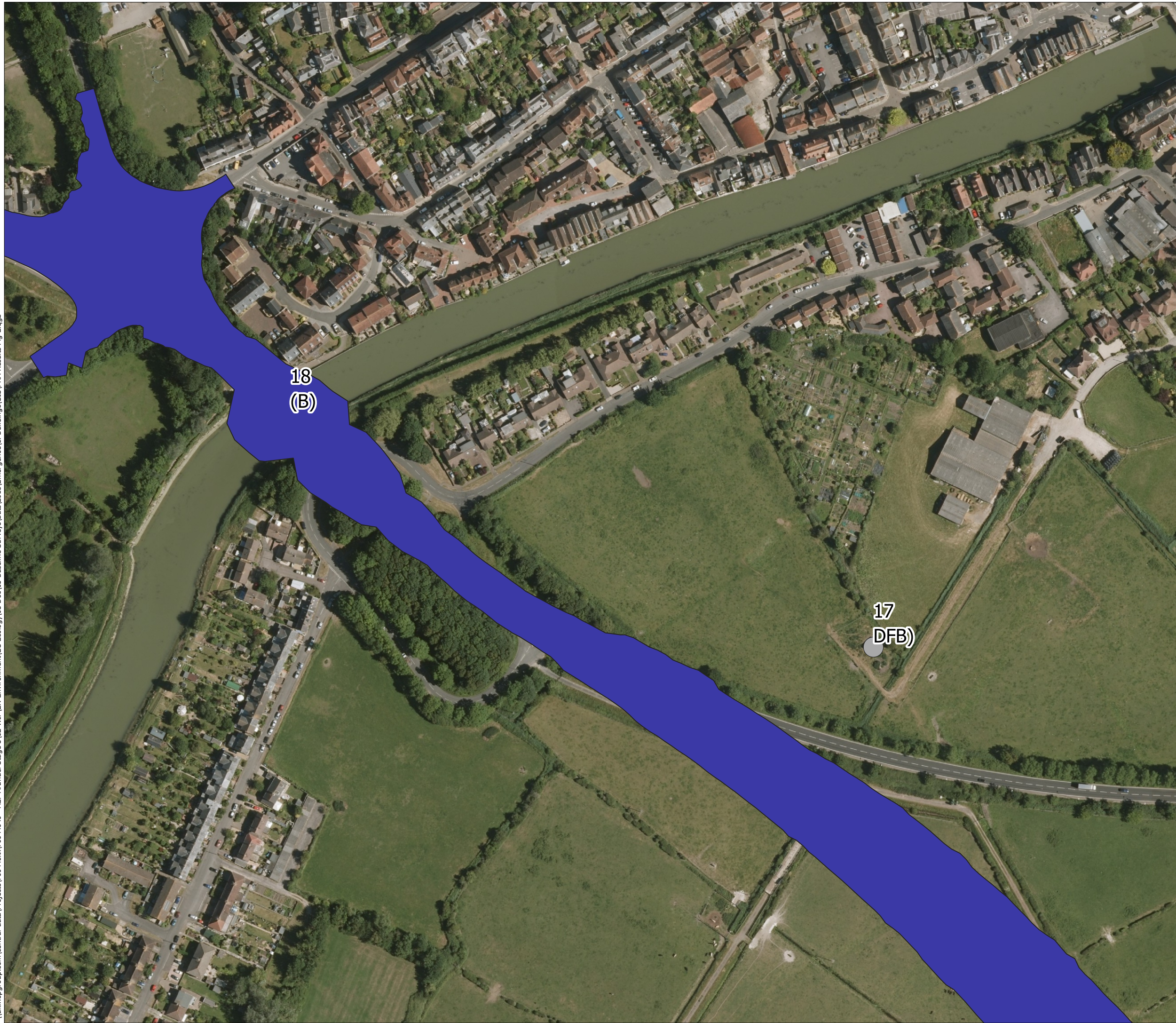


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LEGEND:

- Option 1
- Option 3
- Option 5A
- Confirmed
- Moderate
- Low
- Negligible

Structure Code

- B = Bridge
- DFB = Derelict Farm Building
- DH = Dwelling House
- Dog = Dog Kennel
- Sh = Garden Shed
- TFS = Timber Framed Structure

STATUS:

FOR INFORMATION ONLY



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www.wsp.com

CLIENT:

Highways England

PROJECT:

A27 Arundel Bypass

TITLE:

Figure 2 - Preliminary Bat Roost Assessment Results

SCALE @A3: 1:2,000	DRAWN: AP	APPROVED: HB
VERSION: 1	DATE: 18/01/19	DATE: 18/01/19
PROJECT No: 70019688	DRAWING No: Figure 2	

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LEGEND:

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Figure 2 - Preliminary Bat Roost Assessment Results

SCALE @A3:

1:2,000

DRAWN:

AP

APPROVED:

HB

VERSION:

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DATE:

18/01/19

DATE:

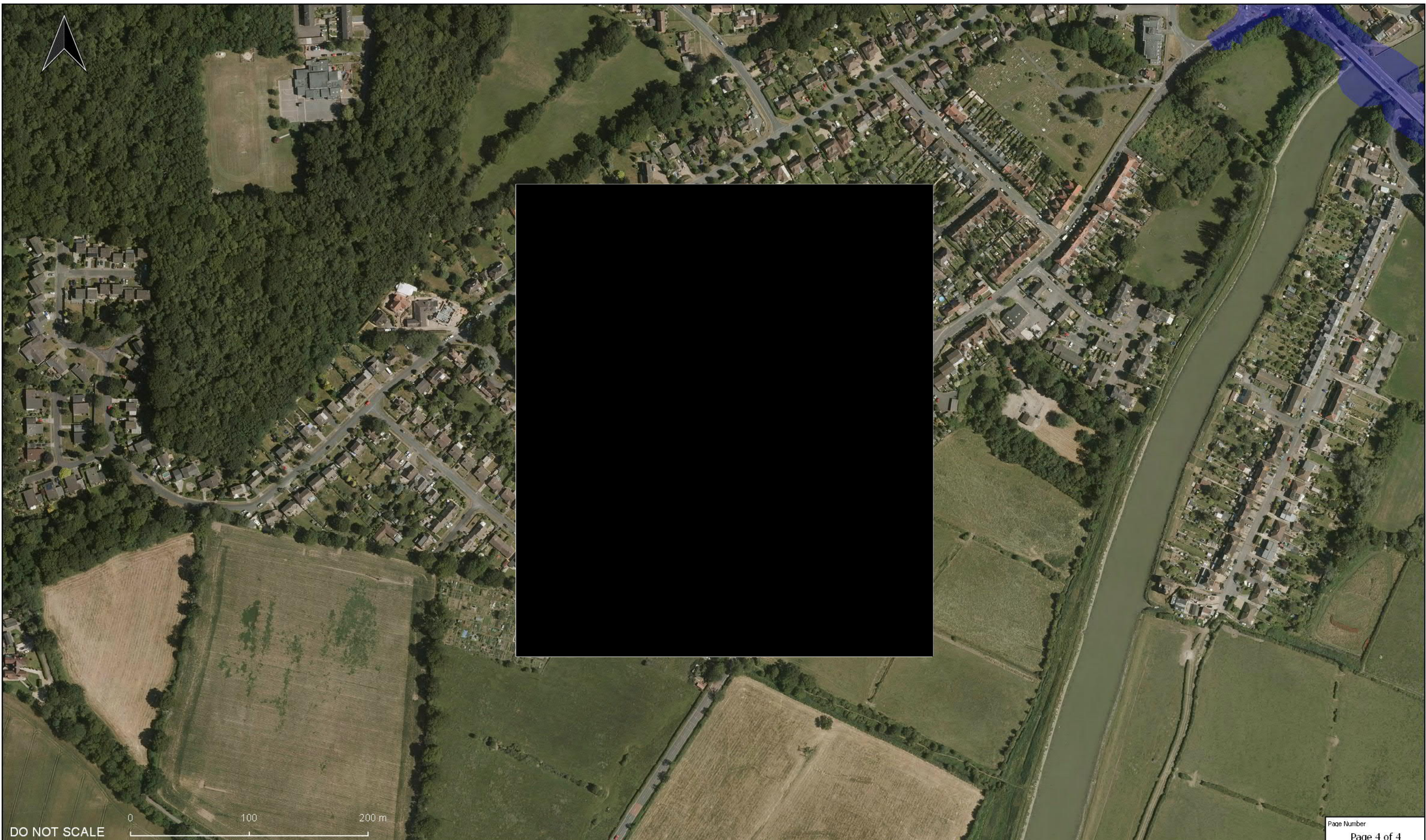
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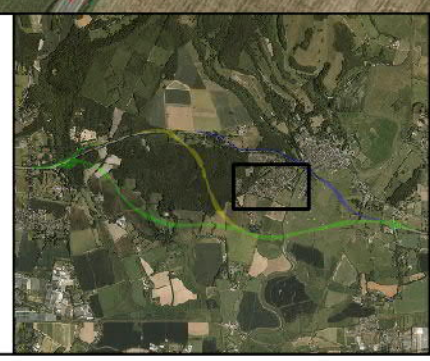
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DRAWING No:

Figure 2



- KEY:**
- Options
 - Option 1
 - Option 3
 - Option 5A
 - Confirmed Roosts

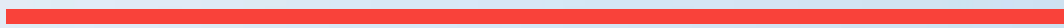


Rev.	Date	Description	By	Chk'd	App'd

Drawing Status WORK IN PROGRESS		Suitability S0		Project Title REGIONAL INVESTMENT PROGRAMME A27 ARUNDEL			
 WSP House 70 Chancery Lane London WC2A 1AF Tel: +44 (0)20 7314 5000 www.wsp.com Copyright © WSP Group (2018)		Drawing Title Figure 3 Radio Tracking Results - Confirmed Building Roosts					
		Scale 1:3,000	Drawn JR	Checked KJ	Approved	Authorised	
Client Working on behalf of 		Date 13/08/18	Date 22/03/18	Date	Date		
Drawing Number Project HE551523		Originator WSP		Volume -GEN		Project Ref. No. 35111 34A	
A27AR Location		-FI Type	-GIS Route	01 Number	Revision P01		

Appendix A

PRA SURVEY RESULTS



Preliminary Roost Assessment Survey Results

Structure number	Building Ref.	Grid Reference	Description	Features present	BCT suitability ⁴⁵	Number of surveys required
1	10550 - Dwelling house	[REDACTED]	Residential home. [REDACTED]	Multiple access points for roosting bats ⁴⁶	Confirmed	1
2	10550 – Dog kennel	[REDACTED]	<i>No description or photos – to be updated in 2019</i>	No features	Negligible	0
3	10900 - Dwelling house	SU 99758 07347	Detached residential home. Two storey brick build with assumed loft conversion. Tiled roof with chimney stack	Multiple access points for roosting bats ⁴⁸	Moderate	1
4	10900 - Shed/workshop	SU 99759 07324	<i>No description or photos – to be updated in 2019</i>	No features	Negligible	0
5	10375 - Dwelling house	SU 97096 06771	Single storey brick built bungalow with 2m high walls and pitched roof to a height of 4m at ridge. Roof tiled with slate tiles and ridge and hip tiles were clay / concrete fibre. Brickwork, pointing and roof tiles all in good condition and well maintained. Closed wooden soffit box that was tight fitting. Ridge tiles and lead flashing tight fitting. Wooden bargeboards on	<ul style="list-style-type: none"> ▪ Some raised slate tiles on eastern elevation ▪ Slipped wooden plank under soffit on north-eastern corner that is a potential access point (no signs). ▪ Wooden bargeboard with closed soffit on northern elevation with some gaps between the 	Moderate	1

⁴⁵ Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1

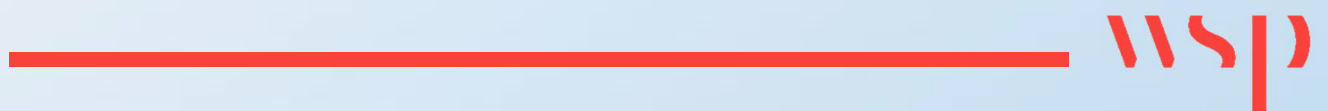
⁴⁶ These structures are scheduled to be revisited and reassessed during 2018 surveys to provide more detail

Structure number	Building Ref.	Grid Reference	Description	Features present	BCT suitability ⁴⁵	Number of surveys required
			east facing gable with closed wooden soffits. Small flat-roofed new extension with roofing felt present on eastern 'leg' of dwelling in good condition	<ul style="list-style-type: none"> brickwork and soffit. Raised roof tiles on other elevations, including adjacent to bargeboards. Gaps between soffit and brickwork on western elevation go up into internal soffit space. No droppings present. 		
6	10375 - Shed in garden	SU 97103 06737	Timber-framed garden shed, timber weatherboarding with bitumastic felt covered pitched roof. Good condition	No features	Negligible	0
7	10375 - Shed in garden next to boundary wall	SU 97071 06740	Timber-framed garden shed, timber weatherboarding with bitumastic felt covered pitched roof. Good condition	No features	Negligible	0
8	10375 - Shed on western side of small copse	SU 97224 06752	Flat-roofed timber shed with timber weatherboarding to 2m in height	<ul style="list-style-type: none"> Gap between the timber face and roof on west side of the shed 	Low	1
9	11250 - Garden shed 1	TQ 00586 05861	Timber-framed garden shed, timber weatherboarding with bitumastic felt covered pitched roof. Good condition	No features	Negligible	0

Structure number	Building Ref.	Grid Reference	Description	Features present	BCT suitability ⁴⁵	Number of surveys required
10	11250 - Garden shed 2	TQ 00622 05831	Timber-framed garden shed, timber weatherboarding with bitumastic felt covered pitched roof. Good condition	No features	Negligible	0
11	11235 - Timber-framed structure 1	TQ 00885 05765	A campsite toilet / wash area. A wooden structure. Timber-framed structure, timber weatherboarding with bitumastic felt covered roof	Multiple access points for roosting bats ⁴⁸	Low	1
12	11235 - Timber-framed structure 2	TQ 00887 05717	Timber framed campsite building with timber weatherboarding and roof	Multiple access points for roosting bats ⁴⁸	Low	1
13	11235 - Timber-framed cabin 3	TQ 00893 05646	Timber-framed structure, timber weatherboarding with corrugated metal roofing	Multiple access points for roosting bats ⁴⁸	Low	1
14	11235 - Timber-framed outbuilding	TQ 00999 05715	Timber-framed garden shed, timber weatherboarding and roof. Good condition	No features	Negligible	0
15	11765 – Derelict farm building 1	TQ 01678 06051	Derelict brick building. No roof	No features	Negligible	0
16	11765 – Open farm building	TQ 02163 06050	Derelict brick building used for sheep shelter. Metal roofing	No features	Negligible	0
17	12275 – Derelict farm building	TQ 01787 06663	Stone building	No features	Negligible	0

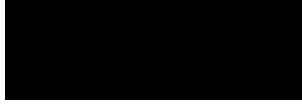
Structure number	Building Ref.	Grid Reference	Description	Features present	BCT suitability ⁴⁵	Number of surveys required
18	Bridge over River Arun	TW 01459 06795	The Arun Bridge is a concrete span bridge, crossing both a road and the River Arun. The bridge has concrete abutments, a concrete deck and multi girder centre arch. The bridge is well lit from above with street lights across the top along the road	<ul style="list-style-type: none"> ▪ No suitable roosting features were seen on the main bridge ▪ However, both abutments have access to internal dark voids where, whilst there are no crevices, there is a space which may be suitable for roosting and hibernating bats ▪ The open nature of the voids means that they are exposed to wind and rain meaning little thermal stability. ▪ No other suitable features were present due to crevices being too wide, open and damp 	Low	1
19	Railway Bridge	TQ 02286 06069	Not surveyed- no access permitted			

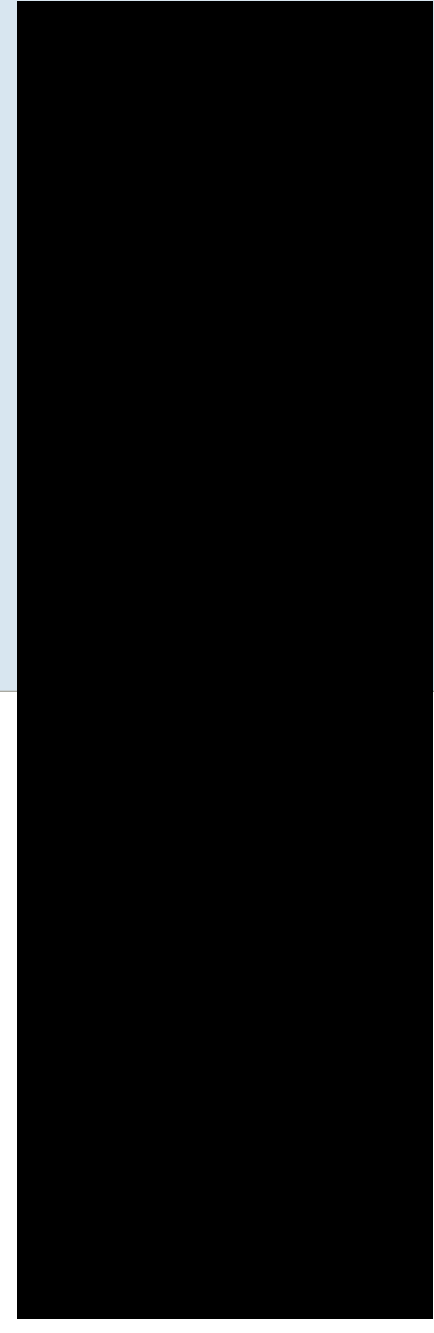
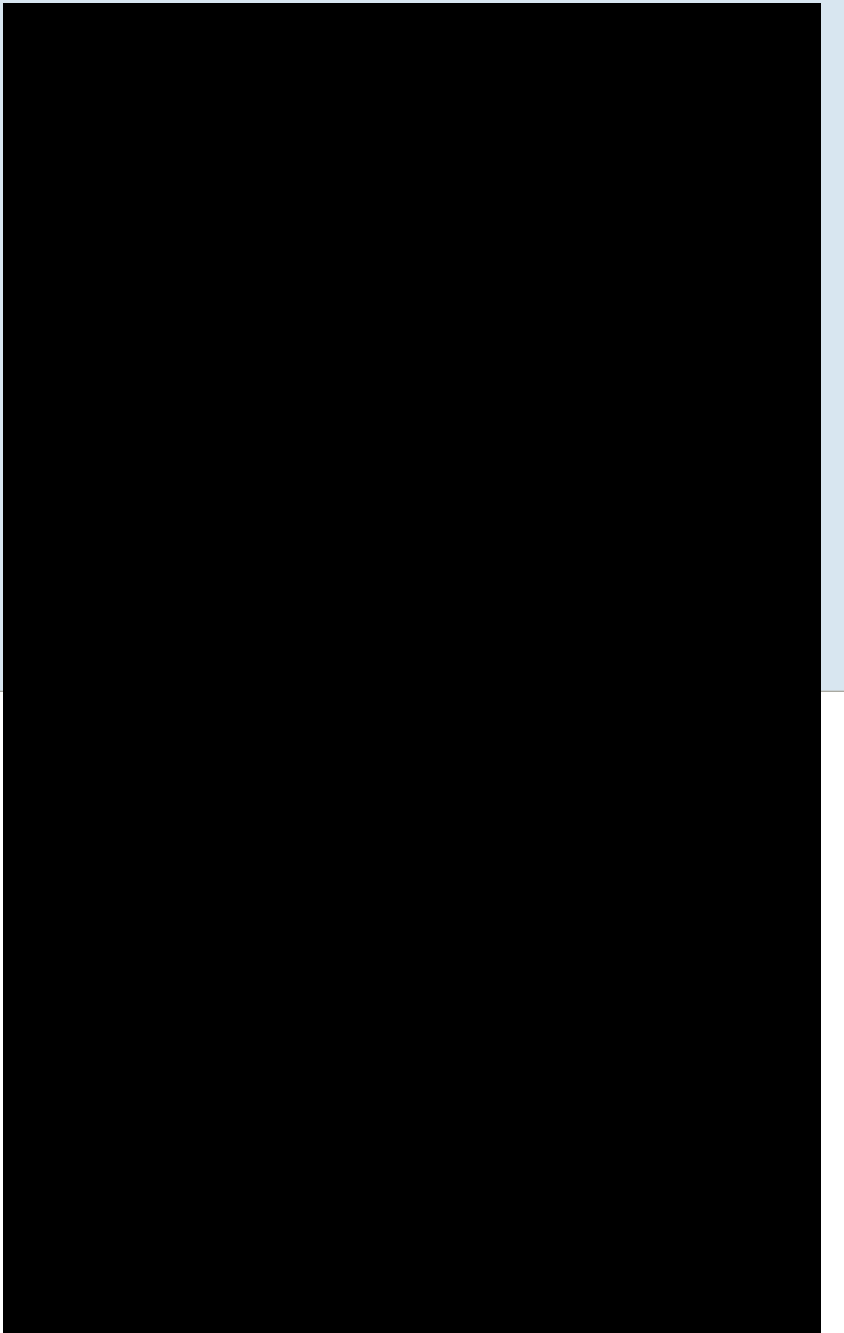
Appendix B

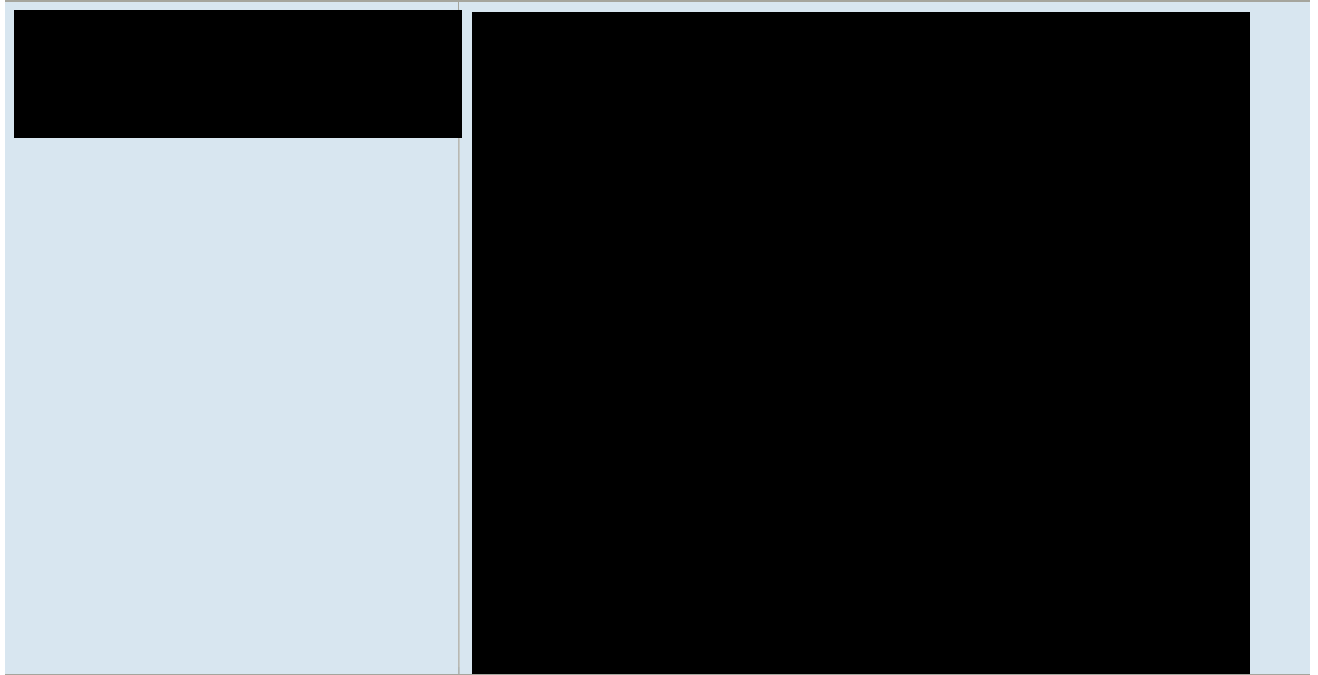


BAT EMERGENCE LOCATIONS AND
FLIGHT PATHS

Bat emergence locations and flight paths

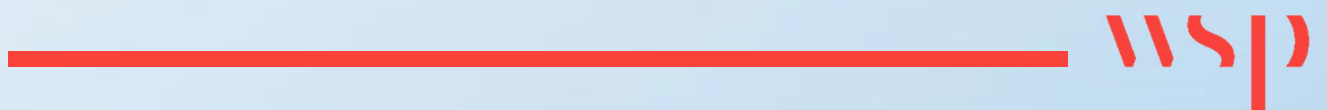


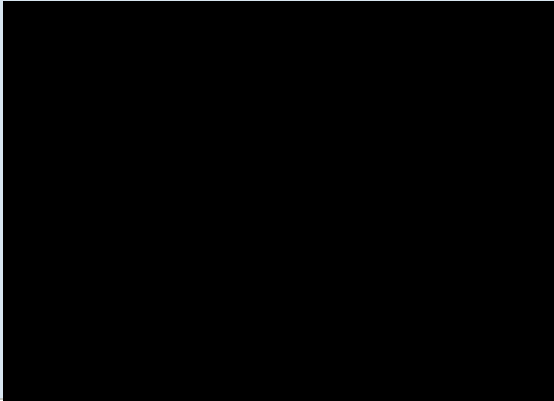
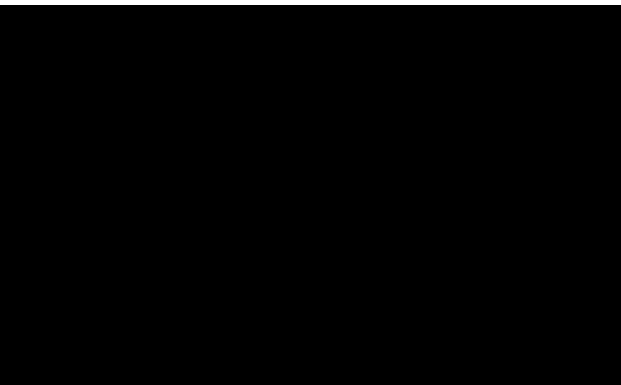
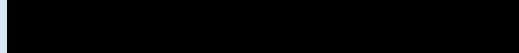
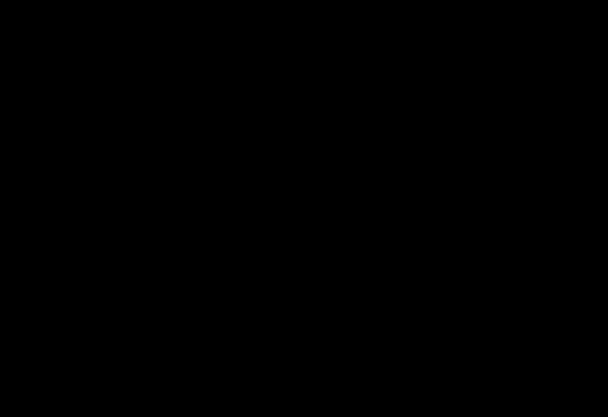
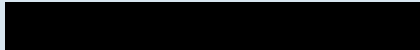
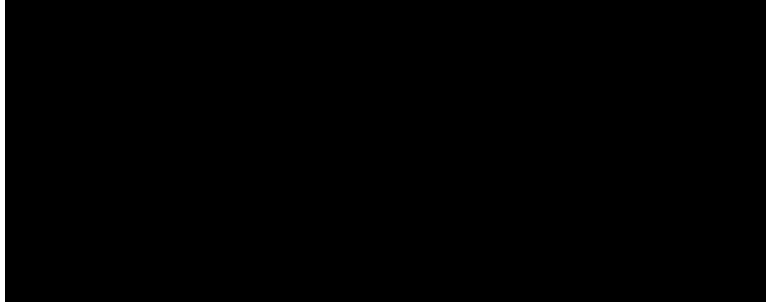
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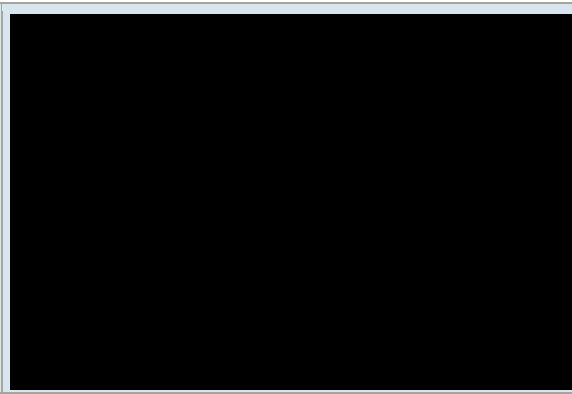
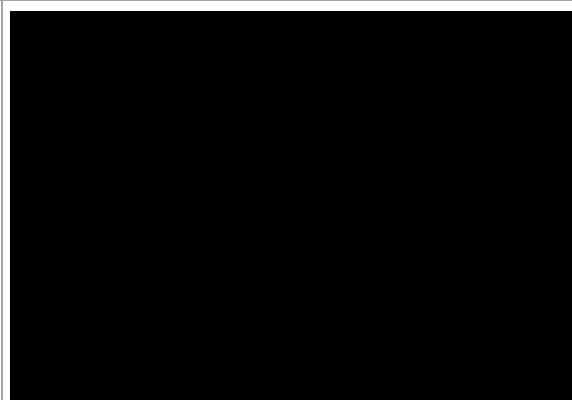

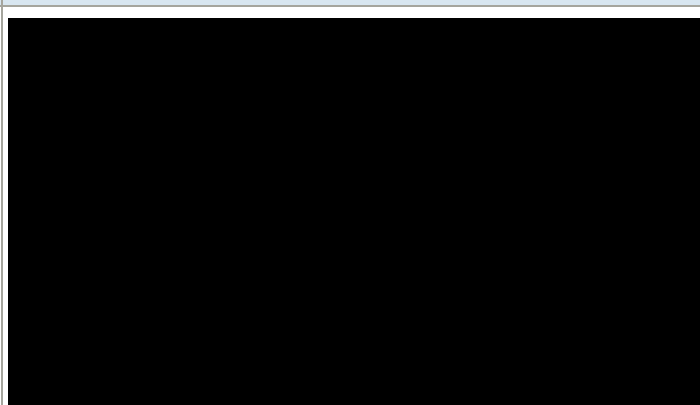


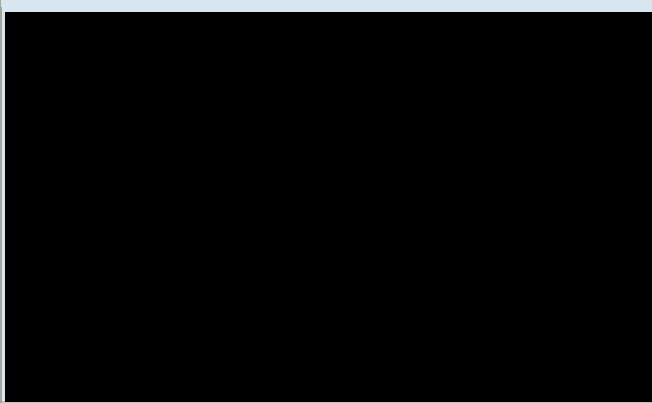

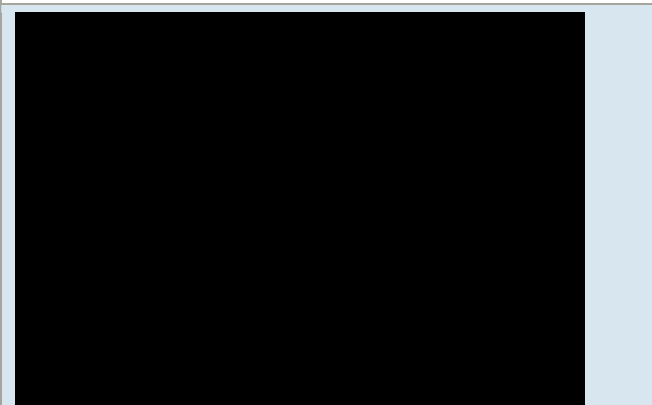
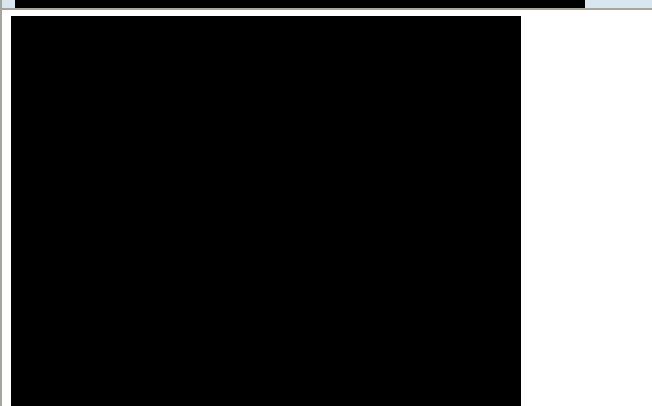
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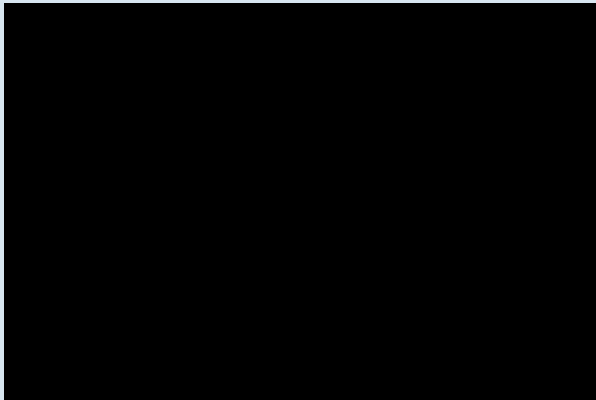
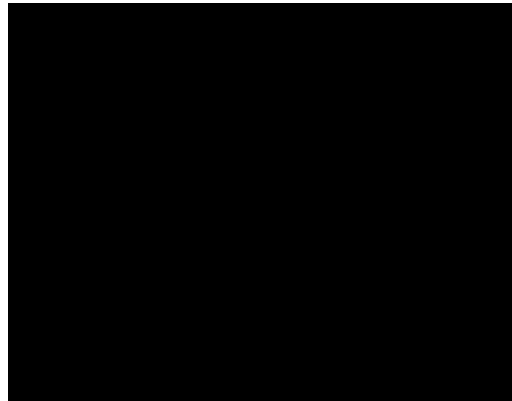

IMAGES OF STRUCTURES
SURVEYED



Structure reference	Image	Description
1		10550 - Dwelling house
Additional - Structure (opposite Structure 1)		<p>No access therefore not inspected- see Limitations section comment 3.1.2.</p> <p>This stable was identified during the assessment of Structure 1 (above), and is likely to have suitable features for bats</p>
2		10550 – Dog kennel
3		10900 - Dwelling house
4		10900 - Shed/workshop
5		10375 - Dwelling house

6		10375 - Shed in garden
7		10375 - Shed in garden next to boundary wall
8		10375 - Shed on western side small copse near field. Flat-roofed timber shed with timber weatherboarding to 2m in height
9		11250 - Garden shed 1

10		11250 - Garden shed 2
11		11235 - Timber-framed structure 1
12		11235 - Timber-framed structure 2
13		11235 - Timber-framed cabin

14		11235 - Timber-framed outbuilding
15		11765 – Derelict farm building 1
16	No photograph	11765 – Open farm building 2
17	No photograph	12275 – Derelict farm building
18		<p>One of the two bridge abutments that require a further survey. Dark void behind the corrugated sheet.</p> <p>Void inside abutment which may provide roosting opportunity</p>

			<p>Entrance to abutment void</p>
19	NOT SURVEYED		Bridge over railway

Appendix D



WEATHER CONDITIONS

Weather conditions throughout the emergence / re-entry surveys

Structure	Date	Temp (°C)		Cloud cover (Oktas)		Wind		Precipitation	
		Start	End	Start	End	Start	End	Start	End
1	23.8.18	20	18	4	1	4	3	0	0
3	24.8.18	17	16	0	6	0	0	0	0
5	29.8.17	24	22	7	7	0	2	0	0
8	29.8.17	26	21	6	4	0	1	0	0
11	30.8.17	16	15	7	8	5	6	2	3
12	30.8.17	17	14	8	7	4	5	3	1
13	30.08.17	17	15	8	6	4	4	2	1



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