

A358 Taunton to Southfields Dualling Wintering Birds Survey Technical Report

PCF Stage 2

HE551508-MMSJV-EBD-000-RP-LB-0097

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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 search for any statutory or non-statutory designated sites, where birds are a feature of interest, within 2 kilometres of the scheme boundary, was undertaken. A total of five designated sites were identified, including the Somerset Levels and Moors Special Protection Area and Ramsar, which lies approximately 3.5 kilometres north-east of the scheme. A detailed biological records search from Somerset Environmental Records Centre (SERC) returned 53 records of notable bird species within 2 kilometres of the scheme which could feasibly overwinter in the surrounding habitats.

Due to the proximity of the scheme to the Special Protection Area (SPA) – part of the National Sites Network – and Ramsar, an extended survey period was employed, with surveys conducted between October 2020 and March 2021. A total of nine transects were assessed, covering an area up to 1 kilometre from the scheme boundary.

A total of 29 notable species were recorded within the survey area, including:

- six Schedule 1 species
- eleven species listed as Section 41 species of principal importance
- twelve species on the Red List Birds of Conservation Concern
- four species listed as individual or qualifying species for the SPA / Ramsar (Somerset Levels and Moors) – golden plover, snipe, green sandpiper and mute swan
- thirteen species on the Amber List Birds of Conservation Concern

Peak numbers of golden plover, snipe, green sandpiper and mute swan observed within the survey area all constitute very small percentages of those listed within the SPA / Ramsar citations.

1. Introduction

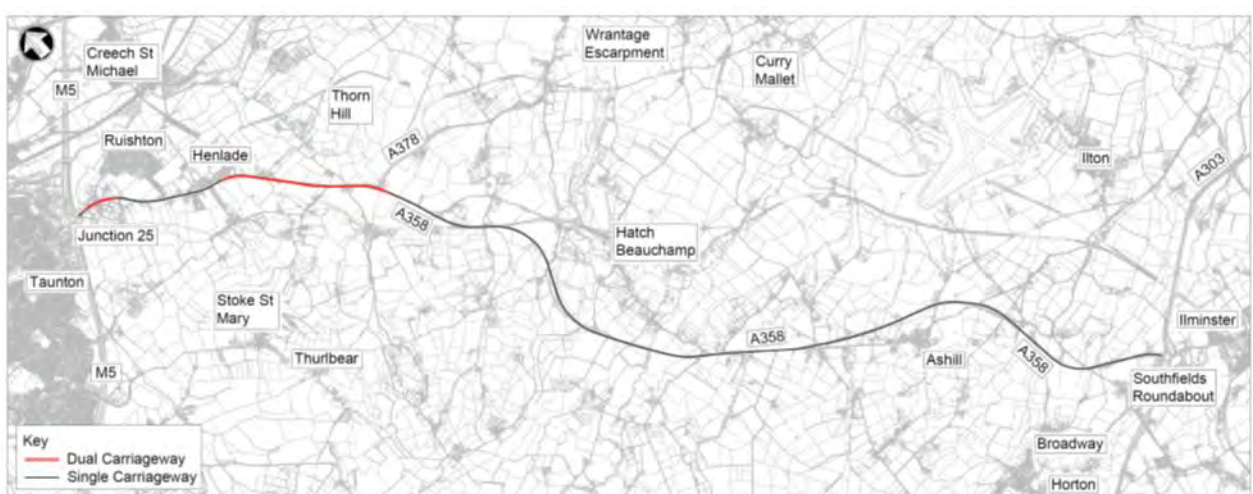
1.1. Background

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 south-west, 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 existing 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 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

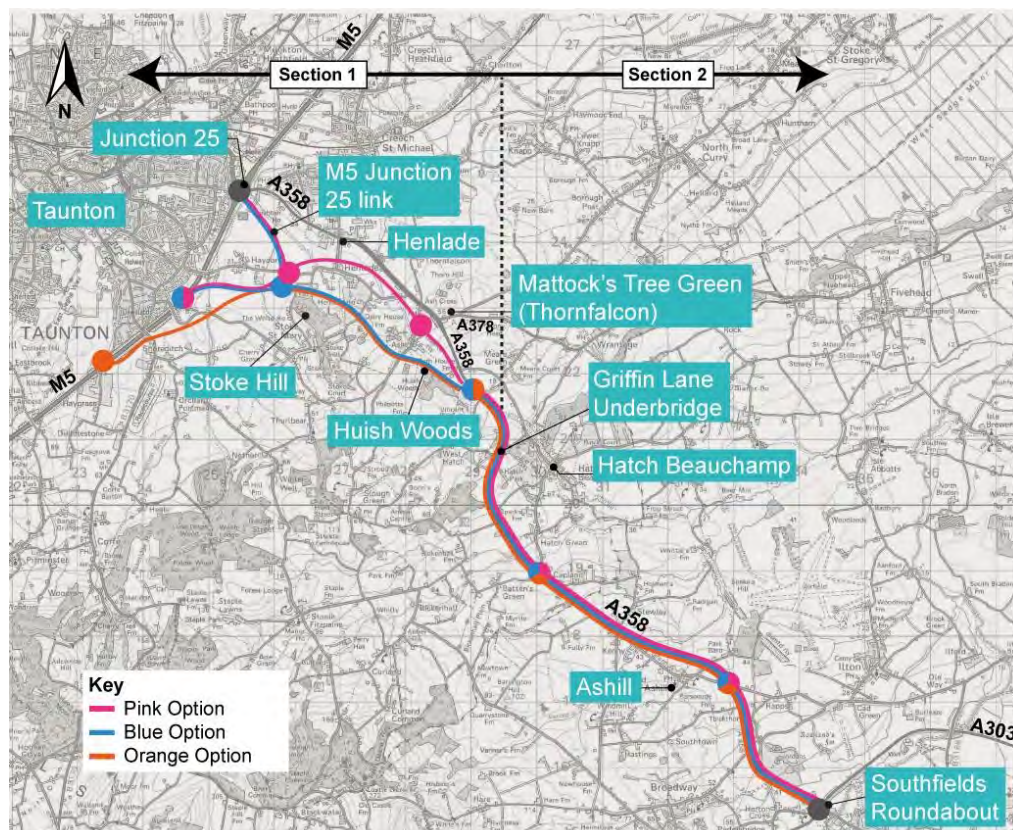


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1.1.4. Following the most recent public consultation in 2018, three route options were presented; Pink, Blue and Orange, as described below and depicted in Figure 1:2.

- 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 arcing 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 public consultations in 2018



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1.2. Scheme proposal

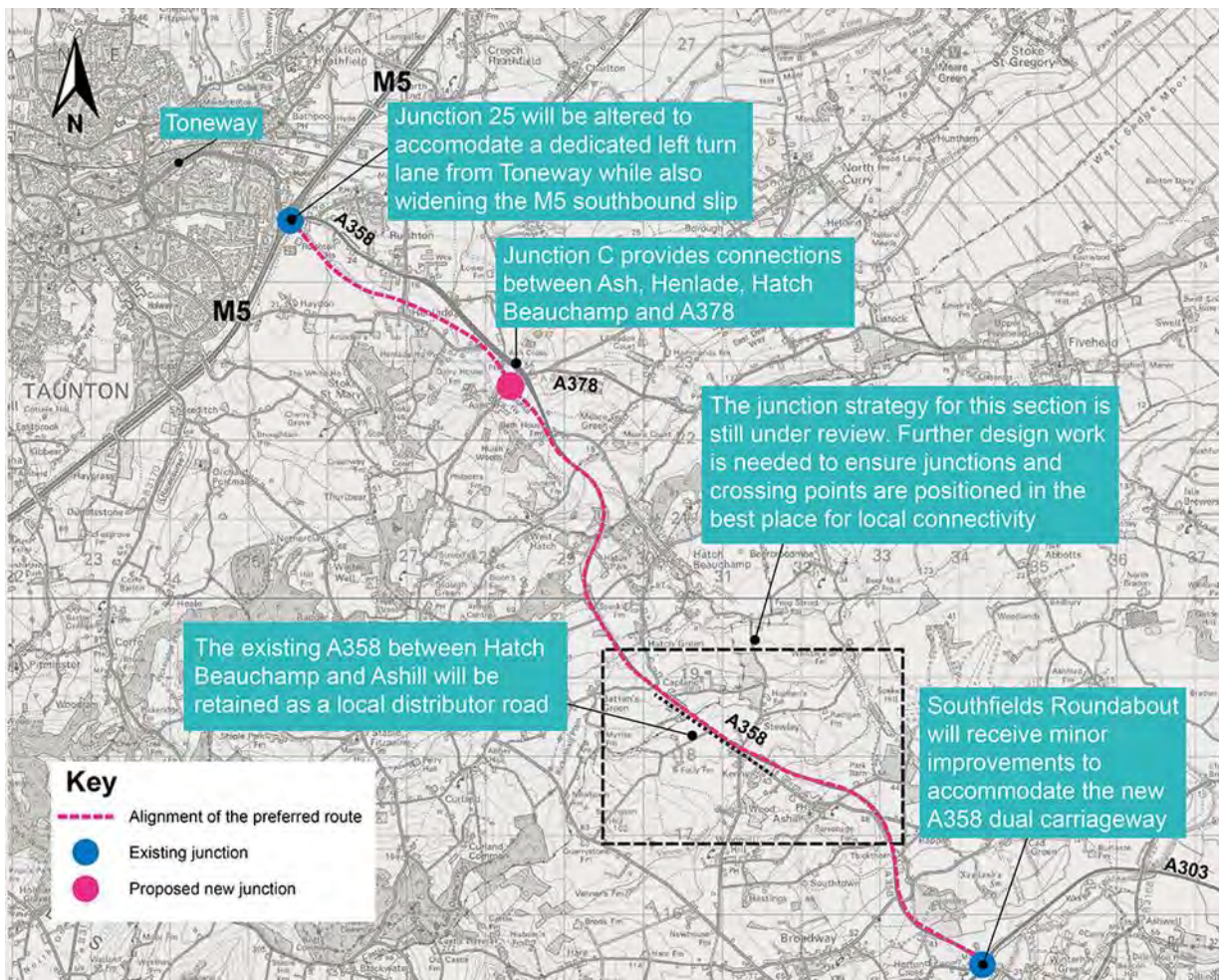
1.2.1. The scheme would provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the A303 at Ilminster to the M5 motorway to the north. The scheme would include grade separated junctions with the purpose of providing a high-quality free flow journey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

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 **Error! Reference source not found.** 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



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1.3. Scope of report

1.3.1. This wintering bird technical report has been prepared during Stage 2 of the Highways England's Project Control Framework (PCF). This technical report provides an overview of the wintering bird surveys results undertaken in the winter of 2020/21 within 1 kilometre of the scheme.

1.3.2. The objectives of this report are:

- to collate and review existing records of notable bird species which may overwinter near the scheme

- to present the methods, constraints and results of the wintering bird survey
- to inform the Biodiversity chapter of the Environmental Statement

1.3.3. The report does not provide any detailed impact assessment or recommendations for mitigation as this aspect will be developed during PCF Stage 3 of the scheme.

1.4. Study area

1.4.1. Guidance on ecological assessment recommends that all ecological features that occur within a zone of influence (Zol) for a proposed scheme are investigated, (Chartered Institute of Ecology and Environmental Management (CIEEM), 2018)¹.

1.4.2. Consultation between Mott MacDonald Sweco Joint Venture, Arup and Highways England established a Zol of 1 kilometre. This took into consideration:

- current usage of and disturbance from the existing A358
- proximity of Somerset Levels and Moors Special Protection Area (SPA) and Ramsar
- the small realignment along most of the scheme
- local hydrology and floodplains
- likely disturbance distances of key species during construction and operation

1.5. Legislation

The National Sites Network

1.5.1. Following the UK exit from the European Union, effective from 1 January 2021, the Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to the *Conservation of Habitats and Species Regulations 2017* (as amended by the *Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*) to give effect to European legislation in England and Wales².

1.5.2. Since 1 January all sites previously part of the Natura 2000 network in England and Wales now form part of the National Sites Network (NSN) and are referred to as such in this report.

1.5.3. The NSN includes the following sites:

¹ Chartered Institute of Ecology and Environmental Management (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal [online] available at: <https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.1.pdf>. Last accessed May 2021.

² Department for Food and Rural Affairs (DEFRA) (2021). Changes to the Habitats Regulations 2017 [online] available at <https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017>. Last accessed April 2021.

- Special Area of Conservation (SACs), candidate SACs and Sites of Community Importance
- Special Protection Areas (SPAs) and potential SPAs

1.5.4. Sites designated under the Convention on Wetlands of International Importance (Ramsar sites) do not form part of the NSN. Ramsar sites may overlap with SACs and SPAs, and may be designated for the same or different species and habitats. All Ramsar sites remain protected in the same way as SACs and SPAs.

Wildlife and Countryside Act 1981 (as amended)

1.5.5. In the UK all wild birds, their nests and their eggs are protected by the *Wildlife and Countryside Act 1981* (as amended), hereafter referred as the 1981 Act. Offences under the 1981 Act include:

- intentionally killing injuring or taking any wild bird
- intentionally taking, damaging or destroying the nest of any wild bird whilst it is in use or being built
- intentionally taking or destroying the egg of any wild bird

1.5.6. Birds listed on Schedule 1 of the 1981 Act have further protection making it an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at / near a nest containing eggs or young, or to disturb the dependent young of such a bird.

Natural Environment and Rural Communities Act 2006

1.5.7. The 1981 Act is also supplemented by *the Natural Environment and Rural Communities Act 2006* (NERC), which enhances the protection to certain habitats and species and places a duty on governments and public bodies / authorities to have regard for nature conservation. The NERC Act 2006 requires public bodies, including local authorities, 'to have regard to the conservation of biodiversity in England' when carrying out their normal functions.

1.5.8. The list of species of 'principal importance for the conservation of biodiversity in England' (Section 41) guides public bodies in implementing their duty – the 'Biodiversity Duty'. The Secretary of State for Transport therefore must consider the impact on biodiversity of the proposed development.

1.6. National conservation status assessment

Birds of Conservation Concern⁴

1.6.1. Also referred to as the UK Red List for birds, the fourth review of the status of wild birds within Great Britain was undertaken in 2015. Two hundred and forty-four

species were assessed and assigned to the Red, Amber or Green lists regarding conservation concerns.

1.6.2. Focusing at a national level, the quantitative criteria assessed the historical and more recent trends in the population and range of each species, as well as its current population size, localised distribution, and international importance. Bird species in the red and amber lists will be subject to at least one of the relevant factors as listed below:

Red list criteria

- globally threatened
- historic population decline in UK during the period 1800-1995
- severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period (the entire period used for assessments since the first Birds of Conservation Concern (BoCC) review, starting in 1969)
- severe (at least 50%) contraction of UK breeding range over last 25 years, or the longer-term period

Amber list criteria

- species with unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern)
- historical population decline during 1800-1995, but recovering; population size has more than doubled over last 25 years
- moderate (25-49%) decline in UK breeding population over last 25 years, or the longer-term period
- moderate (25-49%) contraction of UK breeding range over last 25 years, or the longer-term period
- moderate (25-49%) decline in UK non-breeding population over last 25 years, or the longer-term period
- rare breeder; 1-300 breeding pairs in UK
- rare non-breeders; less than 900 individuals
- localised at least 50% of UK breeding or non-breeding population in 10 or fewer sites, but not applied to rare breeders or non-breeder
- internationally important; at least 20% of European breeding or non-breeding population in UK (NW European and East Atlantic Flyway populations used for non-breeding wildfowl and waders respectively)

Green list criteria

- species that occur regularly in the UK but do not qualify under any of the above criteria

1.7. Planning Policy

National Planning Policy Framework

1.7.1. The *National Planning Policy Framework* (NPPF) 2019 sets out government's planning policies for England and how these are expected to be applied. Chapter 15 'Conserving and enhancing the natural environment', sets out the Government's policies on biodiversity. In summary, with regards to ecology and biodiversity, the NPPF requires that the planning system and planning policies should:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils
- minimising impacts on and providing net gains for biodiversity
- if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it should not normally be permitted.
- development resulting in the loss or deterioration of irreplaceable habitats should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity

Local Biodiversity Action Plans

1.7.2. Biodiversity Action Plans (BAPs) set out actions for the conservation and enhancement of biological diversity at various spatial scales. The *UK Biodiversity Action Plan (UK BAP) 1994 – 2010* has been superseded by the *UK Post-2010 Biodiversity Framework* covering the period 2011 - 2020. UK BAP priority habitats and species were used to form the basis for the statutory list of habitats and species of 'principal importance for the conservation of biodiversity in England' under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*.

1.7.3. Local Biodiversity Action Plans (LBAP) are a means for delivering UK Biodiversity Action Plan targets at a local level. The proposed works area falls within the area covered by the *Taunton Deane and South Somerset Biodiversity Action Plans*. Northern lapwing *Vanellus vanellus* is the only bird species identified within the LBAP.

2. Methodology

2.1. Desk study

2.1.1. A detailed biological records search was requested from Somerset Environmental Records Centre (SERC) in 2016 up to 2 kilometres from the scheme as part of the Preliminary Ecological Appraisal. This was used to identify records of birds within the zone of influence (Zol) and wider surrounds. The records search was undertaken for the scheme options under consideration at the time and was not updated in 2020 due to the changing timescales of the project and to avoid multiple repeats of data search requests. The data search should be updated during PCF Stage 3 to support the Development Consent Order (DCO) application.

2.1.2. A search for any statutory or non-statutory designated sites, where birds are a feature of interest, within 2 kilometres of the scheme boundary, was undertaken. The following sources were reviewed / consulted:

- Multi Agency Geographical Information for the Countryside (MAGIC) website (<https://magic.defra.gov.uk>)
- Joint Nature Conservation Committee (JNCC) (<https://jncc.gov.uk/>)
- *Taunton Deane and Somerset West Biodiversity Action Plans*

2.2. Field survey

2.2.1. The field survey focused primarily on open farmland and grassland within 1 kilometre of the scheme footprint. Areas furthest from Somerset Levels and Moors SPA and Ramsar or with a small realignment of the road and lacking extensive areas of open fields, were subject to a reduced survey area of 500m. This is hereafter referred to as the “survey area”.

2.2.2. Surveyors followed the ‘look-see’ method as described by Bibby *et al* (2000)³, walking at a constant pace and recording all notable or protected species of birds observed within and considered to be utilising the study area.

2.2.3. Nine transects were established to cover the largest open farmland and grassland fields. These were surveyed monthly during the extended overwintering period (October-March) due to the proximity to Somerset Levels and Moors special protection area (SPA) and Ramsar (3.5 kilometres) and the potential for species associated with the designated site to be present within the survey area. Other areas of habitat such as woodland and scrub were covered within the transects but were not the focus of the

³ Bibby, C., Jones, M. & Marsden, S. (2000). *Expedition Field Techniques: Bird Surveys*. BirdLife International, Cambridge.

survey effort. Transect locations in the context of the scheme and the SPA / Ramsar are shown in Appendix C.

2.2.4. In addition to the constant pace survey, surveyors also stopped periodically to scan open fields and listen for calls. Prominent hills within the survey area were used as vantage points to increase survey coverage and record waders and wildfowl at greater distances, if encountered. At each vantage point, 15 minutes was spent scanning the field of view during each visit. The locations of each vantage point are displayed alongside the transect location and field observations in Appendix D.

2.2.5. Surveys were carried out by two ecologists; at least one of whom was an experienced ornithologist, using binoculars and a telescope. David Locke ACIEEM and Mashuq Ahmed, experienced ornithologists with breeding bird, overwintering bird, and barn owl survey proficiencies, led the surveys. Jamie Willmott and Rowena Webb acted as assistants throughout the survey period.

2.2.6. Notable birds identified by sight or sound were registered electronically on a Samsung Galaxy Note 2 Tablet using the ArcCollector application. The identification, numbers of each bird species and activities were noted throughout the data collection period, using standard BTO abbreviations⁴.

2.2.7. The transects starting point and direction was reversed on alternate visits to avoid potential temporal bias (Marchant, 1983). Monthly visits to each transect were spaced at least two weeks apart.

2.2.8. To maintain a relatively consistent ability to detect overwintering bird activity, the surveys were conducted where practicable in optimal or near optimal conditions and avoided periods of heavy rain and/or strong wind (above wind Force 4) wherever possible. The weather conditions for each survey are presented in Appendix B.

Notable species

2.2.9. For the purpose of this report, notable bird species are defined as those which are listed in Schedule 1 of the 1981 Act, species of principal importance under Section 41 of the *Natural Environment and Rural Communities Act 2006*, either listed as Red or Amber in BoCC⁴, and/or species listed on the *South Somerset or Taunton Deane Biodiversity Action Plans*.

2.2.10. Any species for which Somerset Levels and Moors SPA and Ramsar are designated were also considered notable, regardless of their conservation status. This includes all species listed under Article 4.1/4.2 for the SPA and Ramsar Criteria 5 and 6;

⁴ Abbreviated code list (BTO) [online] accessible at: https://www.bto.org/sites/default/files/u10/downloads/taking-part/species_codes.pdf. Last accessed April 2021.

species listed in the SPA / Ramsar qualifying waterbird assemblage and those listed for future consideration under Ramsar Criterion 6 were recorded.

2.3. Constraints

2.3.1. Due to access issues, October visits for some transects did not take place until the first week of November. A gap of at least two weeks was left before the second visit in November for these transects.

2.3.2. The absence of a species is not conclusive proof that a species is not present or that it will not be present in the future. The desk data coupled with the field surveys provide a good comprehensive understanding of wintering bird species that exist within the scheme footprint and surrounding areas which are likely to be impacted by the proposed works.

2.3.3. Surveys were carried out in daylight hours only and therefore species most frequently observed during hours of darkness or twilight are also likely to have been under recorded.

2.3.4. Access was denied to Hatch Park, Hatch Beauchamp for all survey visits. Given the habitat is largely woodland and parkland, it is unlikely that significant numbers of wading birds or waterfowl (that is, species which the SPA and Ramsar is designated) would have been present, though other species are likely to use these habitats.

2.3.5. For March surveys, there was a risk of recording notable birds which were using the habitats surrounding the scheme for breeding, rather than overwintering. To avoid this, notable birds which were observed displaying breeding behaviours, such as singing males, nest building, courtship and display, pairs in suitable nesting habitats or distraction displays, amongst other breeding evidence, were not recorded as overwintering birds.

2.3.6. As transects were surveyed on different days, it was not possible to remove the risk of double counting, where the same flock moved around the scheme, and was encountered by the surveyors during the same survey month.

2.3.7. The survey approach assesses the scheme using transect sampling. As the nine transects do not cover 100% of the land parcels within the scheme's ZoI, it is assumed that not every individual bird was recorded.

3. Results

3.1. Desk study

Designated sites

3.1.1. Five statutory and non-statutory designated sites are located within 2 kilometres of the scheme which mentioned birds in their reason for designation. The closest is South Taunton Streams Local Nature Reserve, which is 600m west of the scheme. These sites are detailed below in Table 3:1.

Table 3:1 : Statutory and non-statutory designated sites within 2 kilometres

Name	Designation	Reason for designation	Distance and Direction
Barrington Hill	National Nature Reserve (NNR)	The hedgerows (some with large oaks) are also home to a wide range of birds, small mammals and insects. Local butterflies include common blue, meadow brown, speckled wood, brimstone and orange tip. To maintain the grassland, a late hay cut is taken from each field in July or August. The aftermath growth is then grazed with cattle and/or sheep. Hedgerows are left to grow uncut for a few years to provide habitat for small mammals and birds. A section of hedge is laid each year.	1.3km south-west
South Taunton Streams	Local Nature Reserve (LNR)	The four sites support a wide range flora and fauna with colonies of water vole in several locations. Otters, kingfisher, sand martin and dippers can also be found. These linear wetland habitats are important foraging areas for bats, especially pipistrelle, lesser horseshoe and noctule.	600m west
Children's Wood / Riverside	LNR	Habitats include the River Tone, lake, grassy banks and berms with standard trees and a small area of woodland. The reserve is an important habitat and movement corridor for a host of animals with otter and a number of bats being recorded. A large number of bird species occur including kingfisher, dipper, grey wagtail, mute swan, grey heron and reed warbler. Butterflies include small and large skipper, marbled white, small heath and small copper. Also good for dragonflies and damselflies.	850m north
Donyatt Railway Cutting	Local Wildlife Site (LWS)	Mosaic of habitats with good bird population.	2km west
Staple Farm Area	LWS	Large arable farm with headlands and substantial areas of fallow set aside some of them marshy with Somerset notable breeding birds.	1.5km west

3.1.2. Somerset Levels and Moors special protection area (SPA) and Ramsar designated sites were identified approximately 3.5km north-east of the scheme. One of the primary reasons for the SPAs designation is nationally important numbers of golden plover *Pluvialis apricaria*, a highly mobile species of wader which within the SPA primarily uses wet grassland but will readily make use of open farmland.

3.1.3. As the study area is comprised partly of open farmland and the designated sites lie in valleys that cross the study area, the wintering bird surveys were designed to focus on some of the mobile species associated with the designated sites. Details of Somerset Levels and Moors SPA and Ramsar are provided below in Table 3:2. The location of the SPA and Ramsar in the context of the scheme and the transect locations are shown in Appendix C.

Table 3:2: Somerset Levels and Moors SPA and Ramsar designation details

Name	Designation	Reason for designation	Distance and Direction
Somerset Levels and Moors	Special Protection Area (SPA) ⁵	<p>Individual species listed in Annex 1 of the EU Birds Directive (Article 4.1) Nationally important numbers of wintering:</p> <ul style="list-style-type: none"> • Bewick's swan <i>Cygnus columbianus bewickii</i>, 310 individuals in the five-year period from 1989/90 to 1993/94 (4.4% of the British population). Five-year peak mean of five individuals in the period 2012/13 to 2016/17. • Golden plover <i>Pluvialis apricaria</i>, 3,110 individuals in the five-year period from 1989/90 to 1993/94 (1.2% of the British population). Five-year peak mean of 14,024 individuals in the period 2012/13 to 2016/17. <p>Individual species not listed in Annex 1 (Article 4.2)</p> <ul style="list-style-type: none"> • Eurasian teal <i>Anas crecca</i>, 7,476 individuals in the five-year period from 1989/90 to 1993/94. peak mean of 21,918 individuals in the period 2012/13 to 2016/17. • Northern lapwing, 36,565 individuals in the five-year period from 1989/90 to 1993/94. Peak mean of 32,896 individuals in the period 2012/13 to 2016/17. <p>Qualifying assemblage of species (Article 4.2) Regularly supporting over 20,000 waterfowl in winter. The five-year peak mean for the five-year period from 1989/90 to 1993/94 was 58,093. Since notification, a substantial increase in numbers with a five-year peak mean of 90,205 individuals in the period 2012/13 to 2016/17. In addition to the Annex 1 and 2 species featured above, the assemblage includes the following five species which exceed the international threshold: Gadwall <i>Anas strepera</i>, Wigeon <i>Anas penelope</i>, Shoveler <i>Anas clypeata</i>, Pintail <i>Anas acuta</i>, and Mute swan <i>Cygnus olor</i>. There are four species which exceed the national threshold: Snipe <i>Gallinago gallinago</i>, Whimbrel <i>Numenius phaeopus</i>, Bittern <i>Botaurus stellaris</i>,</p>	3.5 km north-east

⁵ Somerset Levels and Moors SPA European Site Conservation Objectives [online] available at: <http://publications.naturalengland.org.uk/publication/4598158654963712>. Last accessed April 2021.

Name	Designation	Reason for designation	Distance and Direction
		Little egret <i>Egretta garzetta</i> , Ruff <i>Philomachus pugnax</i> and Green sandpiper <i>Tringa ochropus</i> .	
Somerset Levels and Moors	Ramsar ⁶	<p>Ramsar criterion 5 Assemblages of international importance: Species with peak counts in winter: 97,155 waterfowl (five-year peak mean 1998/99-2002/03).</p> <p>Ramsar criterion 6 Species / populations occurring at levels of international importance. Qualifying Species / populations (as identified at designation): Species with peak counts in winter:</p> <ul style="list-style-type: none"> • Eurasian teal. 21,231 individuals, representing an average of 4.2% of the population (five-year peak mean 1998/99-2002/03). • Northern lapwing. 36,580 individuals, representing an average of 1.8% of the population (five-year peak mean 1998/99-2002/03). <p>Species / populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter:</p> <ul style="list-style-type: none"> • Eurasian wigeon. 25,759 individuals, representing an average of 1.7% of the population (five-year peak mean 1998/99-2002/03). • Mute swan <i>Cygnus olor</i>, Britain 842 individuals, representing an average of 2.6% of the population (five-year peak mean 1998/99-2002/03). • Northern pintail, NW Europe 927 individuals, representing an average of 1.5% of the population (five-year peak mean 1998/99-2002/03). • Northern shoveler, 1,094 individuals, representing an average of 2.7% of the population (five-year peak mean 1998/99 - 2002/03) <p>Species currently occurring at levels of national importance, with peaks counts in winter:</p> <ul style="list-style-type: none"> • Snipe, 1,633 individuals, representing an average of 1.6% of the GB population (five-year peak mean 1998/99 - 2002/03). • Golden plover. 3857 individuals, representing an average of 1.5% of the GB population (five-year peak mean 1998/99 - 2002/03). • Gadwall. 522 individuals, representing an average of 3% of the GB population (five-year peak mean 1998/99 - 2002/03). • Ruff. 16 individuals, representing an average of 2.2% of the GB population (five-year peak mean 1998/99 - 2002/03) 	3.5 km north-east

⁶ JNCC Ramsar Information Sheet: UK11064 Somerset Levels and Moors [online] available at: <https://jncc.gov.uk/jncc-assets/RIS/UK11064.pdf>. Last accessed April 2021.

Name	Designation	Reason for designation	Distance and Direction
		<ul style="list-style-type: none"> Water rail <i>Rallus aquaticus</i>. 36 individuals, representing an average of 8% of the GB population (five-year peak mean 1998/99- 2002/03). 	

Historical species records

3.1.4. Six hundred and eighty-seven records of 87 bird species were returned from within 2 kilometres of the scheme. Fifty-three of these were notable bird species which could be encountered in the overwintering period and are presented in Appendix A.

3.1.5. Further details of the record search for qualifying individual species and/or assemblages of the SPA or Ramsar are presented in Table 3:3.

Table 3:3: Records search details for species associated with SPA or Ramsar

Species	Details of nearest and most recent record	Distance from scheme
Gadwall	36 wintering, Ham sewage treatment works, January 1996 45 wintering, Ham sewage treatment works, January 1995	1.3km north-east
Golden plover	2,500 wintering, Ilminster, January 1991 206 wintering, Ilminster, January 1995	1.5km east
Green sandpiper	Several count of present, Ilminster, November 2004	900m east
Lapwing	Unknown number, Donyatt Railway Cutting, 1980	900m south
Little egret	1 count of present, River Isle weir/tributary Donyatt, February 2009	740m south
Mute swan	2 adults and 8 juveniles, Creech St Michael, May 2010	1.6km north
Pintail	3 wintering, Ham sewage treatment works, December 1995	1.3km north-east
Shoveler	1 wintering, Ham sewage treatment works, December 1999	1.3km north-east
Teal	99 wintering, Ham sewage treatment works, November 1996	1.3km north-east
Water rail	Unknown number, Taunton and Bridgwater Canal – Creech St. Michael, December 2011	1.75km north
Wigeon	1 wintering, Ham sewage treatment works, December 1999	1.3km north-east

3.2. Field survey

Transect habitats

3.2.1. Transects 1,7,8 and 9; at the northern end of the scheme, covered the lowest-lying areas within the survey area and were closest to Somerset Levels and Moors SPA and Ramsar designated sites. They comprised largely of fields of winter cereals. Transects 1 and 7 also contained fields of pasture and some winter stubble.

3.2.2. All remaining transects were on higher ground that was less prone to flooding. The dominant field type was again winter cereals. There were some fields of clover leys,

silage and winter stubble at the southern end along transects 4 and 5. Transects 2,3 and 6 also had some areas of pasture.

3.2.3. The only significant area of flooding or ephemeral pooling noted during the surveys was in November 2020. A tributary of the Fivehead River that is covered by transect 6 burst its banks and flooded the low-lying sections of some winter stubble fields.

Notable species

3.2.4. A total of 29 notable species were recorded during the surveys and are detailed below within Table 3:4. These records include the following:

- six Schedule 1 species
- eleven species listed as Section 41 species of principal importance
- twelve species on the Red List Birds of Conservation Concern
- four species listed as individual or qualifying species, or part of the qualifying waterbird assemblage, for the SPA / Ramsar (Somerset Levels and Moors)
- one species listed for future consideration under Ramsar Criterion 6 (Somerset Levels and Moors)
- thirteen species on the Amber List Birds of Conservation Concern

3.2.5. It must be noted that a species' conservation status and level of legal protection are not discrete categories and there may be overlap between them; a species may appear in more than one of the categories listed above. Therefore, the total number of species in each category does not relate to the total number of notable species recorded during the October 2020 to March 2021 surveys.

3.2.6. Peak counts, as shown below in Table 3:4, relate to the single highest number of birds recorded on any of the nine transects.

3.2.7. Field observations, including the species, abundance and visit number, are displayed in detail for each transect within Appendix D.

Table 3:4: Notable species, status and peak count within the scheme survey area (* indicates Somerset Levels and Moors SPA or Ramsar species)

Common name	Scientific name	Schedule 1	Section 41	BOCC ⁴	Peak count
Black-headed gull	<i>Chroicocephalus ridibundus</i>			Amber	9
Brambling	<i>Fringilla montifringilla</i>	•		Green	1
Bullfinch	<i>Pyrrhula pyrrhula</i>		•	Amber	3
Dunnock	<i>Prunella modularis</i>		•	Amber	4
Fieldfare	<i>Turdus pilaris</i>	•		Red	56
Golden plover*	<i>Pluvialis apricaria</i>			Green	47
Greater black-backed gull	<i>Larus marinus</i>			Amber	3

Common name	Scientific name	Schedule 1	Section 41	BOCC ⁴	Peak count
Green sandpiper*	<i>Tringa ochropus</i>	•		Amber	1
Grey wagtail	<i>Motacilla cinerea</i>			Red	2
Herring gull	<i>Larus argentatus</i>		•	Red	78
House sparrow	<i>Passer domesticus</i>		•	Red	16
Kestrel	<i>Falco tinnunculus</i>			Amber	1
Lesser black-backed gull	<i>Larus fuscus</i>			Amber	23
Linnet	<i>Carduelis cannabina</i>		•	Red	200
Mallard	<i>Anas platyrhynchos</i>			Amber	3
Marsh tit	<i>Poecile palustris</i>		•	Red	1
Meadow pipit	<i>Anthus pratensis</i>			Amber	25
Mistle thrush	<i>Turdus viscivorus</i>			Red	6
Mute swan*	<i>Cygnus olor</i>			Amber	2
Peregrine falcon	<i>Falco peregrinus</i>	•		Green	1
Red kite	<i>Milvus milvus</i>	•		Green	1
Redwing	<i>Turdus iliacus</i>	•		Red	80
Reed bunting	<i>Emberiza schoeniclus</i>		•	Amber	3
Skylark	<i>Alauda arvensis</i>		•	Red	4
Snipe*	<i>Gallinago gallinago</i>			Amber	10
Song thrush	<i>Turdus philomelos</i>		•	Red	2
Starling	<i>Sturnus vulgaris</i>		•	Red	1,500
Stock dove	<i>Columba oenas</i>			Amber	200
Yellowhammer	<i>Emberiza citrinella</i>		•	Red	35

Somerset Levels and Moors SPA and Ramsar Species

3.2.8. Golden plover is designated species for the Somerset Levels and Moors SPA. This species was only recorded once during the survey period, on the 29 October 2020 between Horton Cross and Broadway at the southern end of the scheme; a flock of 47 birds was observed feeding within an arable field adjacent to the existing A358, approximately 70m west of the live carriageway, and part of the section proposed for dualling.

3.2.9. This flock represented <1% of the five-year peak mean up to 2016/17.

3.2.10. Snipe are listed within the SPA citation as part of the qualifying winter bird assemblage and identified within the Ramsar Information Sheet (RIS) as species occurring at levels of national importance; 1,633 individuals were recorded in the five-year peak mean up to 2002/03.

3.2.11. The peak count of ten snipe within the survey period represented <1% of that cited in the RIS. Snipe were recorded in November and December 2020, and January and March 2021. The majority of observations for this species were concentrated around the arable fields bordering Bickenhall Lane in Hatch Beauchamp (approximately 120m east of the scheme) with other records in and around the grasslands near Henlade (the closest observation in this area was approximately 280m south of the scheme).

3.2.12. The mute swan is cited within the RIS for future consideration under criterion 6, where internationally significant peak species' counts have been identified after the site's designation. A peak count of two individuals was seen during every survey where the pair inhabited the same pond near Thornfalcon to the east of the scheme (approximately 440 metres north of the scheme at its closest point). This peak count equated to <1% of the population cited in the RIS and this pair is unlikely to be part of the Ramsar site population.

3.2.13. Although not overwintering in nationally-significant numbers at the time of designation, the population of visiting green sandpiper in the SPA now exceeds the national threshold of importance and is included within the qualifying waterbird assemblage of the SPA. A single individual was recorded on the 18 December 2020, foraging within a flooded arable field margin adjacent to the Fivehead River. This is approximately 300m north-east of the scheme. This equates to <1% of the population cited for the SPA.

Schedule 1 Species

3.2.14. A total of six Schedule 1 species were recorded during the survey period. A single brambling was observed adjacent to Capland Lane on the 4 November 2020 approximately 500m north-east of the scheme.

3.2.15. Fieldfare and redwing were observed regularly throughout the survey area, utilising the agricultural margins, boundary features and orchards surrounding the scheme. Both species were recorded throughout the scheme between October 2020 and February 2021, but neither were present during the last of the surveys in March 2021.

3.2.16. Green sandpiper is also Schedule 1 species. Details of the sighting are provided in 3.2.13 above.

3.2.17. A single peregrine was recorded on the 16 December 2020, high over the Fivehead River and surrounding grassland, approximately 750m south-east of the scheme. A pair of peregrines roost, and have successfully bred for the last five years, on St. Mary Magdalene church in Taunton town centre.

3.2.18. One red kite was recorded within the survey area flying overhead between Horton Cross and the Southfields Roundabout at the southern end of the scheme, on 18 March 2021. This is approximately 150m south of the scheme.

3.2.19. Brambling, fieldfare, redwing and green sandpiper are not species which breed in Southern England. As such, Schedule 1 breeding status for these four species is not relevant to the scheme.

Birds of Conservation Concern⁴

3.2.20. The farmlands, open grassland and associated boundary features, provided suitable commuting and foraging habitats for many Red and Amber listed passerine species within the survey area, including dunnock, house sparrow, bullfinch and reed bunting.

3.2.21. These habitats are also important for supporting smaller flocks of declining farmland specialists such as yellowhammer, skylark, meadow pipit and stock dove. Large numbers of gulls and corvid species (not recorded) also utilised these areas for foraging.

3.2.22. There are several watercourses which cross the scheme, forming part of the larger wetland network and connected to the Somerset Levels and Moors SPA / Ramsar; Fivehead River, Venners Water and the River Isle all provide connectivity to the NSN site. These habitats were suitable for overwintering aquatic species, although only mallard, grey wagtail and mute swan were recorded during the survey period.

4. Conclusion

4.1.1. Fifty-three notable bird species which may overwinter in the area, were returned from the data search within 2 kilometres of the scheme.

4.1.2. Five statutory and non-statutory designated sites are located within 2 kilometres of the scheme which include wild birds in their reason for designation. The closest is South Taunton Streams Local Nature Reserve, which is 600m west of the scheme. Kingfisher *Alcedo atthis* and dipper *Cinclus cinclus* are mentioned in its designation, but neither species were recorded during the wintering bird surveys.

4.1.3. The Somerset Levels and Moors special protection area (SPA) and Ramsar is approximately 3.5 kilometres north-east of the scheme and is designated for internationally-important numbers of overwintering bird species, including Bewick's swan, golden plover, Eurasian teal and Northern lapwing. Of these four species, only golden plover was recorded during the wintering bird surveys. Of the qualifying waterbird assemblage associated with the designated site, only snipe and green sandpiper were recorded.

4.1.4. A total of 29 notable species were recorded within the survey area. Notable species which displayed characteristic breeding behaviours during the March 2021 surveys were not recorded as overwintering birds. Records of notable bird species include:

- six Schedule 1 species
- eleven species listed as Section 41 species of principal importance
- twelve species on the Red List Birds of Conservation Concern
- four species listed as individual or qualifying species for the SPA / Ramsar (Somerset Levels and Moors)
- one species listed for future consideration under Ramsar Criterion 6 (Somerset Levels and Moors)
- thirteen species on the Amber List Birds of Conservation Concern

4.1.5. Peak numbers of golden plover (47), snipe (10), green sandpiper (1) and mute swan (2) observed within the survey area all constitute less than 1%, of those cited to overwinter in the SPA / Ramsar.

Appendix A: Biological records search

Species	Latin Name	Status	Species	Latin Name	Status
Barn owl	<i>Tyto alba</i>	Schedule 1 Amber list	Kestrel	<i>Falco tinnunculus</i>	Amber list
Black redstart	<i>Phoenicurus ochruros</i>	Amber list Schedule 1	Kingfisher	<i>Alcedo atthis</i>	Schedule 1 Amber list
Brambling	<i>Fringilla montifringilla</i>	Schedule 1	Lapwing	<i>Vanellus vanellus</i>	Red list Section 41
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber list Section 41	Lesser black-backed gull	<i>Larus fuscus</i>	Amber list
Common Crossbill	<i>Loxia curvirostra</i>	Schedule 1	Lesser spotted woodpecker	<i>Dryobates minor</i>	Red list Section 41
Common sandpiper	<i>Actitis hypoleucos</i>	Amber list	Linnet	<i>Carduelis cannabina</i>	Red list Section 41
Curlew	<i>Numenius arquata</i>	Red list Section 41	Mallard	<i>Anas platyrhynchos</i>	Amber list
Dipper	<i>Cinclus cinclus</i>	Amber list	Marsh tit	<i>Poecile palustris</i>	Red list Section 41
Dunlin	<i>Calidris alpina</i>	Amber list	Meadow pipit	<i>Anthus pratensis</i>	Amber list
Dunnock	<i>Prunella modularis</i>	Amber list Section 41	Merlin	<i>Falco columbarius</i>	Schedule 1 Red list
Fieldfare	<i>Turdus pilaris</i>	Schedule 1 Red list	Mistle thrush	<i>Turdus viscivorus</i>	Red list
Firecrest	<i>Regulus ignicapilla</i>	Schedule 1	Mute swan	<i>Cygnus olor</i>	Amber list
Gadwall	<i>Anas strepera</i>	Amber list	Oystercatcher	<i>Haematopus ostralegus</i>	Amber list
Golden plover	<i>Pluvialis apricaria</i>	Associated with SPA	Peregrine falcon	<i>Falco peregrinus</i>	Schedule 1
Goshawk	<i>Accipiter gentilis</i>	Schedule 1	Pintail	<i>Anas acuta</i>	Schedule 1 Amber list
Green sandpiper	<i>Tringa ochropus</i>	Schedule 1 Amber list	Pochard	<i>Aythya ferina</i>	Schedule 1 Red list
Greenshank	<i>Tringa nebularia</i>	Amber list Schedule 1	Red Kite	<i>Milvus milvus</i>	Schedule 1
Grey wagtail	<i>Motacilla cinerea</i>	Red list	Ruff	<i>Philomachus pugnax</i>	Schedule 1 Red list
Herring gull	<i>Larus argentatus</i>	Red list Section 41	Scaup	<i>Aythya marila</i>	Schedule 1 Red list Section 41

Species	Latin Name	Status	Species	Latin Name	Status
Barn owl	<i>Tyto alba</i>	Schedule 1 Amber list	Kestrel	<i>Falco tinnunculus</i>	Amber list
House sparrow	<i>Passer domesticus</i>	Red list Section 41	Short-eared owl	<i>Asio flammeus</i>	Amber list
Shoveler	<i>Anas clypeata</i>	Amber list	Whimbrel	<i>Numenius phaeopus</i>	Schedule 1 Red list
Skylark	<i>Alauda arvensis</i>	Red list Section 41	Woodcock	<i>Scolopax rusticola</i>	Red list
Song Thrush	<i>Turdus philomelos</i>	Red list Section 41	Woodlark	<i>Lullula arborea</i>	Schedule 1 Section 41
Stock dove	<i>Columba oenas</i>	Amber list	Wigeon	<i>Mareca penelope</i>	Amber list
Tawny owl	<i>Strix aluco</i>	Amber list	Yellowhammer	<i>Emberiza citrinella</i>	Red list Section 41
Teal	<i>Anas crecca</i>	Amber list	Mute swan	<i>Cygnus olor</i>	Amber list
Tree sparrow	<i>Passer montanus</i>	Red list Section 41			

Source: SERC 2016. The data included within this table is permissible under the usage agreement with Somerset Environmental Records Centre (SERC).

Appendix B: Weather conditions

Table A: October weather details

Date	Transect	Start time	Finish time	Visibility	Minimum temperature (°C)	Maximum temperature (°C)	Wind speed (Beaufort scale)	Cloud cover (0-8)	Rain (0-8)
30/10/2020	1	08:30	12:30	Good	13	14	3	3	0
5/11/2020	2	10:00	14:15	Good	9	10	1	0	0
3/11/2020	3	12:30	16:00	Good	8	8	3	3	0
29/10/2020	4	10:00	13:30	Moderate	11	12	3	8	0
28/10/2020	5	08:30	12:00	Good	8	10	3	1	0
4/11/2020	6	10:00	15:15	Good	6	9	2	0	0
6/11/2020	7	09:15	12:30	Moderate	6	8	3	0	0
27/10/2020	8	10:30	14:30	Moderate	11	12	3	7	1
26/10/2020	9	15:00	16:15	Good	11	11	2	1	0

Table B: November weather details

Date	Transect	Start time	Finish time	Visibility	Minimum temperature (°C)	Maximum temperature (°C)	Wind speed (Beaufort scale)	Cloud cover (0-8)	Rain (0-8)
18/11/2020	1	10:30	13:30	Good	11	13	4	8	0
25/11/2020	2	09:30	12:30	Good	7	10	2	6	0
19/11/2020	3	09:30	13:30	Moderate	6	9	3	8	0
18/11/2020	4	14:00	17:30	Good	11	13	4	8	0
18/11/2020	5	09:00	13:00	Good	10	13	4	8	0
24/11/2020	6	11:00	15:30	Good	10	11	3	5	0
26/11/2020	7	09:15	12:00	Good	3	6	2	1	1
19/11/2020	8	09:30	13:00	Moderate	6	9	3	8	0
17/11/2020	9	13:30	15:15	Good	11	12	4	8	0

Table C: December weather details

Date	Transect	Start time	Finish time	Visibility	Minimum temperature (°C)	Maximum temperature (°C)	Wind speed (Beaufort scale)	Cloud cover (0-8)	Rain (0-8)
11/12/2020	1	09:00	12:00	Moderate	8	11	2	7	2
21/12/2020	2	12:00	15:45	Moderate	11	12	3	7	1
16/12/2020	3	12:00	16:00	Moderate	8	9	2	8	2
15/12/2020	4	09:30	13:00	Moderate	6	9	3	6	1
14/12/2020	5	11:30	15:00	Moderate	8	9	2	8	1
18/12/2020	6	09:30	13:00	Poor	11	11	4	8	3
22/12/2020	7	09:30	12:30	Moderate	8	10	2	8	0
17/12/2020	8	11:00	14:30	Good	6	10	2	3	0
10/12/2020	9	14:00	15:30	Good	8	8	3	4	0

Table D: January weather details

Date	Transect	Start time	Finish time	Visibility	Minimum temperature (°C)	Maximum temperature (°C)	Wind speed (Beaufort scale)	Cloud cover (0-8)	Rain (0-8)
12/1/2021	1	10:00	13:00	Moderate	9	9	3	7	1
20/1/2021	2	13:00	16:15	Poor	9	10	4	8	2
15/1/2021	3	09:30	13:30	Good	1	4	2	2	0
19/1/2021	4	09:30	14:00	Moderate	8	9	3	7	1
13/1/2021	5	11:00	14:00	Moderate	8	8	3	6	0
14/1/2021	6	10:00	13:30	Good	7	8	4	7	0
21/1/2021	7	10:15	13:00	Good	8	10	3	3	0
18/1/2021	8	12:30	15:45	Good	6	9	3	2	0
11/1/2021	9	14:00	15:30	Good	6	6	3	3	0

Table E: February weather details

Date	Transect	Start time	Finish time	Visibility	Minimum temperature (°C)	Maximum temperature (°C)	Wind speed (Beaufort scale)	Cloud cover (0-8)	Rain (0-8)
23/2/2021	1	10:00	12:30	Good	7	9	4	8	0
17/2/2021	2	09:00	12:30	Good	8	10	3	8	0
18/2/2021	3	09:00	13:00	Good	5	8	3	8	0
16/2/2021	4	12:30	16:45	Good	8	10	2	8	0

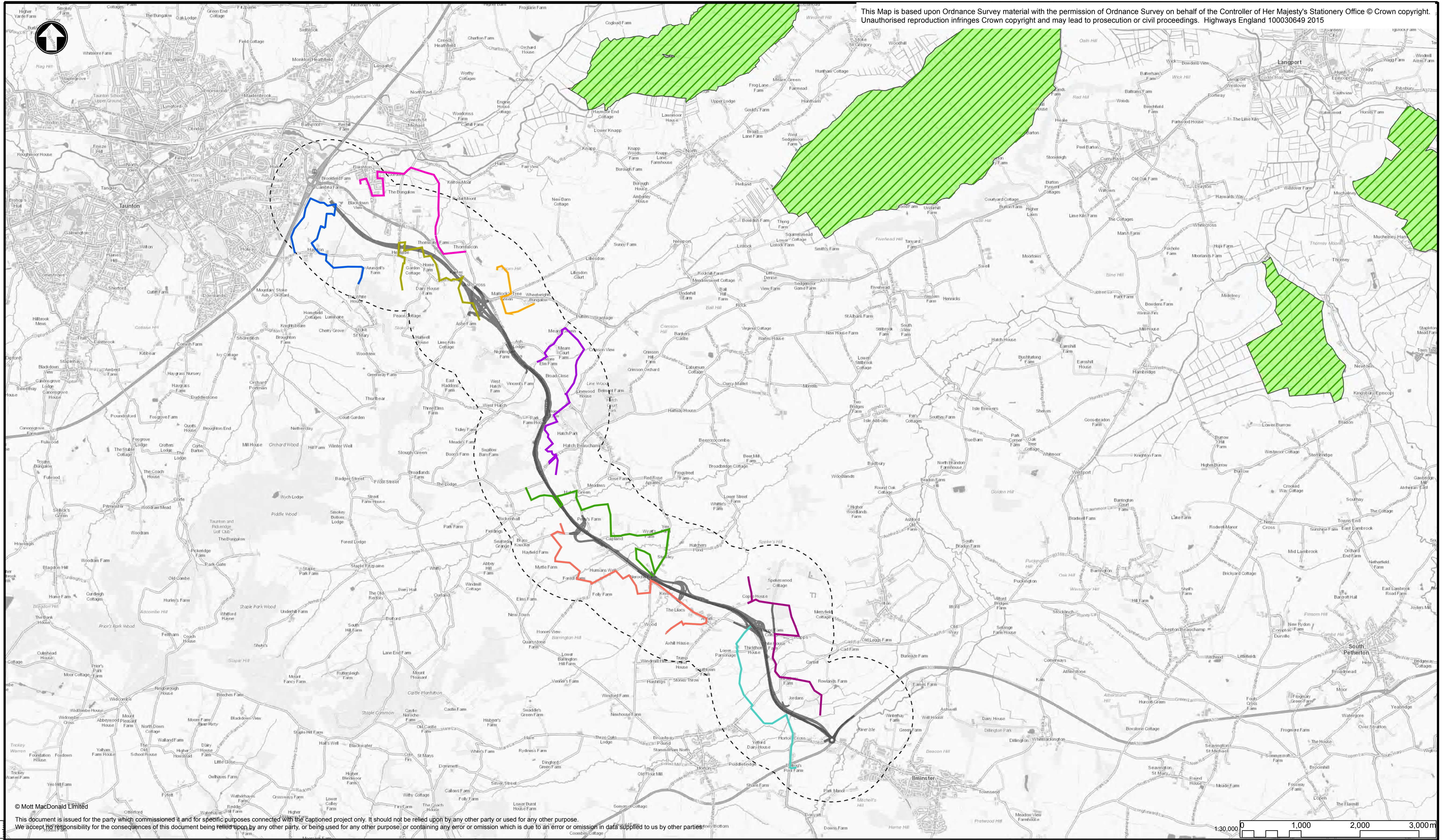
Date	Transect	Start time	Finish time	Visibility	Minimum temperature (°C)	Maximum temperature (°C)	Wind speed (Beaufort scale)	Cloud cover (0-8)	Rain (0-8)
24/2/2021	5	10:00	13:00	Good	10	11	4	6	0
25/2/2021	6	10:30	13:30	Good	7	9	1	3	0
19/2/2021	7	09:30	12:15	Moderate	7	8	4	8	1
22/2/2021	8	13:00	16:15	Good	9	12	1	8	0
15/2/2021	9	14:30	15:45	Good	9	10	2	6	0

Table F: March weather details

Date	Transect	Start time	Finish time	Visibility	Minimum temperature (°C)	Maximum temperature (°C)	Wind speed (Beaufort scale)	Cloud cover (0-8)	Rain (0-8)
29/03/2021	1	15:00	17:30	Good	14	16	1	0	0
16/3/2021	2	09:00	11:45	Moderate	9	13	3	7	1
17/3/2021	3	09:00	13:45	Good	6	13	1	5	0
18/3/2021	4	14:00	16:30	Good	11	14	2	3	0
31/03/2021	5	08:00	12:30	Good	13	16	1	0	0
30/03/2021	6	13:30	16:30	Good	20	23	1	0	0
30/03/2021	7	11:00	13:00	Good	18	21	1	0	0
30/03/2021	8	08:00	10:30	Good	15	19	1	1	0
15/3/2021	9	15:00	16:15	Good	11	11	3	4	0

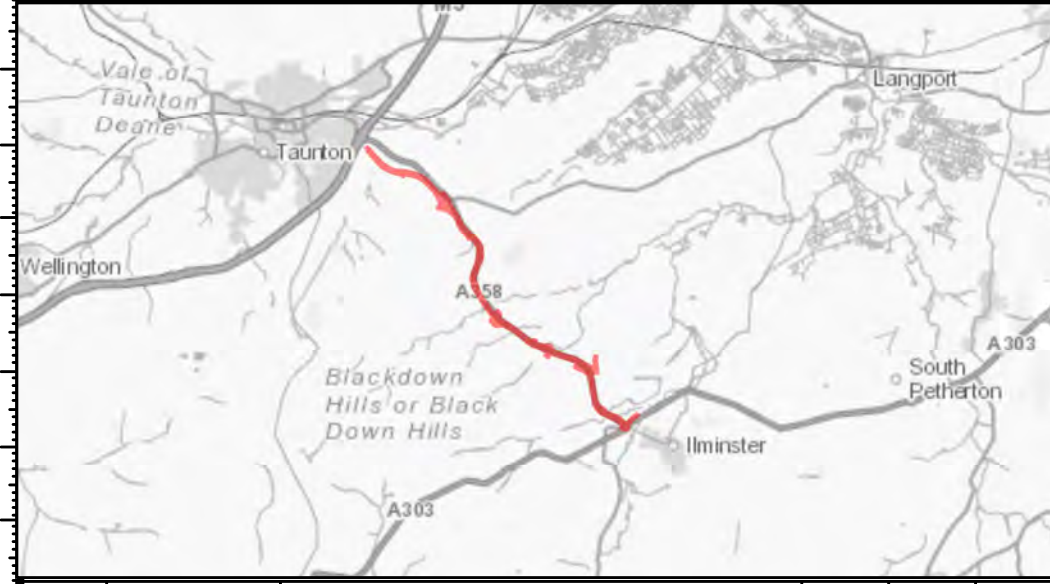
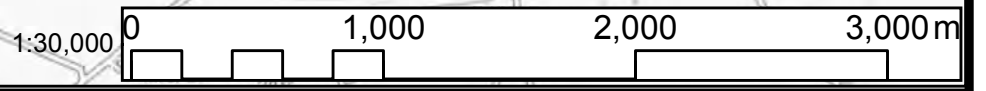
Appendix C: Somerset Levels and Moors SPA / Ramsar and Transect Locations

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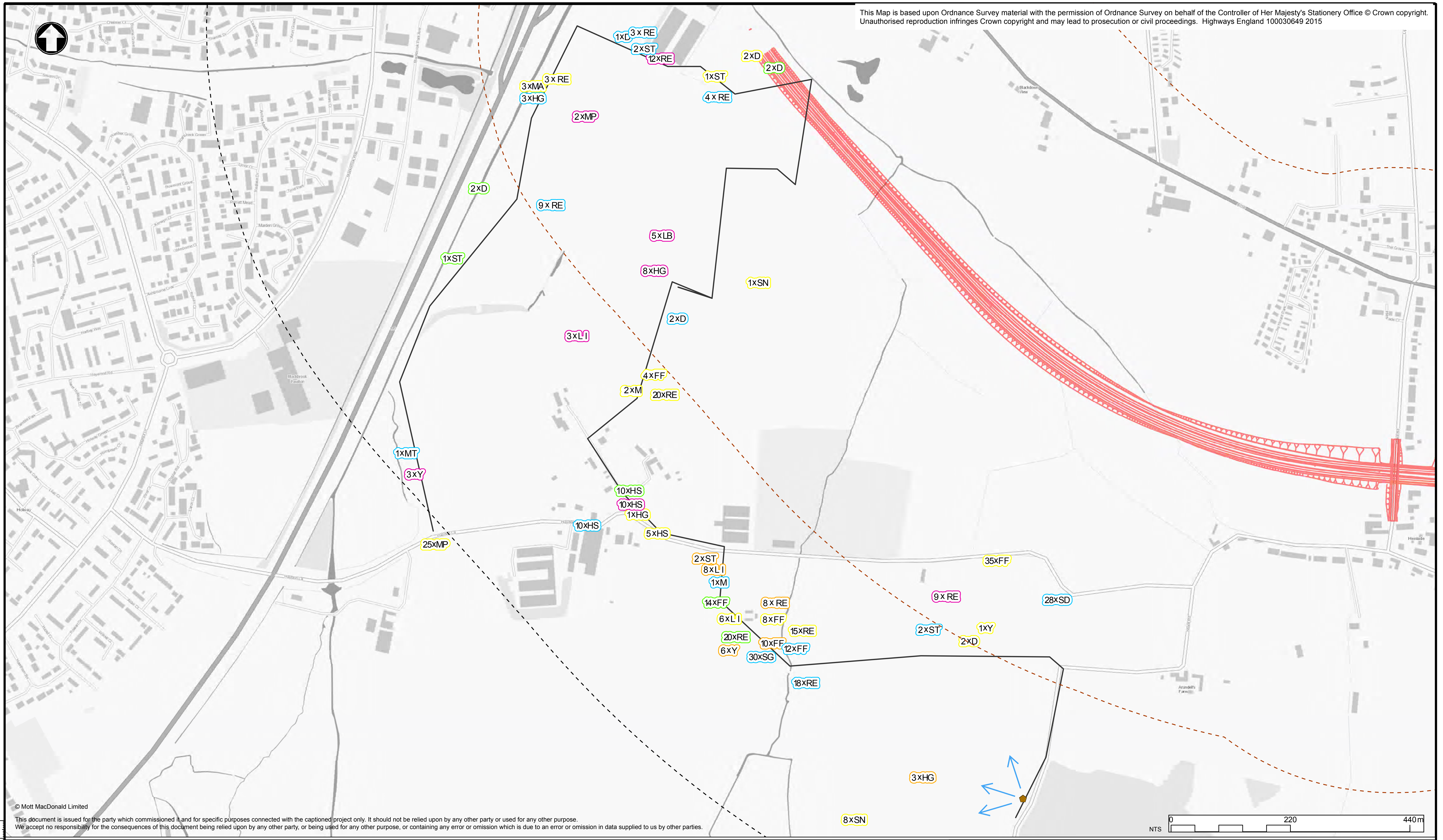
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Notes	Key to symbols	References drawings												
Pink Modified Scheme, Mott MacDonald (2018) SPA and Ramsar data, Natural England (2020) Transect locations, Mott MacDonald (2021) Service Layer Credits: Contains OS data © Crown Copyright and database right 2020	<ul style="list-style-type: none"> — Pink modified scheme option - - - 1km buffer ▨ Somerset Levels & Moors Ramsar ▨ Somerset Levels & Moors Special Protection Area 	<table border="1"> <thead> <tr> <th>Transect number</th> <th>Transect</th> </tr> </thead> <tbody> <tr><td>Transect 1</td><td>Transect 5</td></tr> <tr><td>Transect 2</td><td>Transect 6</td></tr> <tr><td>Transect 3</td><td>Transect 7</td></tr> <tr><td>Transect 4</td><td>Transect 8</td></tr> <tr><td>Transect 9</td><td>Transect 9</td></tr> </tbody> </table>	Transect number	Transect	Transect 1	Transect 5	Transect 2	Transect 6	Transect 3	Transect 7	Transect 4	Transect 8	Transect 9	Transect 9
Transect number	Transect													
Transect 1	Transect 5													
Transect 2	Transect 6													
Transect 3	Transect 7													
Transect 4	Transect 8													
Transect 9	Transect 9													

Drawing Status	Suitable for Stage Approval	Subsidiary	S4	Project Title	A358 Taunton to Southfields									
Mott MacDonald Sweco Stoneham Place Stoneham Lane Southampton SO50 9NW Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com		Drawing Title Somerset Levels and Moors SPA and Ramsar			Scale	1:30,000	Designed	ER	Drawn	ER	Checked	AW	Approved	KA
Client			Drawing Number HE551508 - MMSJV - EBD - 000	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021	Drawing Date 13/05/2021
P2 13/05/2021 Following comment REV. DATE AMENDMENT DETAILS ORIG CHK'D APP'D		000 - DR - LB - 0235		Project Ref. No. 370774	Revision P2									

Appendix D: Overwintering bird field observations



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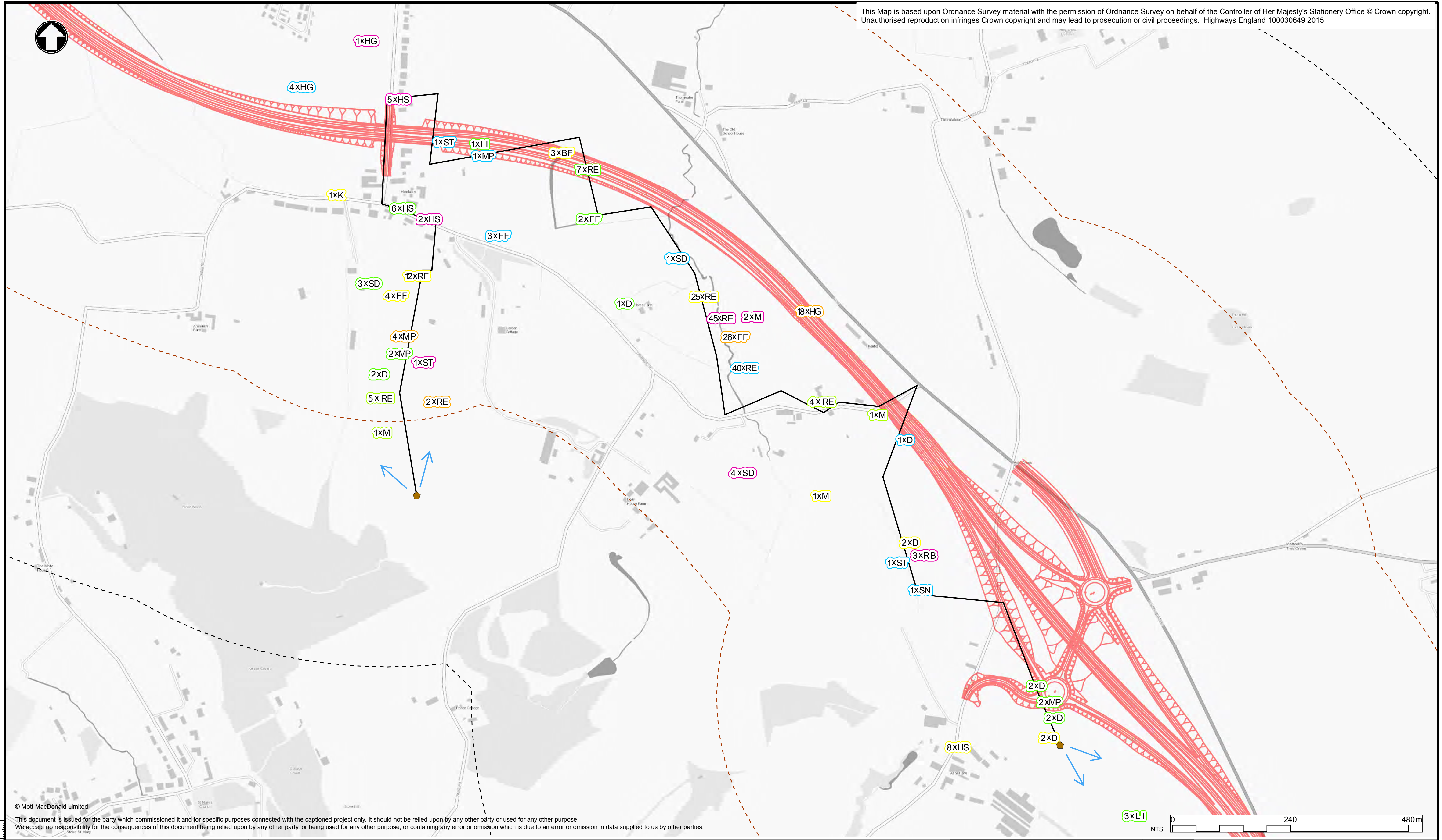
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Notes	Key to symbols	Conservation status	References drawings
Pink Modified Scheme, Mott MacDonald (2018) Wintering birds results, Mott MacDonald (2020-2021) Service Layer Credits: Contains OS data © Crown Copyright and database right 2020	— Pink modified scheme option - - - 500m buffer - - - 1km buffer — Transect 1 ● Vantage Point → Field of view	Red HG - Herring gull HS - House Sparrow LI - Linnet	Amber M - Mistle thrush MT - Marsh tit SG - Starling ST - Song thrush Y - Yellowhammer Schedule 1 (W&CA 1981) D - Dunnock LB - Lesser black-backed gull MA - Mallard MP - Meadow pipit SD - Stock dove SPA/Ramsar SN - Snipe

P1	15/04/2021	Suitable for Stage Approval	ER	AW	KA
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D

Drawing Status		Suitable for Stage Approval		S4		Project Title		A358 Taunton to Southfields			
Client		Mott MacDonald Sweco		Stoneham Place Stoneham Lane Southampton SO50 9NW Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com		Drawing Title		Overwintering bird field observations Transect 1			
Scale		NTS		Designed		JW		Drawn		ER	
Original Size		A1		Date		15/04/2021		Date		15/04/2021	
Drawing Number		HE PIN		Originator		Volume		Checked		Approved	
HE551508 - 000		MMSJV		- EBD -		- DR - LB - 0226		AW		KA	
Location		Type		Role		Number		Date		Revision	
								15/04/2021		370774 P1	



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Notes
 Pink Modified Scheme, Mott MacDonald (2018)
 Wintering birds results, Mott MacDonald (2020-2021)
 Service Layer Credits: Contains OS data © Crown Copyright and database right 2020

Key to symbols

- Pink modified scheme option
- 500m buffer
- 1km buffer
- Transect 2
- Vantage Point
- Field of view

Visits

- Visit 1
- Visit 2
- Visit 3
- Visit 4
- Visit 5
- Visit 6

Conservation status

Red

- HG - Herring gull
- HS - House Sparrow

Amber

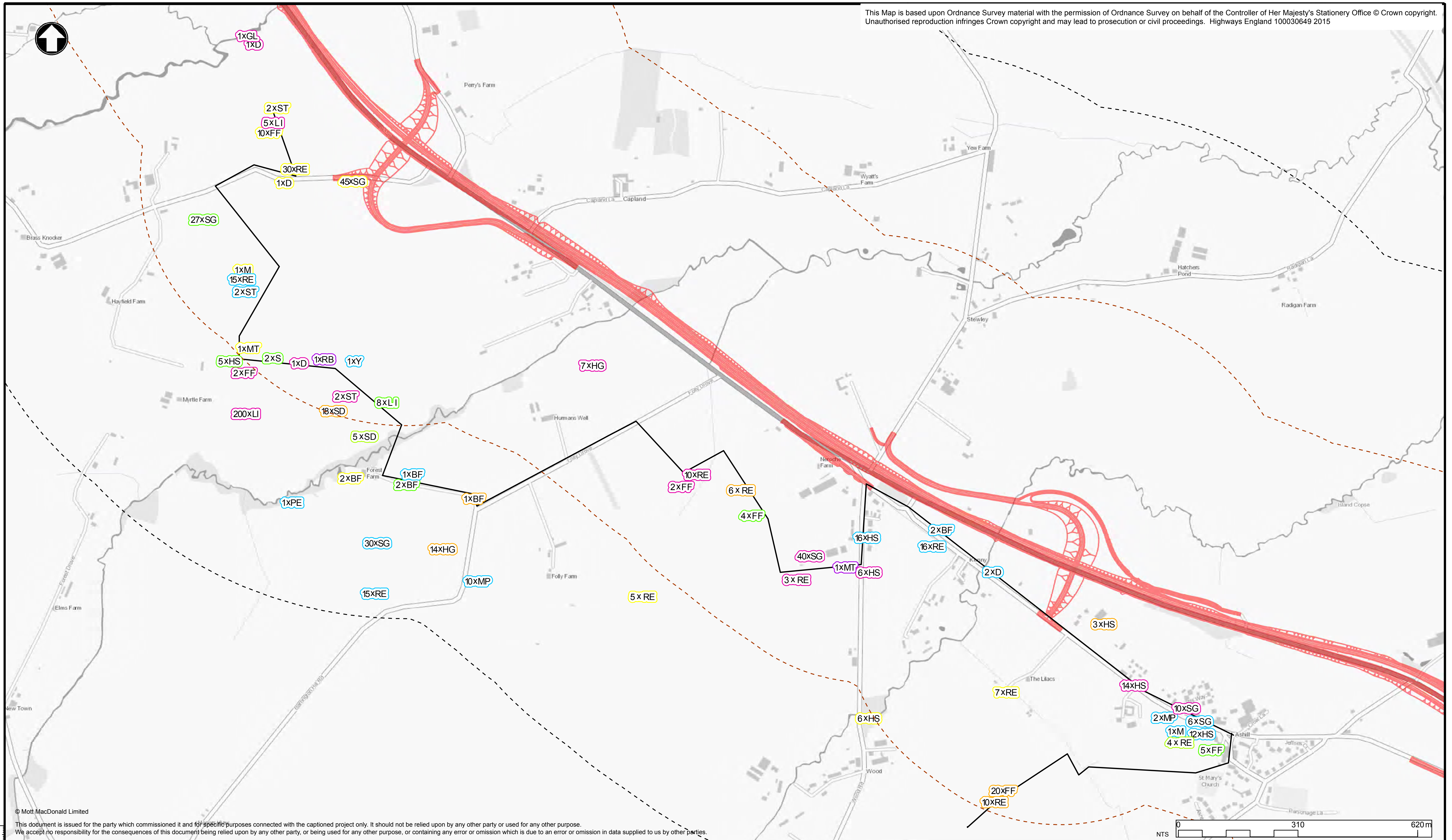
- LI - Linnet
- M - Mistle thrush
- ST - Song thrush
- D - Dunnock
- MP - Meadow pipit
- SN - Snipe
- SD - Stock dove

Schedule 1 (W&CA 1981)

- FF - Fieldfare
- RE - Redwing

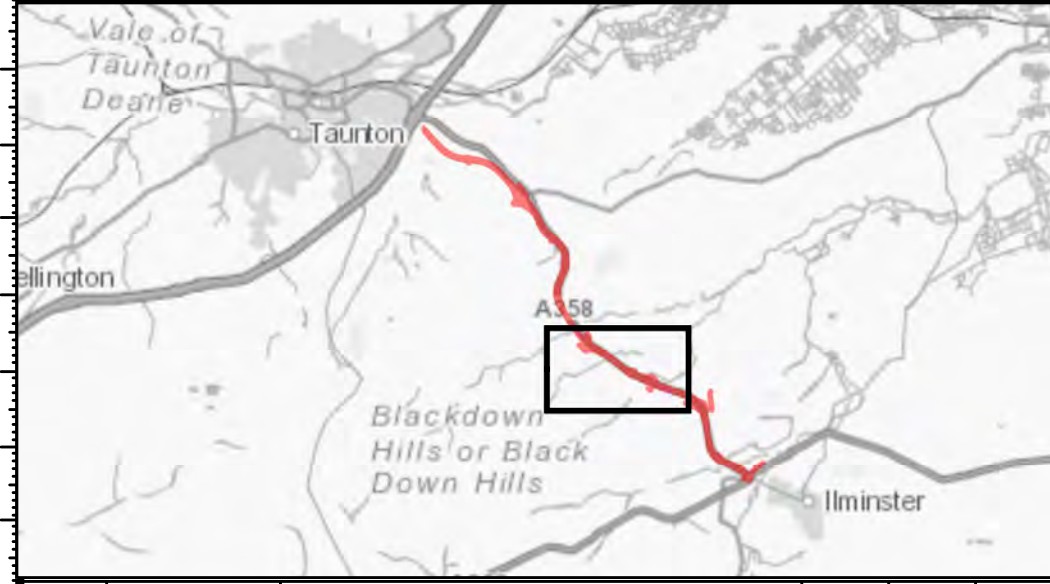
P1	15/04/2021	Suitable for Stage Approval	ER	AW	KA
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D

Drawing Status		Suitable for Stage Approval		S4		Project Title		A358 Taunton to Southfields											
Client		Mott MacDonald Sweco		Stoneham Place Stoneham Lane Southampton SO50 9NW Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com		Drawing Title		Overwintering bird field observations Transect 2											
Scale		NTS		Designed		JW		Drawn		ER		Checked		AW		Approved		KA	
Original Size		A1		Date		15/04/2021		Date		15/04/2021		Date		15/04/2021		Date		15/04/2021	
Drawing Number		HE551508		Originator		MMSJV		Volume		- EBD -		Project Ref. No.		370774					
Revision		000		Type		- DR - LB -		Number		0227		Revision		P1					



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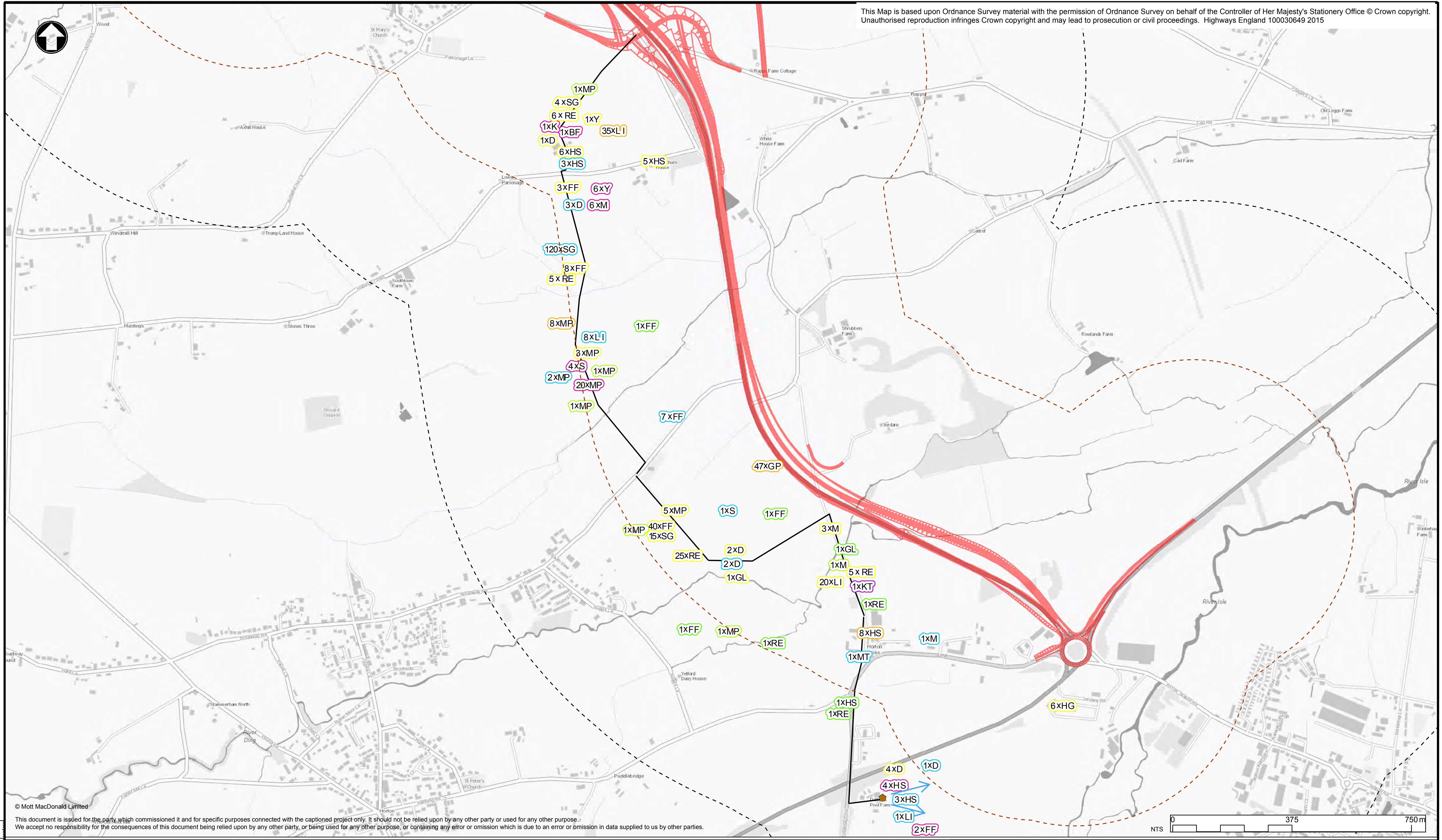
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Notes	Key to symbols	Visits	Conservation status	References drawings
Pink Modified Scheme, Mott MacDonald (2018) Wintering birds results, Mott MacDonald (2020-2021)	Pink modified scheme option	Visit 1	Red	M - Mistle thrush
Service Layer Credits: Contains OS data © Crown Copyright and database right 2020	500m buffer	Visit 2	HG - Herring gull	MT - Marsh tit
	1km buffer	Visit 3	HS - House Sparrow	SG - Starling
	Transect 3	Visit 4	GL - Grey wagtail	ST - Song thrush
		Visit 5	LI - Linnet	Y - Yellowhammer
		Visit 6		
				Amber
				BF - Bullfinch
				D - Dunnock
				MP - Meadow pipit
				RB - Reed bunting
				SD - Stock dove
				Schedule 1 (W&CA 1981)
				FF - Fieldfare
				RE - Redwing
				PE - Peregrine falcon

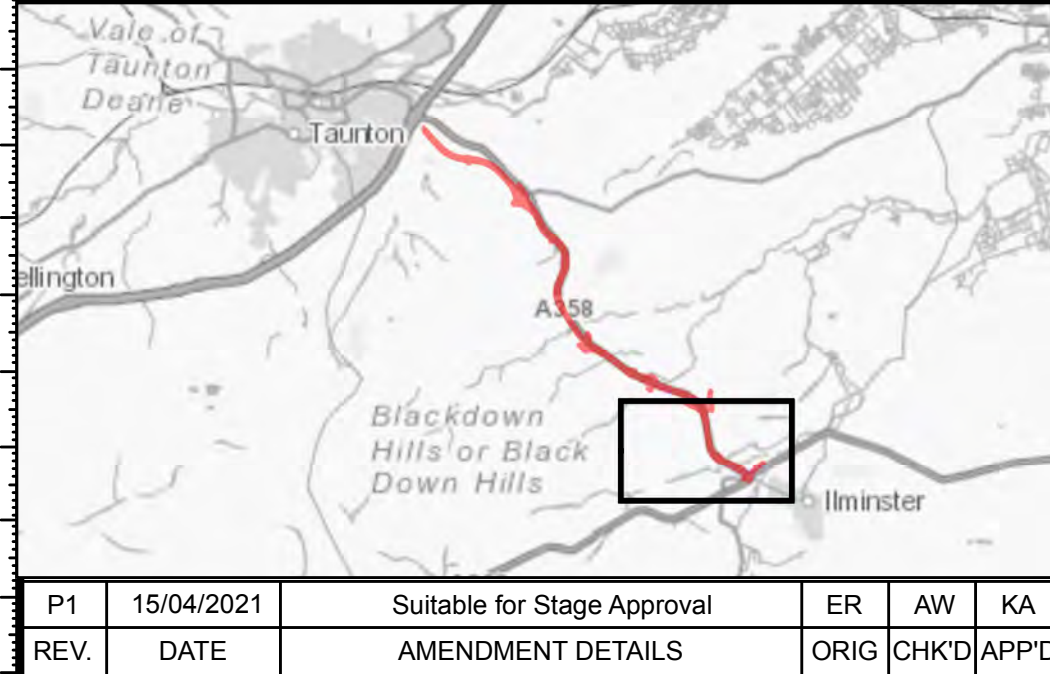
Drawing Status		Suitable for Stage Approval		S4		Project Title		A358 Taunton to Southfields	
Mott MacDonald Sweco		Stoneham Place Stoneham Lane Southampton SO50 9NW		Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com		Drawing Title		Overwintering bird field observations Transect 3	
Client		highways england		Scale		NTS		Designed	
				Date		15/04/2021		Drawn	
				Date		15/04/2021		Checked	
				Date		15/04/2021		Approved	
				Date		15/04/2021		KA	
Drawing Number		HE PIN		Originator		Volume		Project Ref. No.	
000		HE551508 -		MMSJV -		EBD -		370774	
Location		Type		Role		Number		Revision	
						0 228		P1	

P1	15/04/2021	Suitable for Stage Approval	ER	AW	KA
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D



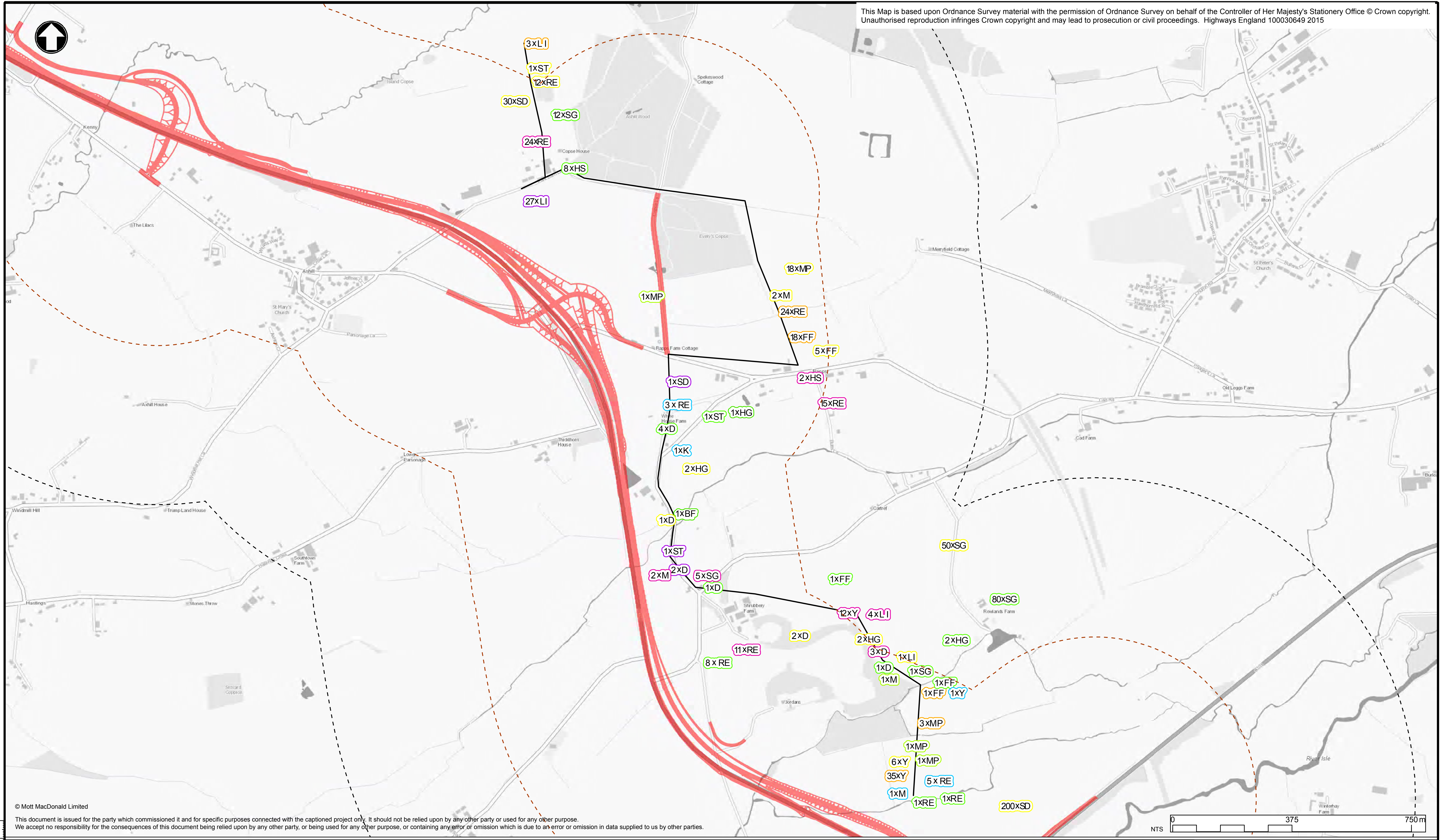
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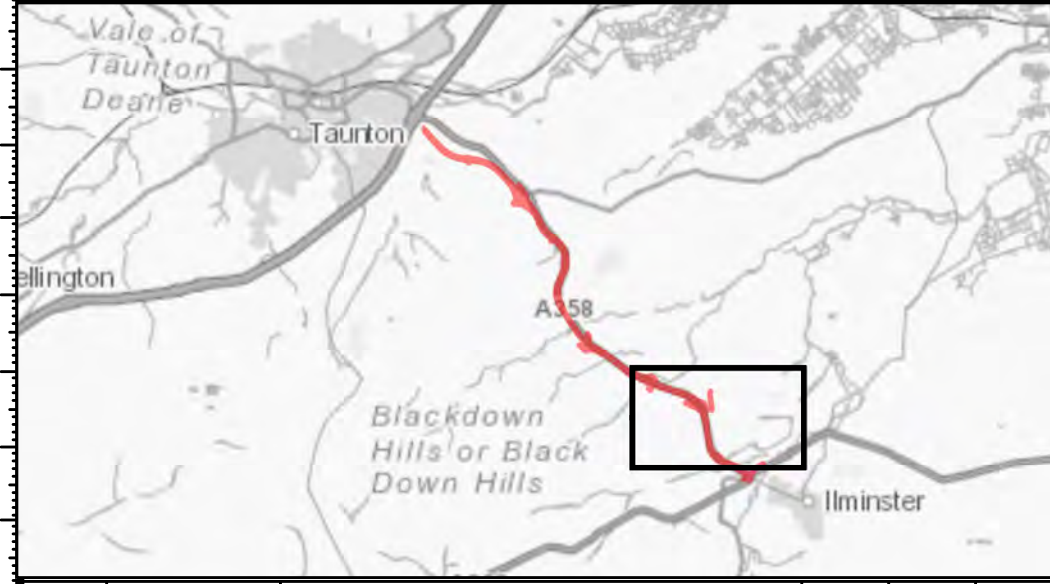
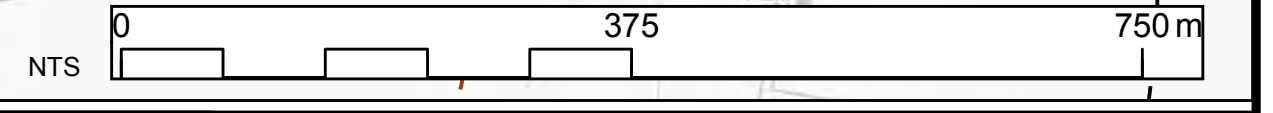
Notes		Key to symbols		References drawings	
Pink Modified Scheme, Mott MacDonald (2018) Wintering birds results, Mott MacDonald (2020-2021)		Pink modified scheme option		Schedule 1 (W&CA 1981)	
Service Layer Credits: Contains OS data © Crown Copyright and database right 2020		500m buffer		FF - Fieldfare	
		1km buffer		RE - Redwing	
		Transect 4		KT - Red kite	
		Vantage Point		SPA	
		Field of view		GP - Golden plover	
		Visits		Amber	
		Visit 1		D - Dunnock	
		Visit 2		MP - Meadow pipi	
		Visit 3		BF - Bullfinch	
		Visit 4		K - Kestrel	
		Visit 5		Conservation status	
		Visit 6		Red	
		HG - Herring gull		MT - Marsh tit	
		HS - House Sparrow		S - Skylark	
		GL - Grey wagtail		SG - Starling	
		LI - Linnet		Y - Yellowhammer	

Drawing Status		Suitable for Stage Approval		S4		Project Title		A358 Taunton to Southfields			
Client		Mott MacDonald Sweco		Stoneham Place Stoneham Lane Southampton SO50 9NW Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com		Drawing Title		Overwintering bird field observations Transect 4			
Scale		NTS		Designed		Drawn		Checked		Approved	
Original Size		A1		Date		Date		Date		Date	
Drawing Number		HE551508 - MMSJV		Volume		- EBD -		Project Ref. No.		370774	
Revision		000		- DR - LB -		0229		Revision		P1	



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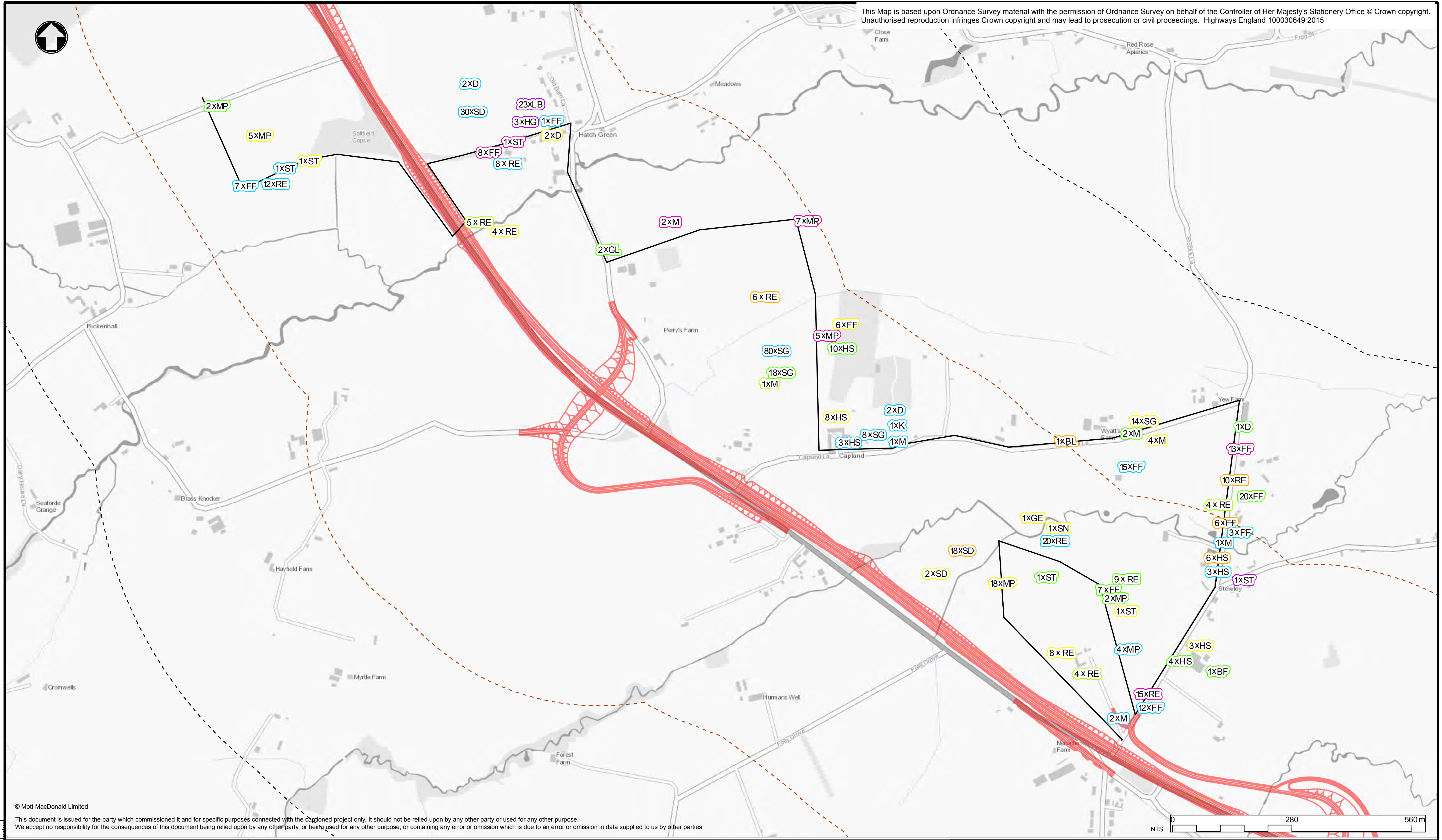
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Notes	Key to symbols	Visits	Conservation status	References drawings
Pink Modified Scheme, Mott MacDonald (2018) Wintering birds results, Mott MacDonald (2020-2021) Service Layer Credits: Contains OS data © Crown Copyright and database right 2020	Pink modified scheme option 500m buffer 1km buffer Transect 5	Visit 1 Visit 2 Visit 3 Visit 4 Visit 5 Visit 6	Red HG - Herring gull HS - House Sparrow LI - Linnet	M - Mistle thrush SG - Starling ST - Song thrush Y - Yellowhammer Amber BF - Bullfinch D - Dunnock K - Kestrel MP - Meadow pipit SD - Stock dove Schedule 1 (W&CA 1981) FF - Fieldfare RE - Redwing

Drawing Status		Suitable for Stage Approval		S4		Project Title		A358 Taunton to Southfields	
Mott MacDonald Sweco		Stoneham Place Stoneham Lane Southampton SO50 9NW		Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com		Drawing Title		Overwintering bird field observations Transect 5	
Client		highways england		Scale		NTS		Designed JW	
HE PIN		HE551508 - MMSJV - EBD -		Date		15/04/2021		Drawn ER	
Location		- DR - LB - 0230		Date		15/04/2021		Checked AW	
Type		- 0230		Date		15/04/2021		Approved KA	
Role		P1		Date		15/04/2021		Project Ref. No. 370774	
Number		P1		Date		15/04/2021		Revision	

P1	15/04/2021	Suitable for Stage Approval	ER	AW	KA
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D



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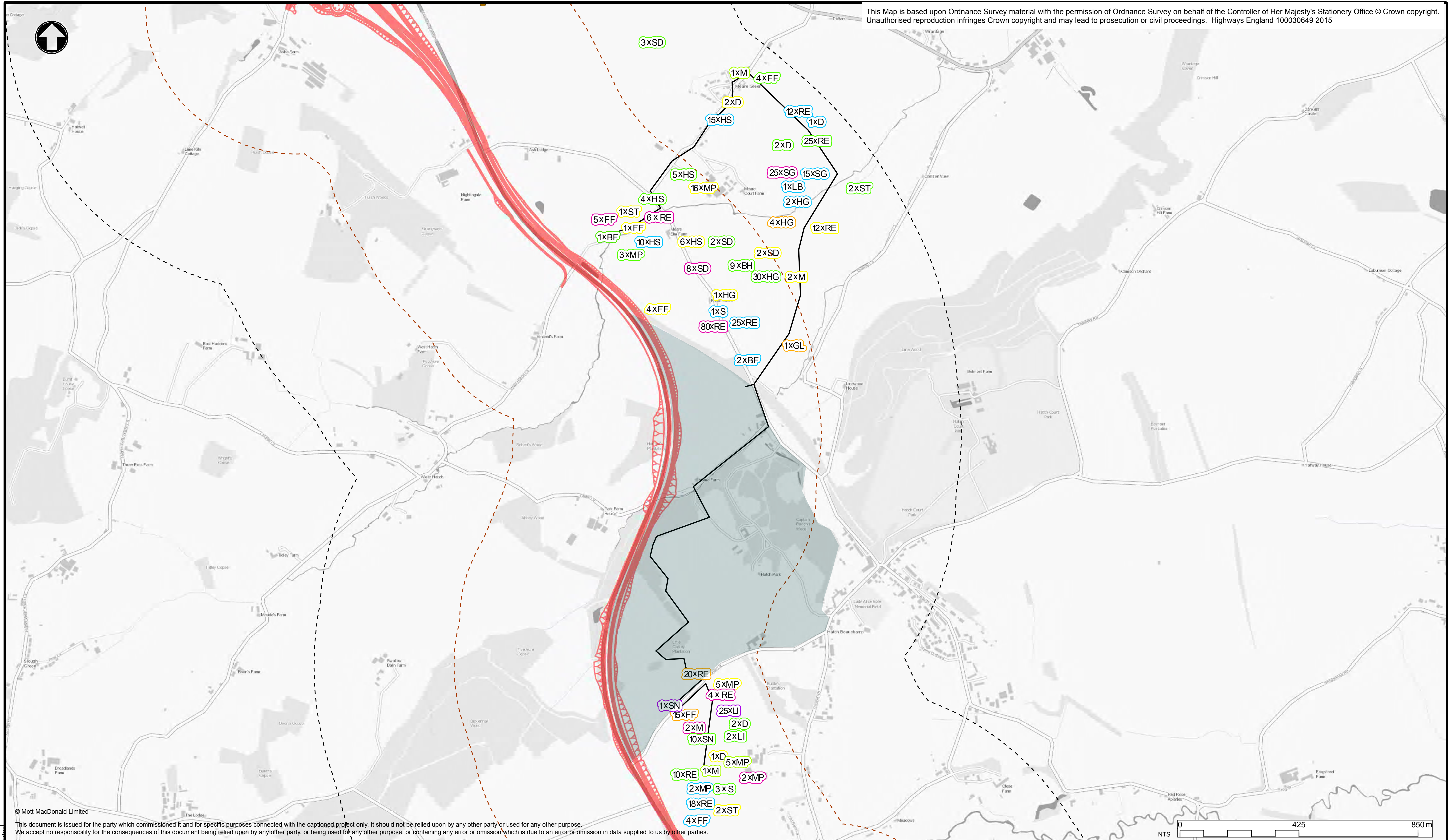


Notes	Key to symbols	Visits	Conservation status	References drawings	Schedule 1 (W&CA 1981)
Pink Modified Scheme, Mott MacDonald (2018) Wintering birds results, Mott MacDonald (2020-2021)	Pink modified scheme option	Visit 1	Red	M - Mistle thrush	BL - Brambling
Service Layer Credits: Contains OS data © Crown Copyright and database right 2020	500m buffer	Visit 2	HG - Herring gull	SG - Starling	FF - Fieldfare
	1km buffer	Visit 3	HS - House Sparrow	ST - Song thrush	RE - Redwing
	Transect 6	Visit 4	GL - Grey wagtail		
		Visit 5			
		Visit 6			

Drawing Status	Suitable for Stage Approval	Suitability	S4	Project Title	A358 Taunton to Southfields									
Mott MacDonald Sweco Stoneham Place Stoneham Lane Southampton SO50 9NW Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com		Drawing Title Overwintering bird field observations Transect 6			Scale	NTS	Designed	JW	Drawn	ER	Checked	AW	Approved	KA
Client			Original Size	A1	Date	13/05/2021	Date	13/05/2021	Date	13/05/2021	Date	13/05/2021	Project Ref. No.	370774
	Drawing Number HE551508 - MMSJV - EBD -												Revision	P02

P02	13/05/2021	Suitable for Stage Approval	ER	AW	KA
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D

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Notes

Pink Modified Scheme, Mott MacDonald (2018)
Wintering birds results, Mott MacDonald (2020-2021)

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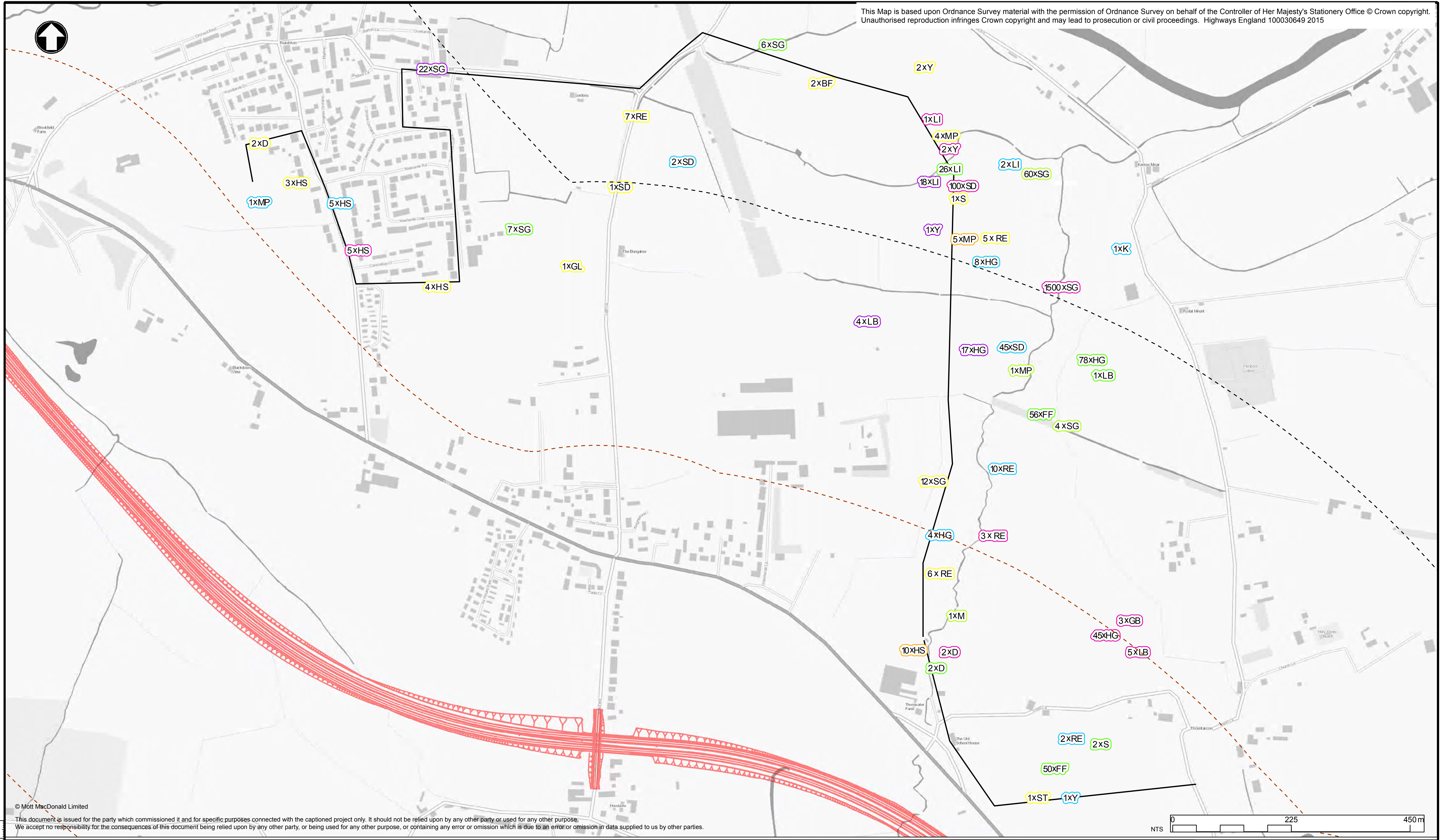
Key to symbols

- Pink modified scheme option
- 500m buffer
- 1km buffer
- Transect 7
- No access

References drawings

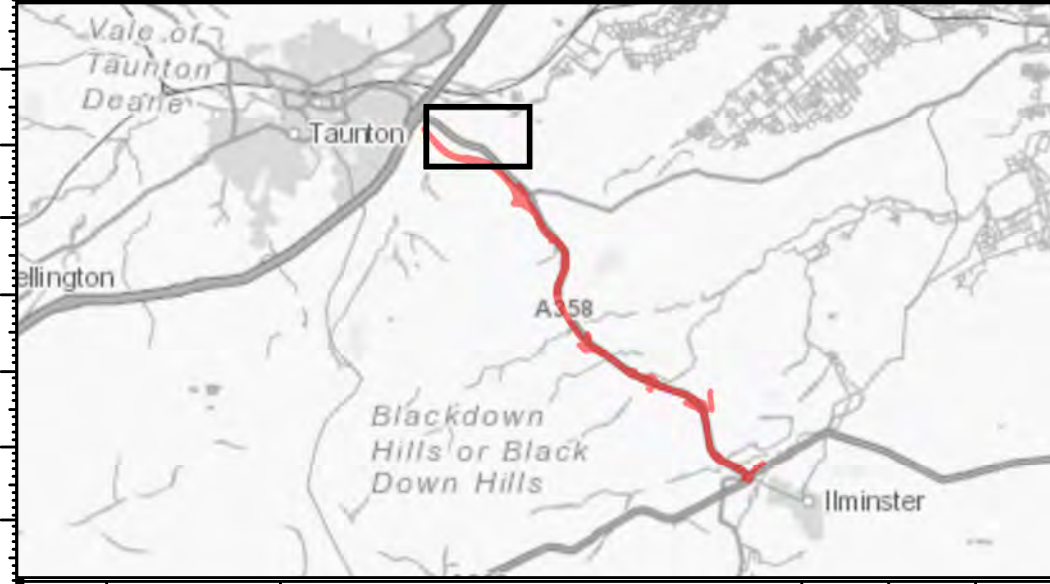
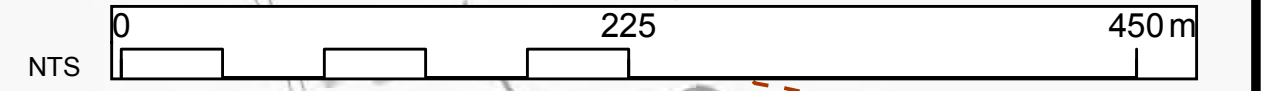
Visits	Conservation status	Amber	Schedule 1 (W&CA 1981)
Visit 1 (Red)	Red	M - Mistle thrush	FF - Fieldfare
Visit 2 (Green)	HG - Herring gull	S. - Skylark	RE - Redwing
Visit 3 (Yellow)	HS - House Sparrow	SG - Starling	
Visit 4 (Cyan)	GL - Grey wagtail	LB - Lesser black-backed gull	
Visit 5 (Magenta)	LI - Linnet	MP - Meadow pipit	
Visit 6 (Purple)		SD - Stock dove	
		BF - Bullfinch	
		D - Dunnock	
		ST - Song thrush	
		SN - Snipe	

Drawing Status	Suitable for Stage Approval	Subsidiary	S4	Project Title	A358 Taunton to Southfields									
Client	Mott MacDonald Sweco	Stoneham Place Stoneham Lane Southampton SO50 9NW Tel : +44 (0)23 8062 8800 Fax : +44 (0)23 8062 8801 www.mottmac.com			Drawing Title	Overwintering bird field observations								
					Scale	NTS	Designed	JW	Drawn	ER	Checked	AW	Approved	KA
					Original Size	A1	Date	15/04/2021	Date	15/04/2021	Date	15/04/2021	Date	15/04/2021
					Drawing Number	HE PIN	Originator	MMSJV	Volume	- EBD -	Project Ref. No. 370774			
						000		- DR - LB -		0 232	Revision P1			



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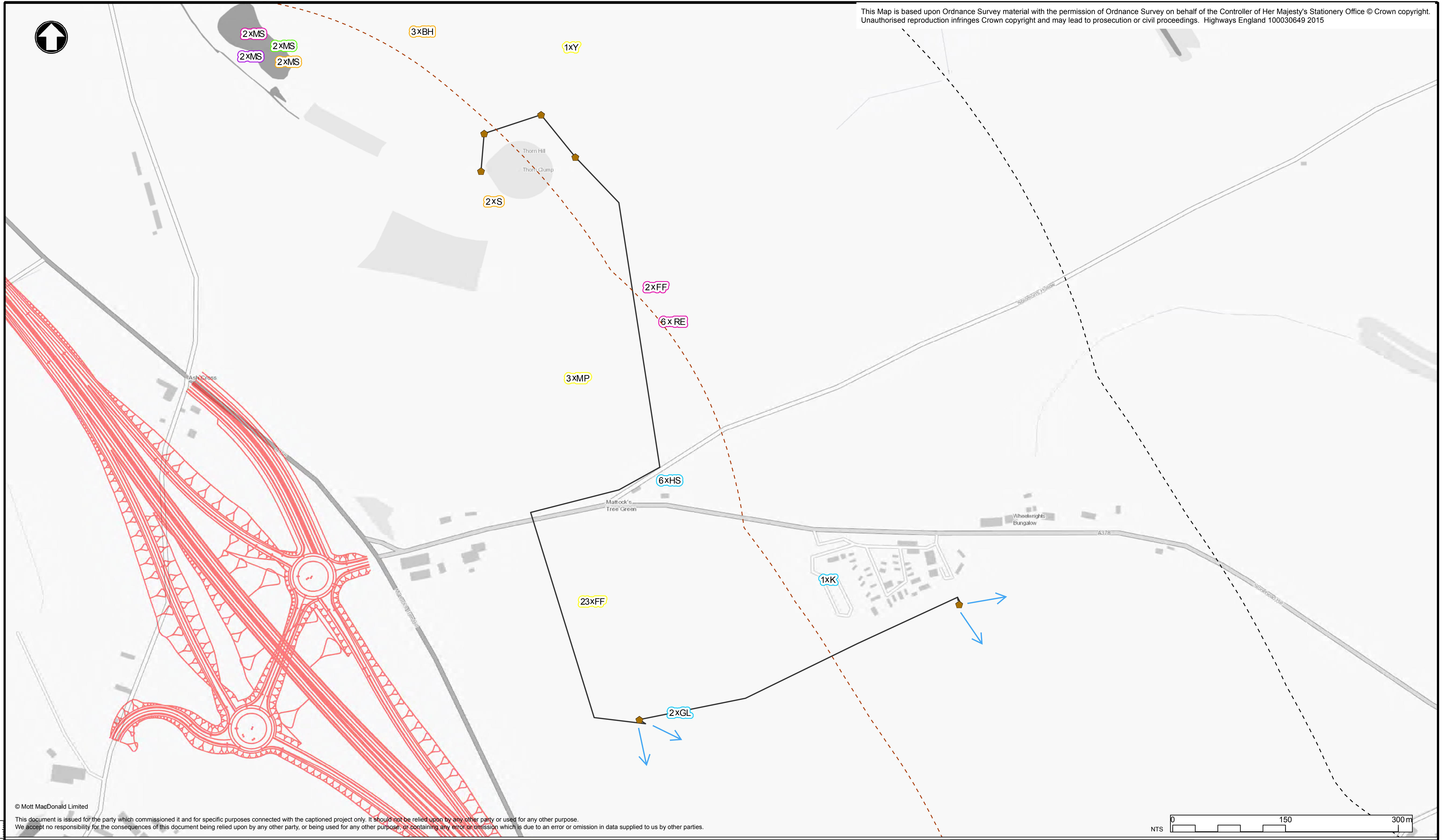
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Notes	Key to symbols	Visits	Conservation status	References drawings
Pink Modified Scheme, Mott MacDonald (2018) Wintering birds results, Mott MacDonald (2020-2021)	Pink modified scheme option	Visit 1	Red	M - Mistle thrush
Service Layer Credits: Contains OS data © Crown Copyright and database right 2020	500m buffer	Visit 2	HG - Herring gull	Amber
	1km buffer	Visit 3	HS - House Sparrow	BF - Bullfinch
	Transect 8	Visit 4	LI - Linnet	D - Dunnock
		Visit 5		GB - Greater black-backed gull
		Visit 6		K - Kestrel
				LB - Lesser black-backed gull
				MP - Meadow pipit
				SD - Stock dove
				S - Skylark
				SG - Starling
				ST - Song thrush
				Y - Yellowhammer
				Schedule 1 (W&CA 1981)
				FF - Fieldfare
				RE - Redwing

Drawing Status	Suitable for Stage Approval	Subsidiary	S4	Project Title	A358 Taunton to Southfields							
Mott MacDonald Sweco		Stoneham Place Stoneham Lane Southampton SO50 9NW Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com			Drawing Title Overwintering bird field observations Transect 8							
Client	highways england		Scale	NTS	Designed	JW	Drawn	ER	Checked	AW	Approved	KA
Drawing Number	HE PIN	Originator	Volume	Date	Date	Date	Date	Date	Date	Date	Date	Date
000	HE551508	MMSJV	- EBD -	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021	370774
Location	Type	Role	Number	Revision P1								

P1	15/04/2021	Suitable for Stage Approval	ER	AW	KA
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D



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Notes	Key to symbols	Visits	Conservation status	Red	Amber	Schedule 1 (W&CA 1981)
Pink Modified Scheme, Mott MacDonald (2018) Wintering birds results, Mott MacDonald (2020-2021)	Pink modified scheme option	Visit 1	GL - Grey wagtail	BH - Black-headed gull	FF - Fieldfare	
Service Layer Credits: Contains OS data © Crown Copyright and database right 2020	500m buffer	Visit 2	HS - House Sparrow	K - Kestrel	RE - Redwing	
	1km buffer	Visit 3	Y - Yellowhammer	MP - Meadow pipit		
	Transect 9	Visit 4				
	Vantage Point	Visit 5				
	Field of view	Visit 6				
						Ramsar
						MS - Mute swan

Drawing Status		Suitable for Stage Approval		S4		Project Title		A358 Taunton to Southfields			
Client		Mott MacDonald Sweco		Stonham Place Stonham Lane Southampton SO50 9NW Tel: +44 (0)23 8062 8800 Fax: +44 (0)23 8062 8801 www.mottmac.com		Drawing Title		Overwintering bird field observations Transect 9			
Scale		NTS		Designed		JW		Drawn		ER	
Original Size		A1		Date		15/04/2021		Date		15/04/2021	
Checked		AW		Approved		KA		Date		15/04/2021	
Drawing Number		HE PIN		HE551508 - MMSJV		Volume		- EBD -		Project Ref. No.	
000		- DR - LB -		0234		Revision		P1		370774	
Location		Type		Role		Number					

P1	15/04/2021	Suitable for Stage Approval	ER	AW	KA
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D