Skylark Mitigation Plan

Land at Engine Lane, Grimethorpe, Barnsley, South Yorkshire S72 7BN

Enviromena Project Management UK ltd

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1.0 Introduction and Context

Arbtech Consulting Ltd. was commissioned by Enviromena Project Management ltd to produce a Skylark Mitigation Plan for site Land at Engine Lane, Grimethorpe, Barnsley, South Yorkshire S72 7BN. This is required to inform for the construction of solar farm at the existing arable and pasture field site.

The site is located at its centre at National Grid Reference SE 40243 09215 and has an area totalling approximately 90ha split into four parcels of land comprising of worked arable fields, hedgerows, scattered trees, hard standing and scattered buildings and pasture fields. It is surrounded by agricultural and arable fields, scattered trees and residential developments located to the east and west.

The proposed works will see a temporary complete disruption to all the fields during installation and the change of land use. This could disrupt skylark nesting, destroy active nests and not provide suitable habitat for continued nesting post-construction

Consideration of the requirements of Skylark at both the population and individual level will be discussed, with the most up-to date research utilised to ensure a deliverable, bespoke strategy which can be successfully implemented to secure the long-term persistence of the species at the site

1.1 Survey Background

A Preliminary Ecological Survey was conducted by Arbtech Consulting Ltd in 2023 and identified the arable farmland areas as suitable breeding habitat for skylark birds. This was followed by full breeding bird surveys, also conducted by Arbtech Consulting in 2025. This involved 6 visits between March and July 2025. Skylarks were recorded within the first three site visits between March and early May, with breeding activity observed. However, from the end of May to early July, no further skylark activity was recorded. This could be due to crop height at this point, making the site unsuitable for further broods.

They were not in abundance, with only 5 territories noted in the 90ha landscape. These territories were in the arable-use fields, and the modified grassland fields in the centre of the site had no skylark activity at all. This site was considered not a significant skylark population. A map showing skylark breeding areas is noted in Appendix 1. However, all territories will be affected by the proposed works.

A Skylark Mitigation Plan has been produced to specify mitigation, compensation and enhancement for skylarks for the site pre- and post-development

2.0 Background of Skylark ecology

The Skylark is a bird of open countryside in the UK, inhabiting open habitats in both upland and lowland areas and can be found throughout the UK.

This species is known as a multi-brood species and in good seasons, may have as many as four different broods in the year. One to two broods are the average expectance.

Courtship and establishment of nesting territories can begin in February if weather conditions are suitable that year. More so in the south of the UK, where the climate improves sooner than in the north. The main nesting period for this species is April-July, with first eggs typically laid mid-May.

The incubation period for this species is 12-14 days, and chicks remain at the nest for another 11-15 days before fledging. This is a short period and allows for multiple broods a year.

The female builds the nest alone, creating a thick layer of grass lined with finer vegetation in an excavated scrape or natural depression on the ground.

The species is best described as a generalist in terms of diet; during the winter, Skylarks form small groups and are frequently found foraging in set-aside fields or stubble for grain (Gillings et al., 2005). Cereal stubble fields and fields that lack any boundary features, such as dense hedgerows and trees, are the most optimal forging habitats. (Geiger et al., 2013))

However, during breeding periods, invertebrate populations are required in order to support chick development. Field margins (Ottens et al., 2014) and undrilled or wide-spaced rows support a higher density of prey items (Smith et al., 2009). Access to areas where levels of invertebrate prey are consistent throughout the breeding season has been shown to be a key feature to maximise skylark breeding successes (Puttmanns et al., 2022).

2.1- Habitat preference.

Skylark's habitat preference differs based on upland or lowland areas throughout the UK. Lowland skylarks' population preference is for arable farmlands, with cereal crops deemed to most important crop type, though pasture grazing land is known to be utilised at times.

However, more recent trends of modern agriculture of winter-sown cereal crops' growth during the spring period would increase the crop height faster and earlier than spring-sown crops. This causes winter-sown crops to grow more than 60cm faster. As skylarks do not nest in taller crops, this can reduce nesting success, increase predation risks and lead to abandonment of the site later in the season. This could also reduce the success rate of the number of broods, and may limit skylarks to just one or two broods a year, rather than three or four.

Another option skylarks will undertake is to seek out bare patches with the taller winter crops, such as access tramlines. This puts nests at risk of destruction when agricultural vehicles return to crop maintenance, throughout the years. Being in close proximity to taller crop height within narrow tramways is also at higher risk of predation as this is easily ambushed.

Skylarks also prefer a crop height area of 20-50cm surrounding the nest sites, though the nest site itself should be as close to bare ground as possible.

Skylarks have been known to use pasture fields, heathlands, and lowland marshes, but population densities are often lower than in arable farming landscapes.

Skylarks in upland areas are known to use a range of habitat types, with main preference areas being open moorland and bogs.

Skylarks also have a preference to be in areas which either have no boundary features or low boundary features. (Wilson et al., 1997) In fields where features are present, nesting locations are best situated 30-50m away from boundary features. Skylarks do not like to be overshadowed by taller features.

2.2- Conservation Status.

In the UK, the breeding population decreased between 1970 and 2013 by 60% (Hayhow et al., 2015). There is also a recorded 9% decrease between 1995-2023 (BTO 2025). There are an estimated 1.6 million territories remaining in the UK (Harris et al., 2022). Due to conservation efforts, some areas have seen a slight recovery of populations since 2015, but the species is still at high risk. There has been a 1.9% reduction in distribution for this species as well (BTO 2025)

Due to the declines, the species is now listed as a Red-listed species on the Bird of Conservation Concern. Species on the red list are noted as of the most urgent conservation concern and should be a priority species of focus.

Skylarks are noted as one of the 19 species that make up the UK Farmland Bird Indicator Group.

Skylark is also listed under Annexe 1 of the Birds Directive (2009 as amended) and is a UK Biodiversity Action Plan (BAP) species as it is one of a number of species identified as being threatened and therefore requiring targeted conservation action to reverse the species declines.

This bird is noted as a bird of focus on the Barnsley Metropolitan Borough Council's BAP

2.3- Legislation

All breeding wild birds, including Skylark, are protected under the Wildlife and Countryside Act 1981 (as amended). Under the Wildlife and Countryside Act, a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. All birds, their nests and eggs are protected, and it is thus 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 whilst it is in use or being built;

- intentionally take or destroy the egg of any wild bird;

- have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954;

- have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954;

- use traps or similar items to kill, injure or take wild birds; and - have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations.

3.0 Mitigation

3.1- Objective-

The objective of the mitigation scheme is to create a suitable foraging habitat for Skylark in the locality of the site, compensating for the potential loss of Skylark territories within the development area.

The construction of the solar array on arable and grassland pasture farmland will reduce the available nesting habitat for skylarks.

Skylarks are deterred from locating their nest in areas that are directly overlooked by tall structures, both natural ones such as woods, mature trees and tall hedges and man-made ones such as buildings and, in this case, arrays of solar panels.

Though they may be deterred from nesting beneath solar arrays (Solar Energy UK, 2023) they will continue to forage there amongst the sown grassland (Shotton, 2018)

As a result of the nesting deterrence effect of structures, it is predicted that all of the skylark territories within the Proposed Solar Areas identified from the field survey will be initially lost/reduced. However, some two parcels of land within the site will be retained and enhanced for skylark nesting. This is in the most southwestern corner, and the southern end of the central parcel, as shown in **Appendix 2**

To mitigate this impact, options are being explored for habitat enhancements within parts of the Site to provide alternative nesting areas, as well as manage the landscape within the solar array to provide a key foraging area for surrounding skylark territories.

Land that remains is limited in its suitability for skylarks, this is due to the site having good quality tree and hedgerow boundaries that surround every field. As well as providing a few plots, the site will focus on creating good foraging quality habitat, not only to support skylarks at the site, but provide a key supporting foraging site for skylarks and other farmland species that may be nesting in the adjacent farmland.

3.2- Pre-development

Prior to and during the construction phase of the development, the following considerations will be adopted to reduce impacts to Skylarks and other birds breeding on site.

Timings of works- It is recommended that works are undertaken outside of the breeding season (March – August inclusive) to avoid the risk of committing an offence by damaging or destroying nests or young of birds actively breeding on site. Where groundworks cannot be undertaken outside of the breeding season, works should be subject to supervision or a nesting bird check by a qualified ecologist.

3.3- Supervision.

A requirement for an Ecological Clerk of Works (ECoW) will be needed if works are to be undertaken within the breeding season (March – August inclusive). The ECoW will be a suitably experienced person and will undertake a nesting bird check of all areas to be impacted – this includes areas suitable for ground-nesting birds such as Skylark. If any nests are located at this point, it is recommended that the position of these is made known to all on site, and that a suitable exclusion zone is installed to safeguard the nest is installed. The checks should be 48 hours prior to the start of work. If checks are undertaken too early, this leaves an opportunity for a new nest to establish.

Buffer zones for these species should be about 15-20m minimum, as ground nesting birds have a greater disturbance range due to exposure. If the birds show signs of distress and risk nest abandonment, this buffer should be increased.

3.4- Identification of Skylark suitable habitat within the site.

The results of the habitat survey and breeding bird surveys conducted at the site were reviewed to identify areas of suitable size, with as few deterrent boundary features as possible and areas with evidence of a current use by a low density of skylark (i.e., with the best potential for improvement) to provide skylark plots for supporting nesting pairs.

Identification of the mitigation areas for skylark, and, separately, of other habitat creation areas that will also be suitable for skylark but have not been created specifically for it. For example, areas of habitat are created at the site to fulfil Biodiversity Net Gain targets. While not created for skylarks in mind, these improvements could benefit skylarks, such as providing key invertebrate areas.

The most southwestern fields of the project will not be used for solar arrays and will be used as an area of land to include some skylark plots. The southern parcels of the central fields will also be set aside to create skylark plots.

4.0 Enhancements

Plots will be created in accordance with the RSPB's promoted guidance for farmers.

Optimal plots will be 30-50m away from any hedgerow boundary. Plots less than 30m will be suboptimal.

Suboptimal plots may still be used by skylarks but also provide alternative nesting areas for other farmland bird species that require short of bare ground for nesting, such as buntings and lapwings as well as foraging for rarer species like turtle doves that require bare ground near their nesting habitats for foraging.

Although neither of these species was recorded at the site, the provision of nesting plots and future management, as well as the provision of foraging habitats, could encourage future nesting of these species at the site

The location of land where plots will be established is noted in Appendix 2 as a result of the criteria. 4ha of land will be created in the northeastern corner and 6.5ha in the southwest

Each plot will be at least 3-4 m wide, will have a minimum area of 16 square metres, will not be connected to the tramlines and will be created by turning off the drill during sowing any grassland creation at the site. As shown in Figure 1 below. Alternatively, the plots can be ploughed and scoured to remove plants from the plots and return to bare soil.

A total of 20 plots will be provided in the south-western site, and an additional 15 plots will be created in the northeastern parcel. These will be systematically stationed as far apart from each other as possible, at a preferable rate of 2 per 0.5ha, to avoid clashing of territories. The majority of plots will focus on being within the optimal distance first, then work outwards.

Plots will be required to be maintained each year, and can be done by scouring or ploughing the plots yearly in December-January to reduce the establishment of ruderal and grasses.

Figure 1 Skylark plots in an arable field- Source Birdguides 2012

4.1- Management of site- grassland meadow.

The following requirements are needed to ensure that the compensation area of the site remains suitable for breeding Skylark for the duration of the solar scheme if maintained as a meadow under the BNG

- All land identified within the compensation areas are retained as meadow and grazing pastures must be managed for any appropriate conservation target- Such as BNG targets.
- Stocking density will be determined by the livestock type used, and the stock rate must not exceed the unit per ha ratios set out in Table 1.
- Livestock must not be present within the compensation or isolated skylark areas between 01 April and 01 June to maximise Skylark breeding success in this period.

- The impact of livestock density must be reviewed to avoid over- or under-grazing of areas. A matrix of short sward, longer grasses and areas of tussocky grassland provides the best opportunities for breeding and foraging birds, including Skylark. Cattle are the best livestock choice for this method.
- Re-surveying the site long-term after construction and the use of livestock will be undertaken to assess the success of skylark nesting and adjust accordingly.
- Wherever possible, any mechanical operations should be timed before or after the breeding season in fields with ground-nesting birds.
- If any areas within the compensation area are being cut, rather than grazed. This must not be cut between April- June, and any subsequent cuts after this, if required, must be at least seven weeks apart to enable the success of later nests.
- Hedgerows will be managed around the boundaries to ensure that the skyline remains mostly unbroken. Hedges will be cut between January and March to ensure that winter foraging opportunities for other species are not lost, and impacts to breeding birds utilising the hedges are avoided.

Livestock type	Livestock units per Ha
Cow and suckling calf	1.0
Cattle > 24 months	1.0
Cattle 6-24 months	0.6
Ewes/ Ewes with lambs	0.15

Table 1- Livestock density for conservation grazing methods- Source - FAS, 2017; KWT, 2012; DEFRA, 2022; EU 2009

4.3- Wider site management

As part of the overall site proposal, the site has undergone a BNG assessment by Arbtech Consulting ltd in 2024 , with those areas underneath the solar establishment will be planted and managed as meadow grassland. There are also proposed shrub planting areas, as well as hedgerows and shade-tolerant meadows in several areas of the site.

These will be managed under BNG to ensure they reach the required conditions over a 30-year period. The management of these meadows will create an invertebrate-rich habitat, and would serve as a vital and very large foraging area. An invertebrate population is vital for nesting, as skylark chicks rely on being fed invertebrates. Not only would this support skylarks nesting at the site, but also provide a key foraging area for skylarks and many other species that would be in the surrounding landscape.

This will also benefit hedgerow and tree nesting species at the site, by providing a higher quality invertebrate foraging area.

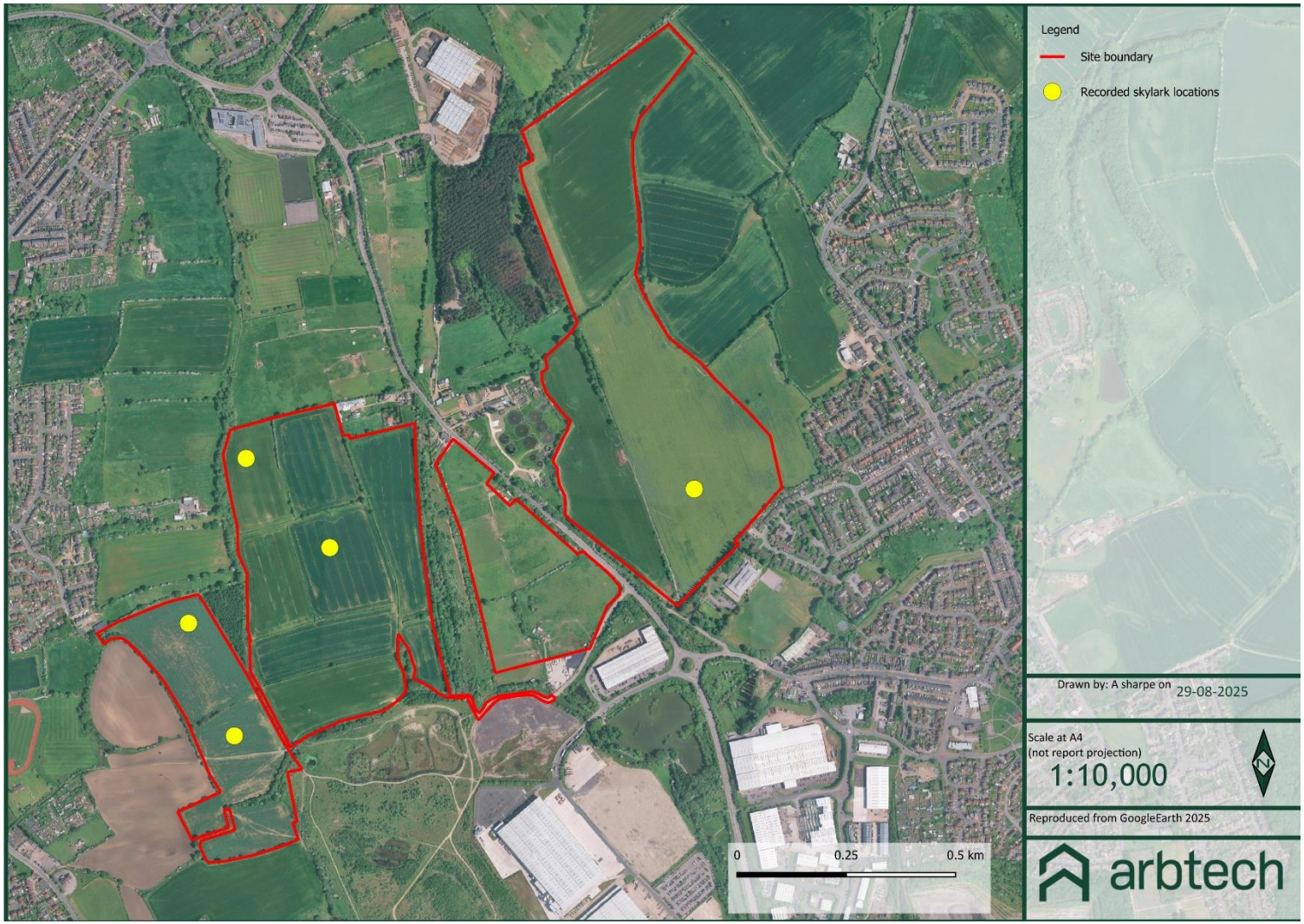
Seeds generated from grasses and flowers will also aid in supporting adult foraging.

5.0- Monitoring.

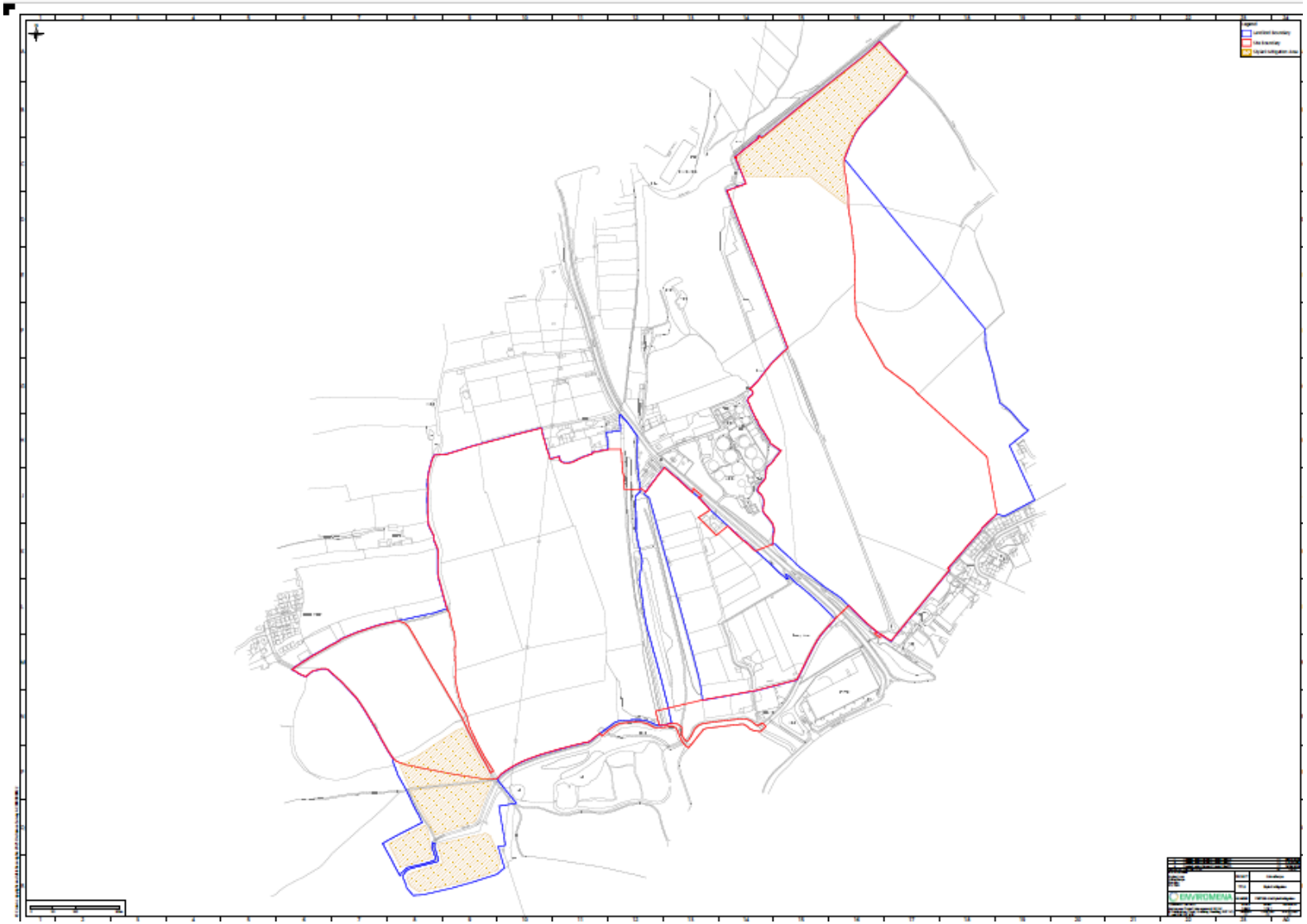
To check the implementation of the above management prescriptions and monitor whether these have been successful in terms of providing suitable Skylark habitat, monitoring surveys will be undertaken by a suitably qualified ecologist in years 2, 5 and 10 following implementation of the scheme. This will comprise a single visit each monitoring year during the peak breeding season (April to June) with a walkover of the mitigation areas to record any Skylarks and note habitat management.

The management strategy will be reviewed following each monitoring visit, and any required actions will be notified to the management.

Appendix 1- Skylark location map- Breeding bird survey result- 2025



Appendix 2- Site plan – Skylark mitigation fields – In orange-



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