Harworth Group

Dearne Valley Parkway, Rockingham, Barnsley – Phase 3

Biodiversity Offsetting Scheme

April 2022

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Appendix A. Biodiversity Metric 2.0 (Phases 2a.1, Phase 3 and Offsite Provision)

1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Ltd on behalf of the Harworth Group in support of requirements under the Section 106 schedule 4 agreement (10 Aug 2020, APPLICATION NO. 2019/1573).

1.2 The Section 106 Agreement requires that for each phase of development a 'Biodiversity Impact Assessment Report and a Biodiversity Offsetting Scheme' is to be submitted to and approved by the Council. The Biodiversity Offsetting Scheme is 'to provide a minimum 10% net gain in Biodiversity Units for habitats based on the Biodiversity Impact Score in the Biodiversity Impact Assessment for that Phase'.

1.3 It specifies that the 'Biodiversity Offsetting Scheme for each Phase shall include:

- The identity of an appropriate receptor site or sites upon which any biodiversity enhancements will be provided;
- A management plan for the provision and maintenance of such offsetting measures for not less than 32 years from the date of implementation of the Approved Biodiversity Offsetting Scheme;
- The provision of contractual terms to secure the delivery of the offsetting measures.'

1.4 A majority of the contents of this report is comprised of summaries and references to existing approved documents and additional documents submitted by the wider project team. To avoid duplication please consult the following documents for full details.:

- Biodiversity Impact Assessment (BIA) - Phase 3. Rev A. FPCR 2022.
- Offsite Habitat Creation and Management Plan - FPCR 2022.
- Landscape and Ecological Management Plan (LEMP) - Rev C. Urban Wilderness 2022.
- Phase 3 Softworks Plan. Drawing No. 441-UW-P-002 - Rev D. Urban Wilderness 2022.

1.5 This revision of the report has been updated to reflect minor landscape/planting changes on site and to address comments received from BMBC and their consultees on the preceding version of the report.

Site Location and Context

1.6 The Site sits to the north of Hoyland, adjacent to Shortwood Business Park in Barnsley, South Yorkshire (central grid ref: SE 3563 0103). The surrounding land use is largely arable and pasture with an area of broad-leaved semi-natural woodland to the north, forming part of the Short Wood and Hay Green LWS.

1.7 Phase 3 comprises an area to the north of Dearne Valley Parkway (A6195) and has largely been cleared of vegetation as part of the approved site clearance and earthworks. Retained areas consist of a periphery woodland and grassland.

1.8 The aim of biodiversity offsetting is to compensate for significant adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been taken, according to the mitigation hierarchy as required by the NPPF.

1.9 This report summarises the steps taken to offset impacts as detailed in the phase 3 BIA (Rev A, FPCR, 2022).

Site Proposals

1.10 Site proposals are for a business park development comprising warehousing with associated parking, lorry compounds and access infrastructure, with landscaping and green infrastructure (GI), including attenuation facilities.

1.11 Phase 3 comprises a single plot with one commercial unit and associated infrastructure; alongside which will be an extensive area of green infrastructure and an attenuation feature. Woodland belts along the boundaries will buffer the development footprint from the environs beyond.

1.12 Access to the site will be provided from Dearne Valley Parkway, with new connecting infrastructure to be adopted by the Highways Agency.

2.0 MITGATION HIERACHY

Avoid Impacts

2.1 The site is located within an allocated site for employment within Barnsley's Local Plan as adopted on 3 January 2019. As such the location of the development can be considered as an appropriate location to avoid likely major negative impacts.

2.2 Within the biodiversity metric, habitats are preassigned to distinctiveness bands. These are based on the distinguishing features, including the consideration of species richness, rarity, and the degree to which a habitat supports species rarely found in other habitats. Within this phase of development, no high distinctiveness habitats will be impacted.

Minimise Impacts

2.3 Site clearance and earthworks were completed in line with the CEMP (FPCR, 2020). This document detailed the requirements to protect retained habitats from construction activities and ensure that vegetation clearance was undertaken following relevant good practice methodologies and within seasonal constraints.

Mitigation (On-site)

2.4 Habitat losses resulting from the development were measured utilising the Biodiversity Metric 2.0. A summary from the BIA (Rev A, FPCR, 2022) is provided in Table 1.

2.5 The two habitat components; area habitats and hedgerows, require independent compensation and any gains made in one cannot be used to compensate for losses in the other.

Table 1. Biodiversity Unit Changes- Phase 3

	Biodiversity Units					
	Baseline	Retained	Created	Enhanced	Post-intervention	Net Change
Area Habitats	37.26	0.78	16.34	-	17.13	- 20.13
Hedgerows	5.06	-	6.5	-	6.5	+ 1.44

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator.

2.6 The on-site habitat creation and management result in an overall net loss in area habitat biodiversity units and an overall gain in hedgerow biodiversity units. This equates to biodiversity impact scores of -54.04% and +28.45% respectively.

2.7 To mitigate for the area habitat losses and fulfil the Section 106 requirement to provide a minimum 10% net gain in Biodiversity Units for habitats, a combination of excess biodiversity units generated from the previous development phase and additional offsite provision will be used.

Offsetting

2.8 The biodiversity metric (Appendix A) has been used to track the combined changes for phase 2a.1, phase 3, and additional offsite provision (Figures 1-5). These three areas combined provide an overall net gain, with surplus biodiversity units, in respect to this phase of development.

Phase 2a.1

2.9 The development of phase 2a.1 included a large area of retained, enhanced and new habitats providing a 13.37 (25.95%) unit gain for area habitats.

2.10 The biodiversity metric for phases 2a.1 and phase 3 have been combined to inform offsite habitat provision requirements.

Table 2. Area Habitat Biodiversity Unit Changes- Phase 3 and 2a.1

	Biodiversity Units					
	Baseline	Retained	Created	Enhanced	Post-intervention	Net Change
Phase 3	37.26	0.78	16.34	-	17.13	- 20.13
Phase 2a.1	51.52	1.84	49.54	13.51	64.89	+13.37
Total	88.78	2.62	65.89	13.51	82.02	- 6.76

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator.

Offsite Provision

2.11 Schedule 4 of the Section 106 agreement (10/08/2020) states that:

"It is acknowledged by the Owners and the Council that based on the Indicative Biodiversity Impact Assessment Report it will not be possible to provide a 10% net gain in Biodiversity Units across the Site as a whole and as such the Owners covenant to make available in the first instance the Replacement Receptor Sites as receptor sites for biodiversity enhancements and in the event that further land is required for biodiversity enhancements then the Owners will make available such additional land as is required from the Barrow Colliery PROVIDED THAT the precise amount of the Replacement Receptor Sites and any amount of the Barrow Colliery (if applicable) that is required to be provided for biodiversity enhancements shall be identified as part of the Biodiversity Offsetting Scheme submitted in respect of any Phase that is seeking to provide biodiversity enhancements on the Replacement Receptor Sites and the Barrow Colliery (if applicable)."

Barrow Hill Colliery

1.1 Subsequent to outline (hybrid) planning permission being granted, Dearne Valley Wetlands was notified by Natural England as a Site of Special Scientific Interest (SSSI) on 13th May 2021. Natural England confirmed Dearne Valley Wetlands SSSI under section 28 of the Wildlife and Countryside Act 1981 on 4 February 2022.

2.12 The notified SSSI consists of 22 site units, with differing interest features[2]. Site unit 21 is made up of Barrow Hill Colliery and Short Wood LWS. The notification for this site unit reports the features of interest to be breeding willow tit and breeding bird assemblage of lowland scrub. Both features of interest in this unit are reported in the notification documentation to be in favourable condition as of March 2020.

2.13 The supporting habitats for the features of interest as listed in the management objectives of the SSSI notification Annexe 2 document are reedbeds, fen, wet grassland, scrub and wet woodland, damp woodland margins, scrubby wetland margins, post-industrial sites with scrub and a high-water table, and occasionally mixed damp scrub along the edges of young plantations.

2.14 Management of SSSIs to maintain favourable condition for the features of interest is the responsibility of the UK government and landowners, and any works towards this objective would not count towards delivering biodiversity units[3].

2.15 From the notification documentation, the SSSI management obligations for site unit 21 are to maintain the scrub habitat in its current condition, preventing succession. Wider management of the Barrow Hill Colliery site which does not interfere with these objectives, or impact upon the favourable status of the features of interest would therefore be additional, going beyond that required under the SSSI designation.

2.16 Finalised site design proposals have been used to inform precise offsite requirements for biodiversity net gain. Woodland unit generation has been prioritised to compensate for losses.

[2] Dearne Valley Wetlands SSSI South Yorkshire – Supporting Information. 2021. Natural England

[3] Biodiversity Net Gain. Good practice principles for development. 2019. Baker, J, Joskin, R, Butterworth, T. CIRIA.

3.0 BIODIVERSITY OFFSETTING PROPOSALS

Baseline Assessment

Methodology

3.1 The field survey of offsite areas was undertaken over 1st-3rd October 2019 by an experience botanist (Nick Law – Associate Ecologist, FISC level 6). This involved a walkover of the survey area during which discrete blocks of habitat were identified and mapped using 'Avenza Maps' software on a Samsung Tablet.

3.2 For each area, brief descriptions and species lists were recorded in a field notebook along with additional notes regarding the current 'condition'. This utilised UKHab[4] classifications for the habitat classification alongside condition criteria set out for the Biodiversity Metric 2.0[5].

3.3 The primary objective of this assessment was to make an initial rapid assessment as to whether the survey area contained habitat areas suitable for further consideration as a receptor site. Consequently, this part of the assessment has had to rely heavily on the surveyor's experience and professional judgement as a botanical surveyor.

Results

3.4 Several areas were identified with potential for habitat creation and management to generate biodiversity units.

Other woodland-mixed mainly broadleaved (w1h5)

3.5 This 23.8 ha area of woodland is located within Barrow Colliery where it is bordered by areas of established lowland mixed deciduous woodland, mixed scrub and neutral grassland, and agricultural land.

3.6 The woodland was Plantation/Secondary semi-natural broadleaved woodland. Although there is clear evidence (tree tubes) of plantation, there is a substantial natural regeneration amongst the planting so has the 'feel' of secondary semi-natural woodland. Birch is the main canopy species and most of the natural regeneration is this species, but with some pedunculate oak and ash. Areas of the understorey were dense and largely impenetrable due to the regeneration and a field layer formed mainly by abundant bramble. Amongst the regeneration there was some hawthorn, hazel, dog-rose, field maple (also occasionally present as a planted tree) and wild cherry which has also been planted. The field layer was only viewable from the edges but appeared to be sparse with very few forbs and no woodland species were noted. A lot of bare ground and some common bryophytes such as common feather-moss occurred. Tree age was difficult to assess, possibly 10 years, and there was a very limited deadwood resource but with reasonable structure due to the regeneration, which has given rise to a varied age class.

[4] UK Habitat Classification Working Group. (2019). UK Habitat Classification. Available at: http://ecountability.co.uk/ukhabworkinggroup-ukhab/ [Accessed01/11/2019]
[5] Natural England. (2019). The Biodiversity Metric 2.0 – Technical Supplement. Available at: http://publications.naturalengland.org.uk/publication/5850908674228224 [Accessed01/11/2019].

3.7 The woodlands were classed as 'moderate' condition, failing on Criteria 3 and 6 (lack of age diversity and height structure and poor deadwood resource) which reflects their relatively young age and planting origins.

Modified Grassland

3.8 Three parcels of modified grassland were identified as suitable for tree planting.

3.9 The largest parcel is a 2.87ha improved grassland field between Shortwood and Hay Green LWS and Barrow Hill Colliery LWS. Currently this is a rye-grass ley characterised by limited species diversity and assessed to be in poor condition

3.10 The remaining two parcels are located at opposite ends of an improved grassland field between Short Wood and Barrow Hill Colliery. Species composition was characterised by palatable grasses consisting of abundant perennial rye-grass, frequent to abundant creeping bent, frequent Yorkshire-fog and occasional cock's-foot grass. Spear thistle was frequent, with common nettle occasional to locally frequent, and occasional broad-leaved dock, common chickweed, common ragwort and dandelion. These parcels totalled 0.76ha and were assessed as being in poor condition.

Arable Fields

3.11 Two parcels of an arable field which collectively form 0.74ha border the northern edge of Barrow Colliery LWS. As agricultural land these are not condition assessed.

Habitat Proposals

Woodland Enhancement

3.12 The condition of the existing woodland will be improved from moderate to good. Active management will need to ensure retention of standing and fallen deadwood issue, increase structural diversity and prevent degradation resulting from invasive species or disturbance.

3.13 Under this phase of development, management of 2.75ha of the woodland area identified will be secured. Long term management for the remainder of the woodland is expected to be secured through future development phases.

Woodland Planting

3.14 The modified grassland parcels will be planted and managed to promote native woodland development, with opportunities for natural colonisation and succession. Low density planting will allow for the retention and enhancement of the existing grassland. This will be achieved through over-seeding with suitable seed mixes, providing a rapid boost to biodiversity provision while the tree canopy develops. The locations buffer existing woodland and will increase habitat connectivity between Short Wood and Barrow Hill Colliery. Long term management goals will target these areas to reach good condition.

Pond / Wet Woodland Creation

3.15 The arable land parcels will be used to create two new 500m^2 ponds (0.1ha total) surrounded by 0.64 ha of wet woodland. Both habitats will be manged to achieve moderate condition.

Habitat Management

3.16 Woodland management will target the following objectives. While the wet woodland area can be managed towards the below goals, it is not expected to achieve all criteria and so has been targeted for moderate condition.

1. Woodland will comprise an area of trees with complete canopy cover.

2. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover.

3. A diverse age and height structure of the trees.

4. Free from damage [Bark stripping; Browse line; Damage shoot tips] (in the last five years) from stock or wild mammals with less than 20% of vegetation being browsed.

5. There should be evidence of successful (i.e. not browsed off before it gets well established) tree regeneration such as seedlings, saplings and young trees.

6. Standing and fallen dead wood of over 20 cm diameter are present including fallen large dead branches/stems and stumps.

7. Wetland habitat if they exist within the wood has little sign of drainage or channel straightening.

8. The area is protected from damage by agricultural and other adjacent operations.

9. There should be no evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction).

10. Invasive non-native plants are below 5% (see list below).

11. No signs of significant nutrient enrichment present.

12. More than 3 different native trees and 3 shrub species in an average 10 m radius

3.17 Pond management will target the following objectives.

1. Ponds will be fishless, those which naturally contain fish should not be stocked and should contain a native fish assemblage.

2. Ponds should not be artificially connected to other water bodies, e.g. ditches.

3. Non-native species should be absent.

4. Pond water levels should be able to fluctuate naturally throughout the year.

Net Gain Summary

3.18 By providing the above habitat creation and enhancement measures an overall +10.27% net gain relative to the on-site baseline total (88.78 units) can be achieved for area habitats. The metric excludes offsite baseline units from this calculation. A summary is provided in table 3 below.

$$\frac{TOTAL\ NET\ UNIT\ CHANGE}{BASELINE\ ONSITE\ UNITS}\ X\ 100 =\ PERCENTAGE\ CHANGE$$

Table 3. Area Habitat Biodiversity Unit Changes- Phase 3, 2a.1 and offsite.

Biodiversity Units						
	Baseline	Retained	Created	Enhanced	Post-intervention	Net Change
Phase 3	37.26	0.78	16.34	-	17.13	- 20.13
Phase 2a.1	51.52	1.84	49.54	13.51	64.89	+13.37
Offsite	35.35	-	3.67	47.56	51.23	+ 15.88
Total	124.13 ***88.78 onsite***	2.62	69.55	61.07	133.25	+ 9.12

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator.

3.19 Phase 3 alone provided a +28.45% gain in hedgerow units and so no additional provision was required. Taken in total with phase 2a.1 an overall +5.37 unit or +46.94% net gain in hedgerow units will be provided.

Habitat Trading

3.20 A large area of habitats to be lost are modified grassland fields, which are low distinctiveness habitats, that had been intensively managed. These have been compensated for through the creation of higher distinctiveness habitats. Similarly, low distinctiveness ruderal vegetation has been lost and compensated for through the provision of higher distinctiveness habitats.

3.21 The metric highlights the loss of 0.18 units of medium distinctiveness bramble scrub as an unaccounted for. However, the net increase in mixed scrub habitat on site is 28.31 units and so the small loss of bramble scrub is sufficiently accounted for, and the trading error highlighted is considered erroneous.

3.22 A significant area of broadleaved woodland has been lost. This is a medium distinctiveness habitat and requires compensation to be equivalent or better. Current proposals compensate for this loss through a combination of woodland habitat creation and enhancement.

3.23 The habitat creation and enhancement scheme is appropriate to the local area. The habitats used to compensate for the losses are those which are achievable and appropriate to the local area, and additionally align with the guidance in the Barnsley Biodiversity and Geodiversity supplementary planning document. In particular, the new scrub habitat is highly desirable given the proximity to the SSSI which has been designated in this area for lowland scrub assemblages of breeding birds and willow tits.

4.0 MANAGEMENT AND MONITORING RESPONSIBILITIES

4.1 Harworth Estates Ltd. have an obligation under the fourth schedule of the Section 106 agreement (Outline [hybrid] planning permission-. 2019/1573) to deliver a 10% net gain in biodiversity units for habitats and provide appropriate management for not less than 32 years from the implementation of the Approved Biodiversity Offsetting scheme.

4.2 The Section 106 agreement requires the provision of contractual terms by Harworth Estates Ltd. to secure the delivery of the above habitat creation and management are required.

4.3 Harworth Estates Ltd. will be responsible for delivering both the on-site habitat creation detailed within the BIA (Rev A. FPCR, 2022) and LEMP (Urban Wilderness, 2021), and offsite habitat creation detailed in the Offsite Habitat Creation and Management Plan (FPCR 2022). Ongoing management following creation should be undertaken by a suitable body, such as a management company, appointed by Harworth Estates Ltd. Ongoing work should be undertaken in agreement with the local authority and other relevant parties as appropriate.

4.4 Habitats will be managed for a minimum period of 32 years. It is anticipated that this management plan will run for an initial period of 15 years following initial creation as set out in the LEMP (Urban Wilderness, 2021). During this and in future periods, the plan should be viewed as a dynamic document, responding to the establishment and development of the habitats and species, as well as to any community needs and aspirations.

4.5 The progress of habitat creation will be monitored, and management prescriptions reviewed and altered where necessary to ensure habitat targets are met from the outset. Where appropriate, this management plan should be informed by updated and detailed surveys of the habitats to refine the identified objectives, targets, and prescriptions as necessary.

4.6 The aims of future on-going management should continue to maintain the habitats as proposed in the LEMP, unless there is a clear and agreed justification to alter these. It is therefore envisaged that future long-term management of the site will be a broad continuation of the agreed management prescriptions given for each habitat described within the LEMP (i.e., the grassland mowing regimes and hedge trimming frequencies are expected to be broadly the same) unless site factors or condition deem otherwise.

4.7 General monitoring should be undertaken annually by the appointed contractor/company and project ecologist to inform the forthcoming year's work programme to ensure the short-term objectives are being met, with results reported back and fed into the management plan review as necessary.

4.8 Where objectives are not being met, appropriate action will be put in place to amend management prescriptions and encourage better establishment to achieve the desired habitat, and any refinements incorporated into an updated management plan, for on-going medium and long-term management.

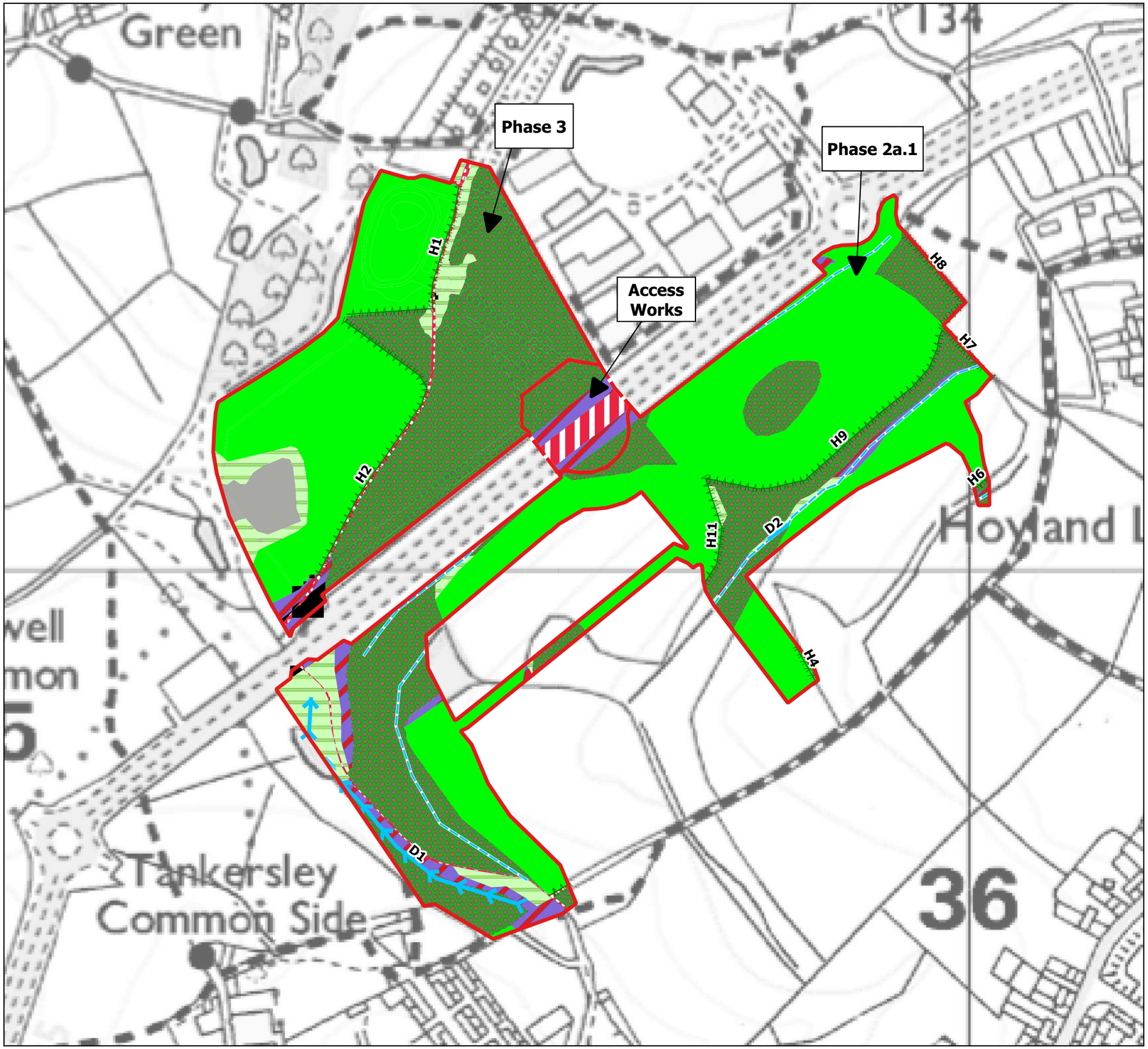
4.9 In accordance with the LEMP (Urban Wilderness, 2021), a full assessment of the site should be undertaken by all relevant disciplines prior to the end of the fifteenth year. The LEMP should be updated with management prescriptions modified as necessary for the remainder of the 32-year period to ensure that the targeted Biodiversity Net Gain is achieved.

5.0 FUTURE DEVELOPMENT PHASES

5.1 In order to comply with the Section 106 agreement (schedule 4), calculations for the remainder of the development should utilise the data provided within this report to track the site wide net gain and inform offsite habitat creation requirements.

5.2 The results of the assessment demonstrate that the combination of habitat creation in phase 2a.1, phase 3 and the identified offsite provision will lead to an overall gain of biodiversity units associated with the area habitats and hedgerows when compared with the baseline values.

5.3 Surplus units, as detailed within this report, may be used towards any offsetting required in future phases.



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Key

- Access Works
- Redline
- Standing water
- Running water
- Intact hedge - native species-rich
- Dry ditch
- Other neutral grassland
- Modified grassland
- Other woodland-broadleaved
- Scrub
- Artificial unvegetated unsealed surface
- Eutrophic standing waters
- Developed land. sealed surface
- Sparsely vegetated land

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client
Harworth Group

project
Dearne Valley Parkway, Rockingham, Barnsley - Phases 2a.1 & 3

drawing title
Onsite Baseline Habitat

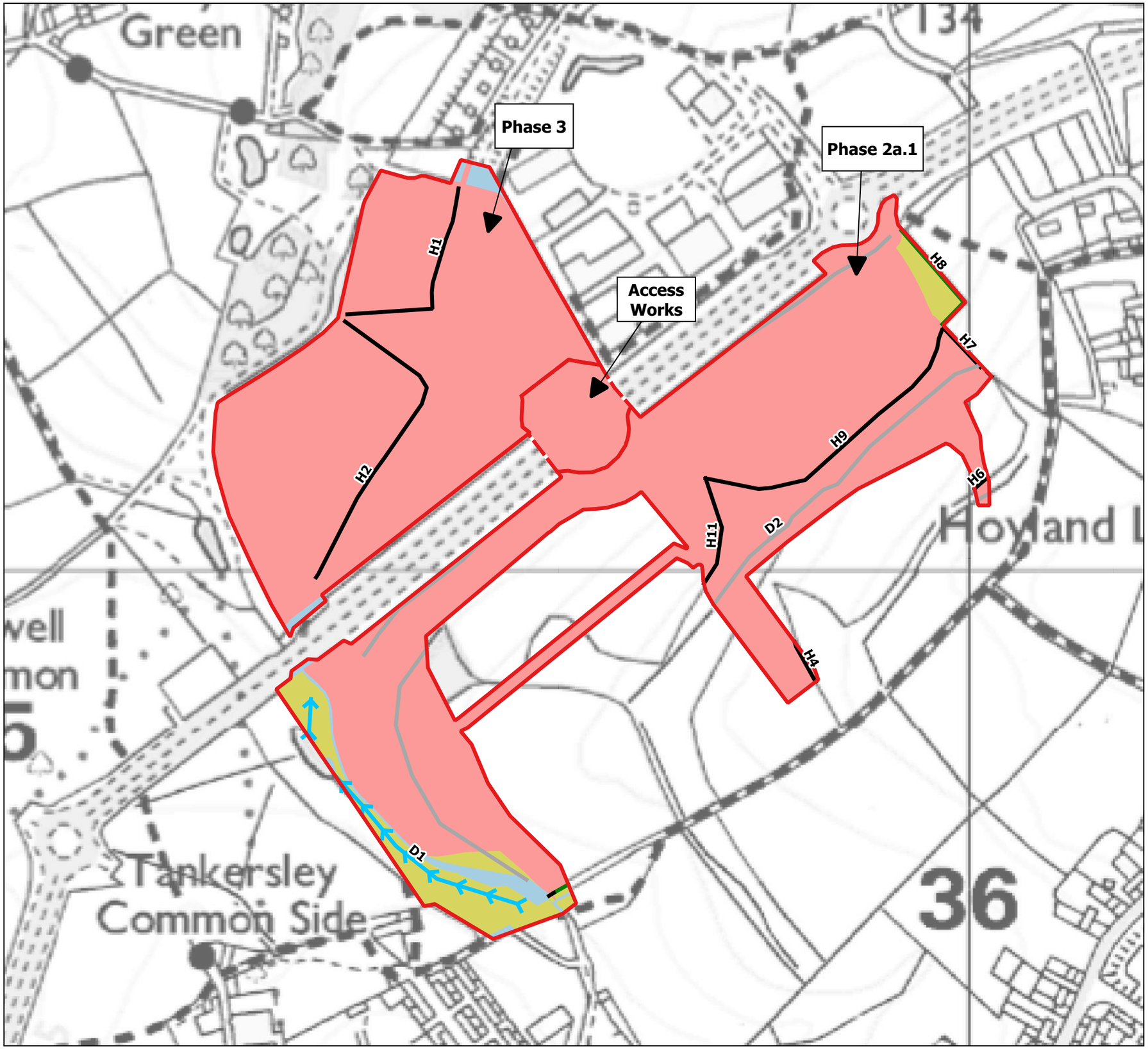
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Key

- Redline

Linear Habitats

- Lost Hedgerow
- Lost Ditch
- Retained Hedgerow
- Retained Ditch

Area Habitats

- Enhanced
- Lost
- Retained

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Dearne Valley Parkway, Rockingham, Barnsley - Phases 2a.1 & 3

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Onsite Habitat Retention

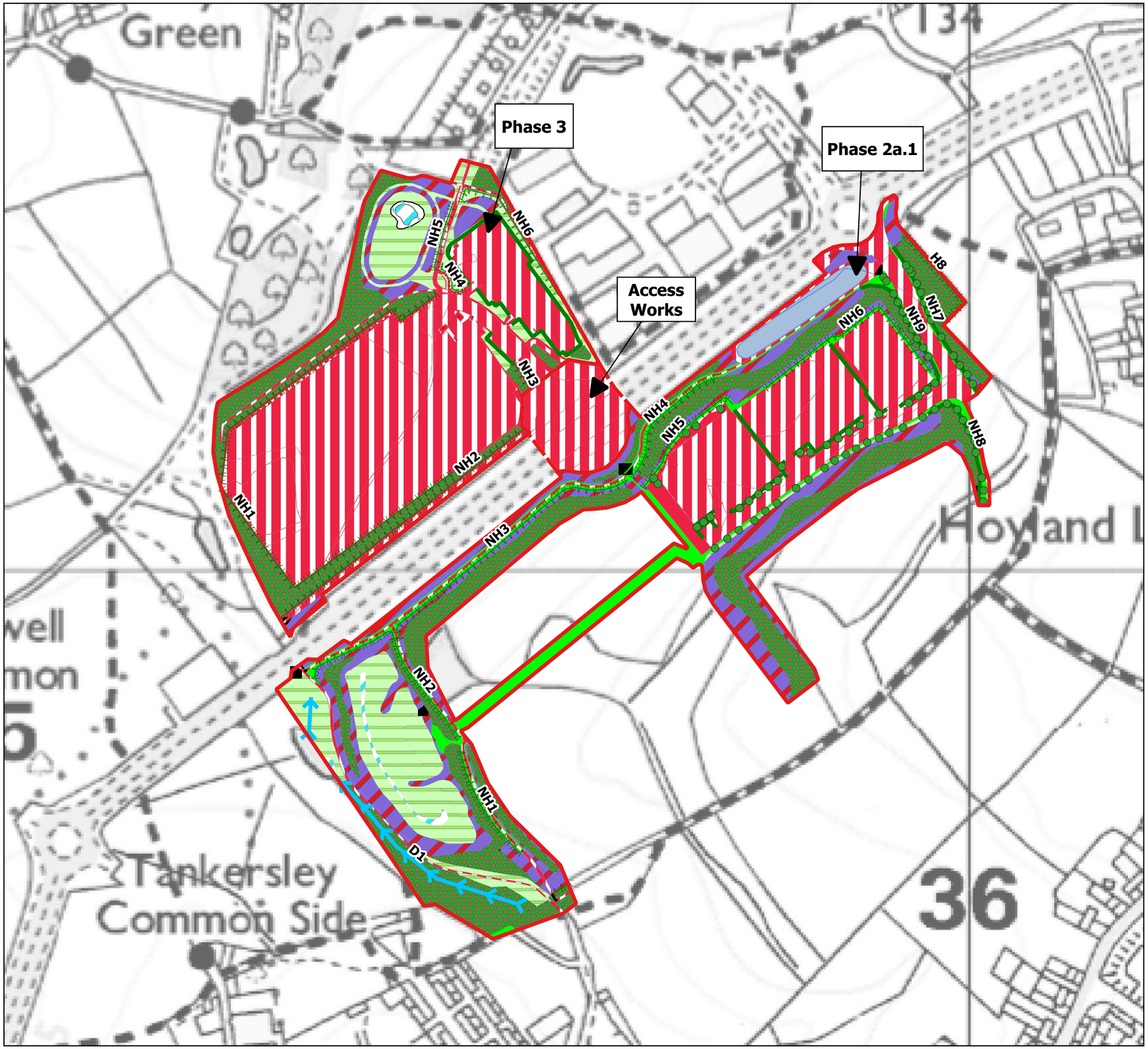
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Key

- Access Works
- Redline
- Street tree
- Running water
- Intact hedge - species-poor
- Intact hedge - native species-rich
- Mixed scrub
- Other neutral grassland
- Other broadleaved woodland
- Modified grassland
- SUDS
- Artificial unvegetated, unsealed surface
- Developed land; sealed surface
- Introduced shrub
- Amenity grassland
- Inundation Planting
- Standing water

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Dearne Valley Parkway, Rockingham, Barnsley - Phases 2a.1 & 3

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Onsite Proposed Habitat

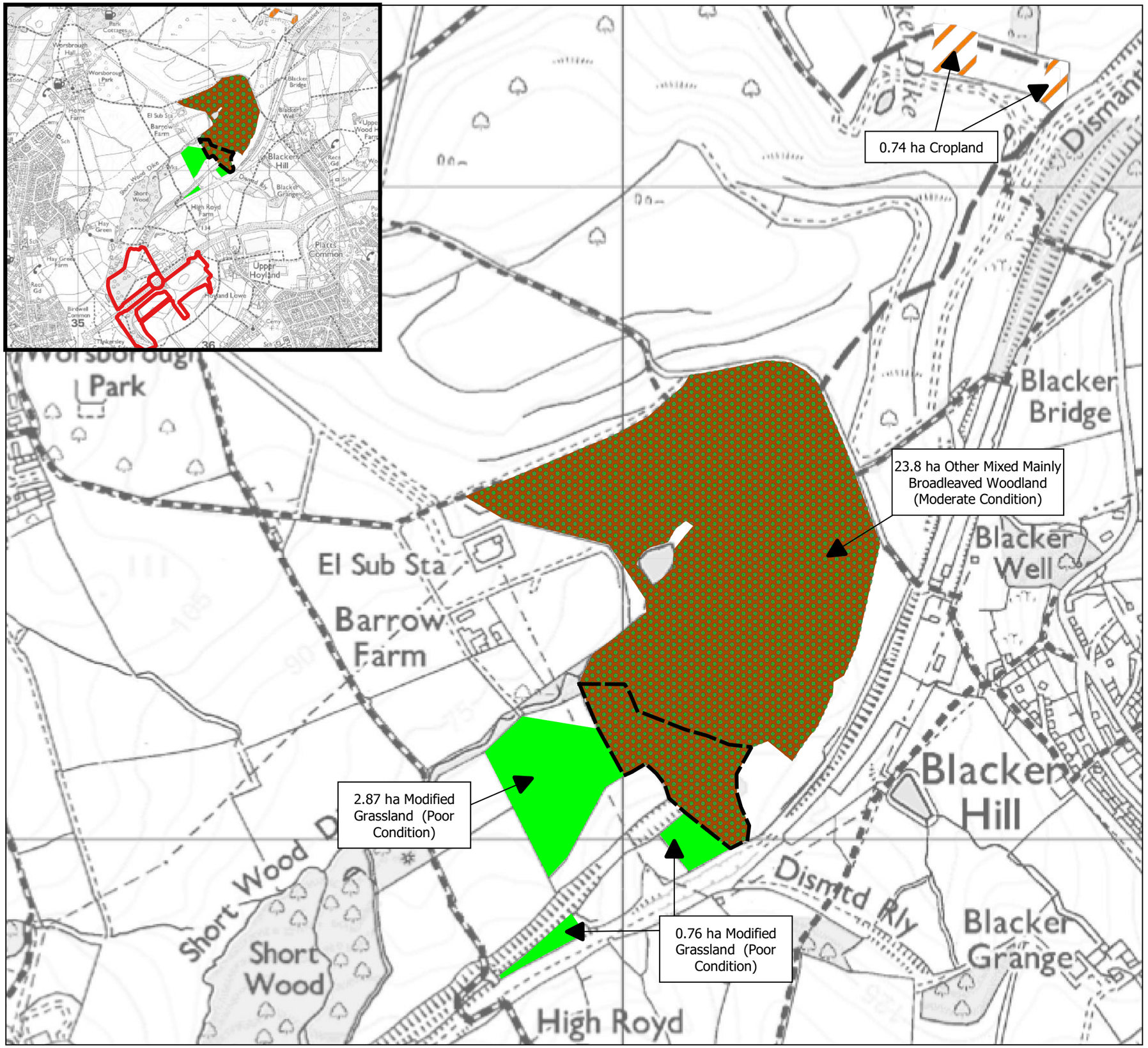
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Key

- Modified grassland
- Other Woodland - mixed
- Cultivated/disturbed land - arable
- Initial Management Area (2.75ha)

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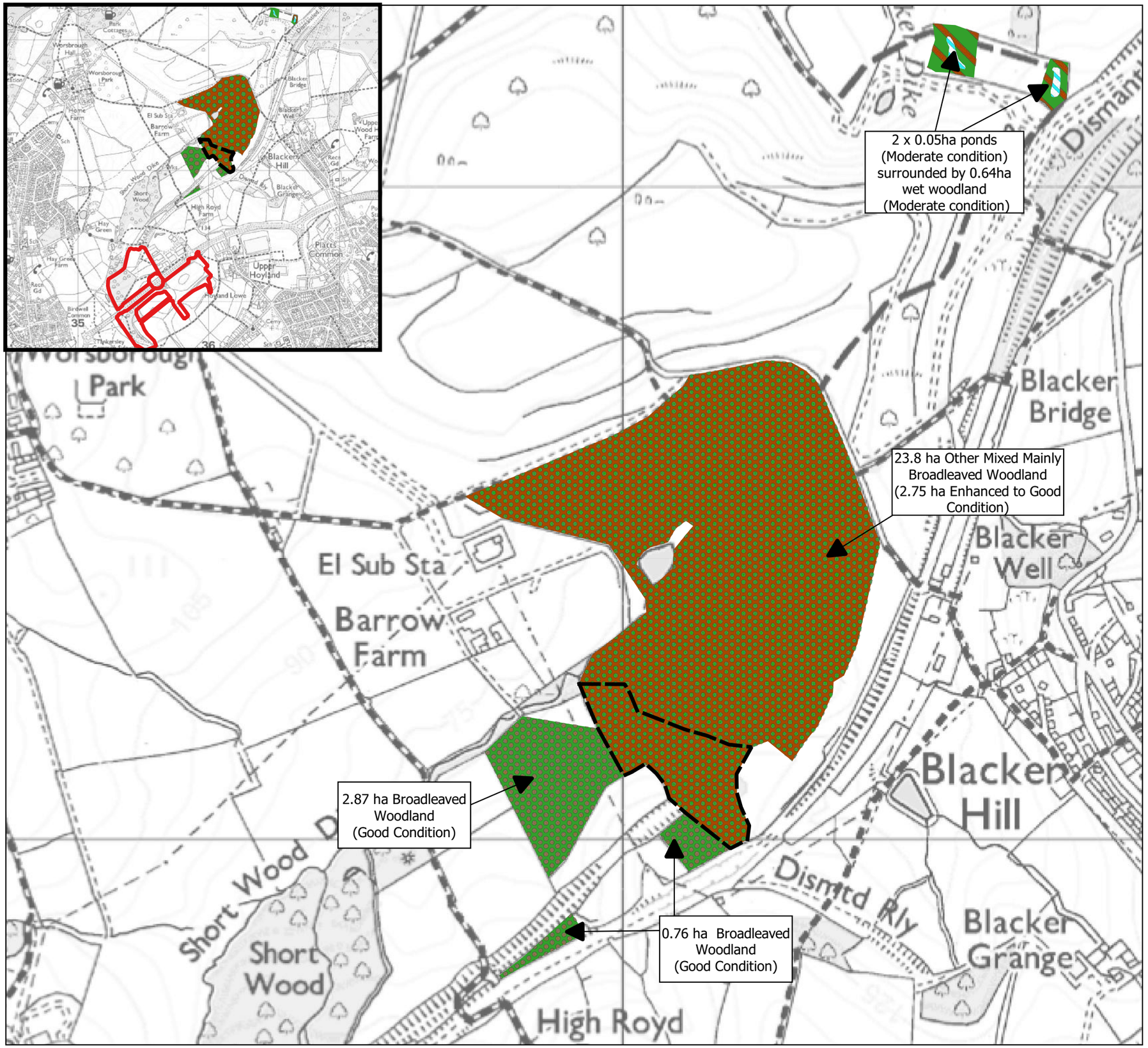
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Dearne Valley Parkway, Rockingham, Barnsley - Phase 3

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Offsite Baseline Habitat

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drawing / figure number
Figure 4

rev
A



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Key

- w1d - wet woodland
- w1g - other woodland-broadleaved
- w1h - other woodland mixed
- r1a - eutrophic standing waters
- Initial Management Area (2.75ha)

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masterplanning ■ environmental assessment ■ landscape design ■ urban design ■ ecology ■ architecture ■ arboriculture

0 100 200 300 400 m

J:\6400\6424\QGIS 2.14 NEW\Plans\Net Gain Master

client
Harworth Group

project
Dearne Valley Parkway, Rockingham, Barnsley - Phase 3

drawing title
Offsite Proposed Habitat

scale @ A3
1:6000

drawn
JDH

issue
1/4/2022

drawing / figure number
Figure 5

rev
A