

XLINKS' MOROCCO-UK POWER PROJECT

Environmental Statement

Volume 2, Appendix 1.1: Phase 1 Habitat Survey

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XLINKS' MOROCCO – UK POWER PROJECT

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Glossary

Term	Meaning
Alverdiscott Substation Site	The National Grid Electricity Transmission site within which the Alverdiscott Substation sits.
Converter Site	The Converter Site is proposed to be located to the immediate west of the existing Alverdiscott Substation Site in north Devon. The Converter Site would contain two converter stations (known as Bipole 1 and Bipole 2) and associated infrastructure, buildings and landscaping.
Converter station	Part of an electrical transmission and distribution system. Converter stations convert electricity from Direct Current to Alternating Current, or vice versa.
Environmental Impact Assessment	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
HVAC Cable Corridors	The proposed corridors (for each Bipole) within which the onshore High Voltage Alternating Current cables would be routed between the Converter Site and the Alverdiscott Substation Site.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Cornborough Range, Devon, between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Onshore HVDC Cable Corridor	The proposed corridor within which the onshore High Voltage Direct Current cables would be located.
Onshore Infrastructure Area	The proposed infrastructure area within the Order Limits landward of Mean High Water Springs. The Onshore Infrastructure Area comprises the transition joint bays, onshore HVDC Cables, converter stations, HVAC Cables, highways improvements, utility diversions and associated temporary and permanent infrastructure including temporary compound areas and permanent accesses.
Proposed Development	The element of Xlinks' Morocco-UK Power Project within the UK. The Proposed Development covers all works required to construct and operate the offshore cables (from the UK Exclusive Economic Zone to Landfall), Landfall, onshore Direct Current and Alternating Current cables, converter stations, and highways improvements.
Xlinks' Morocco UK Power Project	The overall scheme from Morocco to the national grid, including all onshore and offshore elements of the transmission network and the generation site in Morocco (referred to as the 'Project').

Acronyms

Acronym	Meaning
CIEEM	Chartered Institute of Ecology and Environmental Management
ES	Environmental Statement
HVDC	High Voltage Direct Current
JNCC	Joint Nature Conservation Committee
LWS	Local Wildlife Sites
SSSI	Site of Special Scientific Interest

Units

Units	Meaning
km	Kilometre
ha	Hectares
m	Metre

1 PHASE 1 HABITAT SURVEY

1.1 Introduction

- 1.1.1 This document forms Volume 2, Appendix 1.1: Phase 1 Habitat Survey of the Environmental Statement (ES) prepared for the United Kingdom (UK) elements of Xlinks' Morocco-UK Power Project (the 'Project'). For ease of reference, the UK elements of the Project are referred to as the 'Proposed Development', which is the focus of the ES. The ES presents the findings of the Environmental Impact Assessment process for the Proposed Development.
- 1.1.2 Phase 1 habitat survey is a field survey technique used to rapidly classify and map semi-natural vegetation and other wildlife habitats located within or near a proposed development site.
- 1.1.3 This document presents and characterises the results of the Phase 1 Habitat survey undertaken as part of the ES for the Proposed Development. These results provide a basis for describing the extent, distribution, and ecological importance of habitats, hedgerows and vegetation communities within and in proximity to the Proposed Development. The document also aims to assess the site for potential to support protected species or other species that could present a constraint, and make appropriate recommendations for further survey work if necessary.
- 1.1.4 The surveys and desk-based assessments undertaken have been prepared in accordance with the British Standard for Biodiversity Code of Practice for Planning and Development (BS42020:2013).

Site Location

- 1.1.5 The Onshore Infrastructure Area is located in north Devon and includes the Landfall, Onshore HVDC Cable Corridor, HVAC Cable Corridors and Converter Site. The Onshore HVDC Cable Corridor is approximately 14.5 km in length and the Converter Site is approximately 39.5 ha. The HVAC Cable Corridors are situated within the boundaries of the Converter Site and Alverdiscott Substation Site.
- 1.1.6 The Onshore HVDC Cable Corridor passes through a mixture of pastoral and arable farm land, with fields bounded by Devon hedgerows, and occasionally crossing small watercourses in wooded valleys. The route also crosses the tidal Torridge estuary.
- 1.1.7 The site location is shown within **Figure 1.1** to **Figure 1.12** of this report. Aerial imaging was also reviewed to assess the site in relation to its context in the wider landscape.

1.2 Study Area

1.2.1 The onshore ecology and nature conservation study area is detailed within Volume 2, Chapter 1: Onshore Ecology and Nature Conservation of the ES. The study area includes the following.

- Locally designated sites, including Local Nature Reserves and Local Wildlife Sites (LWSs), and less mobile species located within 2 km of the Onshore Infrastructure Area.
- Nationally designated sites, including Sites of Special Scientific Interest (SSSIs) and National Nature Reserves, and records of particularly mobile protected or otherwise notable species (e.g. bats and otters) located within 5 km of the Onshore Infrastructure Area.
- Internationally designated sites located within 12 km of the Onshore Infrastructure Area.

1.2.2 The onshore ecology and nature conservation study area is presented in Volume 2, Figure 1.1 of the ES (see Volume 2, Figures).

1.3 Survey Area

1.3.1 The survey area is defined as the area within which each survey has been undertaken and is based on species or site-specific guidance on the extent of survey required. The survey area for the Phase 1 Habitat Survey (hereafter referred to as the 'survey area') is defined as a 150 m buffer around the Onshore Infrastructure Area.

1.3.2 The buffer of 150 m was chosen to provide an appropriate level of contextual habitat data within and adjacent to the Onshore Infrastructure Area, in order to ensure that the ES is accurately informed with data from within the Onshore Infrastructure Area (i.e. that may be subject to direct impacts) and data from outside the Onshore Infrastructure Area (i.e. that may be subject to indirect impacts).

Contextual Data

1.3.3 Owing to the iterative design process of the Proposed Development, some surveys were undertaken further than 150 m from the Onshore Infrastructure Area. These surveys may have been located within, or within the buffer of, previous iterations of the Onshore Infrastructure Area boundaries. Nevertheless, information from these surveys have been included in this technical report because they provide context regarding the ecological sensitivity of the wider area and to inform Volume 2, Chapter 1: Onshore Ecology and Nature Conservation of the ES (where relevant). Any contextual information (based on survey data collected from outside the survey area) is shown on **Figure 1.1** to **Figure 1.11**.

1.4 Relevant Legislation

1.4.1 With few exceptions, habitats and vegetation communities are not legally protected in the UK other than through designation as statutory sites of nature conservation importance, as supporting habitat for protected species and through

duties placed on public bodies. Legislation which is relevant in this context includes:

- the Conservation of Habitats and Species Regulations 2017, (as amended) including through selecting, managing and restoring sites that contain examples of Annex I habitats of the Habitats Directive to a favourable conservation status;
- the Wildlife and Countryside Act 1981 (as amended), including through notification and protection of SSSIs under Part II of the Act;
- the Natural Environment and Rural Communities Act 2006 that includes a legal duty under Section 41 of the Act to provide a list of habitats and species of principal importance to enable public bodies to comply with the biodiversity duty;
- the Environment Act 2021 through the strengthened biodiversity duty that includes a requirement for public authorities to prepare nature recovery and protected site strategies; and
- the Hedgerow Regulations 1997, which includes provisions for protection of 'important' hedgerows (hedgerows that have existed for 30 years or more and satisfy at least one of the criteria listed in Part II of Schedule 1 of the Regulations).

1.4.2 Further details on legislation relevant to onshore ecology and nature conservation can be found in Volume 2, Chapter 1: Onshore Ecology and Nature Conservation of the ES.

1.5 Methodology

Ecological Appraisal

- 1.5.1 The ecological appraisal consisted of two components: a Phase 1 Habitat survey and a scoping survey for protected species and other species of conservation concern which could present a constraint to development.
- 1.5.2 Initial surveys were undertaken in May 2021, with follow-up surveys undertaken in June 2022 for confirmation and to take into account route and design refinements which had been put in place. The Phase 1 Habitat survey was updated in 2024.
- 1.5.3 The Phase 1 Habitat surveys followed the Joint Nature Conservation Committee's (JNCC) standard methodology (JNCC, 2010), and as described in the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). In summary, this comprised walking over the survey area and recording the habitat types and boundary features present.
- 1.5.4 A protected species scoping survey was carried out in conjunction with the Phase 1 Habitat survey. The Onshore Infrastructure Area was assessed for its suitability to support protected species, in particular bats, otters, dormice, badgers, reptiles, birds, and other species of conservation importance that could pose a planning constraint.
- 1.5.5 The surveyor looked for evidence of use including signs such as burrows, droppings, footprints, paths, hairs, refugia and particular habitat types known to be used by certain groups such as ponds. Any mammal paths were also noted down and where possible followed. Fence boundaries were walked to establish any

entry points or animals signs such as latrines. Areas of bare earth were inspected for mammal prints. Areas of habitat considered suitable for protected species or those of conservation interest were recorded.

Nature Conservation Value

- 1.5.6 The overall ecological appraisal is based on the standard best practice methodology provided by the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). The assessment identifies sites, habitats, species and other ecological features that are of value based on factors such as legal protection, statutory or local site designations such as SSSIs or LWSs or inclusion on Red Data Book Lists or Biodiversity Action Plans.
- 1.5.7 The assessment also refers to planning policy guidance (e.g., National Policy Statements, National Planning Policy Framework, etc.) where relevant to relate the value of the site and potential impacts of development to the planning process, identifying constraints and opportunities for ecological enhancement in line with both national and local policy.
- 1.5.8 The methodology for evaluation of the nature conservation value of ecological features affected by development (ecological receptors) is adapted from the current CIEEM guidelines for Ecological Impact Assessment (CIEEM, 2019). These guidelines recommend assignment of value (or potential value) to ecological receptors in accordance with the following scale:
1. International;
 2. UK;
 3. National (i.e. England/Northern Ireland/Scotland/Wales);
 4. Regional;
 5. County (or Metropolitan - e.g. in London);
 6. District (or Unitary Authority, City, or Borough);
 7. Local or Parish; and/or
 8. within immediate Zone of Influence only.

Limitations

Survey

- 1.5.9 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment.
- 1.5.10 The protected/notable species assessment provides a preliminary view of the likelihood of these species occurring on the site, based on the suitability of the habitat, known distribution of the species in the local area provided in response to our enquiries and any direct evidence on the site. It should not be taken as providing a full and definitive survey of any protected/notable species group.
- 1.5.11 Access to some areas of land, notably at the Landfall and at the Converter Site was not available and surveys in this area were completed from locations where public access was available. In general, views of the Landfall were good, and it was possible to obtain a reasonably accurate picture of the habitats present and

their potential to support protected or otherwise important species. Views of the Converter Site were not as clear as those for the Landfall, but they were sufficiently clear to allow a reasonable assessment of habitats present, although species make-up was not possible. In addition to inspection from public access locations, reviews of aerial photography and historic data (such as survey data from the Atlantic Array project) were reviewed.

Accurate Lifespan of Ecological Data

- 1.5.12 The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for two years, assuming no significant changes to the site conditions.
- 1.5.13 Site specific surveys used to inform Volume 2, Chapter 1: Onshore Ecology and Nature Conservation of the ES were undertaken between 2021 and 2024. CIEEMs Advice Note: On the lifespan of ecological reports and surveys (CIEEM, 2019) recommends that surveys exceeding three years in age are likely to require updating, whilst surveys undertaken between 18 months and three years prior to application may require site visits pre-construction to review the validity of survey findings. Therefore, in accordance with CIEEM guidance, site specific surveys undertaken over 18 months prior to the submission will be updated, where required (following a site review to confirm the validity of survey findings by a suitably qualified ecologist). Those surveys undertaken over three years will be supplemented by further surveys (if Development Consent Order is granted) to be completed pre-construction.

1.6 Site-specific Surveys

Phase 1 Habitat Survey

- 1.6.1 The results of the Phase 1 Habitat Survey are presented within **Figure 1.1** to **Figure 1.11**, with the habitat types and boundary features marked. In recognition of the recent solar development close to the existing Alverdiscott Substation, an additional illustration, **Figure 1.12** shows a recent aerial photograph of the Converter Site of the Proposed Development.
- 1.6.2 Descriptions of the habitat types and boundary features are detailed below. Habitat descriptions are defined using the JNCC broad habitat types (JNCC, 2010).

A1.1.1 Semi-Natural Broadleaved Woodland

- 1.6.3 The majority of the broadleaved woodlands in the survey area occur alongside small watercourses, although some appear to have been planted as wind-breaks or for other purposes.
- 1.6.4 Most woodlands are dominated by oak (*Quercus robur*) and ash (*Fraxinus excelsior*) sometimes with an under-storey of relic hazel (*Corylus avellana*) coppice. Woodlands are often wet in nature, particularly where adjacent to watercourses, and in these alders (*Alnus glutinosa*) and willows (*Salix caprea*, *S. cinerea*) are common. In some places, beech (*Fagus sylvatica*) was frequent. Field maple (*Acer campestre*) was also fairly abundant. Holly, (*Ilex aquifolia*),

elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*) and hawthorn (*Craetaegus monogyna*) are also common. Other trees such as sycamore (*A. pseudoplatanus*), cherry (*Prunus avium*), sweet chestnut (*Castanea sativa*) and horse chestnut (*Aesculus hippocastanum*) were present in some locations, indicating potential plantation origins, or at least some modification to woodland composition. Ground flora was often dominated by ivy, but also frequently supported species indicative of old woodland such as hart's-tongue fern (*Asplenium scolopendrium*), lords-and-ladies (*Arum maculatum*), sanicle (*Sanicula europaea*), dog's mercury (*Mercurialis perennis*) and pignut (*Conopodium majus*). Wetter woodlands have frequent areas of Hemlock water dropwort (*Oenanthe crocata*) with stands of common nettle (*Urtica dioica*) also frequent.

- 1.6.5 Most of the small woodlands were linked by species rich hedges, which could act as corridors supporting dormice.
- 1.6.6 Many of the woodland areas showed poaching by livestock grazing, resulting in only limited natural regeneration. Evidence of wild mammal populations was found in several of the woodlands (deer, fox and small mammals such as bank vole).
- 1.6.7 Lack of management of hedges has, in places, resulted in linear strips of woodland along boundaries, often incorporating old hedgerow trees which may provide roost sites for bats.
- 1.6.8 Broadleaved woodlands are considered to be of considerable ecological importance, as they are likely to be intrinsically interesting and can support notable species, such as dormice, bats, badgers and breeding birds. They also have potential to support interesting invertebrate faunas.
- 1.6.9 Where woodland is associated with the banks of small streams, habitats suitable for otters have been identified.
- 1.6.10 In terms of condition assessment, woodlands identified within the survey area were generally under-managed and as a result, condition would best be described as moderate, as most fail at least two of the condition assessment criteria for woodland.

A1.2.2 Plantation Coniferous Woodland

- 1.6.11 Small plots of conifer plantation occur in some locations within the survey area. Plantations are of evenly-spaced Douglas fir (*Pseudotsuga menziesii*). As is common with plantation woodland, ground flora is minimal, due to shading.
- 1.6.12 Commercial conifer plantation of non-native species is identified in the condition assessment criteria as poor.

A2.1 Dense Scrub

- 1.6.13 Two main types of scrub area were noted during the survey. Areas of grassland with limited management, develop patches of scrub due to the process of succession. These areas typically become overgrown by bramble and scattered hawthorn.
- 1.6.14 Unmanaged hedges and woodland edges develop dense scrub dominated by blackthorn/hawthorn, which encroaches onto adjacent grassland.
- 1.6.15 In addition to bramble and hawthorn scrub, some dense patches of gorse scrub were also recorded, most notably towards the coastal end of the route, where

several areas of gorse dominated (*Ulex spp.*) scrub were identified, some associated with former tracks and embankments.

- 1.6.16 Although these areas may have limited intrinsic ecological value, they do offer potential for cover and foraging to a range of faunal species.
- 1.6.17 Scrub based on the above species is considered of lower environmental value. In terms of condition assessment, the areas of scrub identified, all stands of dense scrub identified fail all of the condition criteria for scrub, and therefore their condition is assessed as poor.

A2.2 Scattered Scrub

- 1.6.18 As described above, some areas of scattered scrub occur, often in areas where grassland management is limited, often due to difficulties of access with machinery.
- 1.6.19 Scattered scrub is dominated by bramble, often with common ruderal species such as common nettle or creeping thistle (*Cirsium arvense*) also present.
- 1.6.20 As for dense scrub, the condition criteria are not achieved, and the condition is therefore assessed as poor.

B1.2 Semi-Improved Neutral Grassland

- 1.6.21 In some areas, improved grass leys are gradually increasing in species diversity, becoming species poor, semi-improved grassland. Grass species such as Yorkshire fog (*Holcus lanatus*), red fescue (*Festuca rubra*), crested dog's tail (*Cynosurus cristatus*) occur with other common grasses such as false oat grass (*Arrhenatherum elatius*), cock's-foot (*Dactylis glomerata*) and meadow foxtail (*Alopecurus pratensis*). Often perennial rye grass (*Lolium perenne*) is frequent with other signs of improvement such as white and red clover (*Trifolium repens* and *T. pratense*). The underlying geology appears mainly to be limestone, particularly towards the coastline, resulting in some areas supporting species more typical of semi-improved, calcareous grassland, such as common knapweed (*Centurea nigra*) and bird's foot trefoil (*Lotus corniculatus*). Large numbers of the common blue butterfly were found associated with bird's foot trefoil in several fields. See target notes for further details.
- 1.6.22 Strips of semi-improved grass verges alongside roads and tracks often support a good floral diversity, including orchid species such as southern marsh orchid (*Dactylorhiza praetermissa*) and pyramidal orchid (*Anacamptis pyramidalis*). The presence of limestone chippings along the bed of the old railway line at the Tarka Trail has resulted in the presence of species typical of calcareous grassland, such as common toadflax (*Linaria vulgaris*).
- 1.6.23 However, in all normal field contexts, grasslands are subject to frequent grazing and cutting regimes (for hay or silage) which have tended to limit species diversity and structural variety.
- 1.6.24 Condition assessment for semi-improved neutral grassland which has less than 25% cover of rye-grass is identified as moderate.

B4 Improved Grassland

- 1.6.25 Improved grassland was the dominant habitat type identified. Improved grassland consists of grasslands dominated by perennial rye grass (*Lolium perenne*) and clovers, especially white clover (*Trifolium repens*), but with red clover (*Trifolium pratense*) occurring in some areas. Due to its very low species diversity improved grassland is considered to be of very low ecological value.
- 1.6.26 The condition assessment for improved grassland indicates that agriculturally improved grassland which is frequently cropped for silage or used as managed pasture is intrinsically considered to be poor.

B6 Poor Semi-Improved Grassland

- 1.6.27 The ecological value of the areas of grassland is also determined by its structural diversity i.e., whether there is a range of heights of sward present. The majority of grassland is being intensively grazed or cut for silage, and as such is of single height across the entire field. The greatest structural diversity occurred in association with old bridleways or tracks such as the Tarka Trail.
- 1.6.28 Species poor, semi-improved grassland has low ecological value, although this is improved by having good structural diversity.
- 1.6.29 Condition assessment for poor semi-improved grasslands is classed as poor, due to presence of high percentages (generally over 25%) of perennial rye grass.

G1 Standing Water

- 1.6.30 A number of ponds have been identified along the buffer zones to either side of the Onshore HVDC Cable Corridor. These ponds are generally of relatively recent construction and used for amenities such as fish/angling ponds or flight ponds for wildfowl. In general, these ponds tend to suffer from some eutrophication and are limited in their aquatic vegetation. In some cases, they are stocked with fish for angling purposes and water levels may be managed by engineered features from nearby watercourses.
- 1.6.31 Condition assessment for ponds encountered across the scheme is assessed as moderate-poor with many showing evidence of filamentous algae and/or duckweed present.

G2 Running Water

- 1.6.32 Running water features in the area range from minor, occasionally-wet, field ditches, through to the estuary of the River Torridge. Where the field ditches are permanently wet, characteristic plant assemblages have established supporting species such as hemlock water dropwort (*Oenanthe crocata*), opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*) and watercress (*Rorippa nasturtium-aquaticum*). Shady, damp, ditches may provide important corridors for wildlife such as amphibians and reptiles.
- 1.6.33 A number of small streams were also noted. Most of these were overgrown and heavily shaded, often diverted along the field boundaries and occasionally forming small, shallow pools rich in invertebrates such as diving beetles and freshwater shrimp. Toad tadpoles were present at one such site. See target notes for further

details. These streams were frequently associated with patches of linear woodland habitat, which probably developed from neglected hedge boundaries.

- 1.6.34 Along the disused railway forming the Tarka Trail, remnants of old drainage ditches have formed marshy, reedy areas typified by meadowsweet (*Filipendula ulmaria*) and common reed (*Phragmites sp.*).
- 1.6.35 The route crosses beneath the Taw-Torridge Estuary, a large tidal estuary complex with associated mudflat and saltmarsh, and swampy margins often dominated by reed-beds. Reed buntings were present in good numbers in the stands of reeds adjacent to the disused railway embankment.
- 1.6.36 These wetland areas provide foraging and breeding sites for a wide range of species.
- 1.6.37 Condition assessment of ditches is generally poor, as they fail at least five of the condition assessment criteria for ditches.
- 1.6.38 Condition assessment for stream and watercourses is presented in Volume 2, Appendix 1.11: River Condition Assessments of the ES.

H1.1 Intertidal Mud and Sand

- 1.6.39 Some areas of intertidal mud and sand are exposed within the Torridge Estuary at low tide levels.

H2.6 Saltmarsh

- 1.6.40 A well-developed saltmarsh zone occurs where the route crosses beneath the Torridge estuary. The upper marsh is bordered by the embankment of the disused railway along the Tarka Trail, with the strandline frequently running along the base of the embankment. Patches of rushes and sedges are present adjacent to the strandline, with stands of common reed above the high tide mark (High Water Spring Tide). Small patches of upper marsh are present, typified by sea aster (*Aster tripolium*), sea plantain (*Plantago maritima*) and sea arrow grass (*Triglochin maritimum*). The majority of the saltmarsh area is dominated by sea purslane (*Atriplex portulacoides*). Glasswort (*Salicornia sp.*) is present in the creeks, helping to stabilise bare mud. Stands of cord grass provide an important food source for migratory wildfowl.
- 1.6.41 On the southern side of the estuary, the tidal race lies immediately adjacent to the A386 road, separated by hard structures and amenity grassland verge areas, with associated laybys and picnic areas.
- 1.6.42 This habitat is likely to be of benefit to waders and other waterfowl and is considered to be of high ecological value.
- 1.6.43 No condition assessment of saltmarsh has been undertaken at this time.

J1.1 Arable

- 1.6.44 Arable land occurs frequently across the Onshore HVDC Cable Corridor. This is predominantly cereal crops, but with maize and occasionally root crops also present. This habitat is of limited intrinsic ecological value although hare and deer were occasionally seen hiding in the crops. In general, arable production has left very little uncultivated margins to the fields, reducing opportunities for rarer arable field plants to establish.

1.6.45 Condition assessment for intensive arable land is assessed as poor.

J2.1.1 Native Species-Rich Hedge

- 1.6.46 Field boundaries are predominantly formed by traditional Devon hedges, where a double row of hedge has been planted on top of an earth bank. In general, the hedges were found to be in good condition, well managed and stock-proof. A few hedges were noted to be defunct and have become replaced by bracken, gorse or bramble. Occasional standard trees occur along many of the hedges, predominantly ash or pedunculate oak. Where these trees have appropriate damage, reached maturity, or contain dead wood, they provide possible roost sites for bats. The species composition of the hedges varied. Blackthorn and hawthorn dominated; with ash, field maple, hazel, pedunculate oak, willow, holly, elder and elm also present. Beech and Yew were found in a few, localised, areas.
- 1.6.47 Good species diversity was noted amongst the herb layer of many of the hedges, with expected hedgerow species such as greater stitchwort (*Stellaria holostea*), red campion (*Silene dioica*), figwort (*Scrophularia nodosa*) and herb Robert (*Geranium robertianum*). Hart's tongue fern (*Asplenium scolopendrium*), lords and ladies (*Arum maculatum*) and dog's mercury (*Mercurialis perennis*) were frequently encountered along these hedgebanks.
- 1.6.48 Condition assessment is assessed as good.

J2.2 Native Species-Poor Hedge

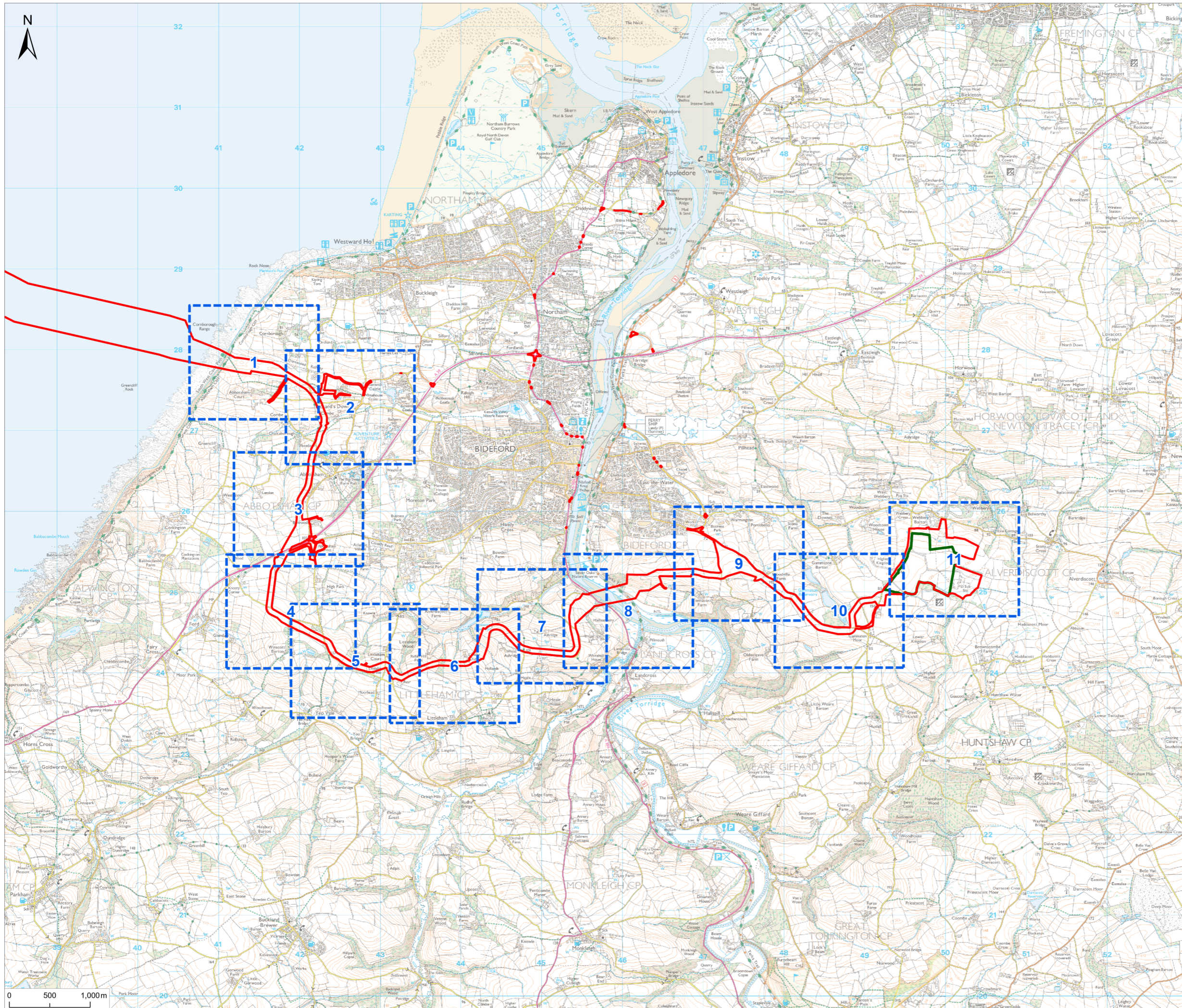
- 1.6.49 A limited number of hedges were identified which did not have a banked construction and which tended to consist of limited species, usually dominated by hawthorn.
- 1.6.50 Condition assessment is assessed as moderate, due to frequent 'gappiness' in hedge base, lack of banks, presence of abundant undesirable perennial vegetation and failing to achieve adequate width of hedge.

J2.3 Native Species-Rich Hedge with Trees

- 1.6.51 In a number of locations, hedgerows had been allowed to develop significant numbers of standard trees. In general, these hedges were of banked Devon hedge construction, with similar species present as described above. Standard trees were frequently oak and ash, with some field maple and elm present. Occasionally beech and other species such as sycamore were also present in this category.
- 1.6.52 Condition assessment is assessed as good.

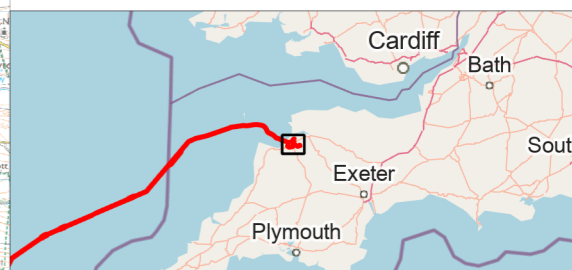
Other Habitats Not Described

- 1.6.53 Other habitats such as, fence-lines, walls, buildings and bare ground have also been identified, but are not described in detail.
- 1.6.54 Of particular note are the number of recent solar arrays which have been constructed (and in some cases still under construction) close to the existing Alverdiscott substation. These are illustrated in **Figure 1.12**. Habitats under these arrays will have been disturbed from their previous condition, and are likely to be re-seeded to provide enhanced grassland value when fully established.



Notes
 1. This plan is scaled at paper size A3. If received electronically it is the recipient's responsibility to print to the correct scale. Only written dimensions should be used.

- Legend**
- Order Limits
 - Converter Site
 - Map Frames



P01	FINAL	MP	MB	18.11.24
Rev	Description	By	CB	Date

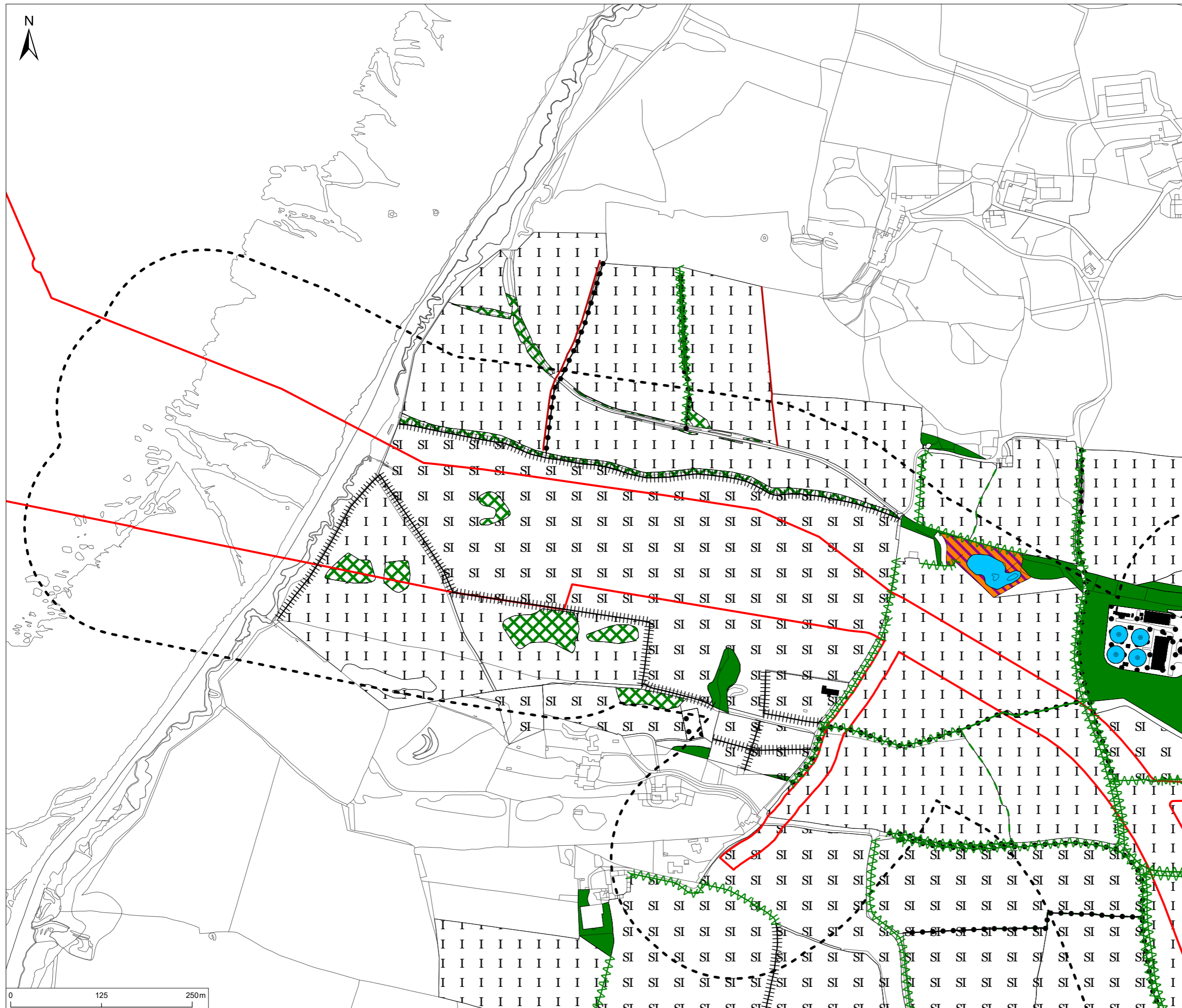


Client Xlinks 1 Limited
 Project Xlinks' Morocco-UK Power Project
 Title Phase 1 Habitat Survey

Status FINAL Scale @ A3 1:45,000 Date Created Nov 2024
 Figure Number 1.0 Rev P01

www.xlinks.co

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Notes
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Legend

- Order Limits
- 150m Buffer
- Bare ground
- Broadleaved woodland - semi-natural
- Buildings
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Scrub - dense/continuous
- Scrub - scattered
- Standing water
- Defunct hedge - species-poor
- Earth bank
- Fence
- Hedge with trees - native species-rich
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Wall



P01	FINAL	MP	BC	04.11.24
Rev	Description	By	CB	Date

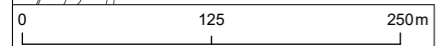


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 Title Phase 1 Habitat Survey

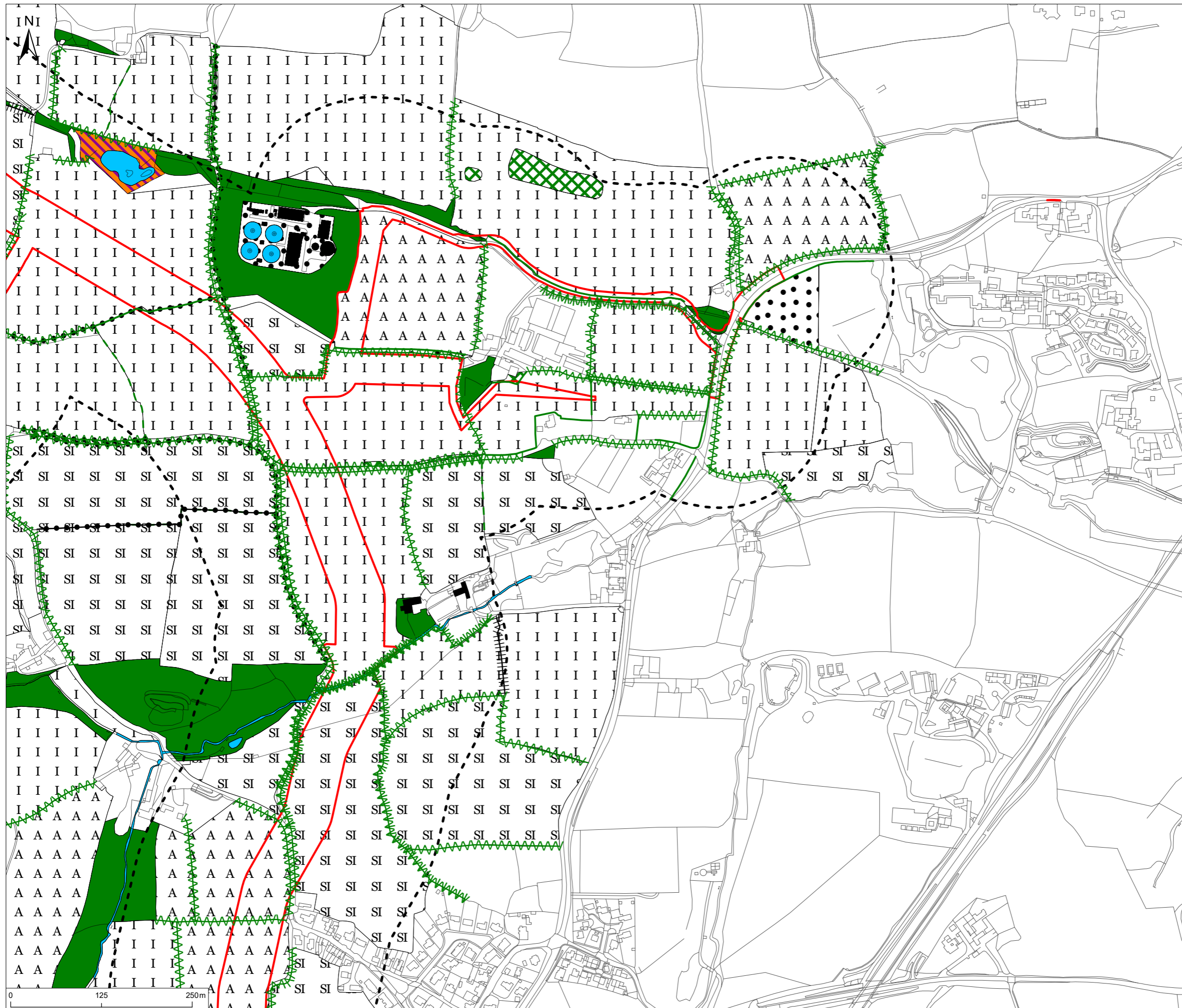
Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.1 Rev P01

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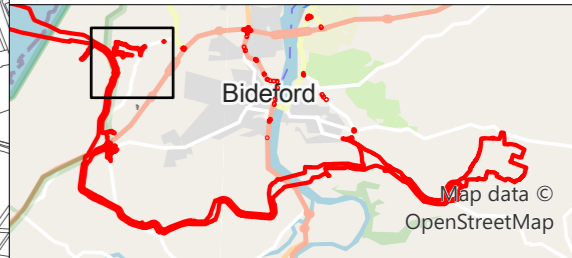


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Notes
 1. This plan is scaled at paper size A3. If received electronically it is the recipient's responsibility to print to the correct scale. Only written dimensions should be used.

- Legend**
- Order Limits
 - 150m Buffer
 - Arable
 - Bare ground
 - Broadleaved woodland - semi-natural
 - Buildings
 - Improved grassland
 - Marsh/marshy grassland
 - Poor semi-improved grassland
 - Scrub - dense/continuous
 - Standing water
 - Defunct hedge - species-poor
 - Earth bank
 - Fence
 - Hedge with trees - native species-rich
 - Intact hedge - native species-rich
 - Intact hedge - species-poor



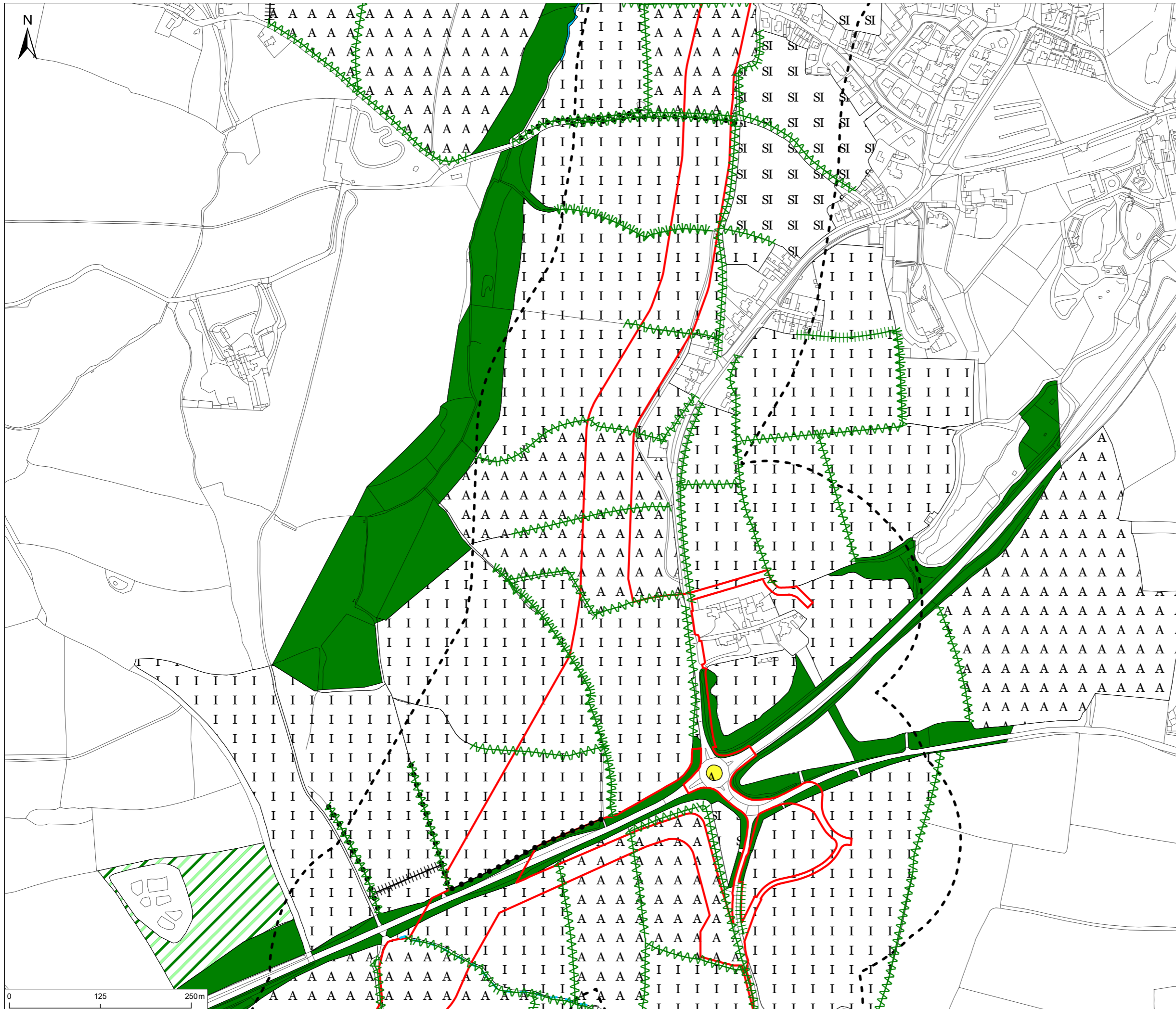
P01	FINAL	MP	BC	04.11.24
Rev	Description	By	CB	Date



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Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.2 Rev P01

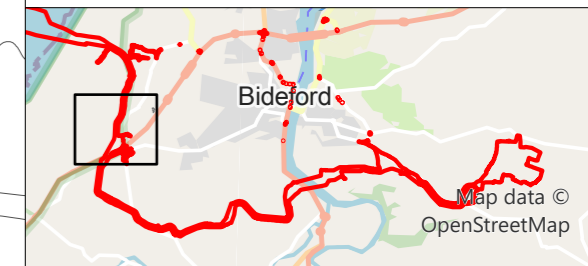
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Legend

- Order Limits
- 150m Buffer
- Amentiy grassland
- Arable
- Broadleaved woodland - semi-natural
- Improved grassland
- Mixed woodland - plantation
- Poor semi-improved grassland
- Standing water
- Dry ditch
- Earth bank
- Fence
- Hedge with trees - native species-rich
- Hedge with trees - species-poor
- Intact hedge - native species-rich



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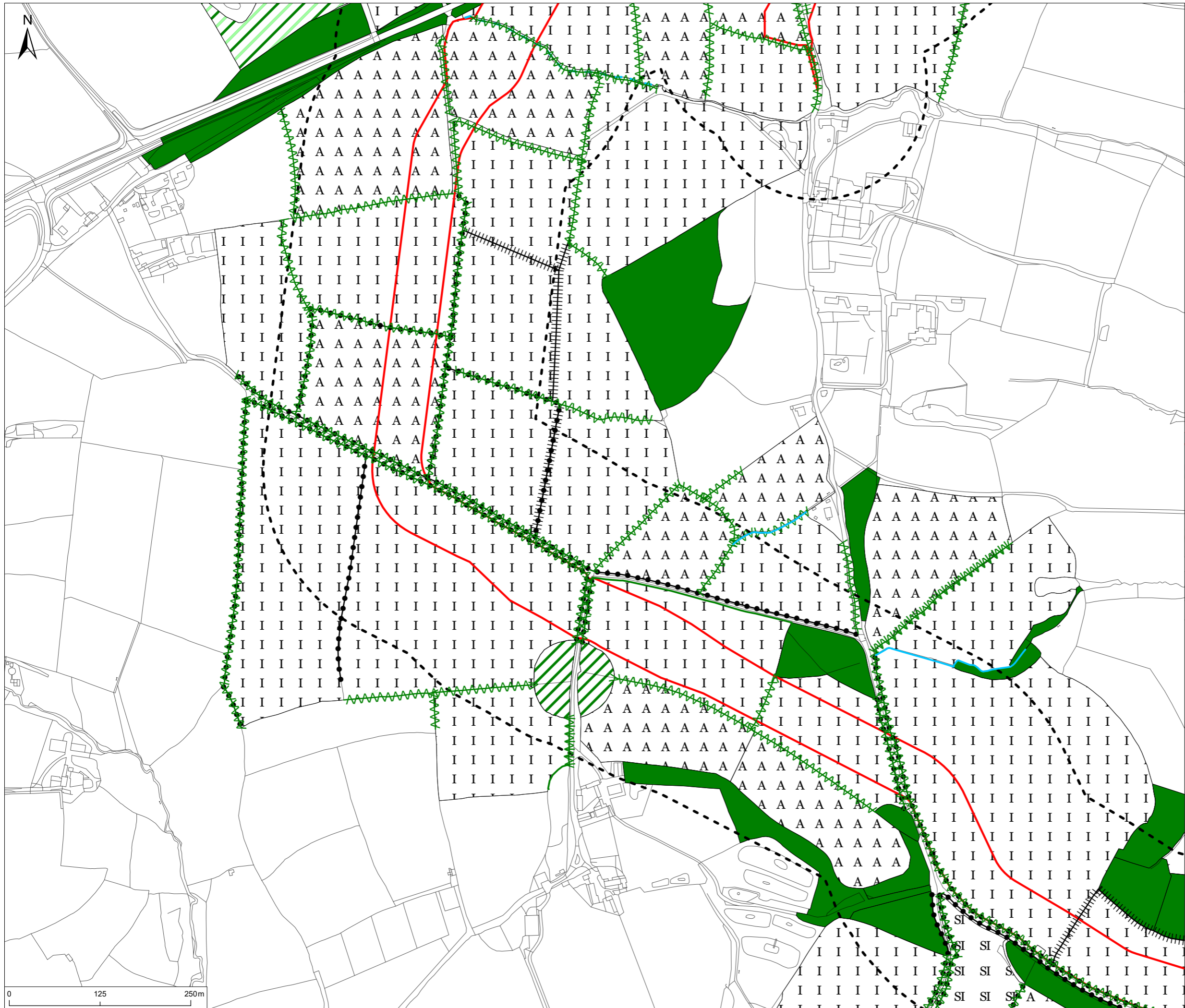


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 Figure Number 1.3 Rev P01

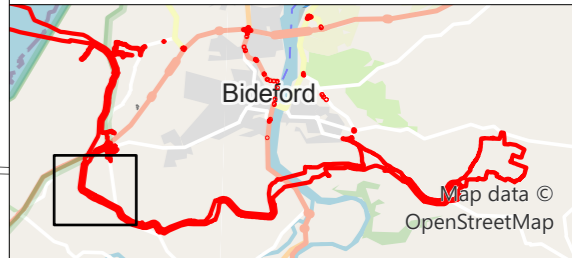
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- Legend**
- Order Limits
 - 150m Buffer
 - Arable
 - Broadleaved woodland - plantation
 - Broadleaved woodland - semi-natural
 - Improved grassland
 - Mixed woodland - plantation
 - Poor semi-improved grassland
 - Dry ditch
 - Earth bank
 - Fence
 - Hedge with trees - native species-rich
 - Hedge with trees - species-poor
 - Intact hedge - native species-rich
 - Intact hedge - species-poor
 - Running water



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Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.4 Rev P01

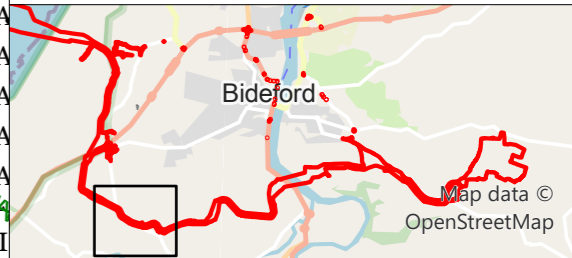
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 1. This plan is scaled at paper size A3. If received electronically it is the recipient's responsibility to print to the correct scale. Only written dimensions should be used.

- Legend**
- Order Limits
 - 150m Buffer
 - Arable
 - Broadleaved woodland - plantation
 - Broadleaved woodland - semi-natural
 - Improved grassland
 - Poor semi-improved grassland
 - Earth bank
 - Fence
 - Hedge with trees - native species-rich
 - Intact hedge - native species-rich
 - Intact hedge - species-poor
 - Running water



P01	FINAL	MP	BC	04.11.24
Rev	Description	By	CB	Date

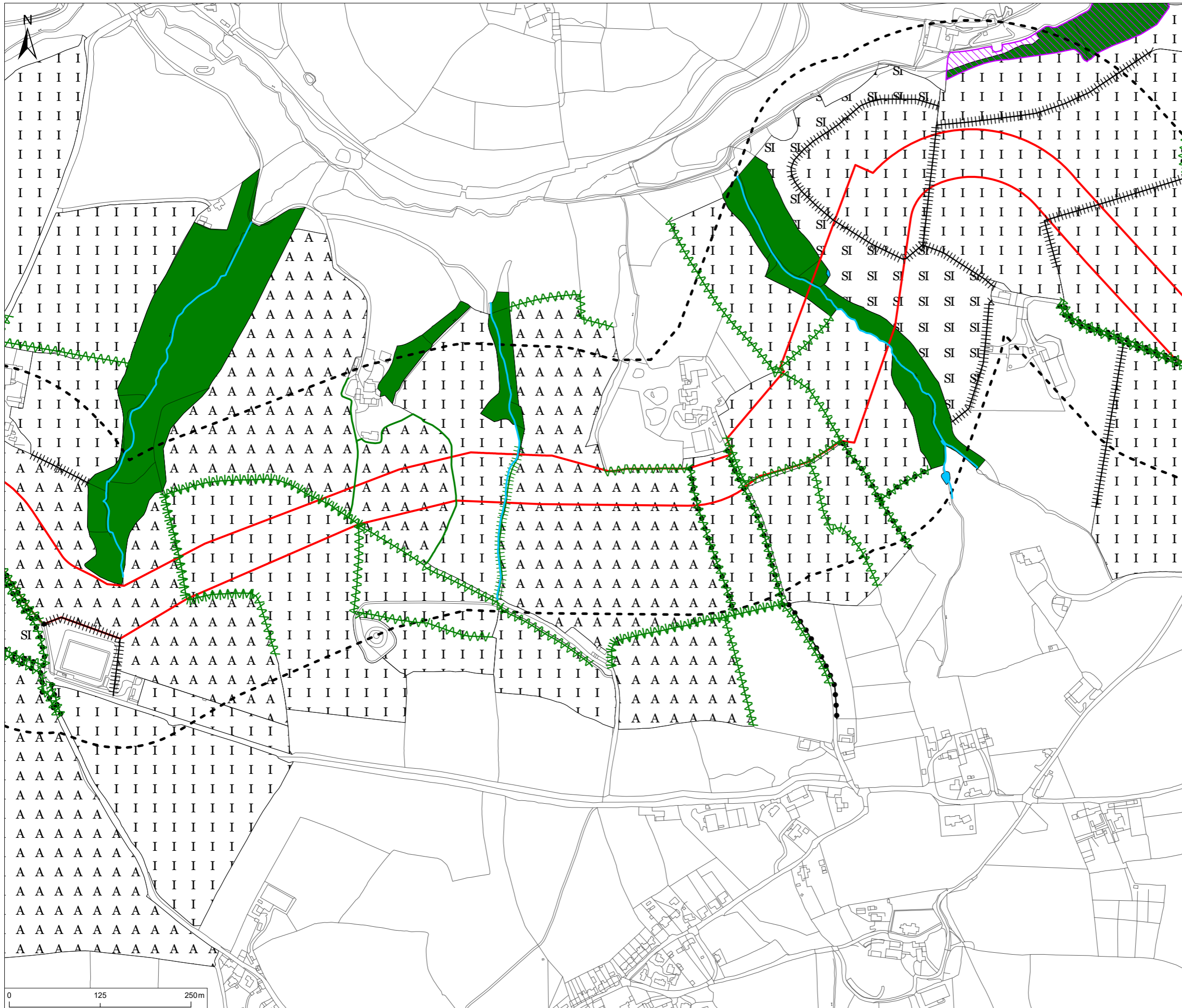


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 Project Xlinks' Morocco-UK Power Project
 Title Phase 1 Habitat Survey

Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.5 Rev P01

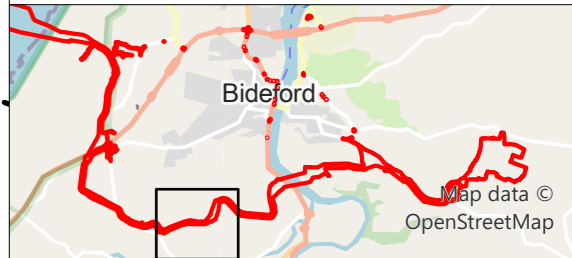
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Notes
 1. This plan is scaled at paper size A3. If received electronically it is the recipient's responsibility to print to the correct scale. Only written dimensions should be used.

- Legend**
- Order Limits
 - 150m Buffer
 - Ancient & Semi-Natural Woodland
 - Arable
 - Broadleaved woodland - semi-natural
 - Improved grassland
 - Poor semi-improved grassland
 - Standing water
 - Earth bank
 - Fence
 - Hedge with trees - native species-rich
 - Hedge with trees - species-poor
 - Intact hedge - native species-rich
 - Intact hedge - species-poor
 - Running water



P01	FINAL	MP	BC	04.11.24
Rev	Description	By	CB	Date

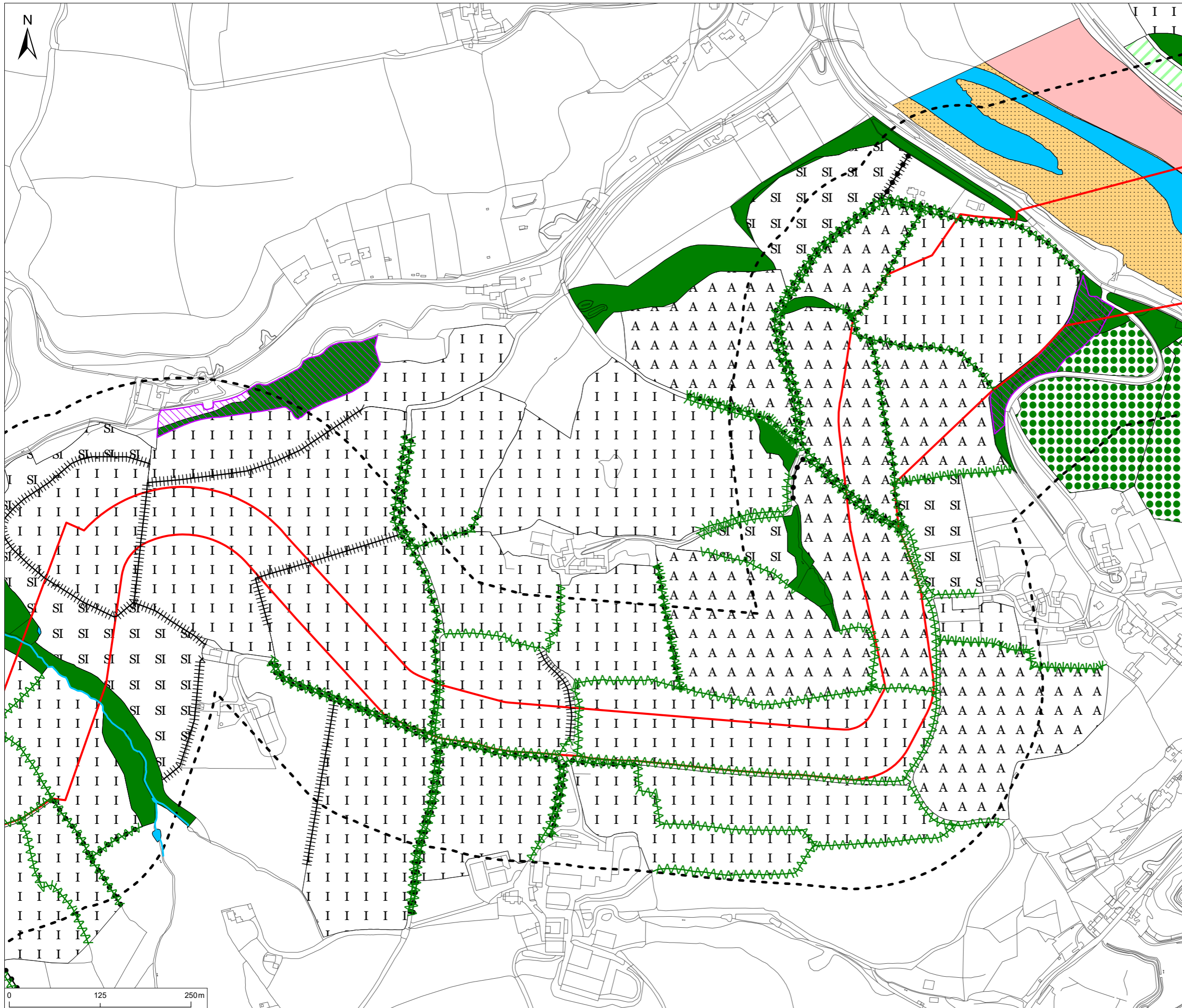


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 Project Xlinks' Morocco-UK Power Project
 Title Phase 1 Habitat Survey

Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.6 Rev P01

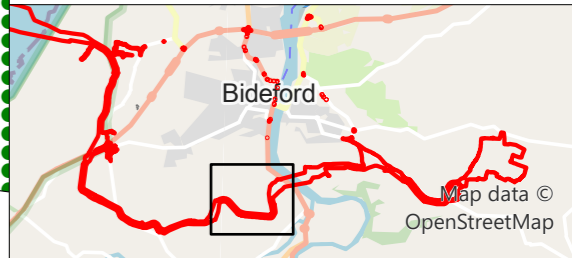
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Notes
 1. This plan is scaled at paper size A3. If received electronically it is the recipient's responsibility to print to the correct scale. Only written dimensions should be used.

- Legend**
- Order Limits
 - 150m Buffer
 - Ancient & Semi-Natural Woodland
 - Arable
 - Broadleaved Parkland/scattered trees
 - Broadleaved woodland - plantation
 - Broadleaved woodland - semi-natural
 - Coniferous woodland - plantation
 - Improved grassland
 - Intertidal - mud/sand
 - Poor semi-improved grassland
 - Saltmarsh - dense/continuous
 - Standing water
 - Earth bank
 - Fence
 - Hedge with trees - native species-rich
 - Hedge with trees - species-poor
 - Intact hedge - native species-rich
 - Running water



P01	FINAL	MP	BC	04.11.24
Rev	Description	By	CB	Date

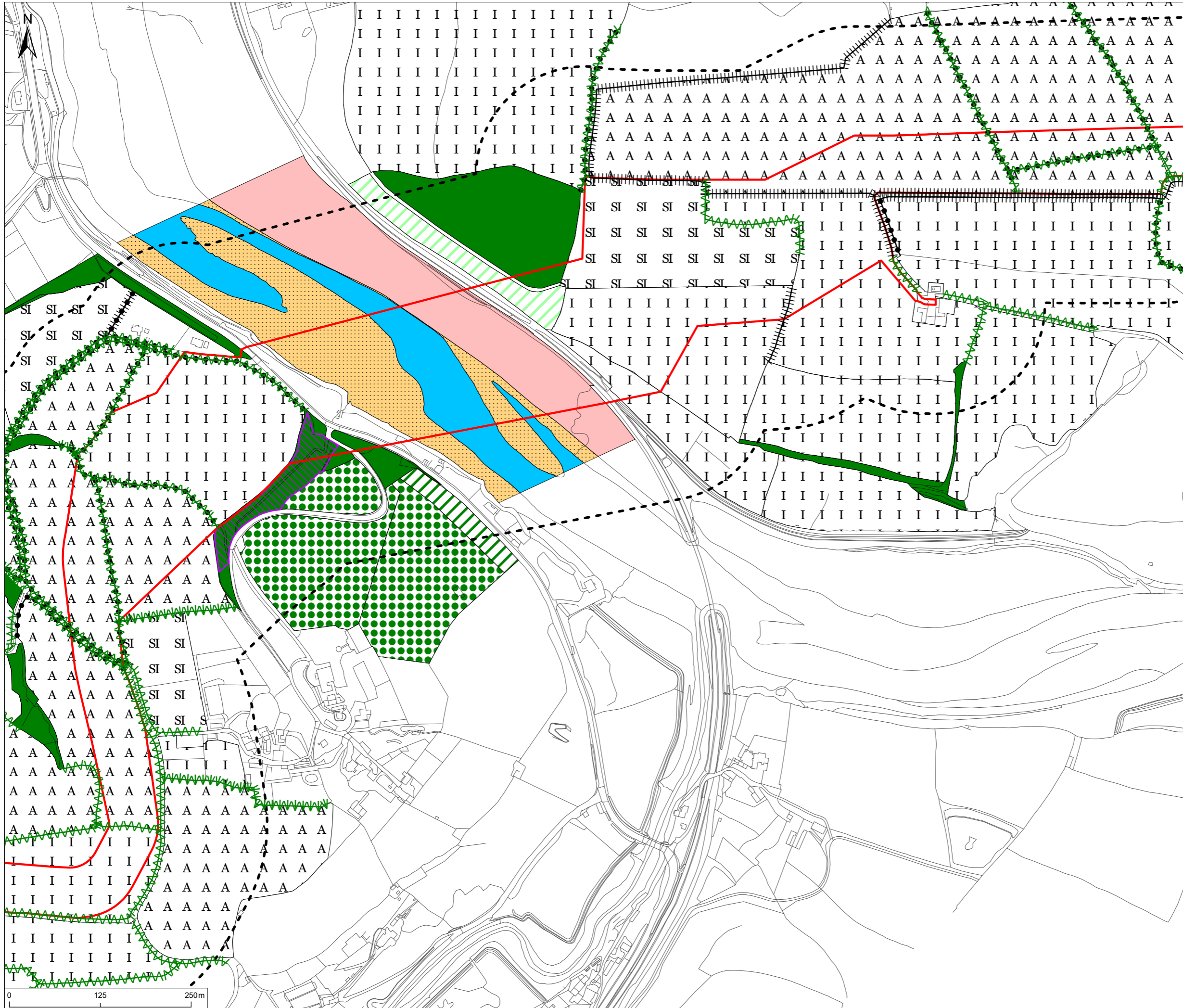


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 Title Phase 1 Habitat Survey

Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.7 Rev P01

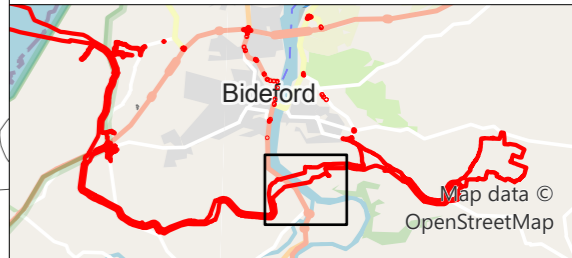
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 1. This plan is scaled at paper size A3. If received electronically it is the recipient's responsibility to print to the correct scale. Only written dimensions should be used.

- Legend**
- Order Limits
 - 150m Buffer
 - Ancient & Semi-Natural Woodland
 - Arable
 - Broadleaved Parkland/scattered trees
 - Broadleaved woodland - plantation
 - Broadleaved woodland - semi-natural
 - Coniferous woodland - plantation
 - Improved grassland
 - Intertidal - mud/sand
 - Poor semi-improved grassland
 - Saltmarsh - dense/continuous
 - Standing water
 - Earth bank
 - Fence
 - Hedge with trees - native species-rich
 - Intact hedge - native species-rich



P01	FINAL	MP	BC	04.11.24
Rev	Description	By	CB	Date

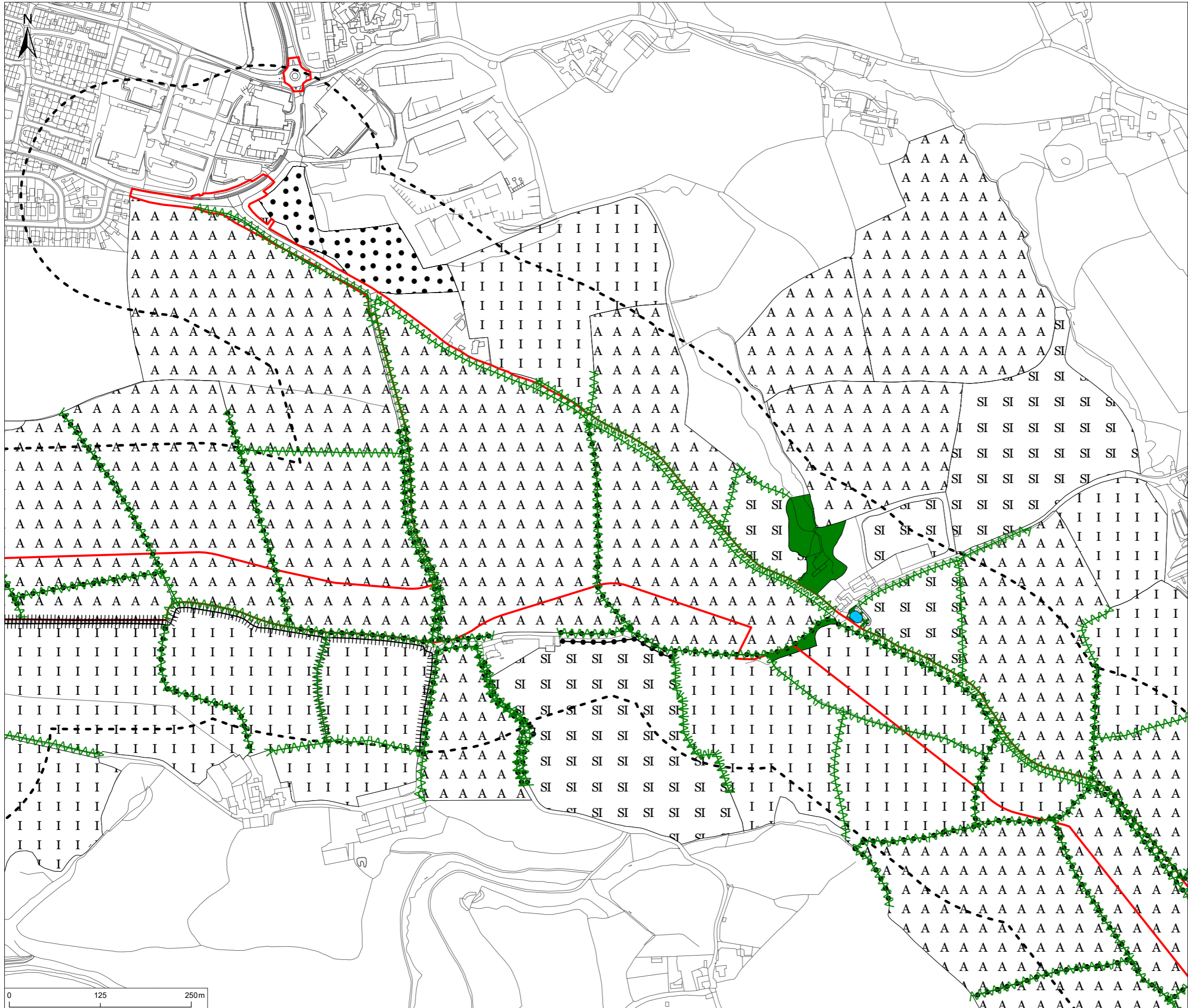


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 Title Phase 1 Habitat Survey

Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.8 Rev P01

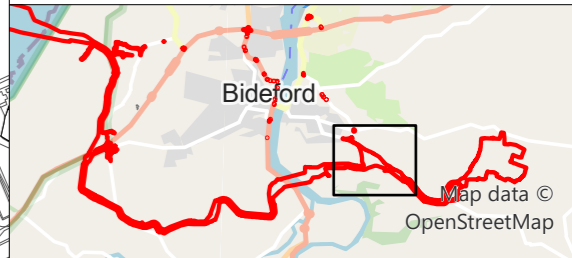
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 1. This plan is scaled at paper size A3. If received electronically it is the recipient's responsibility to print to the correct scale. Only written dimensions should be used.

- Legend**
- Order Limits
 - 150m Buffer
 - Arable
 - Bare ground
 - Broadleaved woodland - semi-natural
 - Improved grassland
 - Poor semi-improved grassland
 - Scrub - dense/continuous
 - Standing water
 - Earth bank
 - Fence
 - Hedge with trees - native species-rich
 - Intact hedge - native species-rich



P01	FINAL	MP	BC	04.11.24
Rev	Description	By	CB	Date

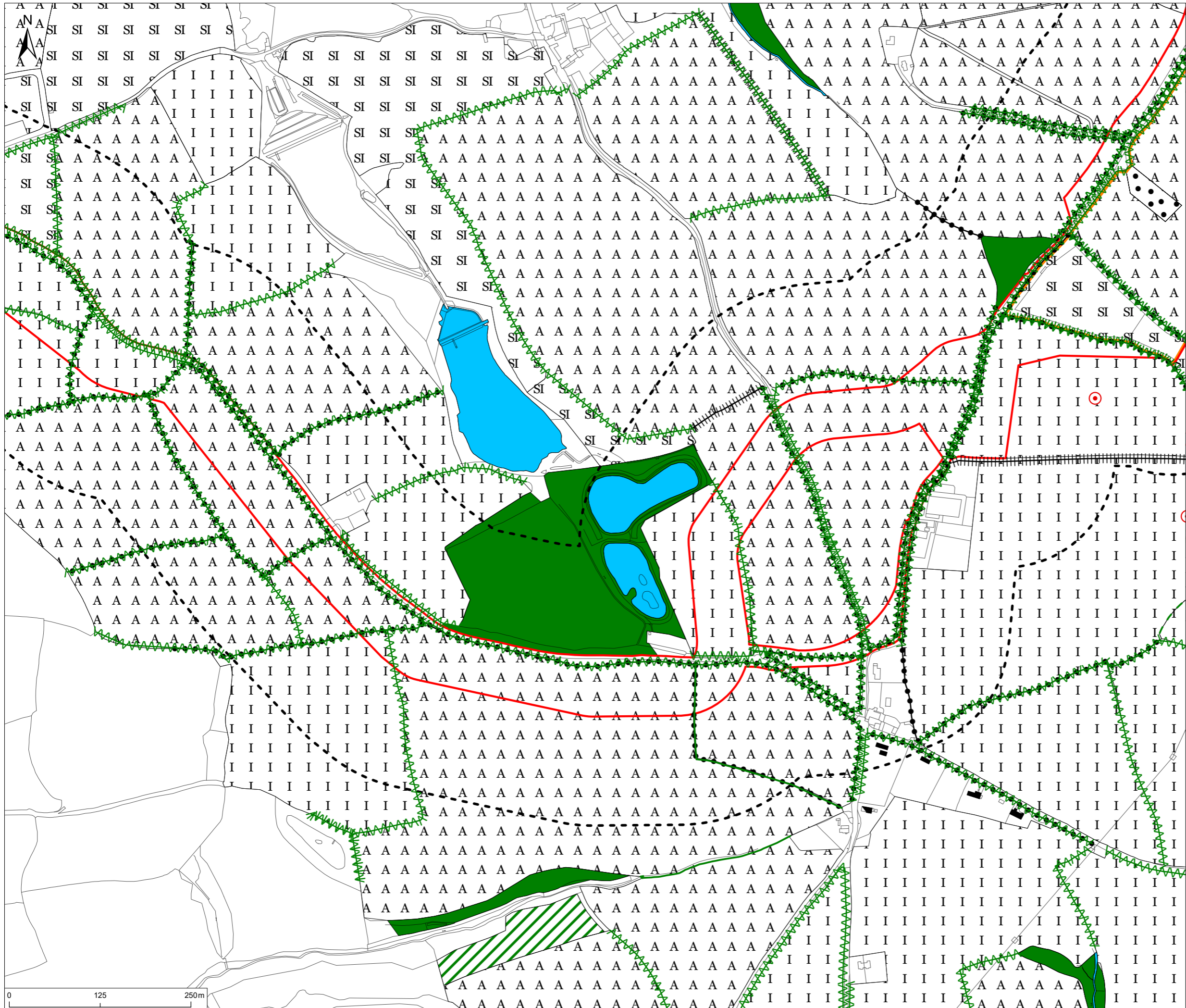


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 Project Xlinks' Morocco-UK Power Project
 Title Phase 1 Habitat Survey

Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.9 Rev P01

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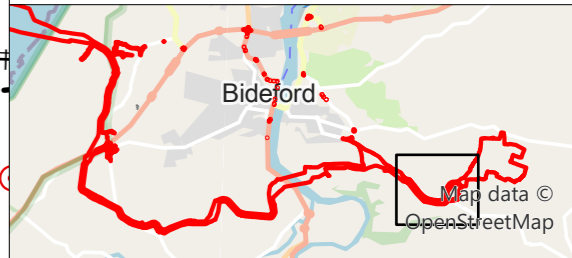
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Notes
 1. This plan is scaled at paper size A3. If received electronically it is the recipient's responsibility to print to the correct scale. Only written dimensions should be used.

Legend

- Order Limits
- Converter Site
- 150m Buffer
- Arable
- Bare ground
- Broadleaved woodland - plantation
- Broadleaved woodland - semi-natural
- Buildings
- Improved grassland
- Poor semi-improved grassland
- Standing water
- Defunct hedge - species-poor
- Earth bank
- Fence
- Hedge with trees - native species-rich
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Target Note



P01	FINAL	MP	BC	04.11.24
Rev	Description	By	CB	Date

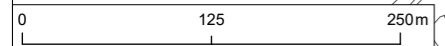


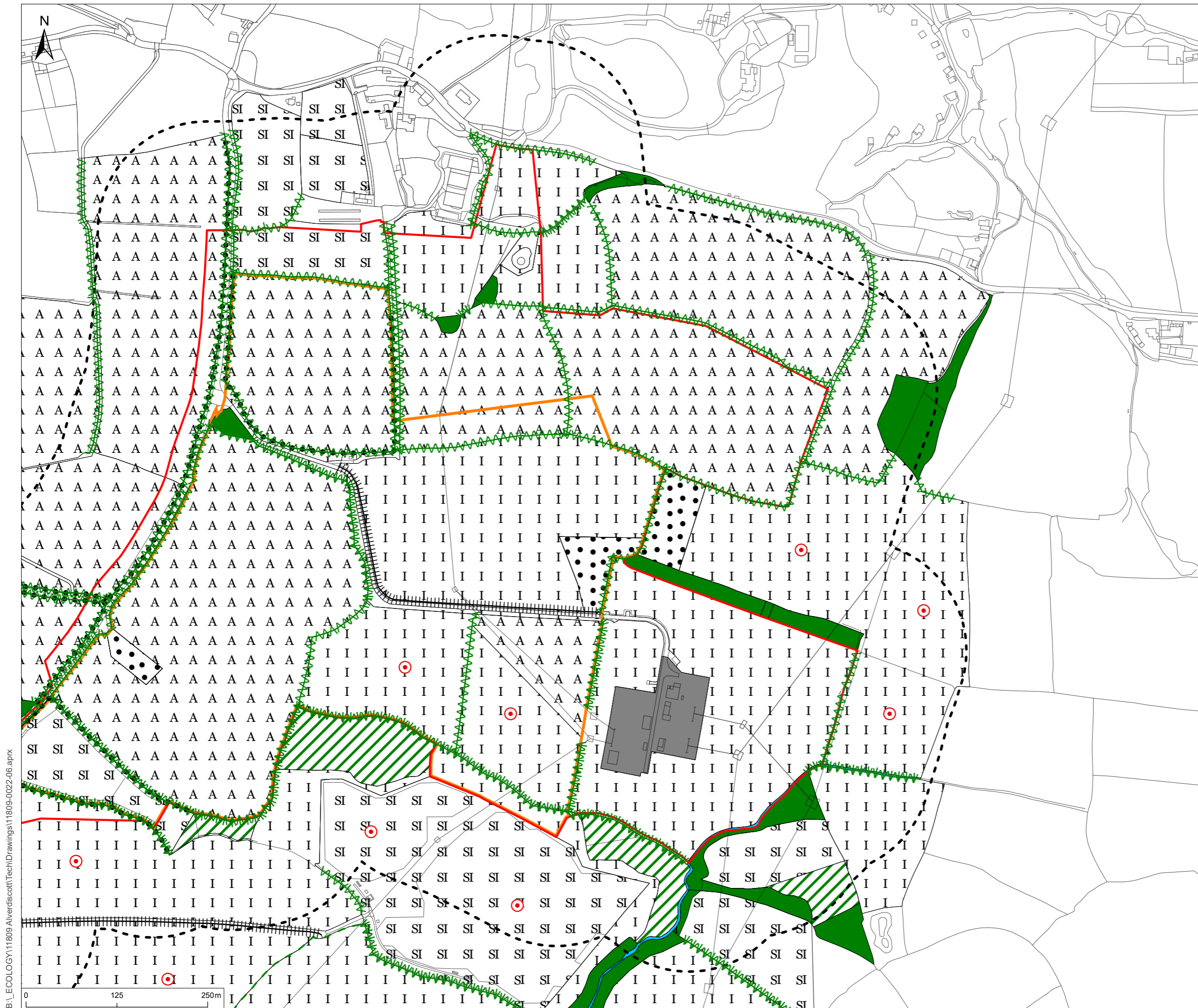
Client Xlinks 1 Limited
 Project Xlinks' Morocco-UK Power Project
 Title Phase 1 Habitat Survey

Status **FINAL** Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number **1.10** Rev **P01**

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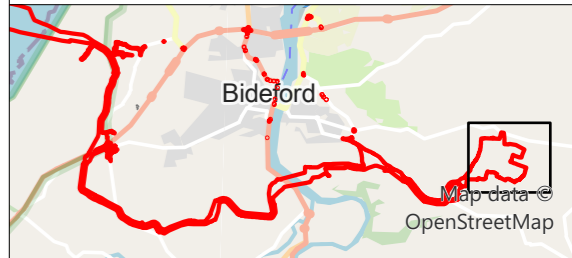
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Notes
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- Legend**
- Order Limits
 - Converter Site
 - 150m Buffer
 - Arable
 - Bare ground
 - Broadleaved woodland - plantation
 - Broadleaved woodland - semi-natural
 - Improved grassland
 - Hard standing
 - Poor semi-improved grassland
 - Standing water
 - Defunct hedge - species-poor
 - Earth bank
 - Fence
 - Hedge with trees - native species-rich
 - Intact hedge - native species-rich
 - Target Note



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Rev	Description	By	CB	Date



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 Project Xlinks' Morocco-UK Power Project
 Title Phase 1 Habitat Survey

Status FINAL Scale @ A3 1:5,000 Date Created Nov 2024
 Figure Number 1.11 Rev P01

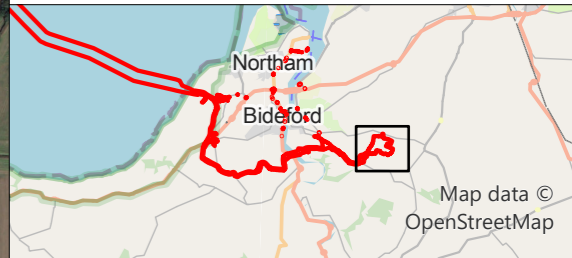
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Notes
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Legend
 [Red Outline] Order Limits
 [Green Outline] Converter Site



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Rev	Description	By	CB	Date



Client Xlinks 1 Limited
 Project Xlinks' Morocco-UK Power Project
 Title Aerial photograph of Converter Site showing current solar arrays

Status FINAL Scale @ A3 1:7,500 Date Created Nov 2024
 Figure Number 1.12 Rev P01

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Ecological Scoping Survey

Plants

- 1.6.55 No particularly rare or notable plants have been identified during the survey. Habitats along the proposed route are generally improved grassland or arable land. Hedgerows are generally more interesting, most being identified as species-rich, primarily due to the number of woody species present.

Invertebrates

- 1.6.56 Few habitats likely to be of value to terrestrial invertebrates have been identified. There are several small, wooded streams which will be crossed by the proposed cable route. Some areas of neutral semi-improved grassland have been noted to have some potential for butterflies, although these occur mainly away from the Onshore HVDC Cable Corridor. These have some potential to support an interesting aquatic invertebrate population. Additional aquatic invertebrate survey has been undertaken (see Volume 2, Appendix 1.10: Aquatic Invertebrate Monitoring of Watercourses to be Crossed of the ES).

Amphibians and reptiles

- 1.6.57 Devon does not support widespread populations of great crested newt, although some populations are known to exist. As a result, Devon Biodiversity Record Centre has identified a number of great crested newt "Consultation Zones", which are based on 5 km radii around known populations in Devon. The Onshore HVDC Cable Corridor and Converter Site (or any other part of the Proposed Development) does not pass through any of the Devon great crested newt consultation zones.
- 1.6.58 Habitats suitable for reptiles were identified in areas across the route. A detailed reptile survey of areas with suitable habitat will be undertaken to assess the populations present.

Birds

- 1.6.59 The route passes from coastal cliffs through farmland with hedgerows to the Torridge Estuary, and then passes on through further areas of farmland. The Torridge Estuary is designated as a SSSI further to the north for its populations of wintering birds. There is potential for wintering, migratory and breeding birds along the route, therefore wintering bird and breeding bird surveys have been undertaken along the route.

Bats

- 1.6.60 The Onshore HVDC Cable Corridor and Converter Site pass through many hedgerows which are likely to be used as foraging and migration flight-lines for bats. In addition, there may be individual trees with potential to support bat roosts on or near the Onshore HVDC Cable Corridor, Converter Site and potentially on temporary construction compounds. An inspection of trees along the route for bat roosting potential and bat activity surveys at all compound locations have been implemented.

Badgers

- 1.6.61 Habitats suitable for badgers are present along the entire Onshore HVDC Cable Corridor and Converter Site. A badger survey has been initiated for detailed information on badger setts on or near to the Onshore HVDC Cable Corridor and Converter Site.

Water Voles

- 1.6.62 Some watercourses crossed by the Onshore HVDC Cable Corridor have potential for presence of water voles. A survey for their presence has been initiated.

Otters

- 1.6.63 The Taw/Torridge Estuary and their catchment is well known for the presence of otters. Otters will be likely to be utilising all watercourses associated with the Proposed Development. A more detailed otter survey to ensure no holts, couches or other places of rest are present in locations which could be affected by the proposed works.

Dormice

- 1.6.64 The Onshore HVDC Cable Corridor passes through many hedges which have direct links to patches of woodland. As dormice frequently occur in most parts of rural Devon, and it is extremely likely that dormice could be present along much of the route. A detailed dormouse survey has been initiated and is ongoing (see Volume 2, Appendix 1.3: Dormouse Report of the ES).

1.7 Summary

- 1.7.1 Habitats identified along the Onshore HVDC Cable Corridor, landfall and Converter Site are typical of the north Devon landscape in this area. Primarily agricultural in format, fields are generally bounded by typical banked Devon hedgerows, many of which are species rich and frequently contain mature standard trees.
- 1.7.2 Fields are predominantly agriculturally-improved grasslands or in arable crop production, which tends to reduce their ecological value.
- 1.7.3 The network of hedgerows provides a strong linking feature across the landscape and often provides connectivity between small patches of woodland which occur frequently.
- 1.7.4 The following list describes the ecological value of those habitats which fall directly into the alignment of the proposed cable route or Converter station site. Their ecological value/sensitivity can be assessed in the following way.
- Devon hedgerows: County value.
 - Streams with wooded banks: County value.
 - Improved grasslands and arable leys: Parish value.
 - Semi-improved grasslands: Local value.
 - Arable cropland: Parish value.

- 1.7.5 The above list of habitats identify those which could be directly affected by the Proposed Development and should be used as a minimum for assessment of impacts.
- 1.7.6 Other habitats of note along the Onshore HVDC Cable Corridor include the Torridge Estuary with its associated salt marsh and mudflat tidal habitats, and woodlands. The current understanding of the Proposed Development indicates that these habitats (estuary, woodlands and streams with wooded banks) will be avoided during cabling operations by use of trenchless crossing techniques (i.e. Horizontal Directional Drilling) methods to install cables underneath them without direct effects on the habitats present.
- 1.7.7 The habitats identified at the Converter Site are typically arable and improved grassland habitats with a small number of Devon hedges (a number of field boundaries at this location are achieved using fences, rather than hedgerows). These habitats and features will be subject to direct habitat loss as a result of construction of the proposed Converter Site. Some additional hedgerow will be lost as a result of proposed road widening for wide load access, although this will be recreated on new alignments.

1.8 References

British Standard Institute (2013). Biodiversity: Code of Practice for Planning and Development (BS42020:2013).

Chartered Institute of Ecology & Environmental Management (CIEEM) (2017). Guidelines for Preliminary Ecological Appraisal.

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JNCC (2010). Handbook for Phase 1 Habitat survey - a technique for environmental audit.