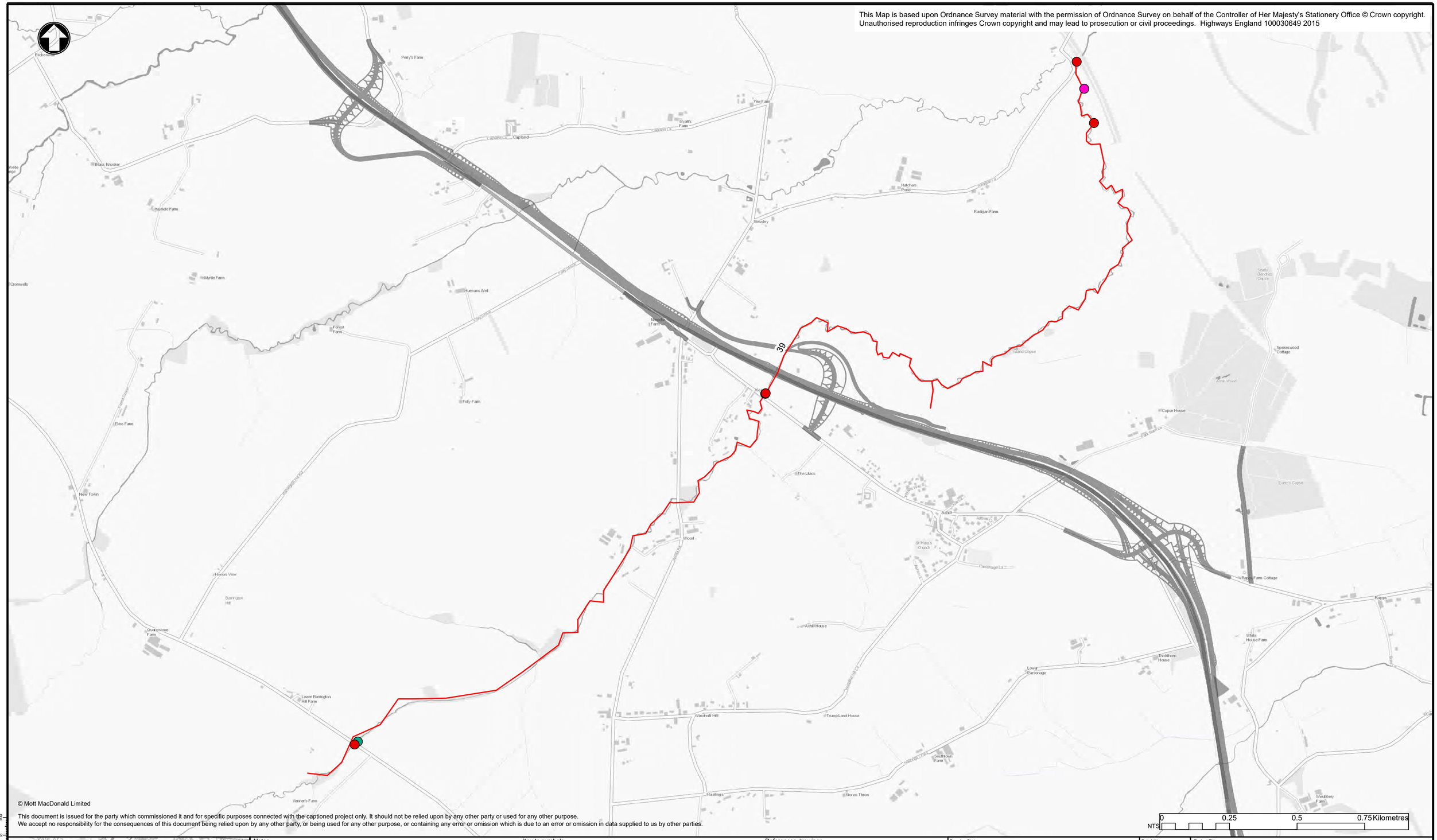
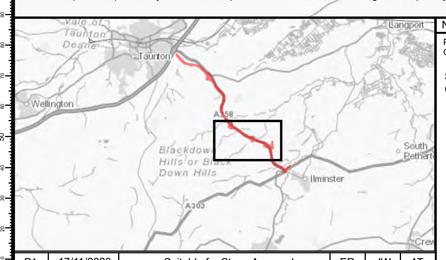
HE551508 - MMSJV - EBD -
000 - DR - LB - 0085
Location | Type | Role | Number

Project Ref. No.: 370774

Revision: P1





REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

Pink Modified Scheme, Mott MacDonald (2018)
Otter field signs, Mott MacDonals (2018)

Service Layer Credits: Contains OS data © Crown Copyright and database right 2020

Key to symbols

Pink modified scheme option

Otter field signs

Couch/Lying Up Site

Footprint

Spraint

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Client: highways england

Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 39

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Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT

Original Size	Date	Date	Date	Date
A4	17/11/2020	17/11/2020	17/11/2020	17/11/2020

Drawing Number: HE551508 - MMSJV - EBD - 000 - DR - LB - 0086
(HE PIN | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1

52

0 0.2 0.4 0.6 Kilometres
NTS

REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

Pink Modified Scheme, Mott MacDonald (2018)
Otter field signs, Mott MacDonals (2018)

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Key to symbols

Pink modified scheme option

Otter field signs

Spraint

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 52

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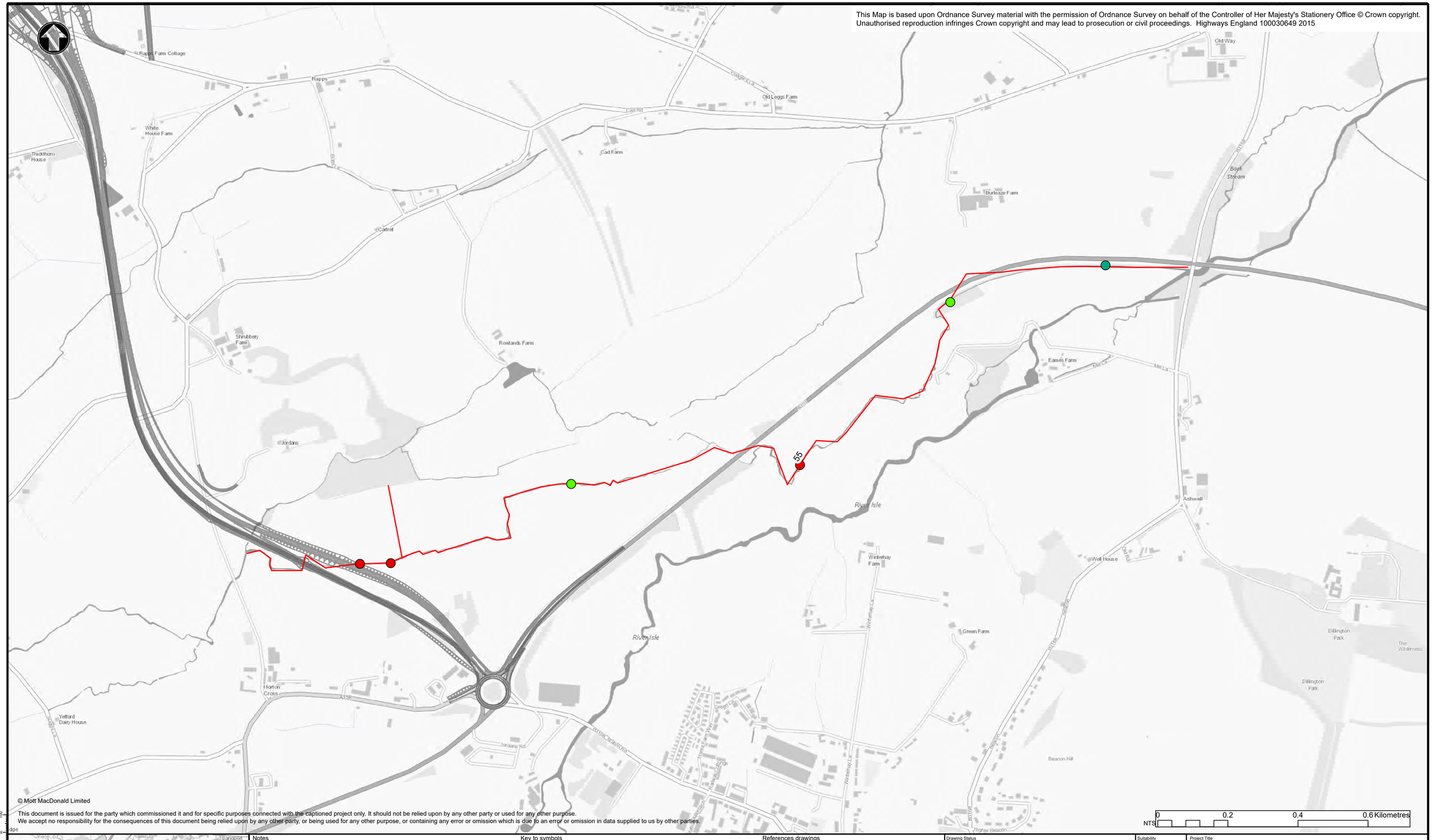
Client: highways england

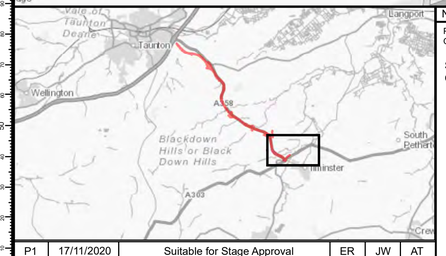
Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size: A4	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020

Drawing Number: HE551508 - MMSJV - EBD - 000 - DR - LB - 0087
(HE PIN | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1





REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

Pink Modified Scheme, Mott MacDonald (2018)
Otter field signs, Mott MacDonals (2018)

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Key to symbols

Pink modified scheme option

Otter field signs

Footprint

Slide

Spraint

References drawings

Drawing Status	Suitable for Stage Approval
Suitability	S4

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Client: highways england

Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 55

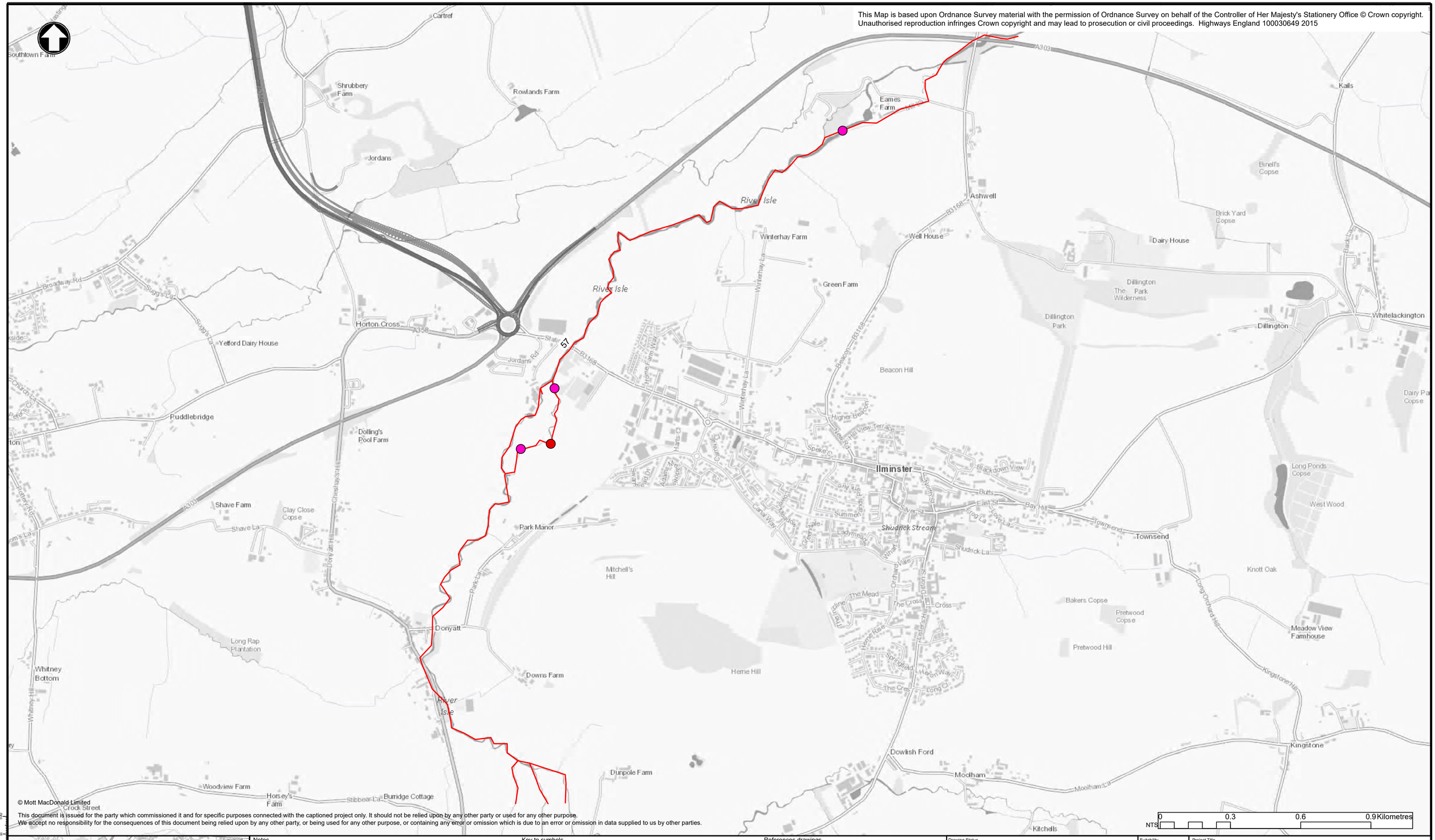
Page 11 of 14

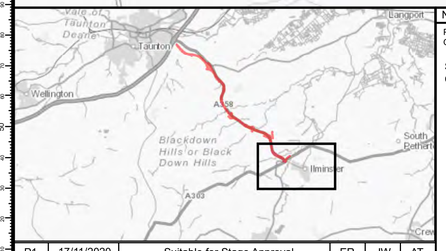
Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size	**Date**	**Date**	**Date**	**Date**
A4	17/11/2020	17/11/2020	17/11/2020	17/11/2020

Drawing Number: HE PIN | Originator | Volume
HE551508 - MMSJV - EBD -
000 Location - DR - Type | LB - Role | 0088 Number

Project Ref. No.: 370774

Revision: P1





REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

Pink Modified Scheme, Mott MacDonald (2018)
Otter field signs, Mott MacDonals (2018)

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Key to symbols

Pink modified scheme option

Otter field signs

Couch/Lying Up Site

Spraint

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Client: highways england

Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 57

Page 12 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size: A4	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020	Date: 17/11/2020

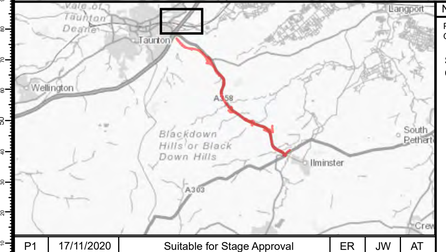
Drawing Number: HE551508 - MMSJV - EBD - 000 - DR - LB - 0089
(HE P/N | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1

60

0 0.15 0.3 0.45 Kilometres
NTS



REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

Pink Modified Scheme, Mott MacDonald (2018)
Otter field signs, Mott MacDonals (2018)

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Key to symbols

Otter field signs

Spraint

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 60

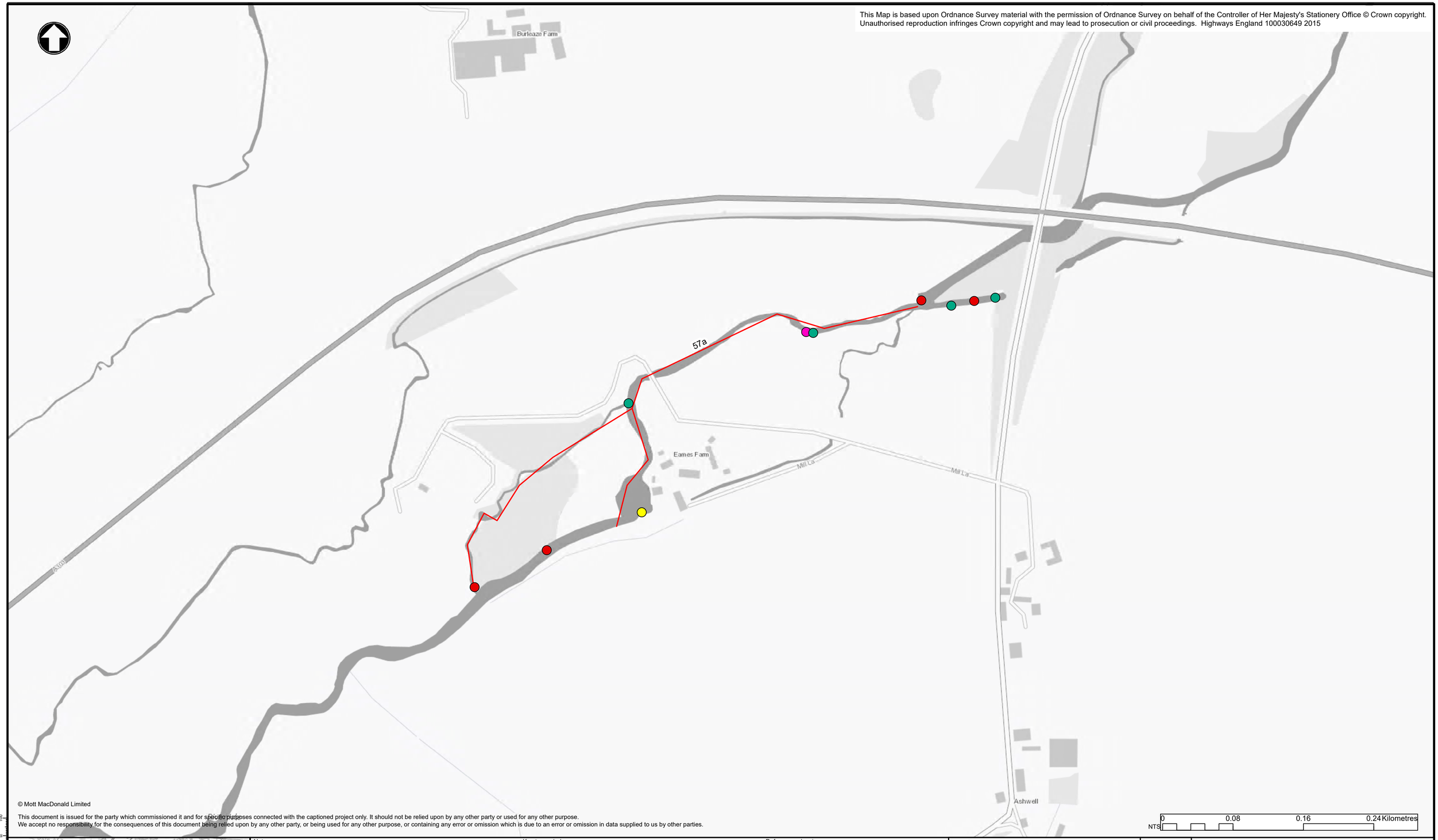
Page 13 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT
Original Size	Date	Date	Date	Date
A4	17/11/2020	17/11/2020	17/11/2020	17/11/2020

Drawing Number: HE PIN | Originator | Volume
HE551508 - MMSJV - EBD -
000 Location | - DR - Type | LB - Role | 0090 Number

Project Ref. No.: 370774

Revision: P1



0 0.08 0.16 0.24 Kilometres
NTS

REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D
P1	17/11/2020	Suitable for Stage Approval	ER	JW	AT

Notes

Pink Modified Scheme, Mott MacDonald (2018)
Otter field signs, Mott MacDonals (2018)

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Key to symbols

Otter field signs

- Couch/Lying Up Site
- Feeding Remains
- Footprint
- Spraint

References drawings

Drawing Status: Suitable for Stage Approval

Suitability: S4

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Project Title: A358 Taunton to Southfields

Drawing Title: Otter field signs: watercourse 57a

Page 14 of 14

Scale	Designed	Drawn	Checked	Approved
NTS	JW	ER	JW	AT

Original Size	Date	Date	Date	Date
A4	17/11/2020	17/11/2020	17/11/2020	17/11/2020

Drawing Number: HE551508 - MMSJV - EBD - 000 - DR - LB - 0091
(HE PIN | Originator | Volume | Location | Type | Role | Number)

Project Ref. No.: 370774

Revision: P1

Appendix E: Field sign photos

Watercourse	Date	Photo	Photo Reference (Table 3:1)
14a	15/09/2017	 	1
15a	20/05/2019	 	2

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	20/05/2019		3
	17/09/2019		4

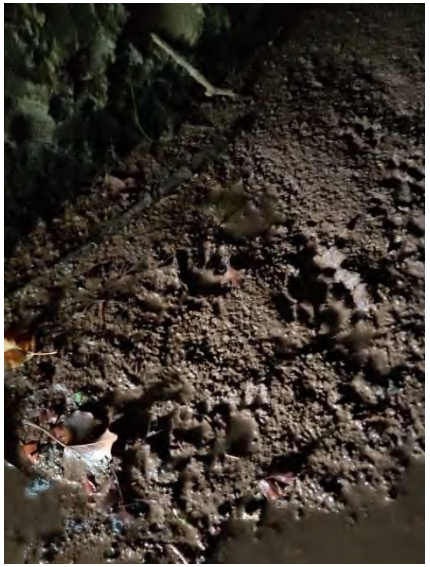
Watercourse	Date	Photo	Photo Reference (Table 3:1)
	17/09/2019		5
	17/09/2019		6

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	17/09/2019		7
17	22/05/2018		8

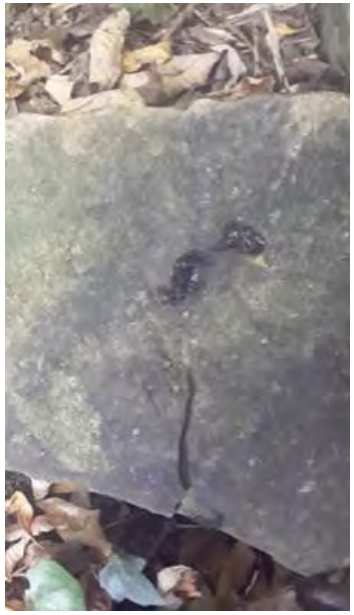
Watercourse	Date	Photo	Photo Reference (Table 3:1)
	22/05/2018		9
19	14/01/2020		10

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	14/01/2020		11
	14/01/2020		12

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	14/01/2020	 	13
	14/01/2020		14

Watercourse	Date	Photo	Photo Reference (Table 3:1)
24	11/09/2019		15
	11/09/2019	 	16

Watercourse	Date	Photo	Photo Reference (Table 3:1)
30	02/05/2019		17
	02/05/2019	 	18

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	11/08/2020	 	19
	22/09/2020		20

Watercourse	Date	Photo	Photo Reference (Table 3:1)
34	21/06/2017		21
	21/06/2017		22

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	13/09/2017		23
	04/09/2019		24

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	04/09/2019		25
	04/09/2019	 	26

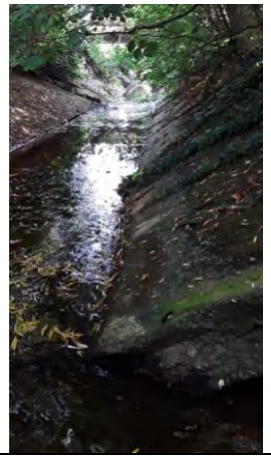
Watercourse	Date	Photo	Photo Reference (Table 3:1)
	04/09/2019		27
	04/09/2019		28

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	04/09/2019		29
	04/09/2019		30

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	04/09/2019		31
	18/09/2019		32

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	18/09/2019	 	33
	18/09/2019	 	34

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	18/09/2019		35
	18/09/2019	 	36

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	18/09/2019		37
	12/08/2020	 	38

Watercourse	Date	Photo	Photo Reference (Table 3:1)
36	03/09/2019		39
	03/09/2019		40

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	19/09/2019	 	41
39	10/05/2018	 	42

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	10/05/2018		43
	10/05/2018		44

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	03/09/2019		45
	03/09/2019		46

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	03/09/2019		47
	13/08/2020		48

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	13/08/2020		49
52	19/09/2017		50

Watercourse	Date	Photo	Photo Reference (Table 3:1)
55	25/09/2017		51
	27/06/2019		52

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	27/06/2019		53
	27/06/2019		54

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	11/09/2019		55
57	29/06/2017		56

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	29/06/2017		57
	29/06/2017		58

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	19/07/2017		59
57a	09/05/2018	 	60

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	09/05/2018	 	61
	09/05/2018		62

Watercourse	Date	Photo	Photo Reference (Table 3:1)
	09/05/2018		63
	09/05/2018	 	64

Watercourse	Date	Photo	Photo Reference (Table 3:1)
60	23/05/2019	 	65