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MAES-Y-DROLL

BREEDING BIRD SURVEY REPORT

Prepared for: **Stephenson Halliday**

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DRAWINGS

JN00777_DW01	Early May Breeding Bird Survey Map
JN00777_DW02	Late May Breeding Bird Survey Map
JN00777_DW03	Early June Breeding Bird Survey Map
JN00777_DW04	Late June Breeding Bird Survey Map
JN00777_DW05	Early July Breeding Bird Survey Map
JN00777_DW06	Late July Breeding Bird Survey Map

APPENDICES

Appendix 1	BTO Species Codes
Appendix 2	BTO Activity Codes

1. INTRODUCTION

Background

- 1.1 SK Environmental Solutions Ltd (SKE) was commissioned by Stephenson Halliday to undertake a suite of breeding bird surveys at Maes-Y-Droll Quarry, Graianrhyd, Denbighshire, to assess the usage of the site by breeding birds.

Definition of Terms

- 1.2 The term 'site' is used in this report to refer to the land within the red line boundary shown on Figure 1 below.



Figure 1. Site Location Plan

Site Description

- 1.3 The site is a currently inactive limestone quarry north of the village of Graianrhyd, Denbighshire, broadly comprising two parcels of land divided by a public bridleway. The main quarry area forms the larger, southern parcel while the smaller northern parcel

comprises an area of previously disturbed ground and includes several settling lagoons. The habitats across both parcels are varied, with areas of bare ground, colonising vegetation, scrub (particularly gorse), bracken and woodland, along with ponds / lagoons.

- 1.4 The surrounding landscape is dominated by agricultural grazing pasture with occasional areas of scrub and woodland. The larger Graig Quarry is located approximately 1km west of the site.

Aims and Objectives

- 1.5 The purpose of the surveys was to:

- Identify any notable bird species interacting with the site; and
- Identify important habitats present within and around the site for breeding bird species.

- 1.6 The instructed works therefore entailed:

- A suite of six breeding bird surveys of the site spanning the peak of the breeding bird season, covering the months of May, June and July; and
- The production of a breeding bird survey report and associated drawings to identify key species which may need to be sensitively considered as part of the works.

Development Proposal

- 1.7 Broad proposals are for the resumption of mineral extraction from the site.

2. LEGISLATION

- 2.1 All birds, their nests and eggs are protected in the UK under the Wildlife & Countryside Act 1981, as amended. This makes it an offence, with certain exceptions, to:
- Intentionally kill, injure or take any wild bird;
 - Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or
 - Intentionally take or destroy the egg of any wild bird.
- 2.2 Bird species listed under Schedule 1 of the Act (which includes species such as barn owl *Tyto alba* and peregrine falcon *Falco peregrinus* are afforded additional protection when breeding. It is an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building or is in, on or near a nest with eggs or young; or disturb the dependent young of such a bird. A total of 90 bird species are afforded Schedule 1 (with another six classed as Schedule 1 A) protection status. A Schedule 1 designation affords some level of increased protection for these species as the penalties for harming, disturbing or killing these species are greater than those covered only under the Wildlife and Countryside Act.
- 2.3 Section 7 - Species “of principal importance for the purpose of maintaining and enhancing biodiversity” are covered under Section 7 of the Environment (Wales) Act 2016 and therefore need to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity. A total of 51 species of bird in the UK are afforded this level of protection.
- 2.4 Birds of Conservation Concern - Commonly referred to as the UK Red List for birds, this is a review of the status of birds in the UK, Channel Islands and Isle of Man. Birds are assigned to the Red, Amber or Green lists of conservation concern, depending on population trends. Red List bird species are those that have met any of a number of criteria with regard to breeding or non-breeding decline in numbers of individuals either globally or across the UK. A total of 70 species of bird are included on the Red List, while 103 species are on the amber list.

- 2.5 UK BAP priority species were those that were identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). A total of 51 bird species is included within the UKBAP as of 2014.

3. METHODOLOGY

Field Survey

- 3.1 The methodology used for the survey work broadly adhered to a combination of the guidelines outlined by the British Trust for Ornithology (BTO) for Common Bird Census (CBC) and Breeding Bird Survey (BBS) methodologies.
- 3.2 A suitable transect route was drafted prior to the surveys from aerial imagery and existing knowledge of the site. This broadly comprised walking a loop within each of the parcels as far as could be accessed given the constraints of steep rocky ground and dense vegetation.
- 3.3 The transect route was walked at a steady pace, pausing briefly at intervals to listen for song and scan for birds moving / flying overhead, observing any birds present within the survey area or the habitats immediately adjacent.
- 3.4 All data collected was transferred onto a transect map and recording sheet. The data collected included:
- Species and corresponding BTO species code (Appendix 1 BTO Species Codes);
 - Number of birds;
 - Age (where possible);
 - Sex (where possible); and
 - Activity and corresponding BTO activity code (Appendix 2 BTO Activity Codes).
- 3.5 Six surveys were undertaken twice monthly in each of May, June and July, covering the peak of the breeding bird season. Surveys generally commenced at dawn or in the early morning, to coincide with the typical peak in bird activity through the day. In line with updated breeding bird survey guidelines, one of the surveys was undertaken during the evening, in order to pick up species not readily recorded during conventional morning surveys. As the site is not considered to contain extensive suitable habitat for such species, the evening survey was the final survey, conducted in late July.
- 3.6 Table 1 (below) summarises the survey information including date, the time survey was undertaken and the particular weather conditions on each occasion.

Table 1 - Survey Information			
Survey	Date	Time	Weather
1	07/05/2025	05:20	Largely clear, still 4 – 8C
2	20/05/2025	05:05	Drizzle, light air 8C
3	04/06/2025	04:45	Partly cloudy, light breeze 6 – 8C
4	18/06/2025	04:45	Clear, gentle breeze 10 – 14C
5	04/07/2025	04:55	Clear, light breeze, 10 – 13C
6	22/07/2025	19:20	Largely overcast, still 18C

3.7 Using the data collected during each survey, the following were produced:

- A comprehensive list of all bird species identified each month to provide a snapshot of species composition across the site; and
- A drawing for each month identifying bird activity across the site to provide an overview of the habitats being utilised by bird species, enabling areas considered to be of particular importance to be identified.

Limitations

3.8 The transect route was designed to provide as complete coverage of the site as safely possible given the access constraints posed by steep ground and dense vegetation. While it is not considered that any areas of the site were poorly covered, inevitably some areas of the site could be observed more clearly than others.

Personnel and Equipment

3.9 All survey work was carried out by experienced bird surveyors, using suitable viewing equipment (binoculars / scopes etc).

4. RESULTS

4.1 In total forty-eight species were identified during the transect surveys. This comprised eight Welsh red list species, eleven amber list species, twenty-seven green list species and two introduced species. Table 2 (below) lists all bird species that were recorded during the surveys, as well as their protected statuses.

4.2 Full survey results tables can be provided upon request.

Common Name	Latin Name	Schedule 1	S7	Annex I	BoCC	Max count of per survey
Blackbird	<i>Turdus merula</i>				Green	19 (Late May)
Blackcap	<i>Sylvia atricapilla</i>				Green	10 (Late May)
Blue tit	<i>Cyanistes caeruleus</i>				Green	9 (Late June)
Bullfinch	<i>Pyrrhula pyrrhula</i>		✓		Amber	1 (Early May / Late May / Late June)
Buzzard	<i>Buteo buteo</i>				Green	1 (Early May / Late June)
Canada goose	<i>Branta canadensis</i>				N/A	1 (Early May / Late May / Early June / Late July)
Carrion crow	<i>Corvus corone</i>				Green	3 (Early July)
Chaffinch	<i>Fringilla coelebs</i>				Green / Amber*	5 (Late May)
Chiffchaff	<i>Phylloscopus collybita</i>				Green	23 (Early June / Late June)
Coal tit	<i>Periparus ater</i>				Green / Amber*	2 (Late May)
Collared dove	<i>Streptopelia decaocto</i>				Green	2 (Early June)
Common whitethroat	<i>Sylvia communis</i>				Amber / Red*	4 (Late May)
Coot	<i>Fulica atra</i>				Green / Amber*	5 (Early May)
Cuckoo	<i>Cuculus canorus</i>		✓		Red	1 (Late

Common Name	Latin Name	Schedule 1	S7	Annex I	BoCC	Max count of per survey
						May)
Dunnock	<i>Prunella modularis</i>		✓		Amber	6 (Early May / Late June)
Garden warbler	<i>Sylvia borin</i>				Green / Amber*	4 (Early May / Late June)
Goldcrest	<i>Regulus regulus</i>				Green / Red*	1 (Early May)
Goldfinch	<i>Carduelis carduelis</i>				Green	5 (Early July)
Grasshopper warbler	<i>Locustella naevia</i>		✓		Red	1 (Early June)
Great spotted woodpecker	<i>Dendrocopos major</i>				Green	1 (Early July)
Great tit	<i>Parus major</i>				Green	3 (Early June)
Grey heron	<i>Ardea cinerea</i>				Green / Amber*	1 (Early May)
Grey wagtail	<i>Motacilla cinerea</i>				Amber	1 (Early May)
House martin	<i>Delichon urbicum</i>				Red / Amber*	5 (Late July)
Jackdaw	<i>Coloeus monedula</i>				Green	1 (Late May / Early June / Late June / Late July)
Jay	<i>Garrulus glandarius</i>				Green	3 (Late July)
Linnet	<i>Linaria cannabina</i>		✓		Red	11 (Early July)
Little grebe	<i>Tachybaptus ruficollis</i>				Green	1 (Early May / Early July)
Long-tailed tit	<i>Aegithalos caudatus</i>				Green	4 (Late July)
Magpie	<i>Pica pica</i>				Green / Amber*	5 (Early June)
Mallard	<i>Anas platyrhynchos</i>				Amber / Green*	3 (Early May)
Meadow pipit	<i>Anthus pratensis</i>				Amber / Red*	1 (Early June / Late June)
Moorhen	<i>Gallinula chloropus</i>				Amber / Green*	1 (Early May / Late

Common Name	Latin Name	Schedule 1	S7	Annex I	BoCC	Max count of per survey
						May)
Pheasant	<i>Phasianus colchicus</i>				N/A	1 (Early May / Late May)
Redstart	<i>Phoenicurus phoenicurus</i>				Amber / Green*	1 (Late May)
Reed bunting	<i>Emberiza schoeniclus</i>		✓		Amber / Green*	1 (Late May / Early June)
Robin	<i>Erithacus rubecula</i>				Green	10 (Early May)
Rook	<i>Corvus frugilegus</i>				Amber / Red*	3 (Late May)
Sedge warbler	<i>Acrocephalus schoenobaenus</i>				Amber / Green*	1 (Early May)
Skylark	<i>Alauda arvensis</i>		✓		Red / Amber*	3 (Early May)
Song thrush	<i>Turdus philomelos</i>		✓		Amber / Green*	13 (Early June)
Stock dove	<i>Columba oenas</i>				Amber / Green*	1 (Late May)
Stonechat	<i>Saxicola rubicola</i>				Green	2 (Early May / Late July)
Swallow	<i>Hirundo rustica</i>				Green	5 (Early July)
Treecreeper	<i>Certhia familiaris</i>				Amber / Green*	1 (Early July)
Willow warbler	<i>Phylloscopus trochilus</i>				Amber / Red*	22 (Early May)
Woodpigeon	<i>Columba palumbus</i>				Amber / Green*	23 (Late July)
Wren	<i>Troglodytes troglodytes</i>				Amber / Green*	24 (Early July)

* Welsh Red List.

- 4.3 None of the species recorded are listed on Annex I of the European Birds Directive or Schedule 1 of the Wildlife and Countryside Act.
- 4.4 Eight species recorded during the surveys are listed in NERC Section 41 and as such are also considered to be species of “principal importance for the purpose of conserving biodiversity”: These species were:

- Bullfinch;
- Cuckoo;
- Dunnock;
- Grasshopper warbler;
- Linnet;
- Reed bunting;
- Skylark; and
- Song thrush.

4.5 The remaining species identified during the surveys are species that carry no specific designations, other than the general protection afforded to all nesting birds in the UK under the Wildlife and Countryside Act 1981.

5. DISCUSSION

Potential Impacts of the Works on Breeding Birds

- 5.1 The likely potential impacts upon breeding birds are the loss of habitat to facilitate the resumption of mineral extraction, as well as through disturbance resulting from these activities.

Species

- 5.2 Table 3 below, lists the species observed on or adjacent to site and assesses the likelihood of their breeding on site or within adjacent habitat likely to be affected by the works. Those categorised as possible comprise species for which the habitats present are considered to be sub-optimal, but could still breed in them, and species for which the habitat was suitable, but only had a single individual recorded on a single occasion during the surveys.

Table 3 – Likelihood of Breeding					
Common Name	Confirmed	Approximate No. of Nests	Probable	Possible	Unlikely
Blackbird			✓		
Blackcap			✓		
Blue Tit			✓		
Bullfinch				✓	
Buzzard					✓
Canada goose					✓*
Carrion crow					✓
Chaffinch			✓		
Chiffchaff			✓		
Coal tit				✓	
Collared dove				✓	
Common whitethroat			✓		
Coot	✓	2**			

Table 3 – Likelihood of Breeding					
Common Name	Confirmed	Approximate No. of Nests	Probable	Possible	Unlikely
Cuckoo				✓	
Dunnock			✓		
Garden warbler			✓		
Goldcrest				✓	
Goldfinch			✓		
Grasshopper warbler				✓	
Great spotted woodpecker				✓	
Great tit				✓	
Grey heron					✓
Grey wagtail					✓
House martin					✓
Jackdaw				✓	
Jay				✓	
Linnet			✓		
Little grebe				✓	
Long-tailed tit			✓		
Magpie				✓	
Mallard				✓	
Meadow pipit				✓	
Moorhen				✓	
Pheasant				✓	
Redstart				✓	
Reed bunting				✓	
Robin			✓		

Table 3 – Likelihood of Breeding					
Common Name	Confirmed	Approximate No. of Nests	Probable	Possible	Unlikely
Rook					✓
Sedge warbler				✓	
Skylark				✓	
Song thrush			✓		
Stock dove				✓	
Stonechat			✓		
Swallow					✓
Treecreeper				✓	
Willow warbler			✓		
Woodpigeon			✓		
Wren			✓		

*bird apparently on nest in early May, but no chicks seen subsequently. ** likely two broods of same pair.

5.3 Table 3 identifies a total of forty-eight species of which:

- eighteen species considered to probably, or definitely, have bred within, or within the margins of, the site during the 2025 breeding season;
- twenty-two species which may possibly have done so; and
- eight which are considered unlikely to have done so.

5.4 Of the eighteen species considered to have probably bred on site in 2025, ten are on the Welsh green list with no additional designations. These species are currently considered to be common, breed widely across the UK and have relatively stable populations.

5.5 In addition to these, three amber list species (chaffinch, coot and garden warbler) with no additional designations are also considered to be common and widespread breeding species.

Common whitethroat

- 5.6 Up to four common whitethroat were observed holding territory on site, primarily within the scrub and bracken of the northern site parcel.
- 5.7 While significant habitat changes will occur on site with the resumption of mineral extraction, it is considered likely that areas of scrub over disturbed ground in which this species prospers will be present within the site boundary. The number of breeding pairs would be expected to fluctuate over this period, but a population of common whitethroat will likely sustain for longer than if the habitats currently present succeeded naturally.

Dunnock

- 5.8 A peak count of six dunnock recorded across the site during the breeding bird surveys. Given the size of the site and the habitat present, such a population is not considered to be notable or significant.
- 5.9 Despite being NERC listed, dunnock is a common and widespread species, both locally and nationally, and the potential loss of breeding habitat on site is not considered likely to result in a significant impact upon the local dunnock breeding population.

Linnet

- 5.10 Linnet were recorded on site throughout the survey season, with a count of four singing birds in early June the highest of the period. The species tended to be more frequently recorded within the northern site parcel.
- 5.11 Given the extent of gorse-dominated scrub on site, a higher population of linnet than has been identified might reasonably have been expected, particularly within the southern site parcel. While the extent of such habitat will be reduced through the resumption of mineral extraction, the relatively low numbers recorded during the survey period do not suggest that the species is currently limited by the availability of suitable nesting habitat. However, it is still expected that numbers would reduce from their current level. Similarly to common whitethroat, natural habitat succession would progressively reduce the suitability of the site for linnet over time. Therefore, the sustaining of a partially reduced population of linnet for a longer period of time may be considered to be an improved outcome for the species rather than a 'do nothing' scenario.

Song thrush

- 5.12 A peak count of thirteen song thrush were observed during the early June survey. The habitats on site are considered to be ideal for song thrush and this supports healthy breeding population of song thrush.
- 5.13 While it is considered that some habitat suitable for song thrush will be maintained throughout the extraction period and following the restoration of the quarry, this is likely to support a breeding population smaller than that currently present. However, should the habitats currently present on site naturally succeed, it is likely that these changes in habitat would lead to a reduction in the breeding population of song thrush in any case.

Willow warbler

- 5.14 Willow warbler were regularly recorded on site, with a peak of twenty-two singing birds during the early May survey. While the species is on the Welsh red list, the population estimates presented in Hughes *et al.* (2021) places willow warbler in the top ten most abundant species in Wales. Numerous willow warbler would therefore be expected on a site with an extensive mix of scrub and woodland habitat.
- 5.15 As the extent of this habitat will be reduced should mineral extraction resume, it is highly likely that the breeding population of willow warbler supported by the site will be reduced accordingly. Indeed, it is unlikely post-restoration that a population of the size currently present would be supported. While the number of willow warblers present would be expected to naturally reduce as the habitats succeed, it is considered that the reduction resulting from resumed extraction will likely be greater.

Notable 'Possible' Breeders

- 5.16 Amongst the species listed as possible breeders, on account of only being recorded on site infrequently and/or in low numbers are S7 listed species bullfinch, cuckoo, grasshopper warbler, reed bunting and skylark. While the presence of any one of these species in low numbers may not be significant in its own right, in combination, particularly alongside the species already listed, they are reflective of the relatively large and diverse assemblage of breeding birds, particularly passerines, supported on site.
- 5.17 This is considered to be a consequence of the mosaic of bracken, scrub, woodland and wetland habitats currently present on the site which provide an array of different niches which favour different species in different areas. While the extent of such habitats will be

reduced during the extraction period, it is considered that a well-designed restoration scheme factoring in the creation of areas of open water, wetland, scrub and woodland can provide a similarly diverse set of niches and support a good assemblage of breeding birds, even if the species composition differs from that currently present.

6. RECOMMENDATIONS

- 6.1 Overall, it is considered that the habitats present on site provide widespread suitable breeding habitat for a relatively high number of species, albeit primarily common passerine species. Of the forty-eight species recorded, forty are assessed as being confirmed, probable or possible breeders, reflecting the attraction that large areas of habitat largely undisturbed by humans or livestock for a period of years provide to wild birds. It is considered that it is the combination of wetland, scrub and woodland habitats, rather than any one habitat in particular, which give the site its value for breeding birds.
- 6.2 Inevitably, the resumption of mineral extraction from the site will lead to a reduction in suitable nesting habitat and increase the levels of disturbance experienced by the birds which remain. However, it is considered that areas of each habitat type will remain present throughout the extraction period and will continue to support an assemblage of breeding birds, albeit reduced from that currently present.
- 6.3 Once mineral extraction ceases, any subsequent restoration would be of greatest benefit to breeding birds by seeking to establish a similar habitat mosaic to that currently present, with a mix of open water, marginal wetlands, scrub and woodland habitats. Restoration schemes such as have been repeatedly successfully established in the UK and, as such, the feasibility of such habitats is considered to be high. This combination of habitats could reasonably be expected to support a diverse assemblage of breeding bird species akin to that currently present on site.
- 6.4 In order to prevent impacts upon nesting birds, any vegetation or habitat clearance works should be commenced outside of the breeding bird season (March – August inclusive).
- 6.5 Should this not be possible, an Ecological Clerk of Works (ECoW) should be present to search that vegetation prior to its removal, to ensure any nests are protected. If nests are found, clearance of surrounding vegetation cannot take place, and nearby disturbance kept to a minimum, until the chicks have fledged. It should be noted that with more impenetrable areas of habitat such as the scrub present on site, the efficacy of an ECoW nest search will be reduced and, consequently, clearance occurring outside of the breeding season should be preferred as far as is possible.
- 6.6 The following advice should be adhered to at all times:

The Wildlife and Countryside Act 1981 states that, it is an offence for any person to intentionally (subject to Provisions of this Part) -

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird whilst it is in use or being built; or
- take or destroy an egg of any wild bird.

7. REFERENCES

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APPENDIX 1

BTO SPECIES CODES

AC	Arctic Skua	GA	Gadwall	LE	Long-eared Owl	SM	Sand Martin
AE	Arctic Tern	GX	Gannet	LT	Long-tailed Tit	SS	Sanderling
AV	Avocet	GW	Garden Warbler	MG	Magpie	TE	Sandwich Tern
BO	Barn Owl	GY	Garganey	MA	Mallard	VI	Savi's Warbler
BY	Barnacle Goose	GC	Goldcrest	MN	Mandarin Duck	SQ	Scarlet Rosefinch
BA	Bar-tailed Godwit	EA	Golden Eagle	MX	Manx Shearwater	SP	Scaup
BR	Bearded Tit	OL	Golden Oriole	MR	Marsh Harrier	CY	Scottish Crossbill
BS	Berwick's Swan	GF	Golden Pheasant	MT	Marsh Tit	SW	Sedge Warbler
BI	Bittern	GP	Golden Plover	MW	Marsh Warbler	NS	Serin
BK	Black Grouse	GN	Goldeneye	MP	Meadow Pipit	SA	Shag
TY	Black Guillemot	GO	Goldfinch	MU	Mediterranean Gull	SU	Shelduck
BX	Black Redstart	GD	Goosander	ML	Merlin	SX	Shorelark
BJ	Black Tern	GI	Goshawk	M.	Mistle Thrush	SE	Short-eared Owl
B.	Blackbird	GH	Grasshopper Warbler	MO	Montagu's Harrier	SV	Shoveler
BC	Blackcap	GB	Great Black-backed Gull	MH	Moorhen	SK	Siskin
BH	Black-headed Gull	GG	Great Crested Grebe	MS	Mute Swan	S.	Skylark
BN	Black-necked Grebe	ND	Great Northern Diver	N.	Nightingale	SZ	Slavonian Grebe
BW	Black-tailed Godwit	NX	Great Skua	NJ	Nightjar	SN	Snipe
BV	Black-throated Diver	GS	Great Spotted Woodpecker	NH	Nuthatch	SB	Snow Bunting
BT	Blue Tit	GT	Great Tit	OP	Osprey	ST	Song Thrush
BU	Bluethroat	GE	Green Sandpiper	OC	Oystercatcher	SH	Sparrowhawk
BL	Brambling	G.	Green Woodpecker	PX	Peafowl/Peacock	AK	Spotted Crane
BG	Brent Goose	GR	Greenfinch	PE	Peregrine	SF	Spotted Flycatcher
BF	Bullfinch	GK	Greenshank	PH	Pheasant	DR	Spotted Redshank
BZ	Buzzard	H.	Grey Heron	PF	Pied Flycatcher	SG	Starling
CG	Canada Goose	P.	Grey Partridge	PW	Pied Wagtail	SD	Stock Dove
CP	Capercaillie	GV	Grey Plover	PG	Pink-footed Goose	SC	Stonechat
C.	Carrion Crow	GL	Grey Wagtail	PT	Pintail	TN	Stone-curlew
CW	Cetti's Warbler	GJ	Greylag Goose	PO	Pochard	TM	Storm Petrel
CH	Chaffinch	GU	Guillemot	PM	Ptarmigan	SL	Swallow
CC	Chiffchaff	FW	Guineafowl (Helmeted)	PU	Puffin	SI	Swift
CF	Chough	HF	Hawfinch	PS	Purple Sandpiper	TO	Tawny Owl
CL	Cirl Bunting	HH	Hen Harrier	Q.	Quail	T.	Teal
CT	Coal Tit	HG	Herring Gull	RN	Raven	TK	Temminck's Stint
CD	Collared Dove	HY	Hobby	RA	Razorbill	TP	Tree Pipit
CM	Common Gull	HZ	Honey Buzzard	RG	Red Grouse	TS	Tree Sparrow
CS	Common Sandpiper	HC	Hooded Crow	KT	Red Kite	TC	Treecreeper
CX	Common Scoter	HP	Hoopoe	ED	Red-backed Shrike	TU	Tufted Duck
CN	Common Tern	HM	House Martin	RM	Red-breasted Merganser	TT	Turnstone
CO	Coot	HS	House Sparrow	RQ	Red-crested Pochard	TD	Turtle Dove
CA	Cormorant	JD	Jackdaw	FV	Red-footed Falcon	TW	Twite
CB	Corn Bunting	J.	Jay	RL	Red-legged Partridge	WA	Water Rail
CE	Corncrake	K.	Kestrel	NK	Red-necked Phalarope	W.	Wheatear
CI	Crested Tit	KF	Kingfisher	LR	Redpoll (Lesser)	WM	Whimbrel
CR	Crossbill (Common)	KI	Kittiwake	RK	Redshank	WC	Whinchat
CK	Cuckoo	KN	Knot	RT	Redstart	WG	White-fronted Goose
CU	Curlew	LM	Lady Amherst's Pheasant	RH	Red-throated Diver	WH	Whitethroat
DW	Dartford Warbler	LA	Lapland Bunting	RE	Redwing	WS	Whooper Swan
DI	Dipper	L.	Lapwing	RB	Reed Bunting	WN	Wigeon
DO	Dotterel	TL	Leach's Petrel	RW	Reed Warbler	WT	Willow Tit
DN	Dunlin	LB	Lesser Black-backed Gull	RZ	Ring Ouzel	WW	Willow Warbler
D.	Dunnock	LS	Lesser Spotted Woodpecker	RP	Ringed Plover	OD	Wood Sandpiper
EG	Egyptian Goose	LW	Lesser Whitethroat	RI	Ring-necked Parakeet	WO	Wood Warbler
E.	Eider	LI	Linnet	R.	Robin	WK	Woodcock
FP	Feral Pigeon	ET	Little Egret	DV	Rock Dove (not feral)	WL	Woodlark
ZL	Feral/hybrid goose	LG	Little Grebe	RC	Rock Pipit	WP	Woodpigeon
ZF	Feral/hybrid mallard type	LU	Little Gull	RO	Rook	WR	Wren
FF	Fieldfare	LO	Little Owl	RS	Roseate Tern	WY	Wryneck
FC	Firecrest	LP	Little Ringed Plover	RY	Ruddy Duck	YW	Yellow Wagtail
F.	Fulmar	AF	Little Tern	RU	Ruff	Y.	Yellowhammer

If you are not submitting your data electronically using BBS-Online, please return your Field Recording Sheets to your Regional Organiser with your other BBS forms. If you would like to submit your results on BBS-Online, please inform your RO, then visit www.bto.org/bbs.

APPENDIX 2

ECN Protocols for Standard Measurements at Terrestrial Sites

BI (BB/BC/BM) Protocols

Note 3 BTO bird activity map symbols

(Sheet reproduced from BTO instructions for CBC recorders)

This standard list of conventions is designed for clear and unambiguous recording. Symbols can be combined where necessary. Additional activities of territorial significance, such as display or mating, should be noted using an appropriate clear abbreviation.

CH, CH ♂ [↗] CH ♀ [↘]	Chaffinch sight records, with age, sex or number of birds if appropriate.
3Chjuve, CH2♀ [↗] 1 ♀	Use CH ♀ [↗] to indicate one pair of Chaffinches, so that: 2CH♀ [↗] means two pairs together.
R fam	Juvenile Robins with parent(s) in attendance
<u>R</u>	A calling Robin
<u><u>R</u></u>	A Robin repeatedly giving alarm calls or other vocalisations (not song) thought to have strong territorial significance
(R)	A Robin in song
	An aggressive encounter between two Robins
*R	An occupied nest of Robins. Do not mark unoccupied nests, which are not of territorial significance by themselves
* BT	Blue tits nesting in a specially provided site. Please remember to use this special symbol for a nest in a nestbox.
*PW on	Pied Wagtail nest with adult sitting
PW mat	Pied Wagtail carrying nest material
PW food	Pied Wagtail carrying food

Movements of birds can be indicated by an arrow using the following conventions:

———— <u>GR</u> ———→	A calling Greenfinch flying over (seen only in flight)
(D) ———→	A singing Dunnock, perched then flying away (not seen to land)
————→ B.♂ [↗]	A male blackbird flying in and landing (first seen in flight)
WR ———→ WR	A Wren moving between two perches. The solid line indicates that it was definitely the same bird .

The following conventions indicate which registrations relate to different, and which to the same individual birds. Their proper use will be essential for the accurate assessment of clusters.

(WR) ----- (WR)	Two Wrens in song at the same time, i.e. definitely different birds. The dotted line indicates a simultaneous registration (or contemporary contact) and is of very great value in separating territories.
-----------------	--

- * *
- LI LI Two Linnet nests occupied simultaneously, and thus belonging to different pairs. This is another example of the value of dotted lines. Only adjacent nests need to be marked in this way.
- (CK) — (CK) The solid line indicates that the registrations definitely refer to the same bird.
- (SD) — ? — (SD) This question-marked solid line indicates that the registrations relate to probably the same bird. This convention is of particular use when your census route brings you back past an area already covered - it is possible to mark new positions of (probably the same) birds recorded before, without risk of double-recording. If you record birds without using the question-marked solid line, over-estimation of territories will result.
- (WR)
- WR mat No line joining the registrations - it will be assumed that the birds are probably different, but depending on the pattern of other registrations they may be treated as if only one bird was involved. (You may if you wish use a question-marked dotted line, indicating that the registrations were almost certainly of different birds.)
- C*
- C* Where adjacent nests are marked without a line, it will often be assumed that they were in first and second broods, or a replacement nest following an earlier failure.

DRAWINGS

KEY:

 Survey Area

Birds

 Male

 Female

 Pair

 Aggressive Interaction

 Alarm Calling

 Calling

 Singing

 BTO Code

 Map Codes

 Flight Line

 Different Individuals

SITE: Maes-Y-Droll

CLIENT: Stephenson Halliday

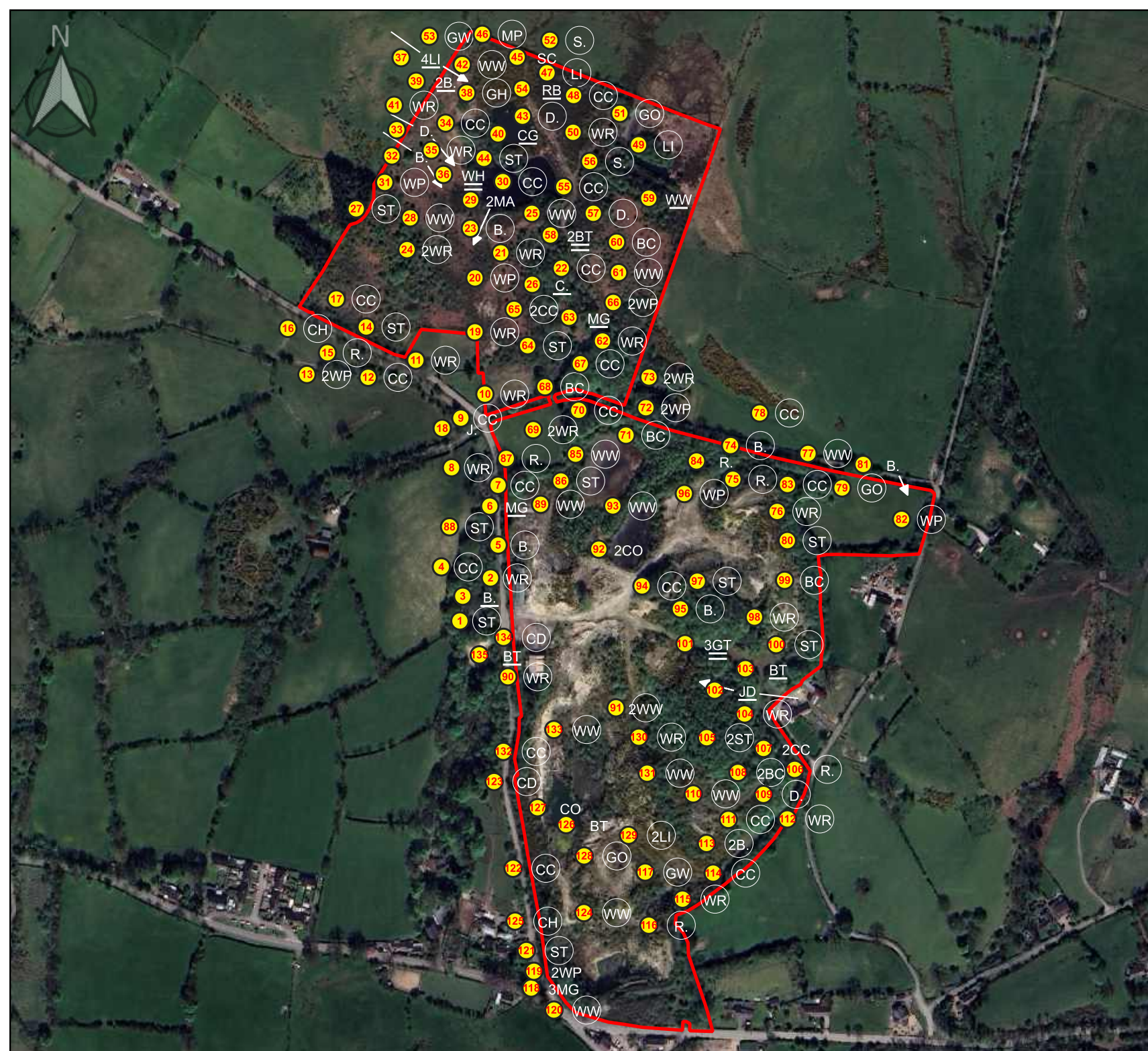
JOB NUMBER: JN00777

DRAWING NUMBER: JN00777_DW02

DATE: October 2025

DRAWN/CHECKED: JW / MK

SCALE: NTS



DRAWING TITLE: Early June BBS Map

KEY:

 Survey Area

Birds

Male

Female

 Pair Aggressive Interaction

Alarm Calling

Calling

☐ Singing

AB	BTO Code
----	----------

1 Map Codes

→ Flight Line

--- Different Individuals

SITE: Maes-Y-Droll

CLIENT: Stephenson Halliday

JOB NUMBER: JN00777

DRAWING NUMBER: JN00777_DW03

DATE: October 2025

DRAWN/CHECKED: JW / MK

SCALE: NTS



KEY:

 Survey Area

Birds

 Male

 Female

 Pair

 Aggressive Interaction

 Alarm Calling

 Calling

 Singing

 BTO Code

 Map Codes

 Flight Line

 Different Individuals

SITE: Maes-Y-Droll

CLIENT: Stephenson Halliday

JOB NUMBER: JN00777

DRAWING NUMBER: JN00777_DW04

DATE: October 2025

DRAWN/CHECKED: JW / MK

SCALE: NTS

KEY:

 Survey Area

Birds

 Male

 Female

 Pair

 Aggressive Interaction

 Alarm Calling

 Calling

 Singing

AB BTO Code

 Map Codes

 Flight Line

 Different Individuals

SITE: Maes-Y-Droll

CLIENT: Stephenson Halliday

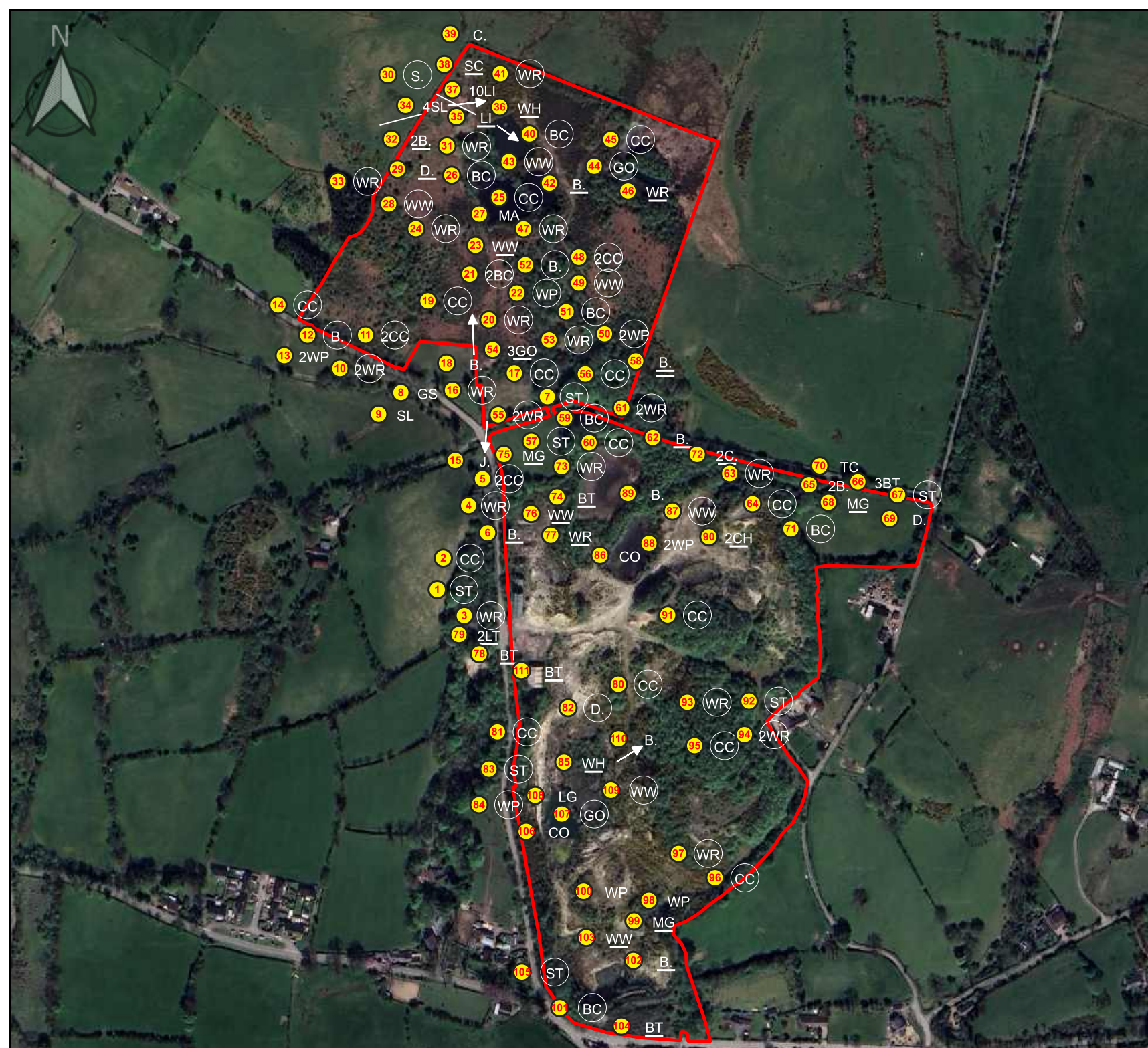
JOB NUMBER: JN00777

DRAWING NUMBER: JN00777_DW05

DATE: October 2025

DRAWN/CHECKED: JW / MK

SCALE: NTS



KEY:

 Survey Area

Birds



Male



Female



Pair

Aggressive Interaction



Alarm Calling

Calling

Singing

AB BTO Code

1 Map Codes



▶ Flight Line

- Different Individuals

SITE: Maes-Y-Droll

CLIENT: Stephenson Halliday

JOB NUMBER: JN00777

DRAWING NUMBER: JN00777_DW06

DATE: October 2025

DRAWN/CHECKED: JW / MK

SCALE: NTS



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