A47 Blofield to North Burlingham Dualling

Scheme Number: TR010040

Volume 6
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APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

December 2020

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A47 Blofield to North Burlingham Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT APPENDICES
Appendix 8.10 2020 Bat Survey Report

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Sweco

A47 Blofield to North Burlingham

Bat Survey Report

MLM. Group

Part of Sweco

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C01	S2		Martin Brammah	Richard Webber-Salmon	Martin Brammah	09/09/2020

Contents

Drawings

1 Non-technical Summary

This bat survey report has been prepared by MLM for Sweco, and relates to proposed dualling of the A47 from Blofield to North Burlingham.

The proposals are understood to involve converting the existing single carriageway road between Blofield and North Burlingham to dual carriageway, altering some of the junctions onto the dual carriageway from the existing country road network and adding additional ancillary roads and infrastructure to accommodate the proposed dualling.

Surveys undertaken by WYG on behalf of Amey in 2017 (ref. 1) identified bat roosts associated with five buildings and two trees located within 50m of the proposed road widening scheme boundary. The purpose of this report is to present the findings of bat roost emergence/re-entry surveys undertaken by MLM in 2020 to update these findings and identify any additional building/tree roosts, so as to inform a European protected species licence for the scheme.

Six buildings and 31 trees were subject to dusk emergence/pre-dawn re-entry survey, in line with the Bat Conservation Trust (BCT) best practice guidelines (ref. 2), during the period May-August 2020.

The purpose of these surveys was to confirm the presence/likely absence of roosting bats associated with the building/trees and, where present, quantify the species and number of bats involved.

The surveys identified the following roosts associated with the following structures/trees:

- Poplar Farm – brown long-eared bat day roost (Three bats) and feeding roost in large thatched barn; brown long-eared feeding roost in building in north-east corner of courtyard to the east of large thatched barn; common pipistrelle day roost (minimum three bats) in building in north-eastern corner of courtyard to east of large thatched barn.
- The Lindens – common pipistrelle day roost (Two bats)
- The White House – common pipistrelle day roost (One bat)
- Hall Cottages (west) – common pipistrelle day roost (One bat)
- Tree T1 – soprano pipistrelle day roost (One bat)

Given the confirmed presence of the above bat roosts and the nature of proposed works in the vicinity of Poplar Farm there is potential for disturbance to these roosts. As such, a European protected species licence from Natural England will be required to enable these works to proceed.

2 Limitations and Exceptions

This report and its findings should be considered in relation to the terms and conditions proposed and scope of works agreed between MLM and the client.

Interpretations and recommendations contained in the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based on current legislation in force at that time.

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This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context. Furthermore, alterations to the initial proposals or changes in conditions on site over time may necessitate an alteration to the report in whole or in part after its submission. Therefore, in the event of any change in proposals or lapse of one year or more from the date of the report, the content of the report should not be relied upon unless referred to MLM for validation and, if necessary, re-appraisal.

Scientific survey data will be shared with local biological records centre in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) professional code of conduct.

This report was prepared only for our client and is not intended to be relied on by any other party. Third parties should not rely on the facts, matters or opinions set out in this report without the express written permission of MLM.

Please note that MLM does not purport to provide specialist legal advice.

Unless stated specifically, drawings and plans are indicative only. As such, the position of features marked on the plans or drawings should not be taken as 100% accurate.

2.1 Site-specific Limitations

Lack of landowner permission to enable access to certain aspects of buildings at Hall Cottages, Poplar Farm and the White House meant that surveyors were unable to achieve full visual coverage of some structures during the surveys. As such some roost access/egress points may have been missed.

The access restrictions can be summarised as follows:

- Poplar Farm – No access to curtilage of house in east of this location after first survey (22 July 2020). No access to land around southernmost building or eastern courtyard of farm buildings until 20 August 2020.
- The White House – No access to courtyard during first survey.
- Hall Cottages - No access to garden of the eastern half of the building after the first survey

In the case of Poplar Farm and The White House, bat roosts were identified in these buildings previously in 2017. The data collected in 2020 by MLM either corroborates those previous findings or identifies additional roosts. As such, it is considered that the limitations are not significant and that there is sufficient information to inform the design of appropriate mitigation for the bat roosts identified as part of the European protected species licence application for the scheme.

Weather conditions for all surveys are considered to have been suitable for bats to be active, as even where no bats were recorded in certain locations, bats were actively flying at nearby locations where concurrent bat surveys were being undertaken. As such only weather conditions for those surveys where bat roosts have been recorded are provided herein.

3 Introduction

3.1 Purpose

This bat survey report has been prepared by MLM for Sweco, and relates to proposed dualling of the A47 from Blofield to North Burlingham.

The proposals are understood to involve converting the existing single carriageway road between Blofield and North Burlingham to dual carriageway, altering some of the junctions onto the dual carriageway from the existing country road network and adding additional ancillary roads and infrastructure to accommodate the proposed dualling.

Surveys undertaken by WYG on behalf of Amey in 2017 (ref. 1) identified probable or confirmed bat roosts associated with five buildings and two trees located within 50m of the proposed road widening scheme boundary:

- The Lindens – probable common pipistrelle day roost (One bat) and brown long-eared day roost (One bat)
- St Andrews Church North Burlingham – common pipistrelle day roost (Four bats)
- Oaklands – common pipistrelle day roost (One bat)
- Poplar Farm – common pipistrelle day roost (Three bats)
- The White House – common pipistrelle day roost (One bat)
- Tree 5 – common pipistrelle day roost (One bat)
- Tree 67 – common pipistrelle day roost (One bat)

The purpose of this report is to present the findings of bat roost emergence/re-entry surveys undertaken by MLM in 2020 to update the 2017 findings (apart from St Andrews Church, which was removed from the scope of works) and identify any additional building/tree roosts, so as to inform a European protected species licence for the scheme.

A total of six buildings and 31 trees were subject to dusk emergence/pre-dawn re-entry survey by MLM, in line with the Bat Conservation Trust (BCT) best practice guidelines (ref. 2), during the period May-August 2020. The purpose of these surveys was to confirm the presence/likely absence of roosting bats associated with the building/trees and, where present, quantify the species and number of bats involved.

3.2 Site Description

The site is located along the A47 in Blofield, Norfolk and is located between Ordnance Survey National Grid Reference TG336101 to the west and TG385101 to the east, a distance of approximately 5.5km. Land within the site boundary comprises the existing A47 road, agricultural land with associated hedgerows and trees, farm buildings and residential properties.

The bat roost survey area comprised a 50m buffer around the site boundary shown on Sweco drawings HE551490-GTY-EGN-000-DR-GI-30001, HE551490-GTY-EGN-000-DR-GI-30002 and HE551490-GTY-EGN-000-DR-GI-30003, which have been stitched together in figure 3.1 below.

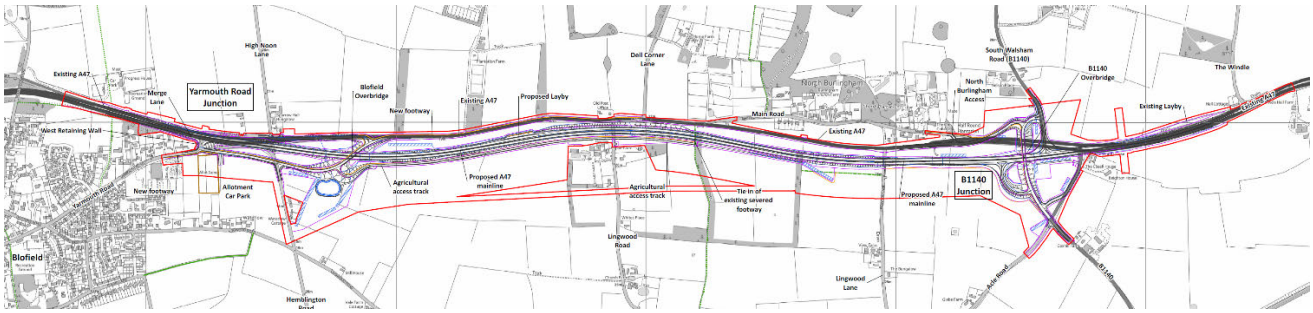


Figure 3.1 Indicative site boundary (red line)

4 Bat Legislation

4.1 Current UK Legislation

All species of British bats are legally protected under part 3 (section 43) of the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations make it an offence to, among other things:

- Deliberately capture, injure, kill or capture a bat;
- Deliberately disturb bats, impairing their ability to survive, breed, reproduce or rear/nurture their young; or
- Damage or destroy a breeding site or resting place used by bats.

All bats and their roosts in England, Scotland and Wales were originally protected under the Wildlife & Countryside Act 1981. Subsequent amendments to the legislation for England and Wales have removed bats from most of the provisions of the Act, however it remains an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection; or
- Intentionally or recklessly obstruct access to any structure or place that a bat uses for shelter or protection.

Disturbance of bats is covered by both the 2017 Regulations and the 1981 Act, with the magnitude of disturbance being critical. Disturbance that impairs the survival or successful reproduction of the species would be covered by the Regulations, with no legal defence existing. Less significant acts of disturbance may only be covered by the Wildlife & Countryside Act 1981, which includes some legal defences that may be applied in certain circumstances.

Bat roosts are protected throughout the year, regardless of whether or not bats are present at the time. Under the Conservation of Habitats and Species Regulations (as amended), the offence of damaging or destroying a bat breeding site or resting place is not subject to any legal defence ie an offence will have been committed even if the damage or destruction occurs accidentally.

4.2 Licensing

Where development proposals would result in an offence under the Habitats and Species Regulations (as amended), a European protected species (EPS) licence needs to be granted by Natural England to permit an act that would otherwise be unlawful. This provides for a specific derogation from the legislation, to prevent an infringement from occurring. To obtain an EPS licence for development, it must be demonstrated that the purpose of the act to be licensed is for:

- "preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment" (Regulation 55(2)(e)).

In addition, Natural England will not grant an EPS licence unless they are satisfied that:

- "There is no satisfactory alternative" (Regulation 55(9)(a)); and
- "The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" (Regulation 55(9)(b)).

5 Methodology

5.1 Technical Approach

All survey work has been undertaken in line with the recommendations of the Bat Conservation Trust best practice guidelines (ref. 2).

Any bat roosts identified have been evaluated in line with Wray *et al.* (ref 3.), which provides guidance on assessing the conservation value of bat roosts according to type and species. This guidance is summarised in the following tables.

Table 5.1 Categorising Bats by Distribution and Rarity

Rarity Within Range	Species
Rarest (under 10,000)	Greater mouse-eared (*Myotis myotis*) Greater horseshoe (*Rhinolophus ferrumequinum*) Grey long-eared (*Plecotus austriacus*) Bechstein's (*Myotis bechsteinii*) Barbastelle (*Barbastella barbastellus*)
Rarer (10,000 – 100,000)	Lesser horseshoe (*Rhinolophus hipposideros*) Whiskered/Brandt's (*Myotis mystacinus*) Nathusius' pipistrelle (*Pipistrellus nathusii*) Serotine (*Eptesicus serotinus*) Leisler's (*Nyctalus leisleri*)
Common (over 100,000)	Common pipistrelle (*Pipistrellus pipistrellus*) Soprano pipistrelle (*Pipistrellus pygmaeus*) Brown long-eared (*Plecotus auritus*) Noctule (*Nyctalus noctula*) Natterer's (*Myotis nattereri*) Daubenton's (*Myotis daubentonii*)

Table 5.2 Valuation of Roosts

Geographic Frame of Reference	Roost Type
International	SAC sites
National	Sites meeting SSSI guidelines Maternity sites of rarest species
Regional	Large swarming sites Mating sites for rarer/rarest species Maternity sites of rarer species Significant hibernation sites for rarer/rarest species, or all species assemblages
County	Feeding perches of rarer/rarest species Small numbers of rarer/rarest species (not maternity sites) Hibernation sites for small numbers of common/rarer species Maternity sites of common species
Local (Parish or District)	Feeding perches Individual bats of common species Small numbers of common species (not maternity sites) Mating site of common species

5.2 Dusk Emergence/Pre-dawn Re-entry Surveys

MLM was appointed to survey all of the buildings and trees listed in table 5.3 below.

5.2.1 Survey Approach

All surveys in relation to bats are undertaken in accordance with the Bat Conservation Trust's 'Bat Surveys for Professional Ecologists – Good Practice Guidelines', 3rd edition (ref. 2).

One low roost suitability building (NB01) was subject to a single pre-dawn re-entry survey. The remaining five buildings (or in the case of Poplar Farm, group of buildings) were all of high roost suitability and therefore subject to three dusk emergence/pre-dawn re-entry surveys.

Two trees of low/moderate potential were each subject to a single dusk emergence/pre-dawn re-entry survey. 16 trees of moderate roost suitability were subject to two dusk emergence/pre-dawn re-entry surveys. The 13 trees of high roost suitability were subject to three dusk emergence/pre-dawn re-entry surveys.

All buildings/trees with moderate potential for roosting bats will be subject to two dusk emergence/pre-dawn re-entry surveys.

The roost suitability of all buildings and trees was assessed by others and provided to MLM prior to undertaking the survey work. MLM was not appointed to undertake roost assessment of any building or tree, although internal inspection of some buildings was undertaken with landowner permission where confirmed or suspected roosts were identified.

5.2.2 Survey Method

Dusk emergence surveys started 15 minutes before sunset and ended a minimum of 1.5 hours after sunset, continuing up to two hours after sunset where late-emerging bat species were anticipated. Pre-dawn re-entry surveys started at least 1.5 hours before dawn and ended at dawn or shortly after (depending on bat activity).

For the buildings, surveyors were each equipped with a full spectrum bat detector and were strategically positioned around the building so as to maximise visual coverage. The number of surveyors utilised at each building was as follows:

- NB01 – 2 surveyors
- Poplar Farm – 4-6 surveyors
- The Lindens – 4 surveyors
- Oaklands – 4 surveyors
- The White House – 4-6 surveyors
- Hall Cottages – 2-3 surveyors (depending on access)

Surveyor numbers were varied depending on the degree of survey effort considered necessary to identify the location of suspected roosts. Also, during some pre-dawn surveys, fewer surveyors were utilised as it was deemed appropriate (given the typical swarming behaviour exhibited by bats returning to roost) for surveyors to walk short transects along different aspects of the buildings on site, searching for bats and following any bats seen to confirm whether or not they were returning to roost.

All trees were surveyed by two surveyors equipped with full spectrum bat detectors, save for those trees which were sufficiently close to one another to allow two surveyors to survey multiples trees.

A record was made of all bats emerging from or re-entering each building/tree, along with the time, direction of travel and suspected species. Details of general bat activity observed or heard during each survey were also noted down, to gather additional information about the local bat assemblage.

Where specific potential roost features were present, surveyors were supported by an infra-red video camera rig capable of filming bats flying in or out of these features in complete darkness.

Post-survey, all bat calls were downloaded from the detectors and analysed using the BatExplorer software. Video footage was analysed using the PlayMemories Home software from Sony.

Table 5.3 Summary of all Buildings and Tree Surveyed by MLM in 2020

Building/Tree ID and National Grid Reference	Description	Roost Suitability	Survey Dates (2020)*
NB01	Modern new brick built house	Low	R1 – 30 June
Poplar Farm	Collection of farm outbuildings including large metal sheds with asbestos cement roofs and brick-built barns with thatched roofs.	Roosts identified in 2017	E1 – 22 July (house only) R1 – 31 July (farm buildings) R2 – 7 August (all buildings) R3 – 20 August (all buildings) E2 – 20 August (courtyard only)
The Lindens	Single-storey brick built bungalow	Roost identified in 2017	E2 – 2 June R1 – 16 June R2 – 30 June
Oaklands	Large two-storey brick building with a pitched and tiled roof	Roost identified in 2017	E1 – 15 May E2 – 1 July R1 – 24 August
The White House	Two-storey brick-built farm house with pitched slate roof. Slate-roofed/clay-tiled brick and timber barns/stables present to the east, forming a courtyard.	Roost identified in 2017	R1 – 13 May E1 – 1 June E2 – 18 June
Hall Cottages	Two-storey rendered brick-built house with clay-tiled roof and clay-tiled outbuildings.	Suspected roost	E1 – 15 May (both halves) E2 – 16 June (west half only) R1 – 15 July (west half only)
T1	Oak	Known roost	E1 – 12 May R1 – 26 May R2 – 9 June
T3	Oak	High	E1 – 12 May R1 – 26 May R2 – 9 June
T5	Oak	Roost identified in 2017	E1 – 12 May R1 – 26 May R2 – 9 June

Building/Tree ID and National Grid Reference	Description	Roost Suitability	Survey Dates (2020)*
T43	Oak	High	R1 – 20 May E1 – 8 June R2 – 23 July
T44	Oak	High	R1 – 20 May E1 – 8 June R2 – 23 July
T45	Oak	High	E1 – 18 May E2 – 2 June R1 – 26 June
T53	Oak	Known roost	R1 – 13 May E1 – 17 June R2 – 23 July
T67	Oak	Roost identified in 2017	R1 – 20 May R2 – 16 June E1 – 1 July
T75	Oak	High	R1 – 7 May R1 – 19 May E1 – 9 June
T81	Oak	High	R1 – 1 June E1 – 16 June R2 – 28 August
T85	Oak	High	E1 – 18 May R1 – 2 June R2 – 23 June
T87	Oak	High	E1 – 18 May R1 – 2 June R2 – 23 June
T88	Oak	High	E1 – 18 May R1 – 2 June R2 – 23 June
T77	Oak	Moderate	R1 – 19 May E1 – 9 June
T11	Oak	Moderate	R1 – 19 May E1 – 9 June
T39	Oak	Moderate	R1 – 25 June E1 – 1 September
T41	Oak	Moderate	R1 – 25 June E1 – 6 August
T50	Oak	Moderate	E1 – 26 May R1 – 1 July

Building/Tree ID and National Grid Reference	Description	Roost Suitability	Survey Dates (2020)*
T51	Oak	Moderate	E1 – 26 May R1 – 1 July
T52	Sycamore	Moderate	E1 – 26 May R1 – 1 July
T57	Ash	Moderate	E1 – 28 May R1 – 16 June
T58	Ash	Moderate	E1 – 29 May R1 – 16 June
T60	Oak	Moderate	R1 – 21 May E1 – 12 June
T78	Oak	Moderate	R1 – 7 May E1 – 9 June
T84	Oak	Moderate	R1 – 21 May E1 – 12 June
T89	Oak	Moderate	R1 – 21 May E1 – 12 June
T90	Oak	Moderate	R1 – 3 June E1 – 22 June
T91	Oak	Moderate	R1 – 3 June E1 – 22 June
T80	Oak	Moderate	R1 – 1 June E1 – 16 June
NT09	Poplar	Low	E1 – 3 June
NT12	Not identified to species level	Low	R1 - 29 May

* E = dusk emergence survey; R = dawn re-entry survey

Figures 5.1-5.6 below show the locations of surveyors and, where applicable, the infra-red camera and/or thermal imaging scope during the building surveys.

Figure 5.1 Survey positions for NB01 (R1 - yellow circles). Map data: © 2020 Google.

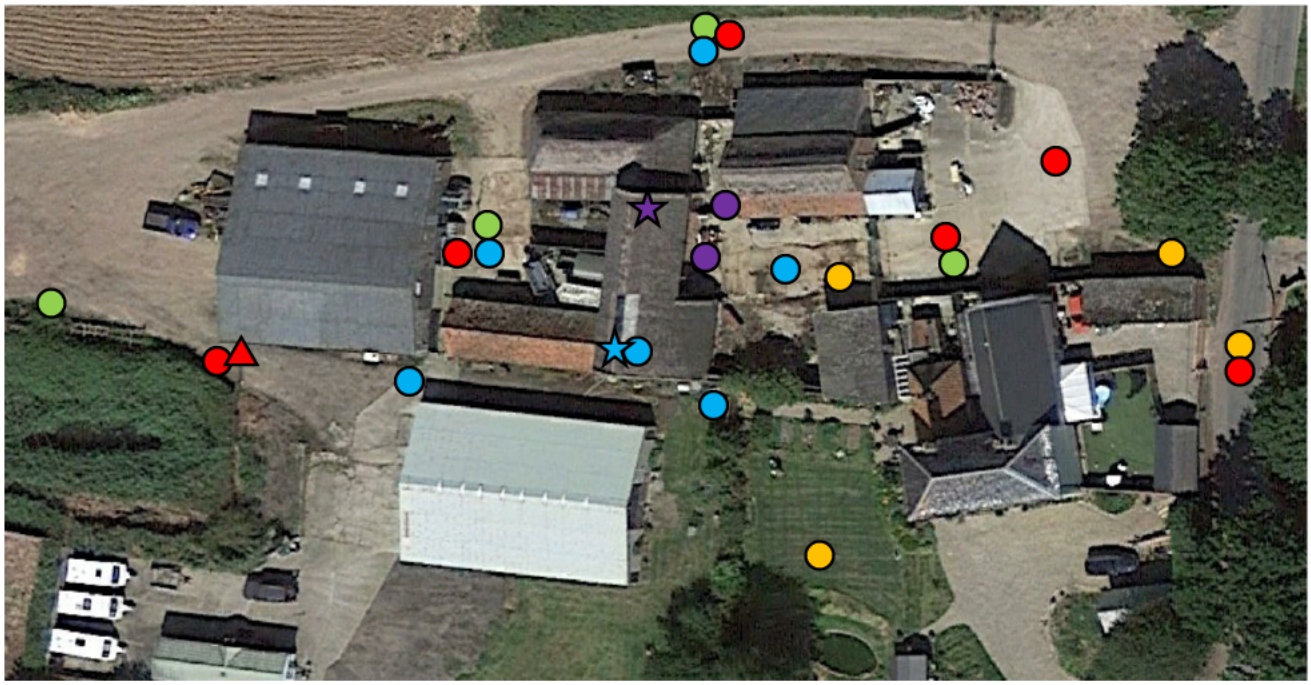


Figure 5.2 Survey positions for Poplar Farm (E1 – yellow circles), (R1 – green circles), (R2 – red circles; infrared camera shown by red triangle), (R3 – blue circles; thermal imaging scope shown by blue star), (E2 – purple circles; thermal imaging scope shown by purple star). Map data © 2020 Google.

Figure 5.3 Survey positions for The Lindens (yellow circles). Map data © 2020 Google.

Figure 5.4 Survey positions for Oaklands. Map data © 2020 Google.

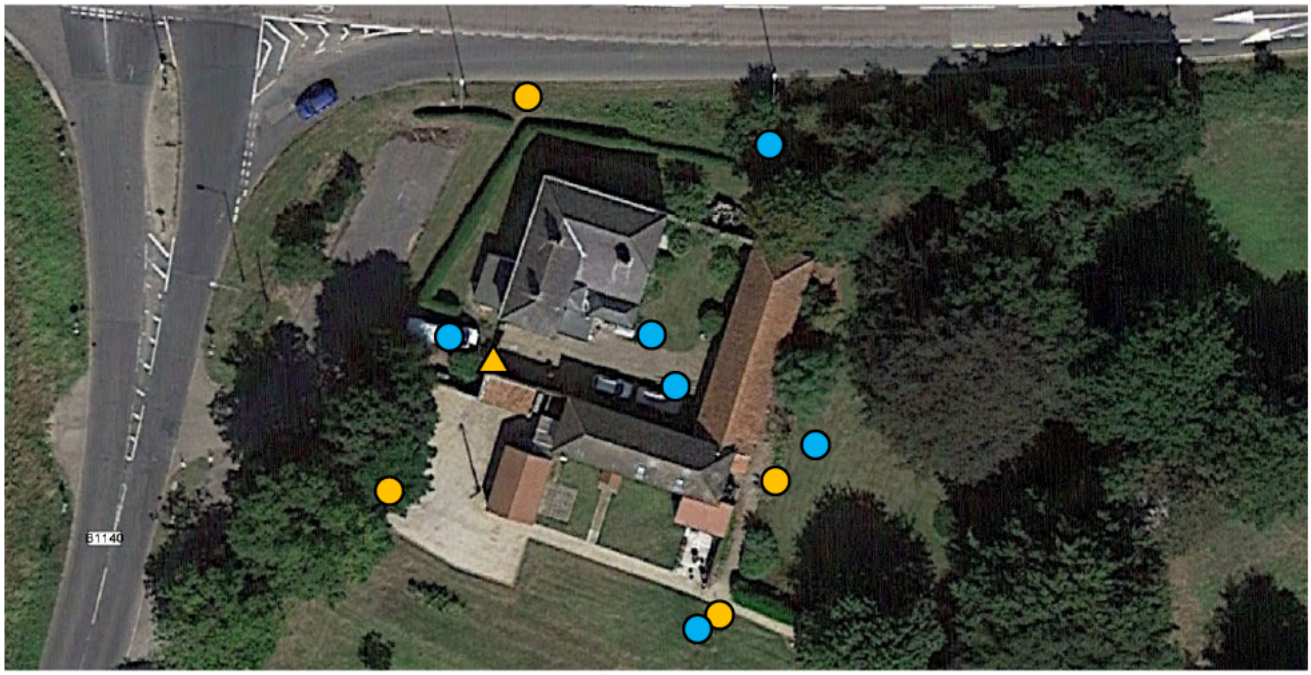


Figure 5.5 Survey positions for The White House (R1 – yellow circles; infrared camera shown by yellow triangle), (E1 & E2 – blue circles). Map data © 2020 Google.

Figure 5.6 Survey positions for Hall Cottages (E1 – yellow circles), (E2 & R3 – red circles). Map data © 2020 Google.

5.2.3 Personnel

The survey work was led by Dr Martin Brammah PhD MA (Cantab) BA (Hons) CEcol MCIEEM MRSB, with assistance from the following experienced bat surveyors:

- Beck Harrington-Harding BSc (Hons) MCIEEM
- Joshua Stafford BSc (Hons) Grad CIEEM
- Richard Webber-Salmon BSc (Hons) Grad CIEEM
- Sam Wilson BSc (Hons) ACIEEM
- Sophie Barrell MEcol (Hons) Grad CIEEM

- Alexandra Jackson MZool (Hons)
- Ben Jervis BSc (Hons) MSc MCIEEM
- Christine Hipperson-Jervis BSc (Hons) MCIEEM
- Jeremy Halls HND MCIEEM PIEMA
- Johnnie Johnson BSc (Hons)

5.2.4 Weather Conditions

All of the surveys took place during suitable weather conditions of no rain, no strong winds and an air temperature above 10°C at dusk.

Detailed weather conditions for those surveys where bat roost were identified are provided in table 5.4 below.

Table 5.4 Weather Conditions When Roosts Were Identified

Building/ Tree	Date (2020)	Start temp. (°C)	End temp. (°C)	Start cloud (oktas)	End cloud	Start wind (Beaufort)	End wind	Rain
Poplar Farm	22 July	17	16	3	5	2	1	0
Poplar Farm	31 July	16	16	0	0	0	0	0
Poplar Farm	7 Aug	16	15	0	0	0	0	0
Poplar Farm	20 Aug	20	19	8	7	2	2	0
Poplar Farm	20 Aug	23	21	1	1	1	1	0
The Lindens	2 June	18	13	2	3	1	1	0
The Lindens	16 June	13	13	8	8	0	0	0
The Lindens	30 June	13	13	8	8	4	3	0
The White House	13 May	7	7	8	8	2	3	0
The White House	1 June	14	12	1	0	3	1	0
The White House	18 June	19	15	2	3	1	1	0
Hall Cottages	15 May	13	9	3	4	1	1	0
Hall Cottages	16 June	17	15	3	0	1	1	0
Hall Cottages	15 July	12	12	6	7	2	2	0
Tree T1	12 May	10	7	7	0	1	1	0
Tree T1	26 May	13	13	1	1	0	0	0
Tree T1	9 June	10	8	1	1	0	0	0

6 Survey Findings

6.1 Building Roosts

Table 6.1 provides a summary of the building roosts identified by MLM in 2020 and their geographic importance according to Wray *et al.* (ref. 3).

Table 6.1 Summary of Building Roosts

Building (and survey*)	Survey Date (2020)	Description of Roosting Activity	Roosts Identified	Geographic Importance
Poplar Farm – E1	22 July	No emergence from house or buildings adjacent to it.	Common pipistrelle day roost in building in north-east corner of courtyard (minimum three bats) Brown long-eared bat day roost in large thatched barn (three bats) Brown long-eared feeding roost in large thatched barn and building in north-east of courtyard	Local
Poplar Farm – R1	31 July	Common pipistrelle re-entry within courtyard to east of large thatched barn (exact location not seen). Two brown long-eared bats seen flying close to western gable end of southernmost building one hour before sunrise.		Local
Poplar Farm – R2	7 Aug	No re-entries observed. Two brown long-eared bats seen flying close to western gable end of southernmost building one hour before sunrise.		Local
Poplar Farm – R3	20 Aug	Three brown long-eared bats re-entered large thatched barn from east side either over the top of the main barn doors or over the top of the smaller door to the left of the main barn doors. Common pipistrelle re-entered building in north-east corner of courtyard over top of stable door at west end of southern aspect. Small number of common pipistrelles seen swarming around eastern gable of building in north-east corner of courtyard – assumed to have re-entered building. Insect feeding remains (mostly peacock butterfly (*Aglais io*) wings) found throughout thatched barn and building in north-east corner of courtyard.		
Poplar Farm – E2	20 Aug	Two common pipistrelle bats emerged from eastern gable of		

Building (and survey*)	Survey Date (2020)	Description of Roosting Activity	Roosts Identified	Geographic Importance
		building in north-east corner of courtyard. One common pipistrelle emerged from above stable door on southern aspect of building in north-east corner of courtyard. BLE recorded in courtyard at 20:47 (38 minutes after sunset) – suspected emergence from thatched barn. Two BLE recorded 'light sampling' inside thatched barn from 20:37 – 20:48 before disappearing off camera. Considered likely to have emerged from north western extension to thatched barn.		
The Lindens – E1	2 June	No emergence recorded.	Common pipistrelle day roost (Two bats)	Local
The Lindens – R1	16 June	Two common pipistrelles re-entered roosts at either side of the western gable end, beneath the bargeboards.		
The Lindens – R2	30 June	No re-entry recorded.		
The White House – R1	13 May	Common pipistrelle recorded on infrared camera, within 30 minutes of sunrise, repeatedly swarming to tile on western pitch of the single storey stables that run along the eastern side of the courtyard, towards the south-east corner. Bat flew off screen but considered highly likely to be roosting in courtyard.	Common pipistrelle day roost (One bat)	Local
The White House – E1	1 June	Common pipistrelle observed flying east over roof of barn at south of courtyard at 21:30 (22 minutes after sunset). Suspected emergence.		
The White House – E2	18 June	No emergence recorded.		
Hall Cottages – E1	15 May	No emergence recorded.	Common pipistrelle day roost (One bat)	Local
Hall Cottages – E2	16 June	Common pipistrelle recorded flying north from south side of single-storey extension to west of property at 22:02 (41 minutes after sunset). Suspected emergence.		

Building (and survey*)	Survey Date (2020)	Description of Roosting Activity	Roosts Identified	Geographic Importance
Hall Cottages – R1	15 July	Common pipistrelle re-entered beneath raised lead flashing on southern aspect of single-storey extension to west of property at 04:04.		

* E = dusk emergence survey; R = dawn re-entry survey

The locations of all known or suspected roost access/egress points at each of the buildings are depicted in photos 1-6 below.

Photo 1. Poplar Farm – Suspected brown long-eared roost access/egress locations (barn doors are closed overnight) on east side of large thatched barn.

Photo 2. Poplar Farm – Common pipistrelle roost access/egress locations in building in north-east corner of courtyard to east of large thatched barn (upper stable door is closed overnight).

Photo 3. Poplar Farm – suspected common pipistrelle access/egress locations on eastern gable of building in north-east corner of courtyard to east of large thatched barn.

Photo 4. The Lindens – Location of common pipistrelle roosts beneath bargeboards on western gable end.

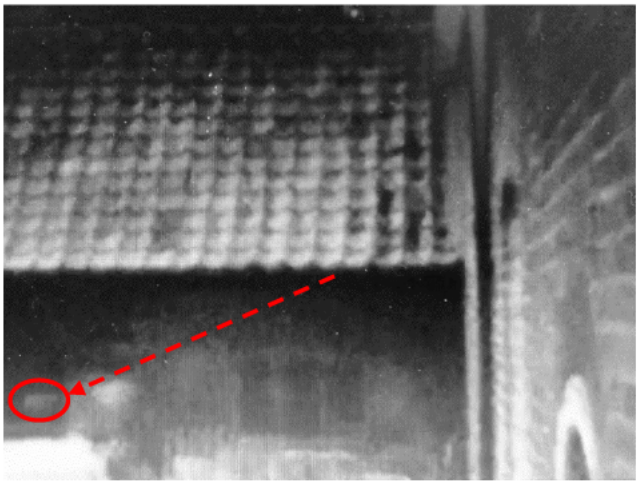


Photo 5. The White House – Location of suspected common pipistrelle day roost under tiles in south-east corner of courtyard. This is a still from the infrared camera showing the flight path of bat recorded (dotted line) and the bat itself (red circle)).

Photo 6. Hall Cottages – Location of common pipistrelle roost under lifted lead flashing on southern aspect of single-storey extension to the west of the property.

6.1.1 Internal Inspection of Mr Durrant's Barn

As two brown long-eared bats were observed flying in close proximity to the western gable end of the southernmost building at Poplar Farm (to the south of the thatched barn) roughly an hour before sunrise on 31 July and 7 August 2020, permission was obtained from the owner (Colin Durrant) to carry out a detailed internal inspection of the building. The purpose of this was to assess the potential for the building to support roosting brown long-eared bats.

Prior to the onset of the 2020 bat surveys at Poplar Farm, works had been ongoing inside the building in order to convert it to a residential dwelling. This included breaking up the internal concrete slab to allow for a new internal floor to be laid.

The internal inspection was undertaken on the morning of 7 August 2020 by Martin Brammah (bat level 2 class licence: 2015-14077-CLS-CLS). During the inspection it was clear that internal roosting opportunities suitable for brown long-eared bats were extremely limited. The building was fully open to the roof and had no enclosed roof voids. The retained timber trusses had a structure that was open at the top and bottom and were therefore unsuitable for roosting, as they provided no enclosed crevice-type roosting locations. Whilst there were open topped breeze blocks at the bottom of the unglazed window openings, these were not considered to be highly suited for roosting by brown long-eared bats, which typically either free hang in open roost spaces, or crevice-roost in much narrower openings.

As the building is being converted, the window openings are frequently left uncovered during periods of fair weather (one of the window openings had been left uncovered overnight at the time of inspection – see photo 7) and as such there would be ample opportunity for bats to explore the interior of the building during the night. Furthermore, the northern bargeboard on the western gable end is lifted and would readily allow bats to explore the building interior.

A total of four brown long-eared type droppings were found inside the building during the inspection. Two of these were clearly very old and two were darker and hence more recent, but were not fresh. None of the droppings was located beneath a suitable roosting feature and no insect feeding remains of any kind were found inside the building. The number and location of droppings found inside the building are consistent with rare, opportunistic investigation of the building by brown long-eared bats, which are known to roost in the adjacent buildings to the north.

Give that the building's construction (breeze blocks and corrugated sheet metal roof) is atypical for selection by roosting bats, that there are no obvious internal roosting opportunities, that very little evidence of roosting bats was identified inside the buildings and that brown long-eared bats are known to roost in the far more suitable thatched barn adjacent to the north, it is considered that Mr Durrant's barn does not support a brown long-eared bat roost.

It is considered therefore that the bats seen flying close to the western gable end of the building an hour before sunrise on 31 July and 7 August were foraging for prey prior to returning to roost inside the thatched barn to the north.

Photo 7. Poplar Farm – southern elevation of Mr Durrant's barn showing open window opening and breeze block construction with sheet metal roof.

6.2 Tree Roosts

Table 6.2 provides a summary of the results of the surveys of tree T1 (photo 7) undertaken by MLM in 2020.

Table 6.2 Summary of Tree Roosts

Tree (and survey)	Survey Date (2020)	Description of Roosting Activity	Roosts Identified	Geographic Importance
T1 – E1	12 May	Soprano pipistrelle emerged from behind ivy at 21:21	Soprano pipistrelle day roost (One bat)	Local
T1 – R1	26 May	No re-entry recorded		
T1 – R2	9 June	No re-entry recorded		

Photo 7. Tree T1.

6.3 Other Bat Activity Recorded During Surveys

In addition to the common pipistrelle, soprano pipistrelle and brown long-eared bats described above (with regular passes by all three species where roosts were identified), noctule bats were also recorded commuting north or south high overhead during most of the surveys (with a suspected roost being present in Church Plantation numbering at least six individuals).

Occasional rare passes by individual barbastelle bats were also recorded during some surveys.

7 Mitigation

7.1 European Protected Species Licence

Given the presence of the roosts identified above and their proximity to the proposed works, the proposals are likely to result in the illegal disturbance of multiple bat roosts. As such a European protected species (EPS) licence from Natural England is required. The method statement of this licence will include appropriate measures to mitigate the impact on bats as a result of the proposed works.

An EPS licence can only be issued once full planning consent has been achieved and all relevant conditions have been discharged.

7.2 Precautionary Approach to Works to the Roof of Mr Durrant's Barn

Mr Durrant's barn, to the south of Poplar Farm, is not considered to support a bat roost. However, given that four brown long-eared type bat droppings were found inside the building, any works to the roof of the building should avoid the period May-September inclusive when bats are active (the building is considered wholly unsuitable for bat hibernation due to the likelihood of fluctuating internal temperatures).

Should this not be feasible, works to the roof should be undertaken under the supervision of a suitably licensed bat ecologist, with a suitable bat box being erected on-site prior to works commencing to receive any bats in the unlikely event that they are found. If bats are found, works will need to cease and an EPS licence be obtained from Natural England.

8 Conclusion

Six buildings and 31 trees were subject to dusk emergence/pre-dawn re-entry survey in line with the Bat Conservation Trust (BCT) best practice guidelines (ref. 2), during the period May-August 2020.

The purpose of these surveys was to confirm the presence/likely absence of bat roosts associated with these building/trees, to better understand the likelihood of any significant effect to any roosts as a result of the proposed dualling of the A47 between Blofield and North Burlingham.

The surveys identified the following roosts associated with the following structures/trees:

- Poplar Farm – brown long-eared bat day roost (Three bats) and feeding roost in large thatched barn; brown long-eared feeding roost in building in north-east corner of courtyard to the east of large thatched barn; common pipistrelle day roost (minimum three bats) in building in north-eastern corner of courtyard to east of large thatched barn.
- The Lindens – common pipistrelle day roost (Two bats)
- The White House – common pipistrelle day roost (One bat)
- Hall Cottages (west) – common pipistrelle day roost (One bat)
- Tree T1 – soprano pipistrelle day roost (One bat)

Given the presence of the roosts identified above and their proximity to the proposed works, the proposals are likely to result in the illegal disturbance of multiple bat roosts. As such a European protected species licence from Natural England is required.

9 References

1 WYG (2017) A47 Blofield: Bat Surveys. Issued 27 November 2017.

2 Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

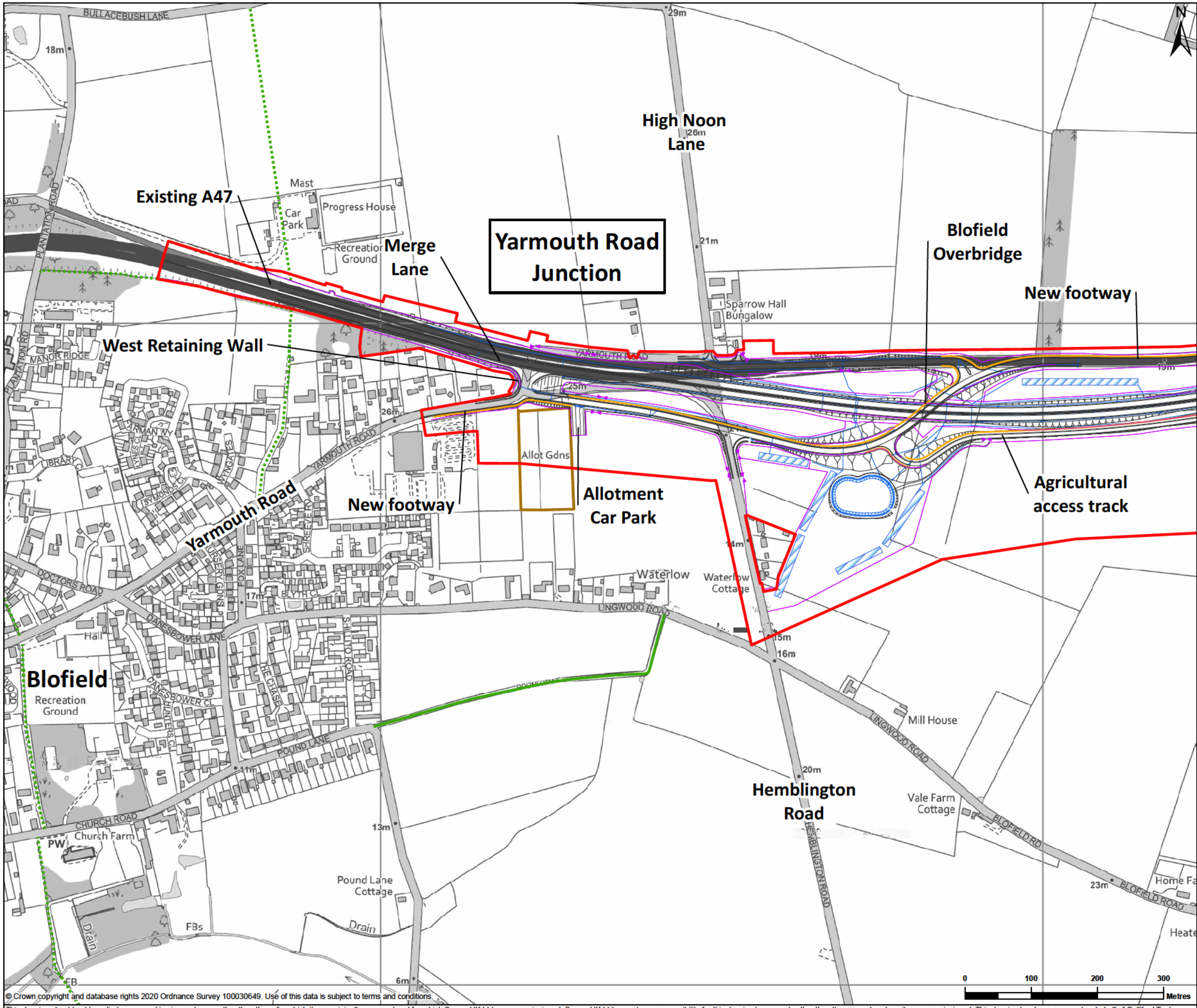
3 Wray S., Wells D., Long E., Mitchell-Jones T. (2010) Valuing Bats in Ecological Impact Assessment, IEEM In-Practice p 23-25.

Drawings

Highways England Scheme Overview Sheet 1 (HE551490-GTY-EGN-000-DR-GI-30001)

Highways England Scheme Overview Sheet 2 (HE551490-GTY-EGN-000-DR-GI-30002)

Highways England Scheme Overview Sheet 3 (HE551490-GTY-EGN-000-DR-GI-30003)



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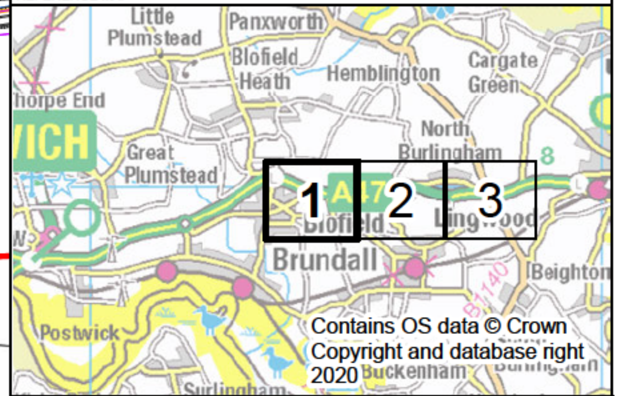
0 100 200 300 Metres

LEGEND

- Red line boundary
- Proposed Scheme design
- Proposed Footway
- Proposed Drainage design
- Proposed Drainage soakaway
- Proposed Fencing
- Proposed Fence gate
- Byway open to all traffic (PRoW)
- Footpath (PRoW)
- Bridleway
- Allotment boundary

REFERENCE MAP



REV	DATE	REVISION NOTE	ORG	CHK'D	APP'D
P02	23/07/2020	AMENDMENTS TO SCHEME DESIGN AND BOUNDARY	PC	MM	MM

DESIGNER: SWECO

CONTRACTOR: Galliford Try

CLIENT: highways england

PROJECT TITLE: A47 BLOFIELD TO NORTH BURLINGHAM

PROJECT STAGE: PCF STAGE 3

DRAWING TITLE: FIGURE 1.1.1 - SCHEME OVERVIEW SHEET 1 OF 3

SUITABILITY: FOR INFORMATION

SHEET SIZE	SCALE	STATUS
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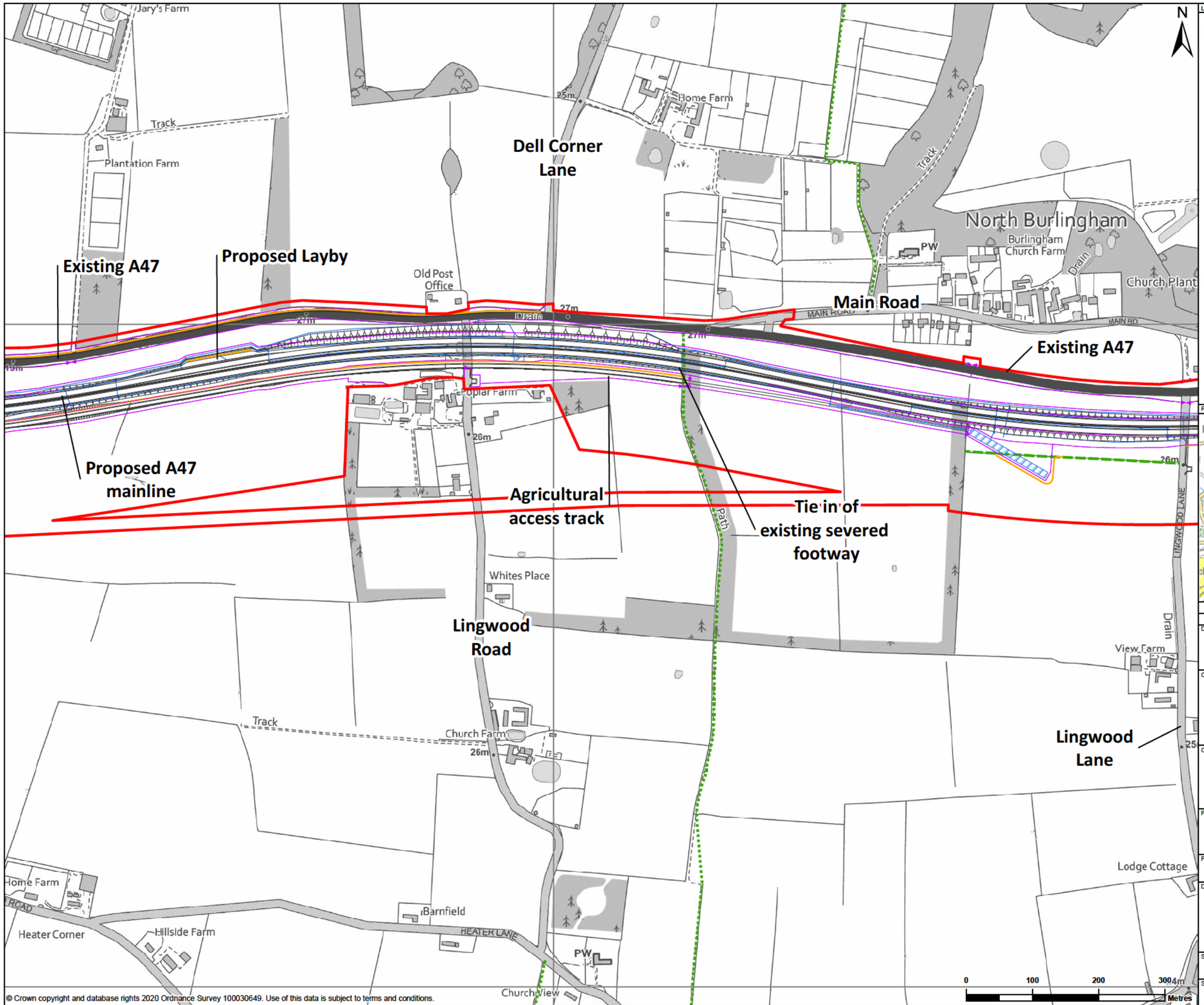

LEGEND

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- Proposed Drainage design
- Proposed Drainage soakaway
- Proposed Fencing
- Proposed Fence gate
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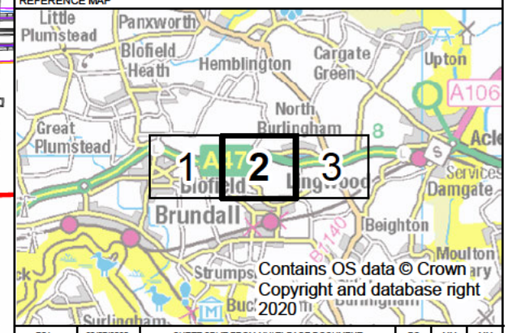
- Footpath (PRoW)
- Bridleway
- Allotment boundary

REFERENCE MAP



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REV	DATE	REVISION NOTE	ORG	CHK'D	APP'D
P01	23/07/2020	SHEET SPLIT FROM MULTI-PAGE DOCUMENT	PC	MM	MM

DESIGNER: SWECO

CONTRACTOR: GallifordTry

CLIENT: highways england

PROJECT TITLE: A47 BLOFIELD TO NORTH BURLINGHAM

PROJECT STAGE: PCF STAGE 3

DRAWING TITLE: FIGURE 1.1.2 - SCHEME OVERVIEW SHEET 2 OF 3

SUITABILITY: FOR INFORMATION

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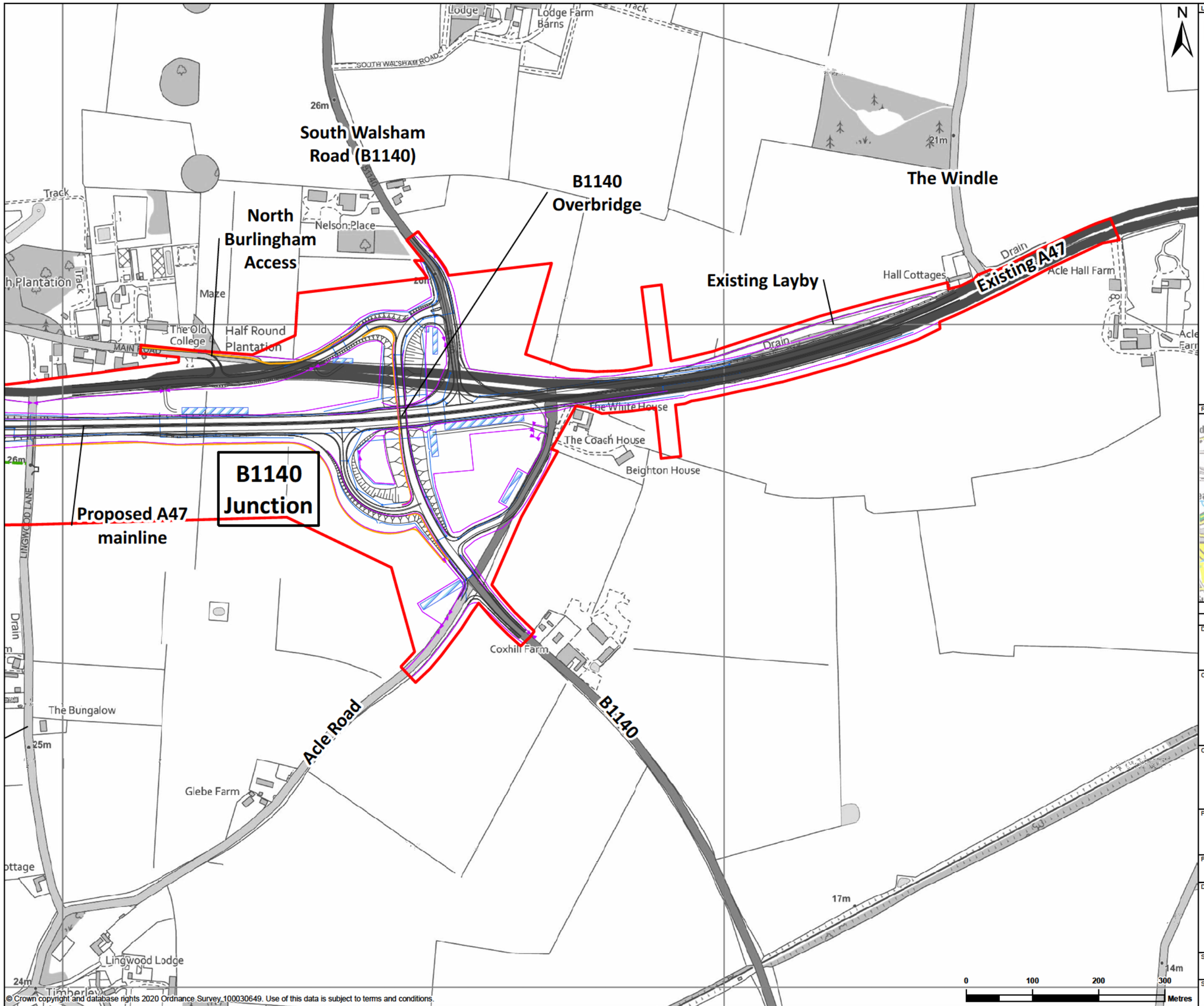

LEGEND

- Red line boundary
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- Proposed Fence gate
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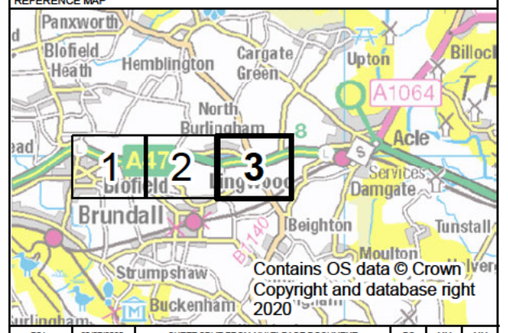
REFERENCE MAP



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DESIGNER: SWECO

CONTRACTOR: GallifordTry

CLIENT: highways england

PROJECT TITLE: A47 BLOFIELD TO NORTH BURLINGHAM

PROJECT STAGE: PCF STAGE 3

DRAWING TITLE: FIGURE 1.1.3 - SCHEME OVERVIEW SHEET 3 OF 3

SUITABILITY: FOR INFORMATION

SHEET SIZE	SCALE	STATUS
A3	1:5,500	S2

DRAWING NUMBER: HE551490-GTY-EGN-000-DR-GI-30003

MLM.
Group
Part of Sweco

T [redacted]
A Saxon House
23 Springfield Lyons Approach
Chelmsford, CM2 5LB

www.mlmgroup.com