

Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order

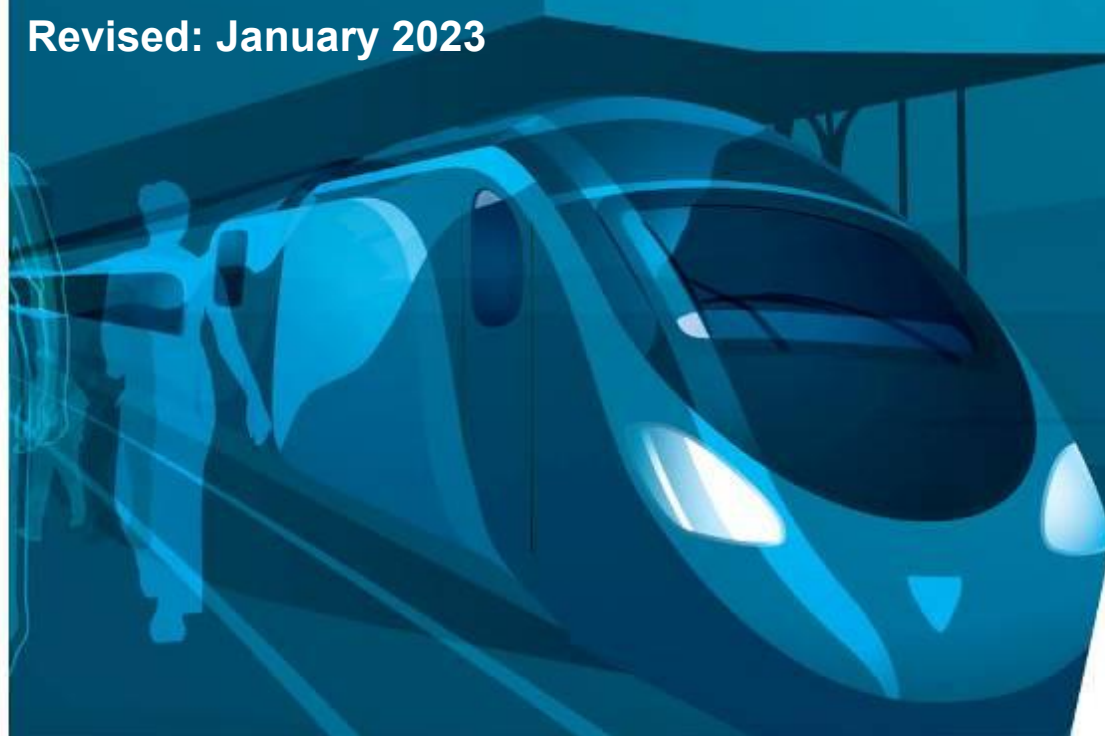
Condition 4: Landscape and Ecological Management Plan – Stage 1

Document Ref: 151667-TSA-00-TRU-REP-W-EN-001179

Network Rail

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1. INTRODUCTION

1.1 Background

- 1.1.1 The Scheme is part of a wider programme of works under the Transpennine Route Upgrade (TRU) which will improve the Transpennine railway between Manchester, Huddersfield, Leeds and York and improve connections between key towns and cities across the north of England.
- 1.1.2 Planning Direction for the Huddersfield to Westtown (Dewsbury) section of the TRU was received from the Department for Transport, referenced TWA/21/APP/03, dated 13 October 2022.
- 1.1.3 This document sets out details in relation to Condition 4 of the Deemed Planning Permission.

2. STAGED APPROACH TO DISCHARGE

- 2.1.1 As set out in document ref 151667-TSA-00-TRU-REP-W-EN-001189 (submitted in relation to Condition 3 (at Stage 1) of the Deemed Planning Permission) a staged approach is proposed in relation to discharge of the deemed planning conditions.
- 2.1.2 This is a Scheme-wide document for the Huddersfield to Westtown (Dewsbury) section of the TRU which contains high level detail of the landscaping and ecological proposals and is based on the most up-to-date design and construction knowledge available at the point of submission.
- 2.1.3 This submission has been made to enable a phased discharge of Condition 4 to facilitate the start of the development (Stage 1), which includes mining remediation works in the Ravensthorpe area and construction compound set up across the route (currently planned to start in April 2023) as well as vegetation clearance across the Scheme area as set out in the Condition 3: Stages of Development submission.
- 2.1.4 This Scheme-wide document sets out the general Landscape and Ecological Management Plan (LEMP) principles to be implemented. The final details, including all landscape design detail, will be submitted at Stage 8.

3. INFORMATION INCLUDED IN THIS SUBMISSION

- 3.1.1 The wording of Condition 4 is reproduced in Table 3-1. Information is also provided as to how this document details the information required and where information is proposed to be provided at a later stage.

Table 3-1 Details of Condition 4

Condition reference	Details of condition	Section reference
Condition 4a Sub-section i)	A plan of existing trees and tree features (such as groups of trees or woodland) to be retained and to be removed in accordance with BS5837 (2012).	Details are included in Section 5.1-5.2 and Scheme-wide drawings are provided in Appendix A.
Condition 4a Sub-section ii)	A plan of ecological mitigation details including areas of new plantings and details of any habitats created or enhanced.	Not applicable to this Stage of Works. The applicant has committed to provided details for ecological mitigation works within the Stage 8 submission, when further information on the proposed landscape/ecological scheme is known, which coincides with detailed design being available.
Condition 4a Sub-section iii)	Implementation timetable and a programme for initial aftercare, long-term management and maintenance responsibilities for a period of five years post-completion.	Not applicable to this Stage of Works. The applicant has committed to provided details of the proposed programme for aftercare and long-term management will be provided within the Stage 8 submission, when further information on the proposed landscape/ecological scheme is known.
Condition 4a Sub-section iv)	Details of organisation(s) responsible for maintenance and monitoring.	Not applicable to this Stage of Works. The applicant has committed to provided details of the organisation sub-contracted for the maintenance and monitoring of all aspects of landscaping and ecological mitigation management within the Stage 8 submission.
Condition 4b Sub-section i)	The aims and objectives of the management to be undertaken.	High level aims are included in Section 7. Not applicable to this Stage of Works. The applicant has committed to provided Information on the aims and objectives for management of ecological important areas w within the Stage 8 submission, when further information on the proposed landscape/ecological scheme is known.
Condition 4b Sub-section ii)	A programme of monitoring with thresholds for action as required.	Not applicable to this Stage of Works. The applicant has committed to provided details for monitoring and remedial action based on generic landscape type e.g. woodland planting, grassland etc. within the Stage 8 submission, when further information

Condition reference	Details of condition	Section reference
		on the proposed landscape/ecological scheme is known.
Condition 4b Sub-section iii)	Full details of measures to ensure protection and suitable mitigation to all relevant protected species and those species identified as being of importance to biodiversity (including licensing mitigation requirements) including bats; floating water plantain (<i>Luronium Natans</i>); badgers; reptiles, otter and water vole, where appropriate.	Details are included in Section 7. Ecological mitigation measures utilise survey information gathered to inform the ES and any subsequent data collected to inform the protected species licence applications.
Condition 4b Sub-section iii)	Implementation timetable and a programme for initial aftercare, long-term management and maintenance responsibilities for a period of five years post-completion	Not applicable to this Stage of Works. The applicant has committed to provided details within the Stage 8 submission, when further information on the proposed landscape/ecological scheme is known. The Stage 8 submission will set out the programme for planting as well as detailing information on management and maintenance responsibilities.
Condition 4c Sub-section i)	Full detailed landscape plans indicating full planting specification, including layout, species, number, density and size of trees, shrubs, plants, hedgerows and/or seed mixes and sowing rates, including extensive use of native species;	Not applicable to this Stage of Works. The applicant has committed to provided details landscape and ecological plans including detailed planting details within the Stage 8 submission when further information on the proposed landscape/ecological scheme is known.
Condition 4c Sub-section ii)	Any structures, such as street furniture, any non-railway means of enclosure and lighting	Not applicable to this Stage of Works. The applicant has committed to provided details within the Stage 8 submission when further information on the proposed landscape/ecological scheme is known
Condition 4c Sub-section iii)	Any details of regrading, cut and fill, earth screen bunds, existing and proposed levels	Not applicable to this Stage of Works. The applicant has committed to provided details within the Stage 8 submission when further information on the proposed landscape/ecological scheme is known
Condition 4c Sub-section iv)	Any areas of grass turfing or seeding and depth of topsoil to be provided	Not applicable to this Stage of Works. The applicant has committed to provided details within the Stage 8 submission when further information on the proposed landscape/ecological scheme is known

Condition reference	Details of condition	Section reference
Condition 4c Sub-section v)	A timescale for the implementation of hard landscaping works	Not applicable to this Stage of Works. The applicant has committed to provided details for hard landscaping works within the Stage 8 submission, when further information on the proposed landscape/ecological scheme is known.
Condition 4b Sub-section vi)	Details of monitoring and remedial measures, including replacement of any trees, shrubs or planting that fail or become diseased within the first five years from completion.	Not applicable to this Stage of Works. The applicant has committed to provided details for management and maintenance based on landscape type e.g. woodland planting, grassland etc. within the Stage 8 submission, when further information on the proposed landscape/ecological scheme is known.
Condition 4c Sub-section vii)	Details of protective measures for retained trees	Details of tree protection measures for areas of retained trees/woodland are included in Section 5.2. Information on areas of retained trees is provided in Appendix A with details of measures to be employed included in Appendix B.

- 3.1.2 As part of the Stage 1 works, partial discharge of Condition 4 (subsections 4ai) 4bii) and 4cvii) is sought to enable revegetation works to proceed.
- 3.1.3 The applicant will be making a further submission against Condition 4 at Stage 8 (as detailed in the Stages of Development document) which will contain detailed proposals of proposed planting and ecological mitigation, as this stage is reliant, in part, on the detailed design and subsequent construction methodology, it is proposed that this information will be submitted post construction start.
- 3.1.4 Regular formalised and periodic discussions will take place with representatives of Kirklees Council (at this stage the assumption is this will involve landscape and biodiversity officers) in relation to the proposed landscape and ecological plans.
- 3.1.5 In terms of dates, it is anticipated that the Stage 8 submission will be made during early 2025 but this timescale is subject to change dependant on the design programme.

4. ROLES AND RESPONSIBILITIES

- 4.1.1 It will be ensured that all relevant policies, procedures and their requirements are made known to site personnel. This will be undertaken through a number of methods including site inductions, Work Package Plans (otherwise known as method statements) and risk assessment briefings, and toolbox talks.
- 4.1.2 Staff, operatives and subcontractors have the authority and responsibility to protect the environment at all times during execution of the works; the responsibilities outlined in this section will be highlighted during the site induction. All personnel will be trained in the necessary skills to fulfil their role.
- 4.1.3 Key personnel for specific job roles are set out in the Table 4-1. The roles outlined may be substituted as required providing that the key environmental responsibilities are clearly and appropriately allocated.
- 4.1.4 Contact details for all key contractors will be displayed on notice boards in the site offices.

Table 4-1 Roles and responsibilities

Role	Key environmental responsibilities
Principal Environment Manager	• Carries overall responsibility for meeting environmental performance objectives and targets; • Responsible for management of the construction phase of the Scheme, and ensuring compliance with all relevant legal requirements, commitments and targets; • Ensures that site-specific training needs are identified, and training programmes are effectively undertaken; • Ensures adequately trained and competent resources are provided to implement the LEMP; • Ensures that environmental risks are evaluated and considered during the planning stage of the Scheme; • Interfaces between various design disciplines to ensure that environmental considerations have been taken account of in final design output; • Approves all specific or specialist environmental procedures that are required; • Responsible for submission of any required protected species licences; and • Responsible for setting and meeting project objectives and targets.
Site Environment Manager	• Maintaining and revising any environmental procedures that are required; • All measures in the LEMP are implemented on site. This includes ensuring that adequate resources are allocated to environmental management on site; • Ensuring all measures to protect retained vegetation are implemented on site; • Ensuring that adequate resources are allocated to environmental management on site; • Reviews and approves risk assessments and Work Package Plans (RAMS) for environmental content; • Appointing Environmental Specialists where required; • Ensuring environmental issues in risk assessments are communicated effectively on site and that appropriate training is delivered;

Role	Key environmental responsibilities
	• Ensuring that any mitigation measures identified in this document but not covered by a Protected Species Licence will be implemented on site; and • Ensuring environmental instructions (including any KPIs) from the client are carried out.

5. DETAILS OF EXISTING TREES AND VEGETATION

5.1 Protection and mitigation for retained trees

- 5.1.1 The Environmental Statement submitted to support the TWAO for the Scheme considered the potential impact of removal of trees within the Scheme area (Chapter 9 of Volume 2 of the ES (Route-wide¹ and Route Section reports) to facilitate construction and/or operation of the Scheme. An Arboricultural Impact Assessment (AIA) was also produced (Appendix 9-1 in Volume 3 of the ES²).
- 5.1.2 Drawing 151667-TSA-00-TRU-REP-W-EN-000117 at Appendix A shows the trees to be removed and retained.
- 5.1.3 Where trees are to be retained within 15m of the construction works (including access routes, storages areas, site compounds and working space), tree protection measures will be required to mitigate for potential above and below ground impacts and ensure these trees are retained successfully. The factors which most commonly result in below ground damage affecting oxygen diffusion and therefore must be avoided.
- 5.1.4 A Construction Exclusion Zone (CEZ) will be established around these trees where no unauthorised access or construction operations (including site compounds/facilities/storage of materials) are permitted to protect the ground from compaction or excavation and canopies from physical damage. This will be secured by means of temporary protective fencing with weatherproof signage, which is shown in Appendix B.
- 5.1.5 These details and the location of tree protection measures will be detailed on a site-by-site basis within standalone Arboricultural Method Statements. These will be kept in the site office. It will be the responsibility of the Site Environment Manager to ensure that the required measures are put in place prior to any construction works taking place on each site.
- 5.1.6 Following the principles set out in section 6.2.2 of BS5837, these barriers should be “*fit for the purpose of excluding construction activity and appropriate to the degree and proximity of the work taking place around the retained trees*”. The CEZ will be secured using a vertical and horizontal scaffold framework, well braced to resist impacts. The vertical tubes will be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels will be securely fixed.
- 5.1.7 All weather notices will be secured to the barrier.

5.2 Vegetation to be removed / retained

- 5.2.1 As set out in the Stages of Development document (151667-TSA-00-TRU-REP-W-EN-001189) submitted to support Condition 3 of the Deemed Planning Permission, vegetation clearance is proposed during Stage 1 across the Scheme to facilitate construction works.
- 5.2.2 An extended Phase 1 habitat survey of the site was conducted in 2019, which covered all accessible areas within and adjacent to the Scheme.
- 5.2.3 A full description of the site’s habitats was provided in Chapter 9 (Biodiversity) of the Environmental Statement (ES) submitted to support the TWAO..

¹ [Ch09 Biodiversity.pdf \(windows.net\)](#)

² [Ch09 Biodiversity - App 9-1 Arboricultural Impact.pdf \(windows.net\)](#)

- 5.2.4 Habitats across the Scheme comprise of:
- Buildings;
 - Hardstanding;
 - Grassland;
 - Scattered trees;
 - Woodland; and
 - Mixed scrub.
- 5.2.5 Retained habitats are presented in Drawing 151667-TSA-00-TRU-REP-W-EN-001288 (submitted to support Condition 3 of the Deemed Planning Permission). Copies of these plans will be retained on site during construction works.
- 5.2.6 In terms of how we will manage data of vegetation removal the following process will be followed;
- Extent of planned vegetation removal (plan of proposed area) is shared with Kirklees landscape and biodiversity officer (3 weeks in advance of works). This will highlight any specific mitigation measures over and above that outlined in the Stage 1 LEMP (e.g. based on pre-construction checks);
 - Letter drops are shared with Kirklees officers (and relevant councillors) at the same time as with residents (minimum 2 weeks in advance);
 - Plan of actual vegetation removal is mapped either via landscape contractor or project ecologists. The TRU West Alliance Consents and Environment (C&E) team will keep a central copy of the vegetation removal plans on the project common data environment to enable these to be superimposed on the baseline phase 1 survey mapping (see paragraph 5.2.1);
 - The Alliance C&E team will calculate actual habitat loss from data in point 3 and populate / update a purpose-developed spreadsheet to capture habitat loss that informs:
 - Stage 8 LEMP (detailed landscaping and ecology plans). Whilst submission of the plans is programmed for Stage 8, these will be developed over time and discussed with officers at the Council and other relevant stakeholders, as appropriate
 - BNG data calculations
 - Alliance C&E team will brief Kirklees officers on progress at periodic environment meetings (frequency to be agreed)
- 5.2.7 It will be the responsibility of the Site Environment Manager to ensure that the required measures are put in place prior to any vegetation works taking place on site with support from ecology and landscape specialists as appropriate/required.

6. PROTECTED SPECIES AND SPECIES OF IMPORTANCE

6.1 Ecological mitigation and avoidance measures

- 6.1.1 To meet legal compliance and demonstrate good practice environmental measures with regard to nature conservation, the following standard pollution prevention guidelines will be implemented, to minimise impacts on retained habitats within the Scheme and within the local area:
- Refine construction compounds (layouts) as far as possible to minimise temporary vegetation clearance;
 - Temporary fencing to be used to clearly delineate retained habitat to be protected during the construction period;
 - Careful siting and appropriate bunding of storage facilities for fuel and hazardous materials avoiding sensitive habitats;
 - Delivery of oils and fuels to be supervised at all times to avoid risk of spillage;
 - Dust build up and mud deposits will be avoided and stockpiled material to be covered or stored within a contained area to enable run-off to be treated;
 - Use of plant nappies when filling smaller containers from tanks or drums to avoid spillage entering the ground or drainage systems;
 - Works to be undertaken during daylight hours or lighting to be controlled to ensure there is minimal light spill on habitats used by nocturnal species (e.g. foraging and commuting bats);
 - Works to be undertaken in line with the mitigation identified in the Code of Construction Practice (CoCP) Part A and Part B documentation; and
 - Targeted toolbox talks on biodiversity issues relevant to the works will be delivered to site personnel.
- 6.1.2 It should be noted that with regards to protected species, the mitigation measures provided particularly in sections 6.2 and 6.4 may be refined, in line with any feedback received from Natural England with during the licence process.

6.2 Bats

- 6.2.1 Several bat roosts, including hibernation and day roosts, have been identified within buildings, structures and trees throughout the Scheme.
- 6.2.2 Bat surveys undertaken in 2019, and 2021 identified a Daubenton's hibernation and maternity roost at Colne Viaduct Underbridge (MVL3/109) and a common pipistrelle day roost at Heaton lodge cottages (32030_B1).
- 6.2.3 Proposed re-construction of Colne Viaduct Underbridge (MVL3/109) and demolition of Heaton Lodge cottages (32030_B1) will need to be undertaken in accordance with an approved Natural England European Protected Species Mitigation Licence (EPSML).
- 6.2.4 Further bat surveys following best practice guidelines³ to support a licence application have been undertaken between May and September 2022 by suitably qualified ecologists.
- 6.2.5 The following mitigation measures will be required as a condition of the EPSML, the scope of which will be refined during the licence application and is subject to agreement with

³ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust.

Natural England. All mitigation will be overseen by a licensed bat ecologist:

- **Colne Viaduct Underbridge (MVL3/109)**

- Provision of temporary alternative roosting sites (bat boxes suitable for use by Daubenton's bats) on nearby bridges over rivers that will not be subject to significant disturbance during construction and where no roosting opportunities currently exist. The recommended site is the A62 Leeds Road bridge over the River Calder to the north. Before any licensable works commence, including exclusion of existing roost in Colne Viaduct Underbridge (MVL3/109), alternative roosting sites will be in place before bats are excluded from the existing roost;
- Pre-works inspections and/or surveys will be undertaken by a suitably qualified licenced bat ecologist to ensure that bats are identified and removed safely during construction works;
- Exclusion of roosting bats from roosting features to be directly impacted using one-way exclusion devices and/or other suitable methods. This will be completed during April, September or October only to avoid the periods when bats are most vulnerable during breeding (May to September inclusive) and hibernation (November to March inclusive);
- Soft demolition of identified roosting features under supervision of a licenced ecologist who would be able to safely remove any opportunistic bats that return as necessary;
- Monitoring of replacement roost sites during construction to determine their effectiveness and the need for any alterations;
- Re-instatement of roosting features as far as possible in the re-constructed Colne Viaduct Underbridge (MVL3/109) to allow bats to continue roosting within the structure in the long term. Provision of alternative roosting sites in the bridge to compensate for any roosting features lost; and
- Monitoring of the bridge and alternative roosting site for several years after completion of construction works to determine the effectiveness of re-instated/replacement roosting features and the need for any alterations.

- **Heaton Lodge cottage (32030_B1)**

- Provision of an alternative roosting site (a bat box suitable for use by common pipistrelle bats) on a nearby tree that will not be subject to significant disturbance during construction and where no roosting opportunities currently exist. Recommended sites include trees within woodland to the south of Helm Lane, around 100m south-west of the roost. The alternative roosting site needs to be in place before soft demolition;
- Soft demolition of identified roosting feature under supervision of a licenced ecologist. This would need to be completed during May to September inclusive. The supervising licenced ecologist would be able to remove any opportunistic bats present;
- Monitoring of replacement roost site during construction to determine its effectiveness and the need for any alterations; and
- Monitoring of the replacement roost site for several years after completion of construction works to determine the effectiveness of re-instated/replacement roosting features and the need for any alterations.

- **Helm Farm and Cooper Bridge Sewage Plant Underbridge (MVN2/186)**

- No additional mitigation is considered necessary in relation to the minor common pipistrelle and brown long-eared bat roosts at Helm Farm or the minor noctule roost at Cooper Bridge Sewage Plant Underbridge (MVN2/186) as these will not be directly or indirectly impacted by the construction works.

Trees and bat boxes

- 6.2.6 The Scheme will result in loss of the following potential bat roost features (as detailed in Figure 9-5 in Volume 3 of the ES, which is re-provided in Appendix C):
- A bat box located on tree (40892_T1 (a-f)), will be subject to direct impacts (felling) from the use of Paul Lane construction compound. The bat box was internally inspected by a licenced bat ecologist in July 2021 and no bats found. The bat box was cobwebbed suggesting it had not been used for roosting or hibernating. However, the Scheme will result in loss of this bat box (40892_T1 (a-f)), with high bat roost suitability;
 - Two trees (32150_T1 and T2), within the Heaton Lodge area will be subject to direct impacts (felling) and indirect impacts from the creation of a construction compound at Heaton Lodge Sewage Treatment Works located 90m to the south-east. No evidence of roosting bats was found during emergence / re-entry surveys undertaken in 2019 and 2020. Both trees were inspected in February 2021 to assess hibernation potential. No evidence of bats was identified. However, the Scheme will result in loss of two trees with moderate bat roost suitability (32150_T1 and T2); and
 - Bat boxes located on 40868-T1, 40868-T2, 40868-T3, 40868-T4 (a&b) and 40868-T5 (a-d) will be subject to indirect impacts (noise, vibration and lighting) from the use of Paul Lane construction compound. The bat boxes were internally inspected by a licenced bat ecologist in July 2021 and no bats found. The bat boxes were cobwebbed suggesting they had not been used for roosting or hibernating.
- 6.2.7 At present it is no longer anticipated that Trees (T3, T5, T6 and T7) within the Ravensthorpe area will require removal to facilitate works to overhead power lines. No evidence of roosting bats was found in these trees during emergence/re-entry bat surveys undertaken in May and June 2021 and hibernation surveys in February 2021 found no evidence of bats. However, the Scheme will result in loss of one tree with high (T3) and three with moderate (T5-T7) bat roost suitability and if works are required then appropriate mitigation measures as set out below will be implemented.
- 6.2.8 Pre-construction surveys of all identified trees and bat boxes will be undertaken.
- 6.2.9 To compensate for direct loss of these features with greater than negligible bat roost suitability, the following measures will be implemented (it is assumed that these activities do not require a EPSL but pre-construction surveys will be undertaken to confirm this position):
- Provision of an alternative roosting site (bat boxes suitable for use by summer roosting or hibernating bats) on nearby structures or trees that will not be subject to significant disturbance during construction and where no roosting opportunities currently exist;
 - Any potential roost features identified during previous surveys will be excluded using one-way exclusion devices and/or other suitable methods;
 - Ecological supervision immediately prior to felling or works to ensure that bats continue to be excluded from roosting features and to remove any opportunistic bats that are present;
 - Monitoring of replacement roost sites during construction to determine their effectiveness and the need for any alterations; and
 - Indirect impacts to 40868-T1, T2, T3, T4 (a&b), T5 (a-d), 41812_T3, T5, T6 and T7 will be adequately mitigated for via the implementation of standard environmental control

measures set out in Part A of the CoCP (Appendix 2-1 in Volume 3 of the ES), which contain measures to minimise noise, vibration and light spill.

Off Forge Lane Underbridge (MVN2/206)

- 6.2.10 A buffer zone will be maintained around the bat roost in Off Forge Lane Underbridge (MVN2/206) to avoid disturbance during establishment and use of the Ravensthorpe Triangle and Forge Lane Quarry construction compounds. This compound will not extend beyond the public footpath that runs between Scholefield Underbridge (MVN2/205) and Off Forge Lane Underbridge (MVN2/206) over the Calder and Hebble Navigation. This will maintain a minimum 75m distance between the compound and the bat roost. Construction lighting within the Ravensthorpe compound will be positioned and designed so as to minimise light spill onto the Calder and Hebble Navigation and associated riparian habitats, as far as possible. Hoods and covers will be used to direct lighting onto working areas only. This will minimise disturbance of riparian habitats along the canal, which are likely to be important for bats moving to and from the roost in Off Forge Lane Underbridge (MVN2/206).

6.3 Floating water plantain (*Luronium Natans*)

- 6.3.1 Floating water-plantain (*Luronium Natans*) is protected under Schedule 5 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The species is currently listed as Near Threatened in England and Nationally Scarce in the UK.
- 6.3.2 *Luronium Natans* were recorded in the following watercourses; Huddersfield Broad Canal, River Colne, River Calder, Calder and Hebble Navigation. However, no significant effects on *Luronium Natans* populations/conservation status are reported for the Scheme. Additionally, no risk of deliberate destruction or uprooting of individual *Luronium Natans* plants has been identified. Assessments have been reported through the ES and also the technical note "Technical Memo: Luronium natans on Transpennine Route Upgrade - Huddersfield to Westtown (Dewsbury) Version 2.0 - 28 September 2021" submitted to Natural England, during the Transport and Works Act Order (TWAo) process.
- 6.3.3 Natural England has been consulted on approaches and findings in relation to floating water plantain. The Scheme is not considered to require a EPSML for floating water plantain.

6.4 Badgers

- 6.4.1 A total of 31 badger setts were identified within and adjacent to the Scheme during field surveys. These comprise one active main sett and thirty non-main setts (two of which were active, eight of which were partially used and 20 of which were disused at the time of survey).
- 6.4.2 Measures will be implemented prior to and during construction to minimise impacts on badger and ensure legislative compliance, including pre-construction surveys to confirm the status of identified setts (and if any new setts have been created or identified in areas previously inaccessible for surveys), provision of a replacement setts (see below) and sensitive habitat clearance under an ecological watching brief, where necessary.
- 6.4.3 A badger development licence(s) will need to be obtained from Natural England to permit the destruction of the active main badger sett and partially active non-main sett identified within the Scheme, as well as any other active or partially used setts identified.
- 6.4.4 Badger surveys have been undertaken by suitably qualified ecologists during 2022 to support a licence application.
- 6.4.5 Sett closure would only be permitted between July and November inclusive. The following

measures would likely be required as a condition of the licence:

- Provision of an artificial sett to compensate for the loss of the main sett. This will be constructed well in advance of sett removal (up to 6 months in advance);
- Exclusion of badgers from setts using one-way gates and monitoring over a period of at least 21 days to ensure that exclusion has been effective; and
- Destruction of the sett as soon as possible after exclusion to reduce the chances of reoccupation by badger. It may be necessary to install heavy-gauge chain-link or weldmesh over the former sett to prevent re-excavation of the sett by badgers. It would also be necessary to discourage excluded badgers from excavating new setts in other areas of the Scheme that will be directly or indirectly impacted during construction by rendering habitat unsuitable, such as by clearing vegetation.

6.4.6 Measures will be implemented to minimise direct impacts on the partially used non-main Setts_015 and _028 (identified in the Badger Survey Report (confidential) submitted to support the TWAO). Where cannot be avoided on these partially used badger setts, appropriate mitigation measures will be undertaken to minimise direct or significant indirect impacts. Should this not be possible, a badger development licence will be sought. The measures will depend on the type of sett and should suitable mitigation not be possible then works will be progressed under a badger development licence, this could include sett closure (generally only permitted between July and November inclusive). However, the provision of replacement setts for these non-main setts would not be required.

6.4.7 Measures will be implemented to minimise direct impacts on the partially used non-main Sett_030 during Stage 1 works. This will include implementation of a 20m buffer zone from the works. The measures to be employed post Stage 1 will be monitored to ensure that further measures are not required to be implemented.

6.4.8 Measures will be implemented to minimise disturbance of any retained setts (such as noise, vibration and artificial light) within and adjacent to the Scheme as far as possible through the establishment of exclusion zones and/or the implementation of standard environmental control measures set out in Part A of the CoCP (Appendix 2-1 in Volume 3 of the ES). Examples include the use of hoods/covers on artificial lighting to minimise illumination of adjacent habitats. Where necessary, such measures would be specified and authorised by inclusion within a badger development licence.

6.4.9 The following reasonable avoidance measures will be implemented to ensure that there are no adverse effects on badgers during the construction phase:

- A pre-commencement check for badger;
- All trenches and excavations should have a means of escape (e.g. a ramp);
- Any exposed open pipe systems should be capped to prevent mammals gaining access; and
- Appropriate storage of materials to ensure that mammals do not use them.

6.5 Reptiles

6.5.1 Pockets of potentially suitable habitat for reptiles are present along the railway corridor and adjacent areas such as the Calder Valley Greenway. Mosaics of scrub, scattered trees, tall ruderal vegetation and grassland, as well as riparian and aquatic habitats associated with ponds, drainage ditches, canals and rivers, provide a range of conditions for foraging, basking and shelter. Such habitats may support small populations of common reptile species such as common lizard, slow-worm and grass snake.

6.5.2 As a precaution, the following reasonable avoidance measures will be implemented to ensure that there are no adverse effects on reptiles during the construction phase:

- Existing vegetation on the site will be gradually cut and removed under ecological supervision to encourage any reptiles present to move away from the affected areas;
- The working area, together with any storage areas, will be kept clear of debris, and any stored materials will be kept off the ground on pallets so as to prevent reptiles from seeking shelter or protection within them; and
- Any open excavations (e.g. foundations / footings / service trenches etc.) will be covered with plywood sheeting (or similar) at the end of each working day. The edges of these sheets will be covered with a thick layer of topsoil or similar) to prevent reptiles from seeking shelter beneath them. Any excavation must be in-filled and made good to ground level with compacted stone or similar at the earliest opportunity, so as to remove any hazard to reptiles.

6.6 Otter

- 6.6.1 There are records of otter within areas to be impacted by the Scheme, namely, River Calder and River Colne.
- 6.6.2 Nine watercourses, including Huddersfield Broad Canal, River Calder, River Colne, Calder and Hebble Navigation, Blackhouse Dike, Unnamed Watercourse at Heaton Lodge Junction, Unnamed Watercourse at Colnebridge Culvert, Unnamed Watercourse at Chadwick Close Culvert and Unnamed Watercourse at Bradley Culvert), two drainage ditches (AF016 and AF021), three standing water bodies (AF020, AF022 and AF027) and five areas of terrestrial habitat (TH_002, TH_004, TH_006, TH_008 and TH_011) were surveyed and no evidence of otter was recorded within any of these habitats during field surveys. However, the surveys were subject to limitations, such as incomplete access to both banks of watercourses and the inability to comprehensively search areas of dense vegetation in terrestrial habitats.
- 6.6.3 As a precautionary approach, measures will be implemented prior to and during construction to minimise the risk of impacts on otter and ensure legislative compliance, including pre-construction surveys to determine the presence/likely absence of otter resting sites, avoid night working on or near to watercourse, leaving a means of egress within excavations that are left open overnight, and sensitive habitat clearance under an ecological watching brief, where necessary.
- 6.6.4 Potential water quality impacts (pollution and sedimentation effects) during works will also be adequately mitigated with the implementation of Part A of the CoCP (Appendix 2-1 in Volume 3 of the ES) and the Pollution Prevention and Incident Control Plan (PPICP) (document ref: 151667-TSA-00-TRU-REP-W-EN-001204) submitted under Part B of the CoCP in accordance with Condition 5b(ii). Potential water quality impacts during operation of the Scheme will be mitigated for with the implementation of the Scheme-wide drainage strategy, which is appended to the Flood Risk Assessment in Appendix 11-1 in Volume 3 of the ES.
- 6.6.5 Lighting within construction compounds at Heaton Lodge Wastewater Treatment Works (WWTW), Colne Bridge Road, Paul Lane and Ravensthorpe area will be positioned and designed so as to minimise light spill onto the River Colne, the River Calder, Calder and Hebble Navigation and their associated riparian habitats, as far as possible. Hoods and covers will be used to direct lighting onto working areas only, to minimise disturbance along these watercourses. Details are included in the Nuisance Management Plan (document ref: 151667-TSA-00-TRU-REP-W-EN-001206) submitted under Part B of the CoCP in accordance with Condition 5b(v).

6.7 Water vole

- 6.7.1 Nine watercourses, including Huddersfield Broad Canal, River Calder, River Colne, Calder

and Hebble Navigation, Blackhouse Dike, Unnamed Watercourse at Heaton Lodge Junction, Unnamed Watercourse at Colnebridge Culvert, Unnamed Watercourse at Bradley Culvert and Unnamed Watercourse at Chadwick Close Culvert, two drainage ditches (AF016 and AF021) and two standing water bodies (AF020 and AF022) have limited potential to support water vole due to factors such as artificial bank construction/canalisation, heavy shading, lack of suitable marginal vegetation for food and shelter, and human disturbance. No evidence of water vole was recorded in any water bodies during field surveys. However, surveys were subject to limitations, such as incomplete access to both banks of the watercourses.

- 6.7.2 As a precautionary approach, measures will be implemented prior to and during construction to minimise the risk of impacts on water vole and ensure legislative compliance, including pre-construction surveys to determine the presence/likely absence of water vole, avoid works within a minimum of 5 metres of the top of the bank⁴ where possible and sensitive habitat clearance will be carried out under an ecological watching brief, where necessary.
- 6.7.3 Potential water quality impacts (pollution and sedimentation effects) during works will also be adequately mitigated with the implementation of Part A of the CoCP (Appendix 2-1 in Volume 3 of the ES) and the PPICP submitted under Part B of the CoCP in accordance with Condition 5b(ii). Potential water quality impacts during operation of the Scheme will be mitigated for with the implementation of the Scheme-wide drainage strategy, which is appended to the Flood Risk Assessment in Appendix 11-1 in Volume 3 of the ES.
- 6.7.4 Lighting within construction compounds at Heaton Lodge WWTW, Colne Bridge Road, Paul Lane and Ravensthorpe area will be positioned and designed so as to minimise light spill onto the River Colne, the River Calder, Calder and Hebble Navigation and their associated riparian habitats, as far as possible. Hoods and covers will be used to direct lighting onto working areas only, to minimise disturbance along these watercourses. Details are included within the Nuisance Management Plan submitted under Part B of the CoCP in accordance with Condition 5b(v).

6.8 Other areas of potential significance/value to biodiversity

- 6.8.1 The following section considers those species identified as Important Ecological Features (IEFs) in the impact assessment in support of the TWA0 where adverse effects were anticipated.
- 6.8.2 Eight watercourses (Gledholt Beck, Hebble Beck, Huddersfield Broad Canal, Blackhouse Dike, Unnamed Watercourse at Bradley Culvert, River Colne, River Calder and Calder and Hebble Navigation) were considered relevant to the impact assessment for the Scheme, based on the application of assessment screening criteria (i.e. those watercourses both considered to be potential IEF and potentially significantly affected by the Scheme). Mitigation measures to minimise the potential impacts to these receptors are provided by the CoCP Part A submitted as part of the TWA0⁵ and the COCP Part B documents submitted pursuant to Condition 5 (Stage 1).
- 6.8.3 As reported in the Scheme wide ES No significant effects on Denby Grange Colliery Ponds SAC, Peak District Moors (South Pennine Moors Phase 1) SPA, South Pennine Moors SAC, Dalton Bank LNR (and LWS), Sunny Bank Ponds LNR (and LWS), Lower Spen Wildlife Area LNR (and LWS) and Sparrow Wood LNR (and LWS) are anticipated during construction

⁴ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). *The Water Vole Mitigation Handbook* (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

⁵ [Ch02 Scheme description - App 2-1 - CoCP Part A.pdf \(windows.net\)](#)

works.

- 6.8.4 Potential impacts on woodland (Semi-natural broad-leaved woodland, Semi-natural mixed woodland, Plantation broad-leaved woodland, and Plantation mixed woodland) either due to vegetation removal or from construction dust were assessed within the submitted ES documents with mitigation measures proposed in the ES as well as AIA and as set out in paragraph 5.15 Arboriculture Method Statements are to be produced and any measures required will be implemented by the site environment manager. Detailed planting schemes will be produced and submitted during Stage 8 will seek to mitigate/compensate for any losses.
- 6.8.5 For all other habitats the potential effects were fully assessed and reported in the ES – Chapter 9 (Route Section and Scheme-wide).

7. MANAGEMENT AND MONITORING

7.1 Aims and objectives

7.1.1 The management aims set out below are intended to protect those landscape and ecological features of greatest ecological value once the Scheme is completed and operational.

- Aim 1: To Implement Avoidance and Mitigation Measures for Important Ecological Features;
- Aim 2: To Enhance the Ecological Value of the Site;
- Aim 3: Provide a Framework for Ongoing Monitoring and Management of the Site;
- Aim 4: To Monitor the Efficacy of the LEMP;
- Aim 5: Define Roles and Responsibilities for implementing the LEMP; and
- Aim 6: To Contribute to Biodiversity Net Gain where practicable to do so.

7.2 Soft landscape monitoring and management objectives

General management and monitoring objectives

7.2.1 Soft landscape management across the Scheme will be achieved through implementing the following general objectives in order to maximise the biodiversity value on site.

- Apply good horticultural and ecological practice to all operations. Horticultural practice will include the use of peat-free composts, biodegradable mulches and soil conditioners. The use of pesticides (insecticides, fungicides and slug pellets), appropriate herbicides (non-residual (glyphosate-free)) and chemical fertilisers will be discouraged, and any weed removal will be undertaken by hand;
- Promote healthy growth and establishment of all plants;
- Ensure consistent control of invasive weeds;
- Promote optimum display and flowering periods and stem colour;
- Ensure development of optimum plant form, shape, and planting density;
- Provide protection against pests and diseases;
- Promote wildlife value and species diversity where appropriate;
- Ensure planting is managed to maintain its function to provide landscape integration, nature and biodiversity value, connectivity for the benefit of wildlife, visual amenity and visual screening; Ensure the new landscape reflects the local landscape character and is in keeping the surrounding area;
- Ensure long term commitment to replacement of defective plant material;
- Review opportunities for introduction of new species or replacement of exhausted species where appropriate, in line with original design intentions;
- Keep planting areas neat and clean in appearance at all times, weed and litter free, and allow specified species to develop free from unnecessary competition;
- Manage planting to ensure clear forward visibility is maintained along transport and pedestrian access routes;
- Prevent damage to and protect as necessary existing paving, buildings, fitments, and utilities;
- Ensure all areas of hard surfacing are left in a clean condition, free from any soil, mud, leaves, cuttings and plant arisings;
- Ensure that the works themselves do not cause inconvenience or danger to users/visitors; and

- Where ground remediation is carried out to remove contaminated material, it will be replaced with clean material and the landscape will be reinstated where appropriate to match the pre-existing planting and vegetation to maintain the amenity of the area that is remediated.

Habitat-specific management objectives (retained habitats)

7.2.2 General management objectives for existing retained habitat on site are set out as follows.

Mixed Scrub

- Existing scrub will be managed for habitat and nature conservation and biodiversity value including providing foraging and nesting/resting habitat for protected species;
- Ensure that good horticultural practice is employed to encourage the long-term health and vitality of scrub;
- Manage to ensure clear forward visibility is maintained along access routes; #Ground to be free of invasive weeds.

Semi-improve neutral grassland

- Manage to maintain a mixed sward to provide connectivity with existing native shrub and trees and maintain the biodiversity and wildlife corridor function;
- Ground to be free of invasive weeds;
- Maintain forward visibility along access routes.

Trees and woodland

- Retained trees to be protected throughout the construction phase as set out in line with the requirements of BS5837:2012 Trees in Relation to Design, Demolition and Construction, and the AIA pertinent to the Scheme (Appendix 9-1 in Volume 3 of the ES);
- Woodland to be managed for nature conservation and biodiversity value, wildlife connectivity and visual screening value;
- Ensure that good horticultural practice is employed to encourage the long-term health and vitality of all trees and shrubs;
- Manage to ensure clear forward visibility is maintained along access routes; and
- Ground to be free of invasive weeds.

Ephemeral/short perennial cultivated/disturbed land

- Manage to maintain a mixed sward to provide connectivity with existing woodland and maintain nature conservation and biodiversity value and wildlife corridor function;
- Ground to be free of invasive weeds; and
- Maintain forward visibility alongside access routes.

Species rich grassland

- Create a structured grassland with grass tussocks creating a series of microclimates across the habitat, thus encouraging a diversity of floral and faunal species;
- Grassland to be managed for nature conservation and biodiversity value, connectivity for wildlife, landscape integration and visual amenity value;
- Allow the meadow sward to meet and link up the native shrub and tree planting and enhance the wildlife corridor function of the hedgerows; and
- Maintain forward visibility alongside access routes.

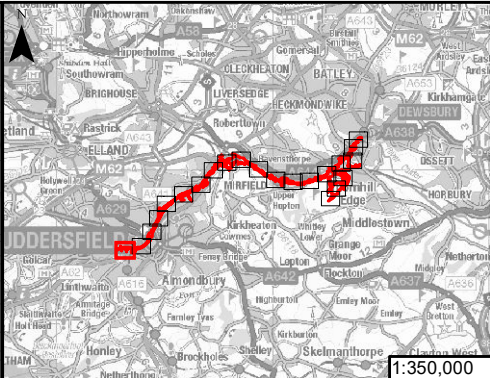
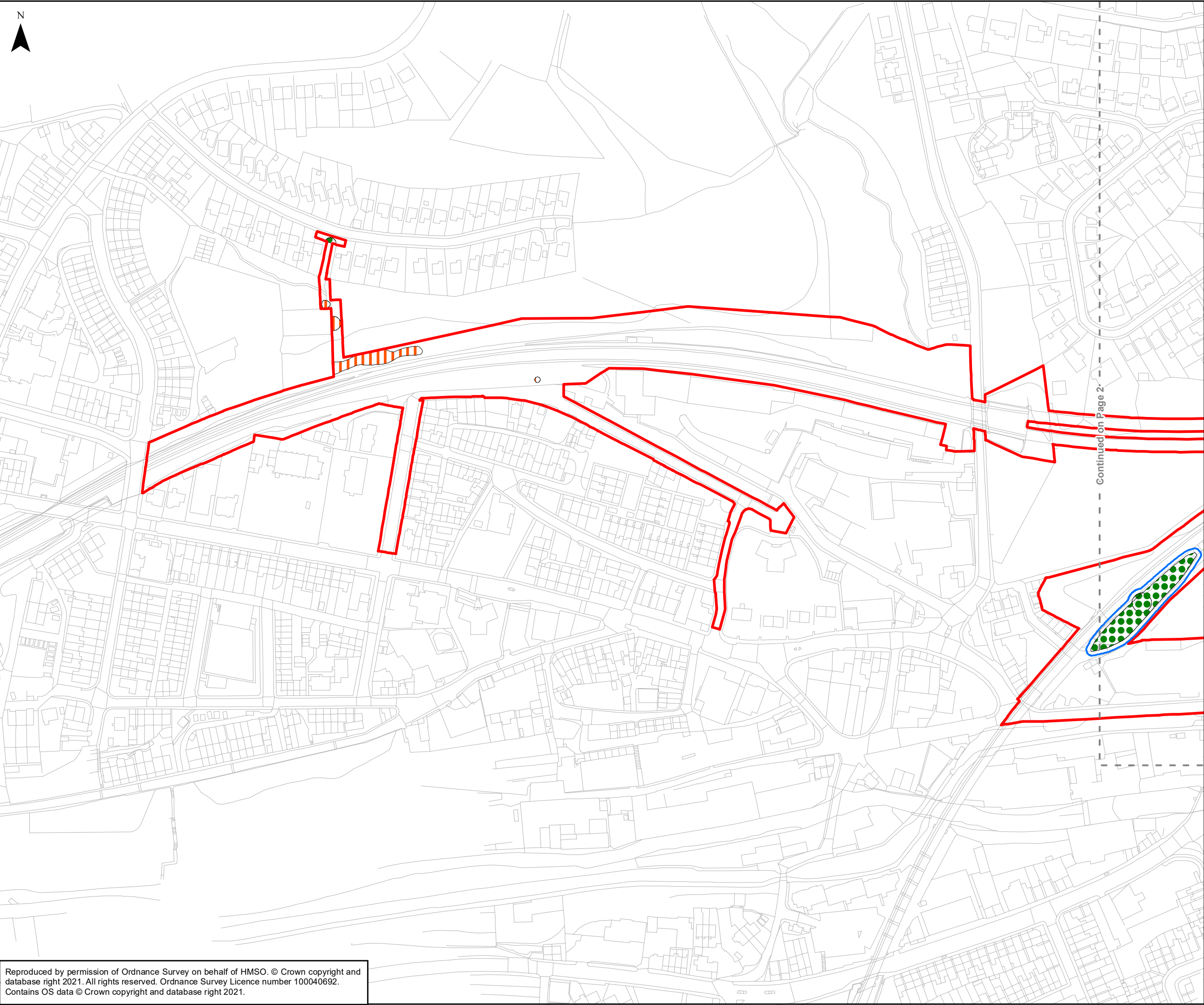
Management of Invasive Non-Native Plants

- 7.2.3 An Invasive Species Management Plan (ISMP) primarily aimed at the treatment of Japanese Knotweed will be prepared. However, it will also consider the other invasive species that may require treatment.
- 7.2.4 The Site Environment Manager will be responsible for implementing and monitoring compliance with the ISMP through regular Site meetings. Requirements for records will also be set out in the ISMP.
- 7.2.5 In addition, the following guidance will also be followed:
- Network Rail Invasive Species Guidance;
 - Network Rail Giant Hogweed Guidance; and
 - Network Rail Japanese Knotweed Guidance.

8. SUMMARY

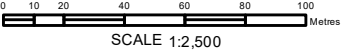
- 8.1.1 The soft landscape monitoring and management objectives outlined above will ensure to protect those landscape and ecological features of greatest ecological value once the Scheme is completed and operational.
- 8.1.2 Habitat specific management objectives have been set out for each type of retained landscape which will ensure these are managed accordingly to their specific criteria.
- 8.1.3 The methodology to minimise impacts on protected or otherwise notable species is outlined above, including a variety of pre-construction measures specific to a range of species / groups identified during the baseline survey. Finer resolution on the details of species / site-specific mitigation will be provided at later stages of the condition discharge. Detail of working methods relating to European Protected Species will be detailed in the relevant licence applications, where locations and specifications of mitigation will be provided (bats and badgers).
- 8.1.4 Full detailed landscape and ecological management plans will be produced and submitted during Stage 8.

APPENDIX A – TREES TO BE RETAINED / REMOVED



- Legend**
- Scheme Boundary
 - Tree Loss
 - Tree Retained
 - Indicative Protective Tree Fencing

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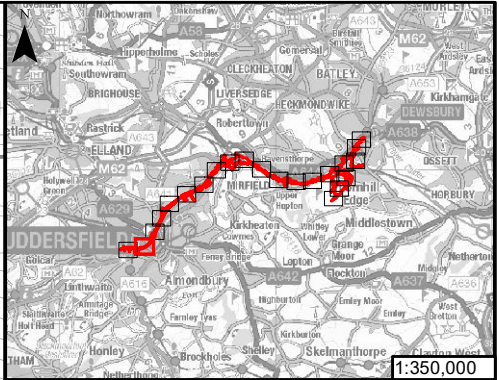
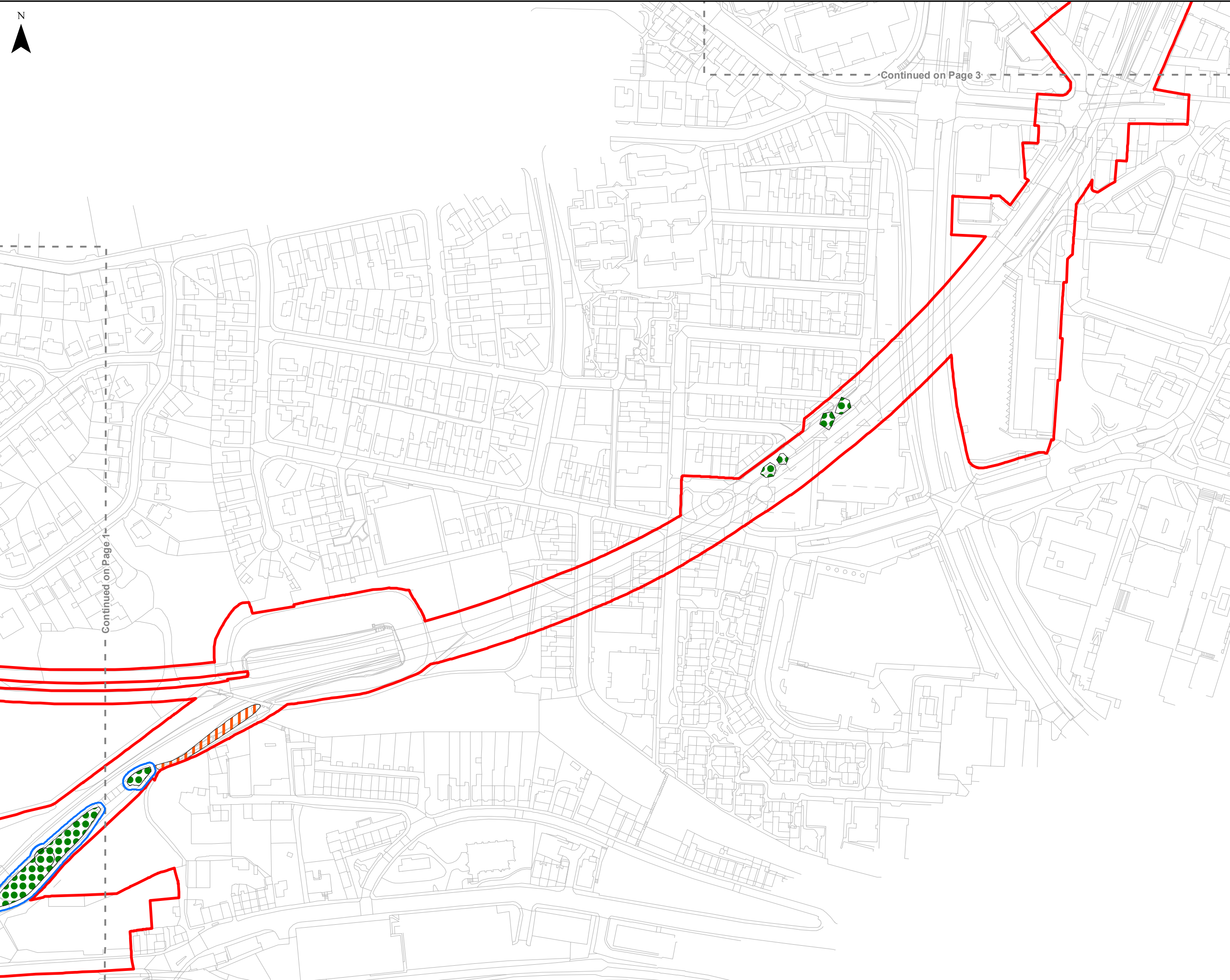
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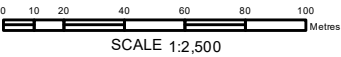
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Drawn	S.Samsath	Signed Electronically	Date	18/01/2023
Checked	NB	Signed Electronically	Date	18/01/2023
Approved	PB	Signed Electronically	Date	18/01/2023
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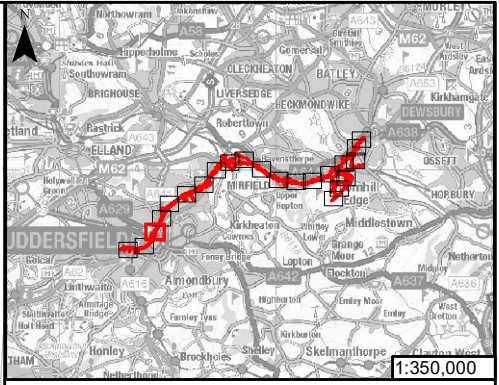
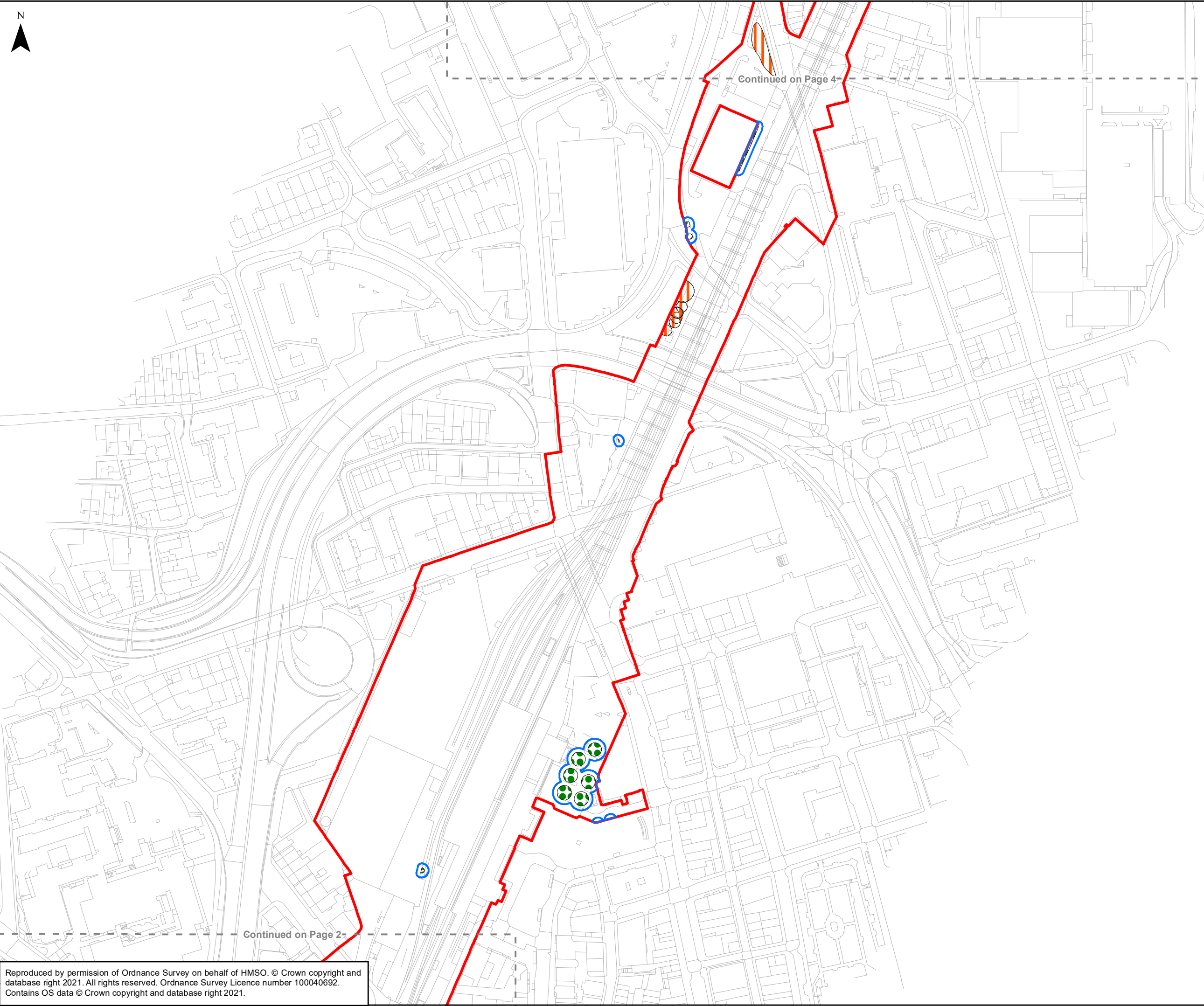
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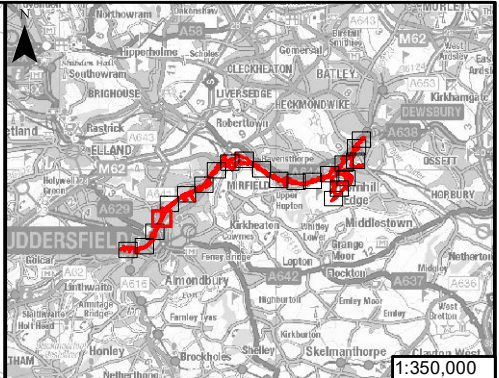
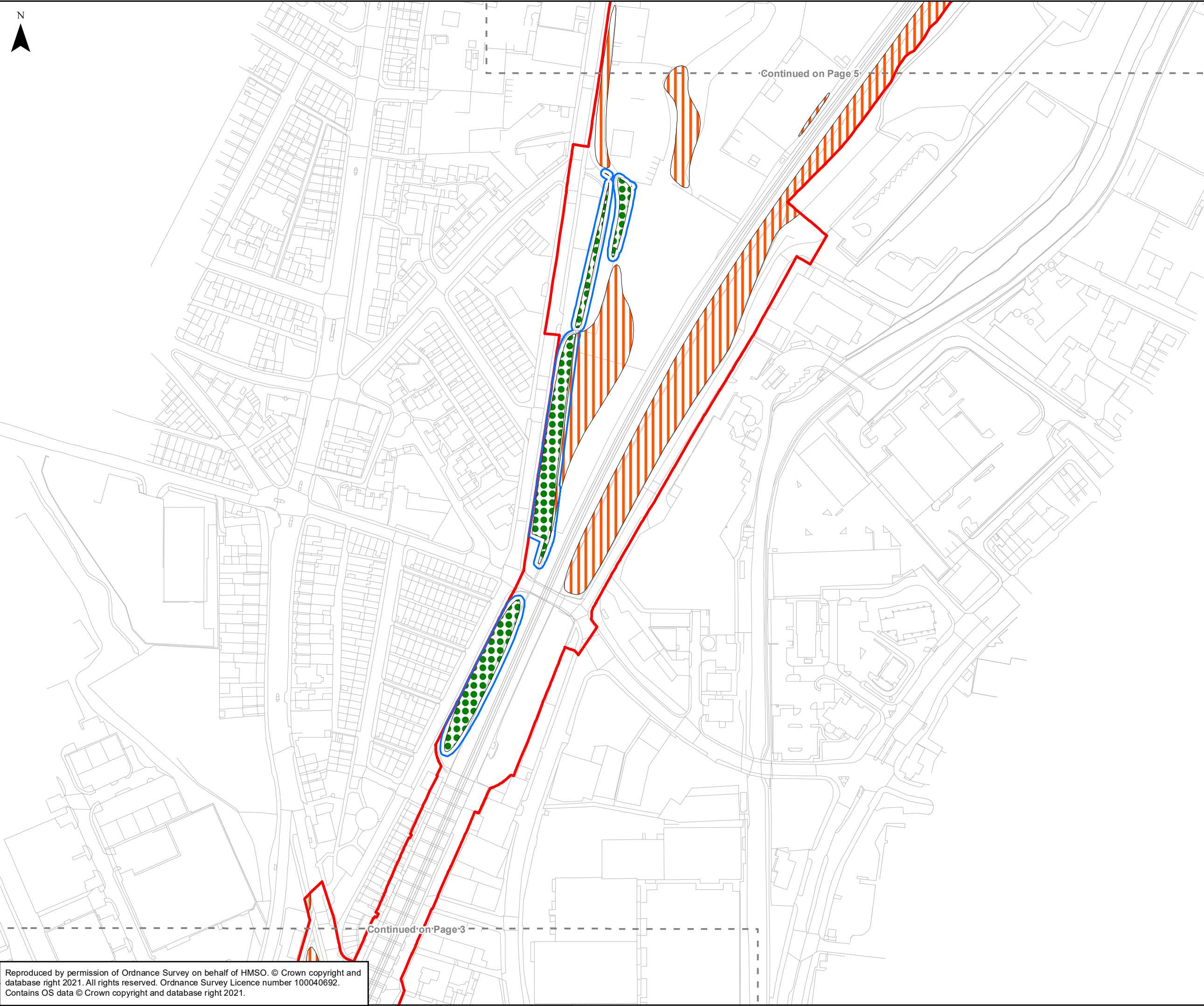
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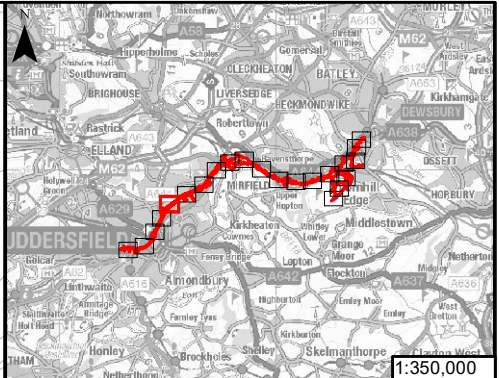
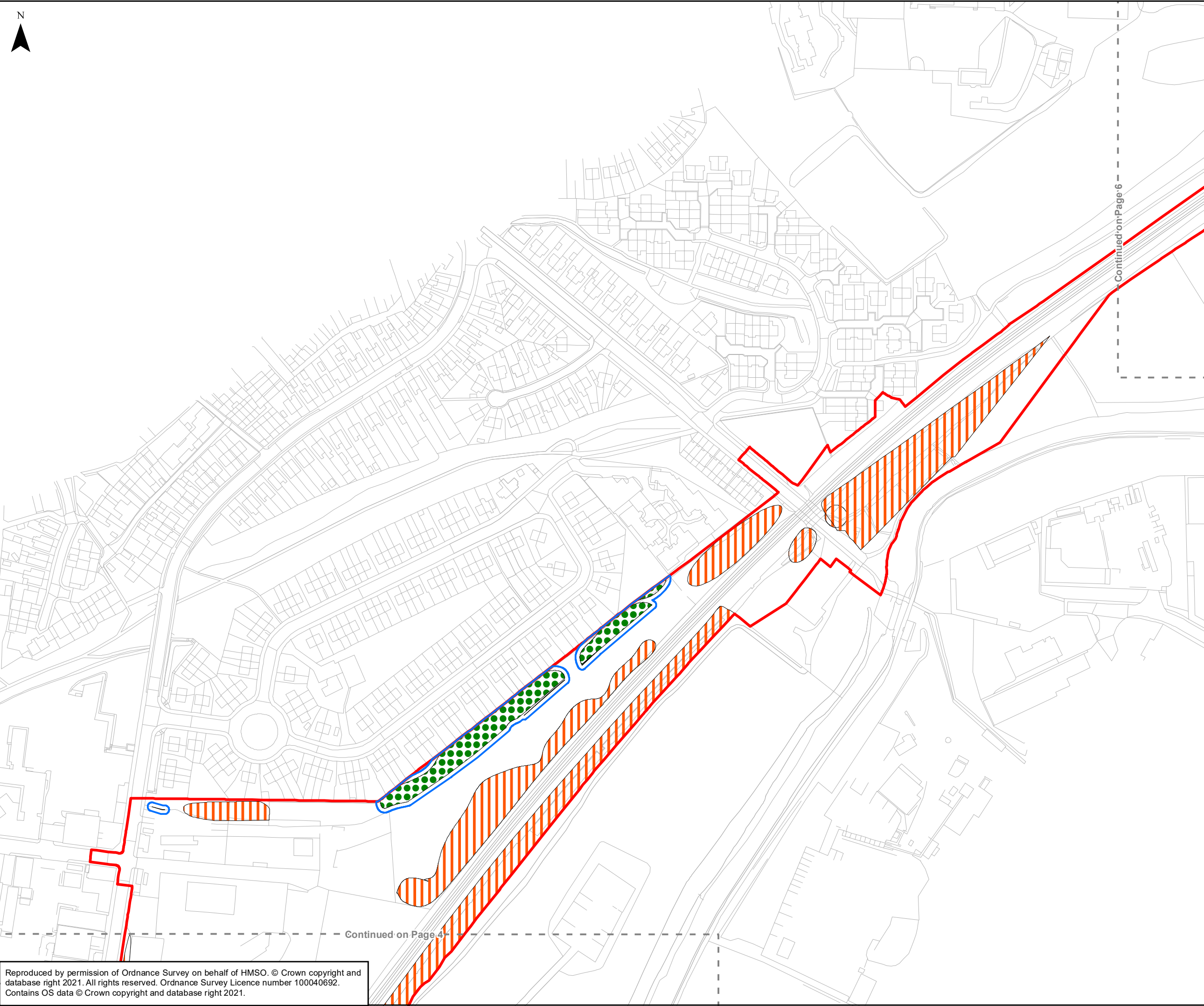
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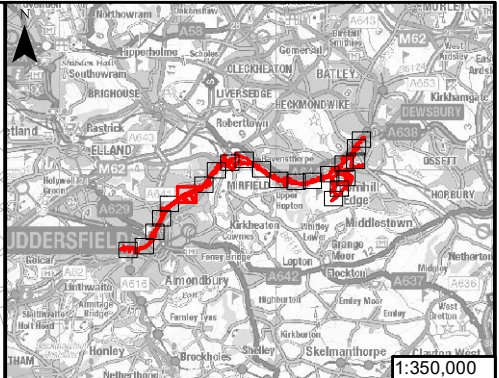
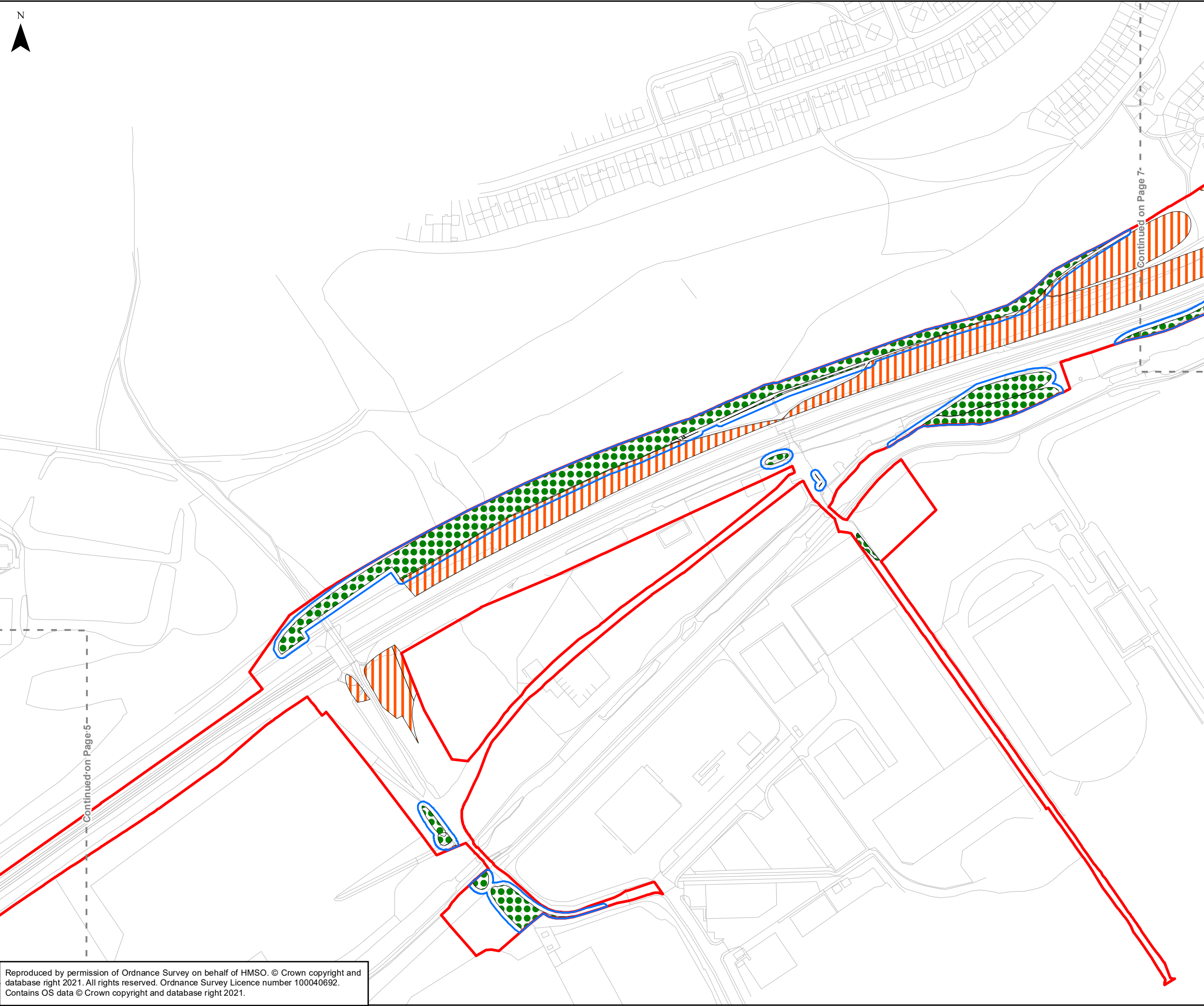
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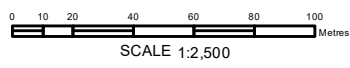
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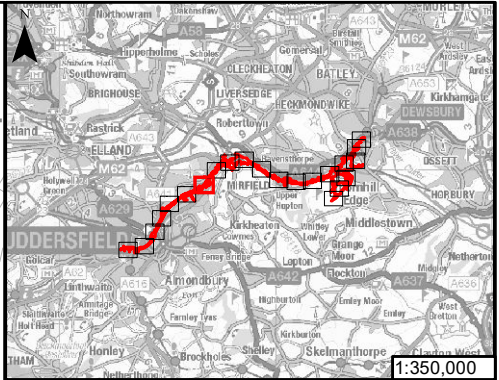
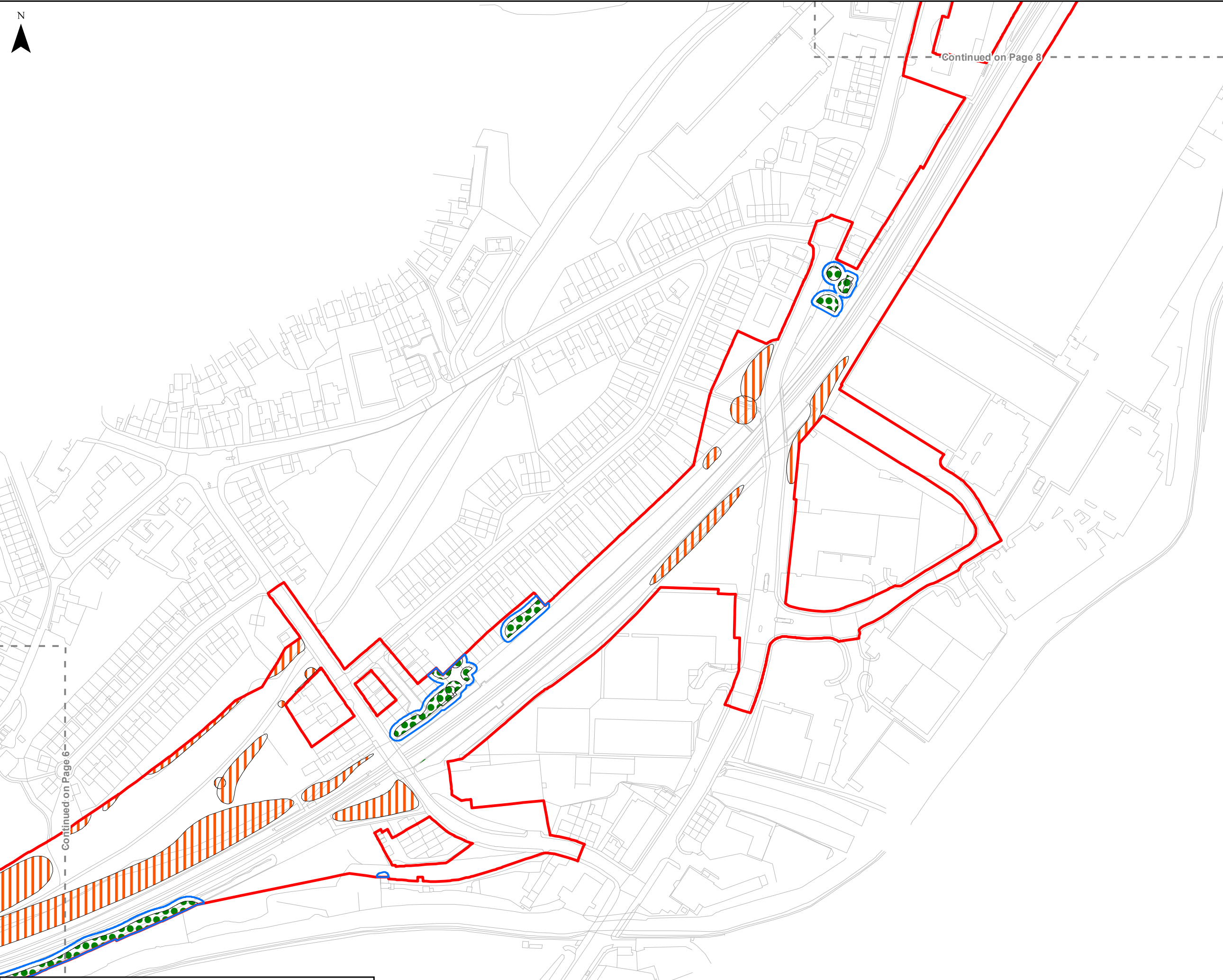
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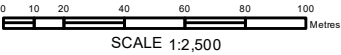
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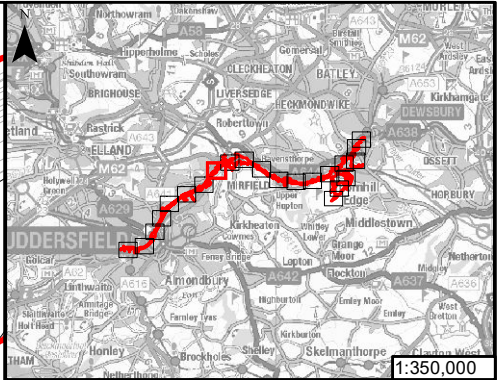
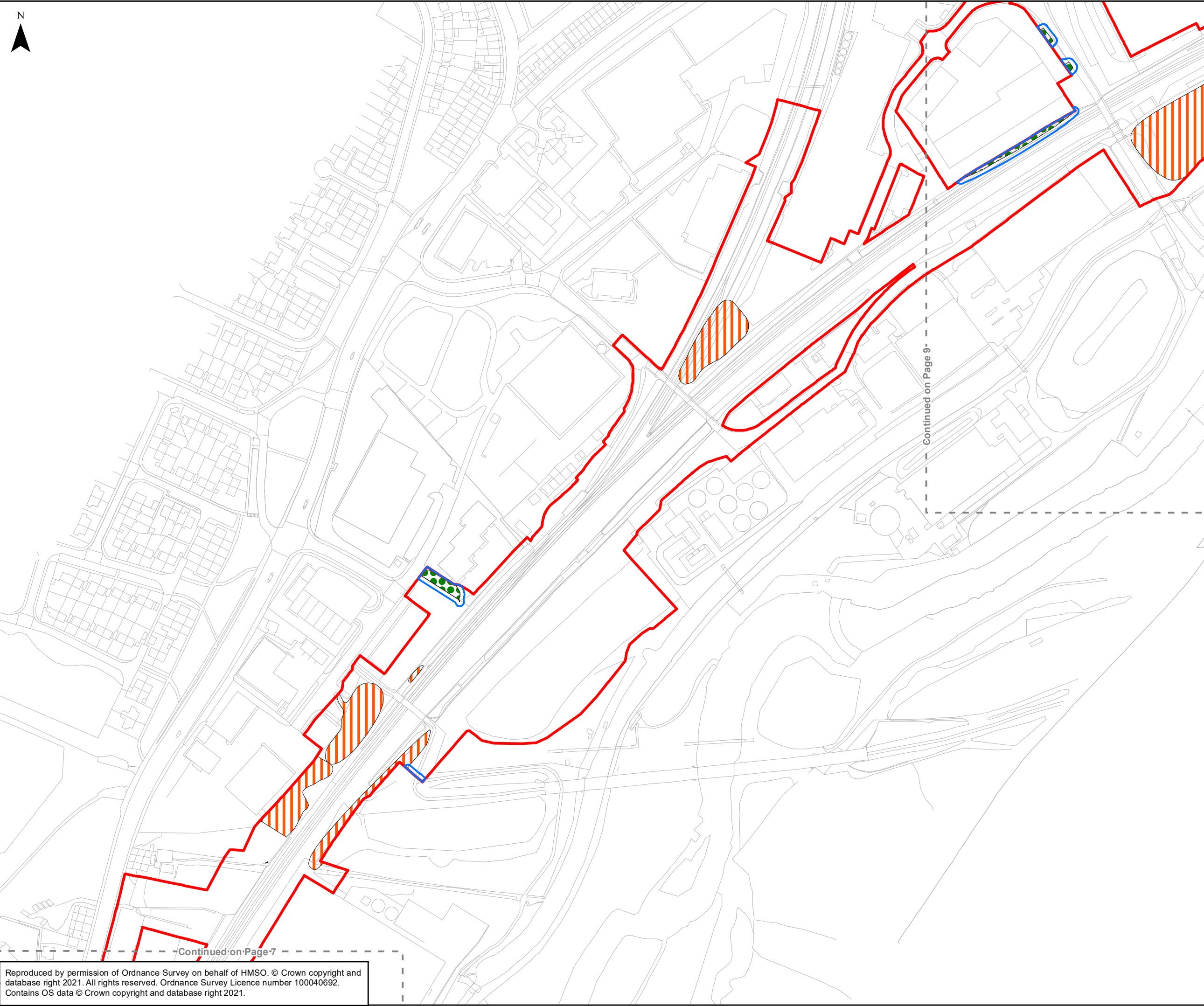
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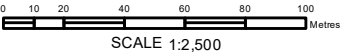
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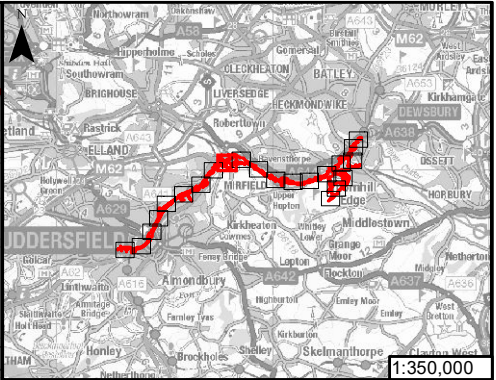
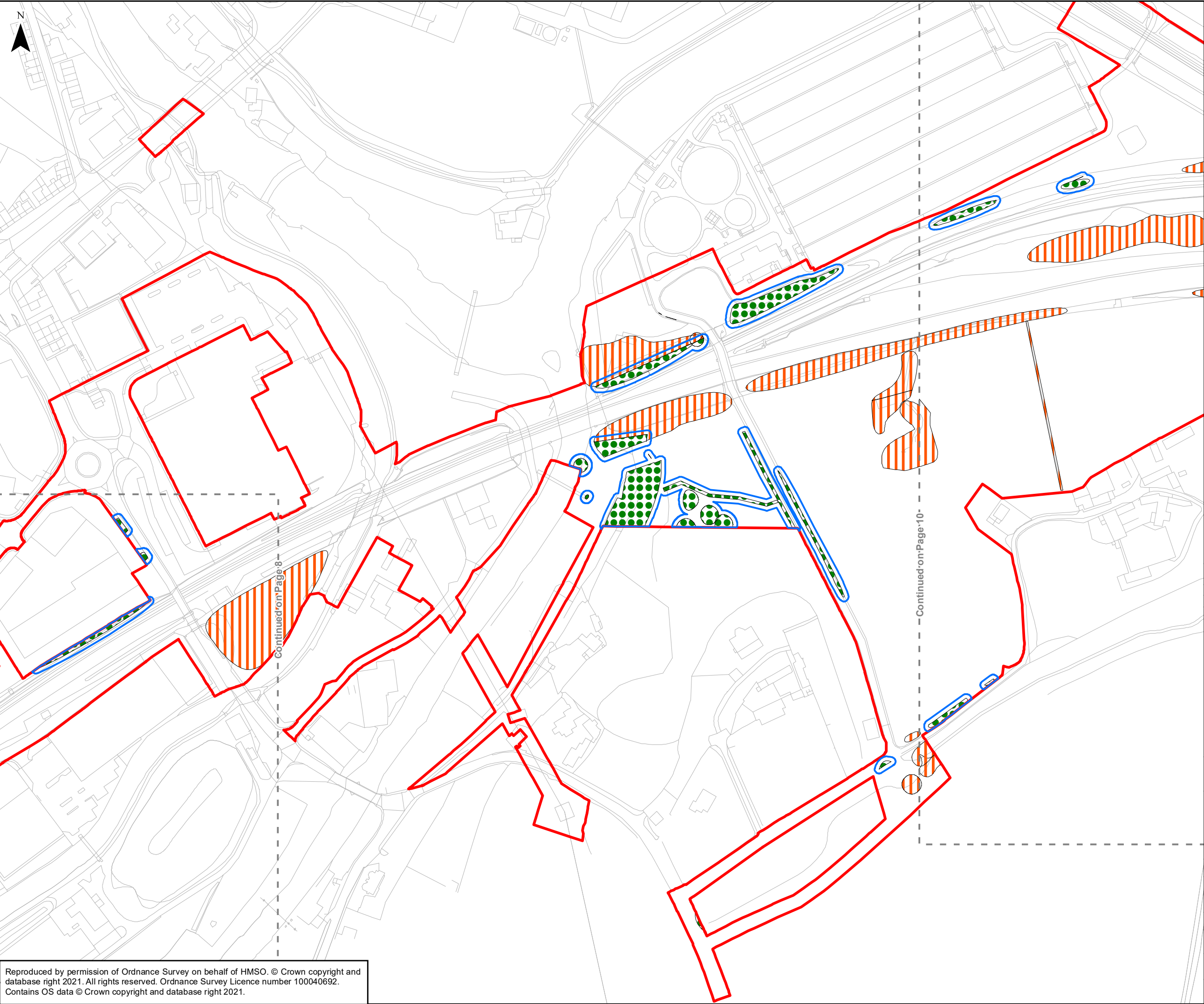
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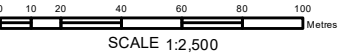
Drawing Title
TREE LOSS & RETENTION PLAN

Designed	S.Samsath	Signed Electronically	Date	18/01/2023
Drawn	S.Samsath	Signed Electronically	Date	18/01/2023
Checked	NB	Signed Electronically	Date	18/01/2023
Approved	PB	Signed Electronically	Date	18/01/2023
Scale(s)	1:2,500	ELR & Project Chainage		
Alternative Reference		---		
Drawing Number				Revision
151667-TSA-00-TRU-REP-W-EN-000117				P01

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- Legend**
- Scheme Boundary
 - Tree Loss
 - Tree Retained
 - Indicative Protective Tree Fencing



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Rev	Date	Description of Revisions	Drwn	Chkd	Appr
Status	SHARED				Suitability



Project
TRANSPENNINE ROUTE UPGRADE

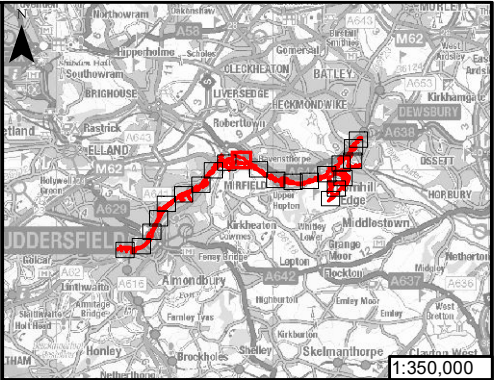
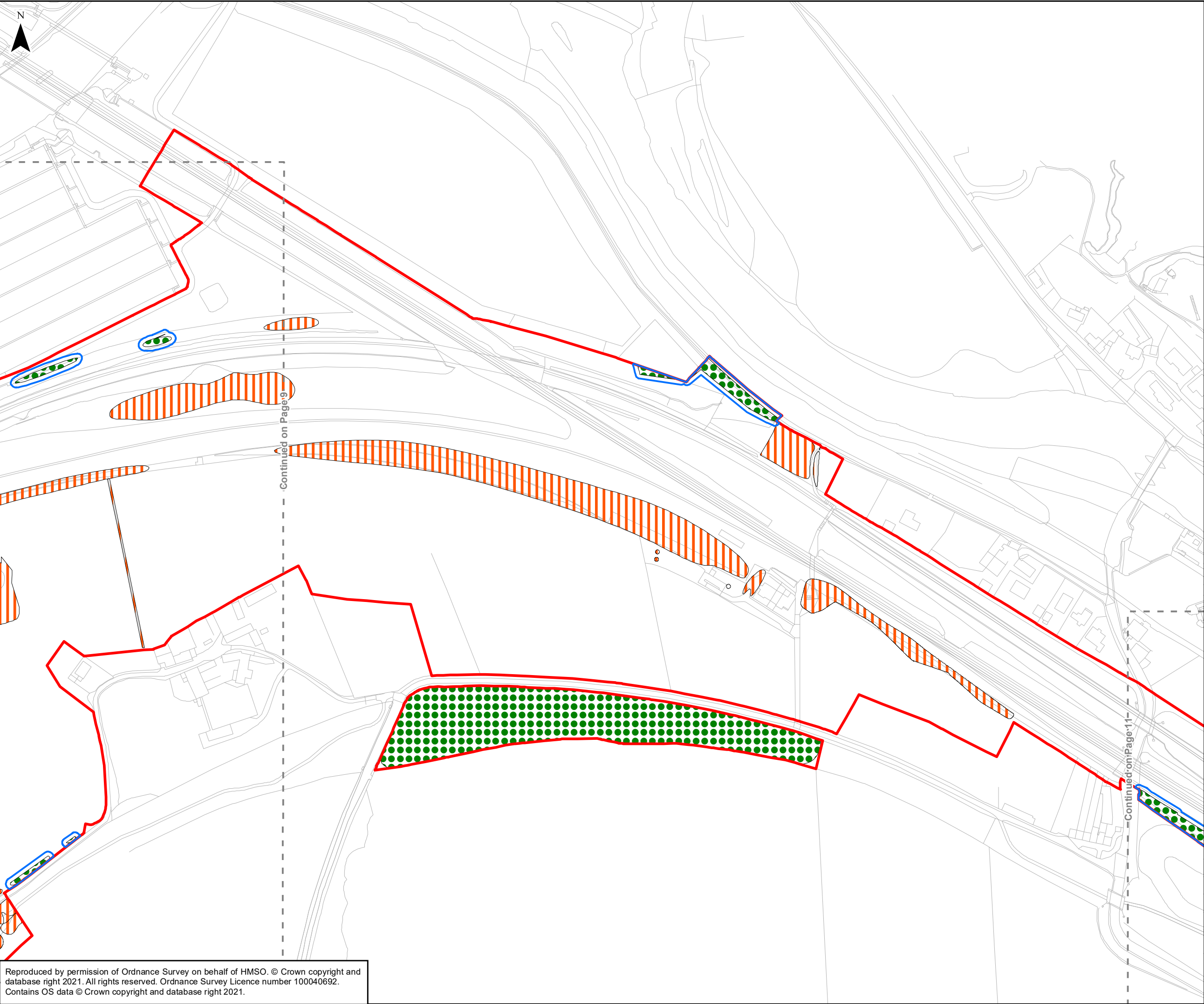
Contract No.
151667

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Drawing Number 151667-TSA-00-TRU-REP-W-EN-000117				Revision P01

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- Legend**
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0 10 20 40 60 80 100 Metres
SCALE 1:2,500

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Project
TRANSPENNINE ROUTE UPGRADE

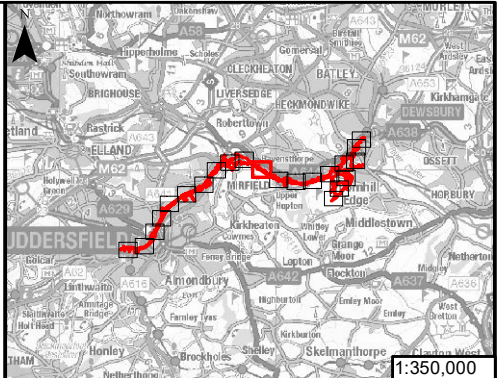
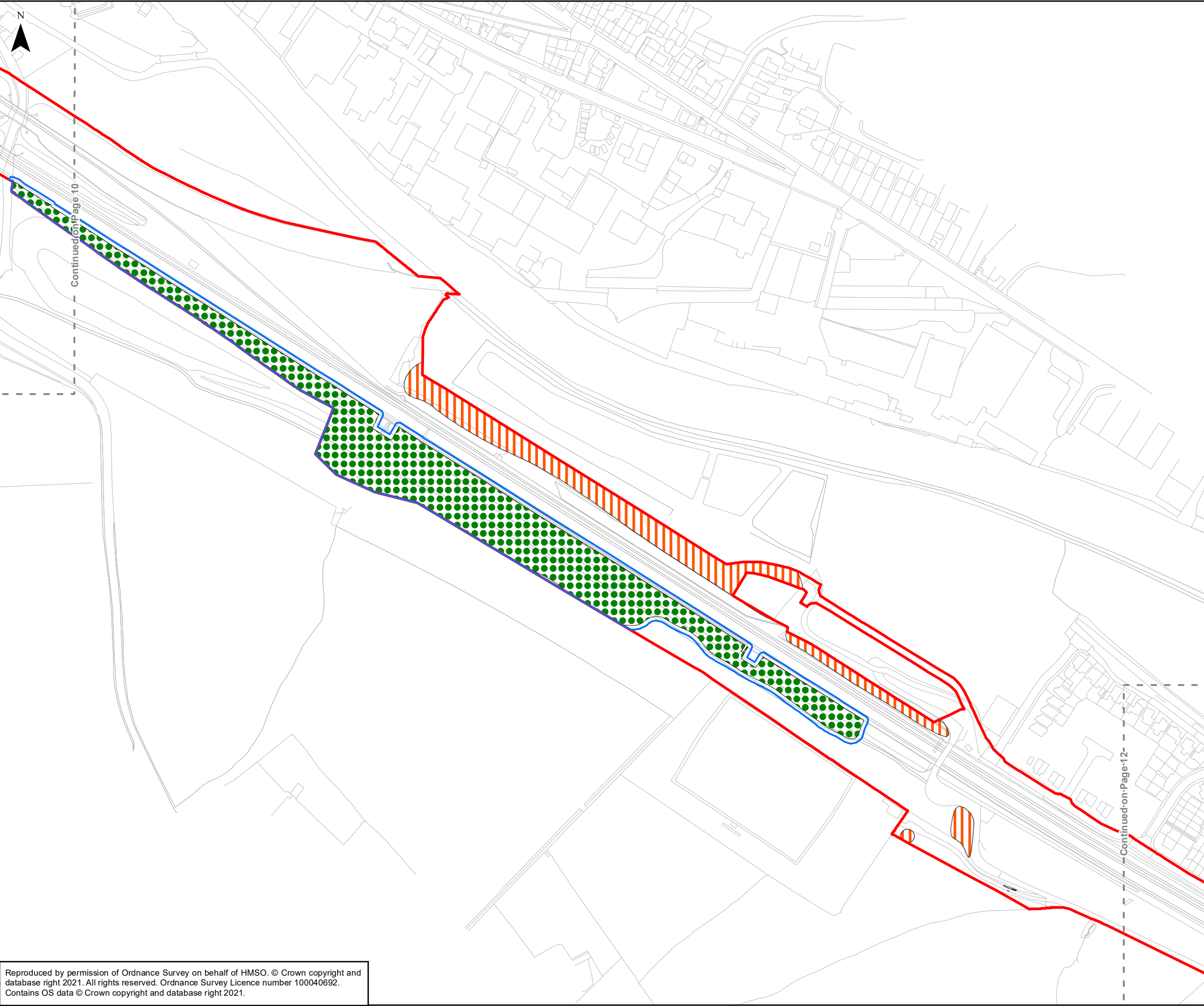
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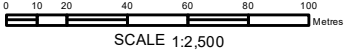
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Project
TRANSPENNINE ROUTE UPGRADE

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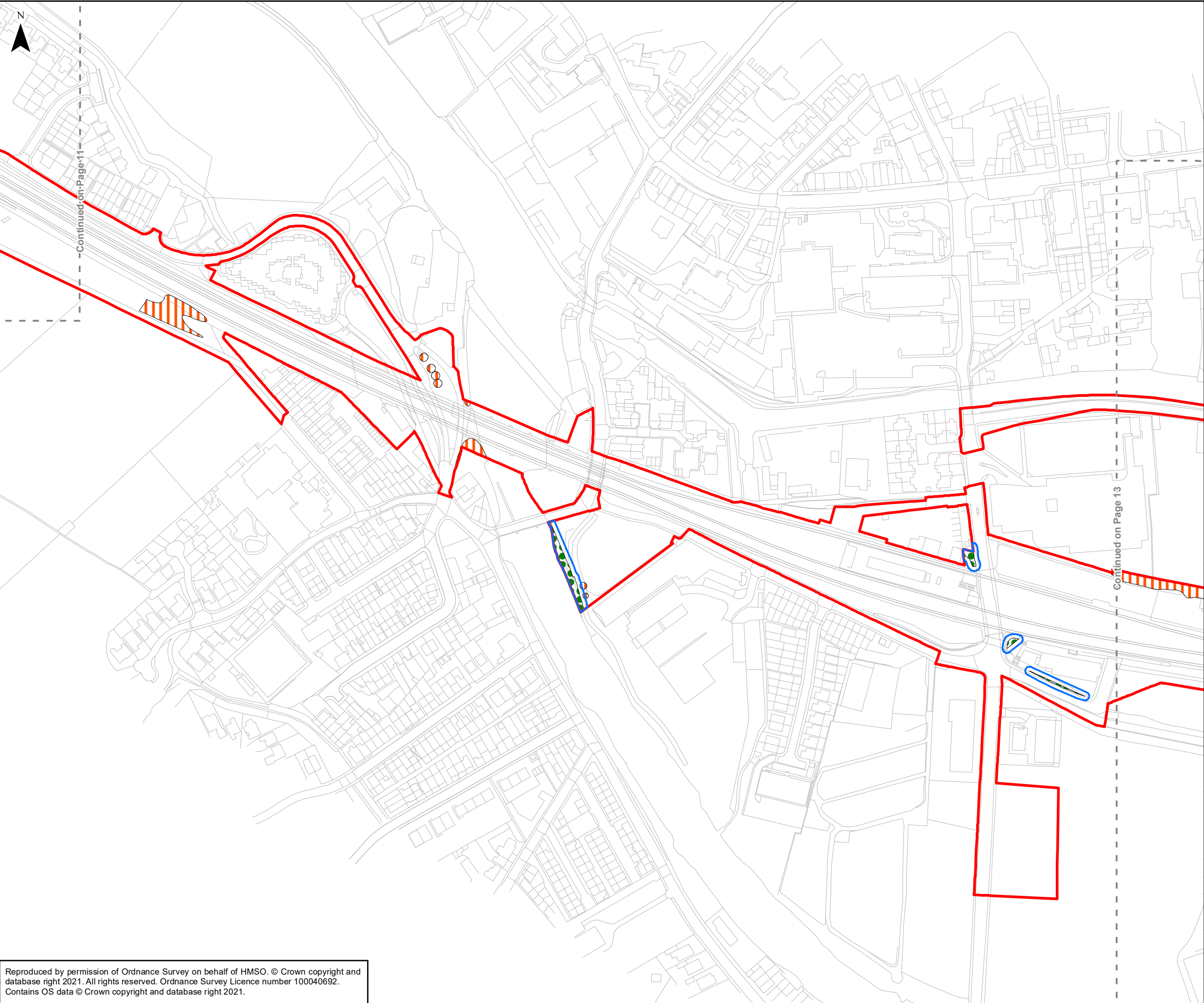
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1:350,000

Legend

Scheme Boundary

Tree Loss

Tree Retained

Indicative Protective Tree Fencing

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Metres

SCALE 1:2,500

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NetworkRail

Project

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ELR & Project Chainage

Alternative Reference

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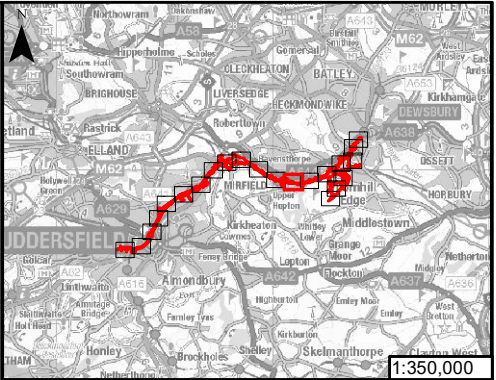
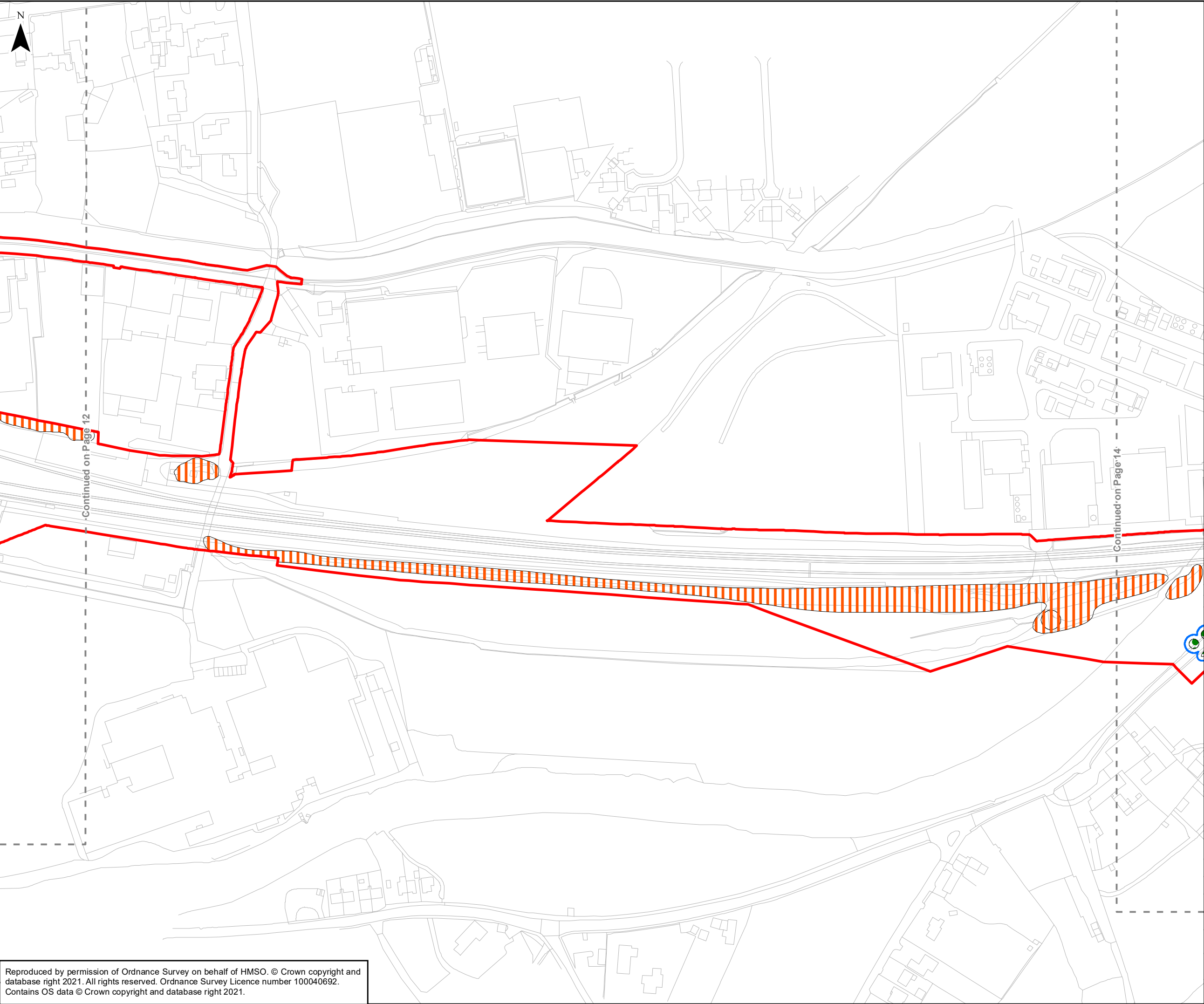
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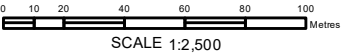
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Sheet Size A3 297 x 420



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- Scheme Boundary
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Project
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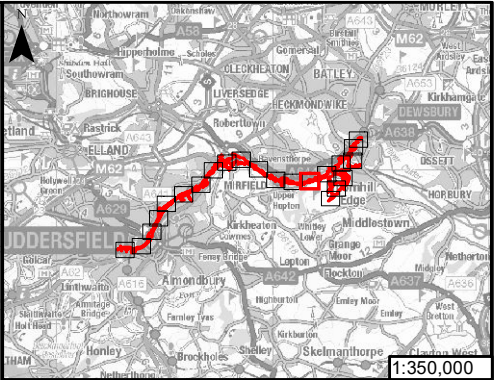
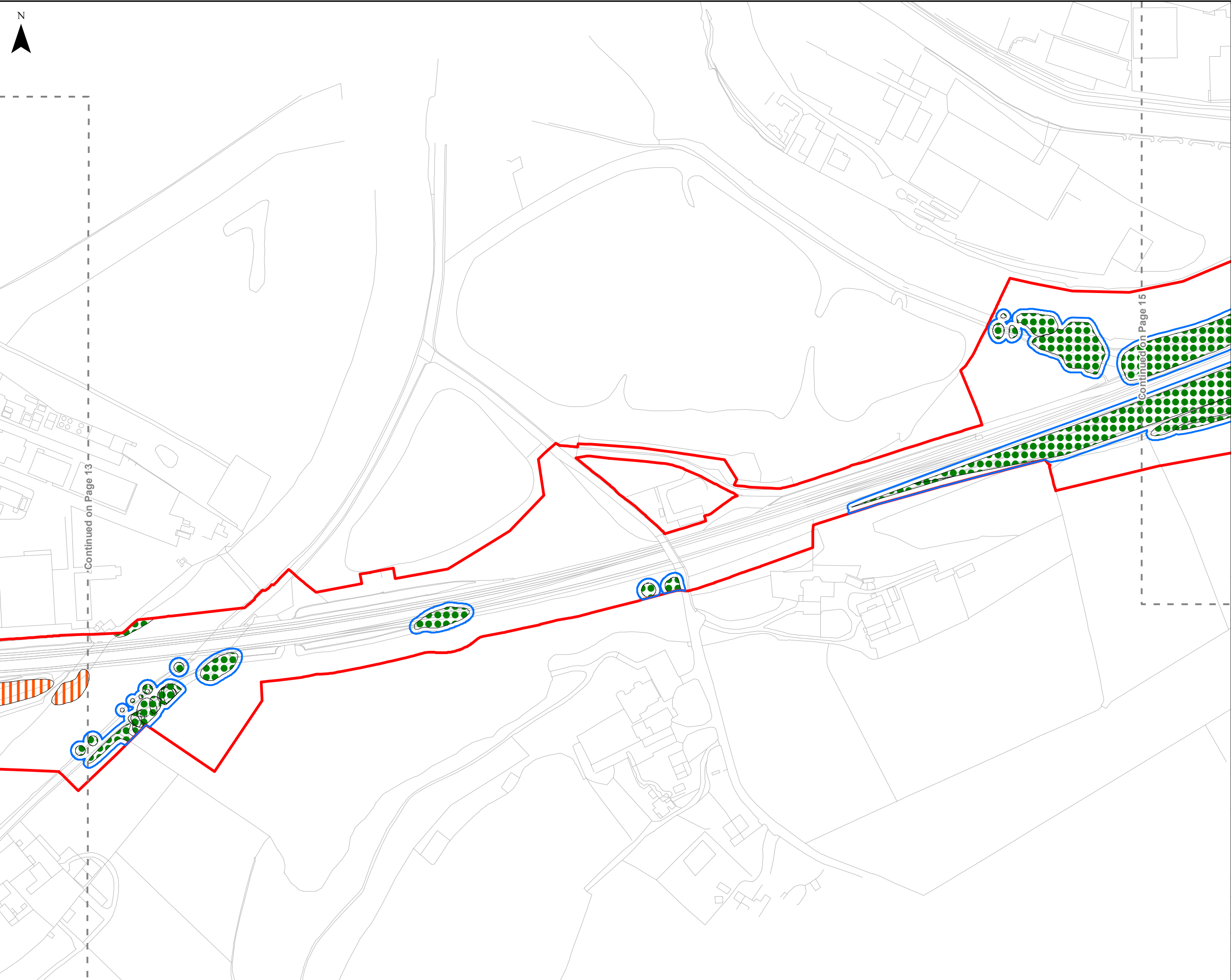
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0 10 20 40 60 80 100 Metres
SCALE 1:2,500

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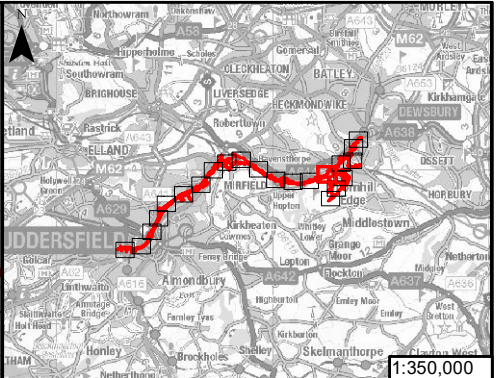
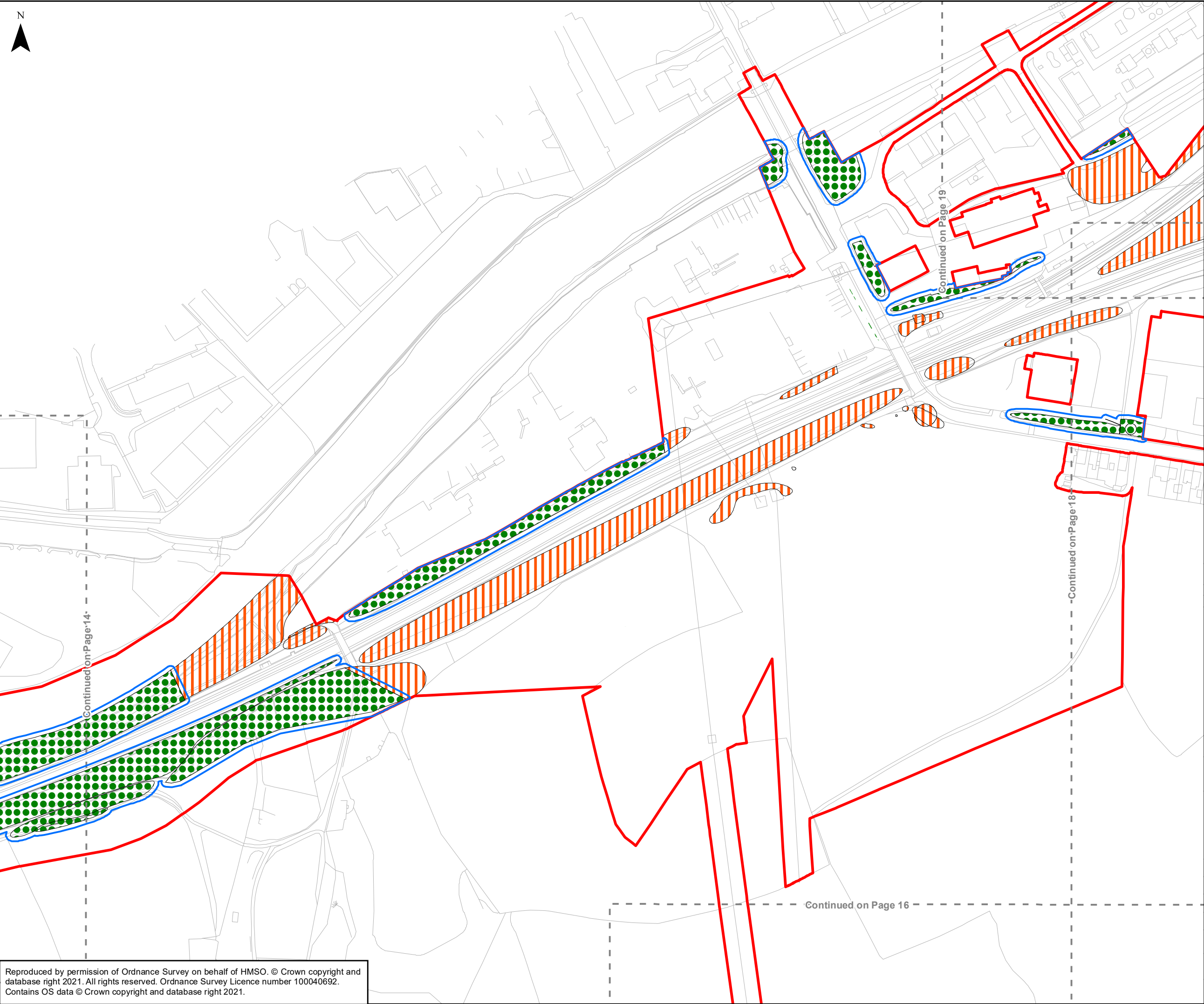
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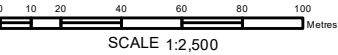
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- Legend**
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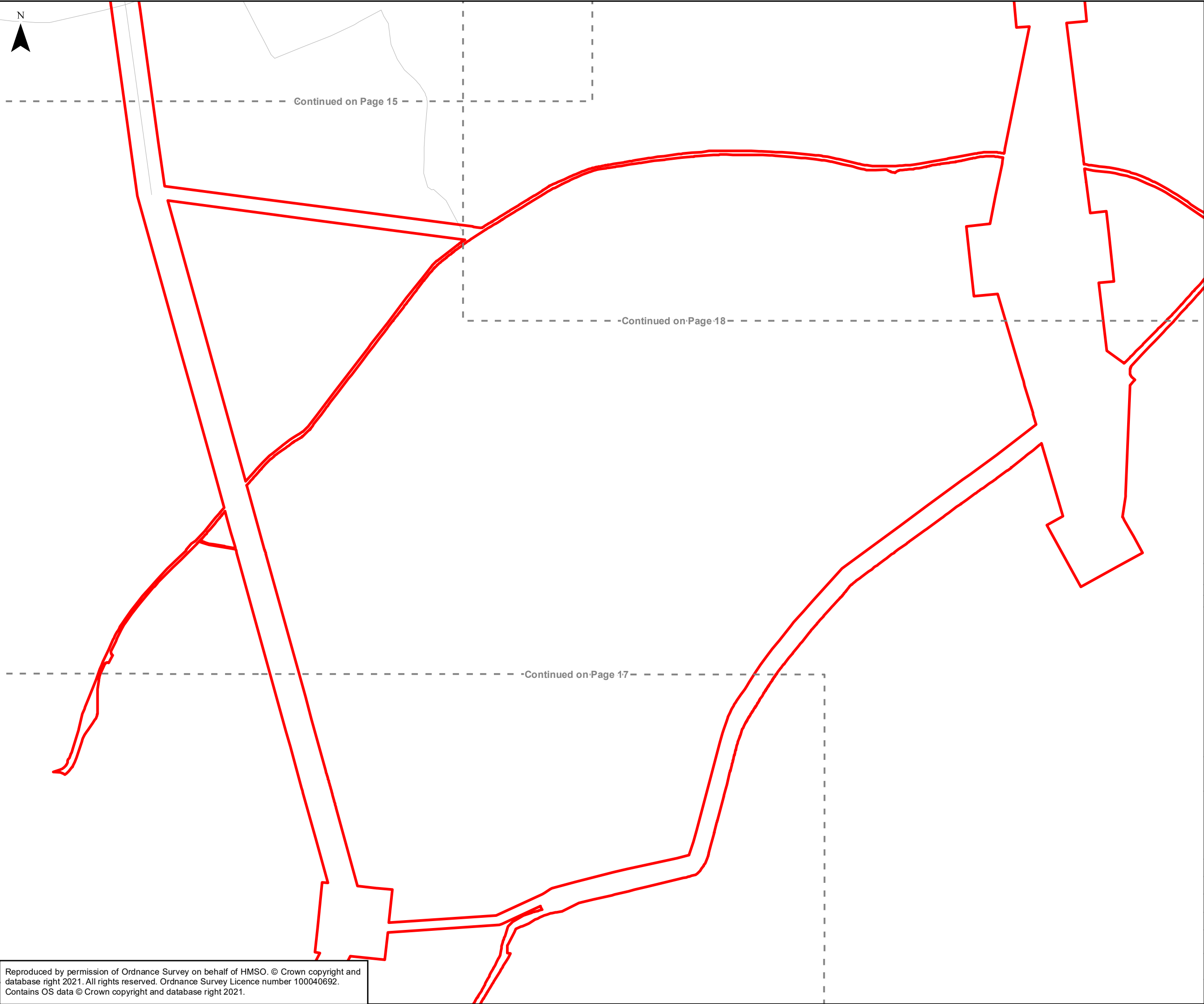
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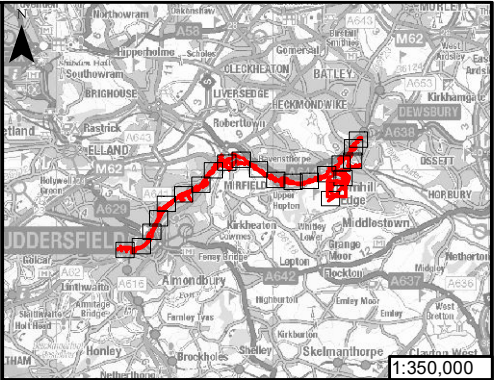
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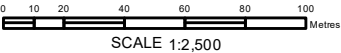


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Legend
 Scheme Boundary

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P01	18/03/21	FIRST ISSUE	KS	RA	PB
Rev	Date	Description of Revisions	Drwn	Chkd	Appr
Status				Suitability	
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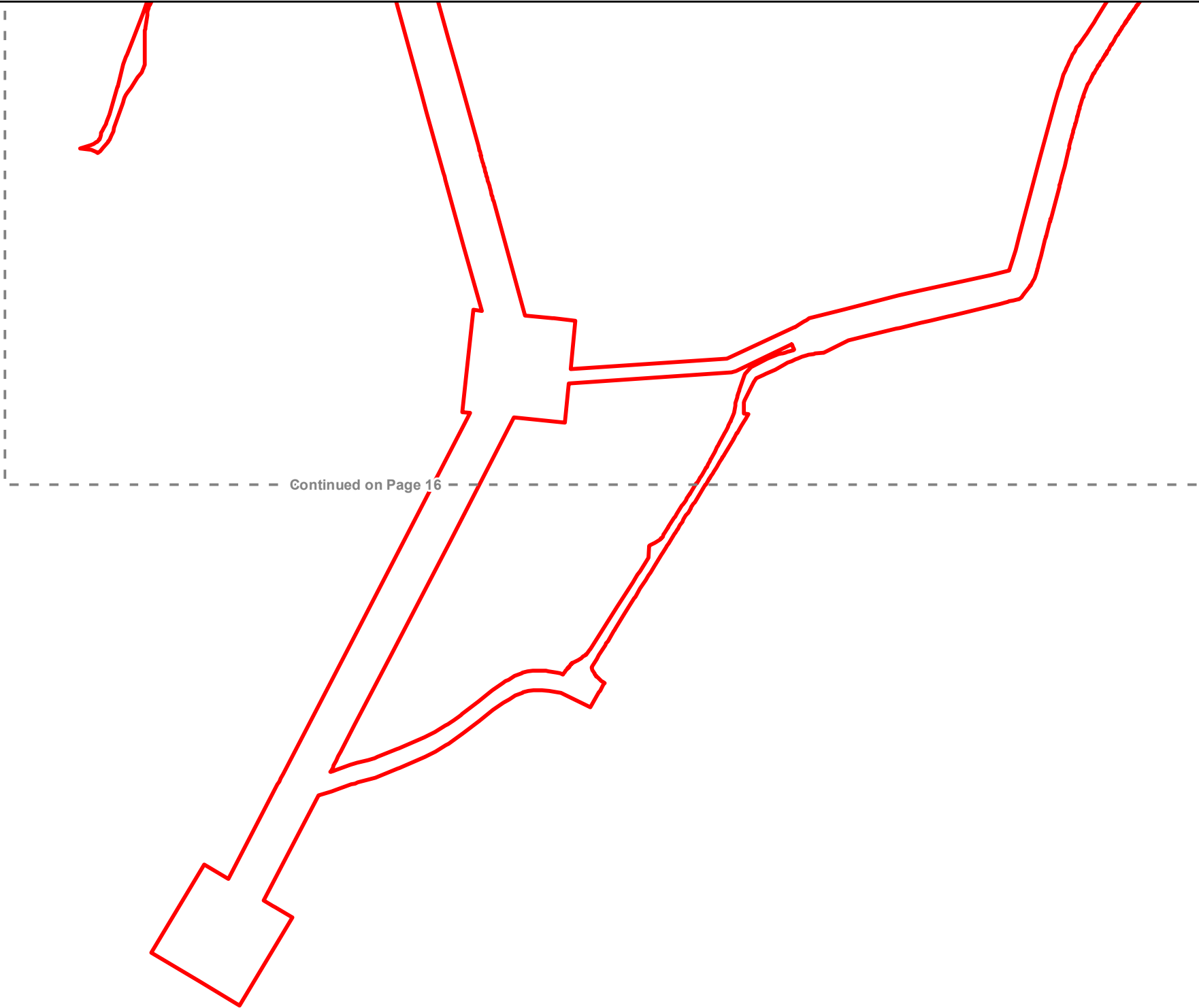
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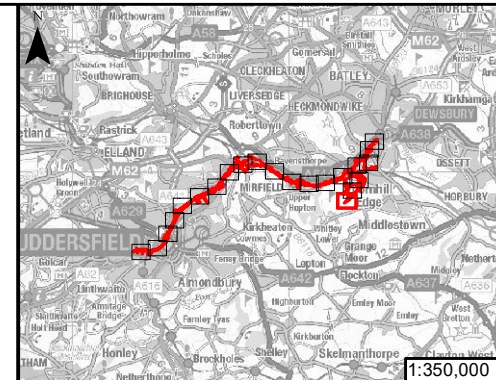
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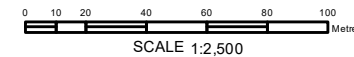
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Legend

 Scheme Boundary

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Project
TRANSPENNINE ROUTE UPGRADE

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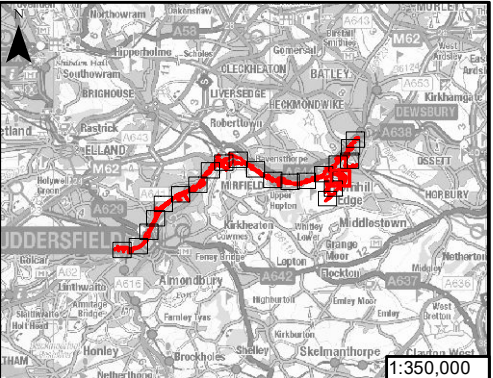
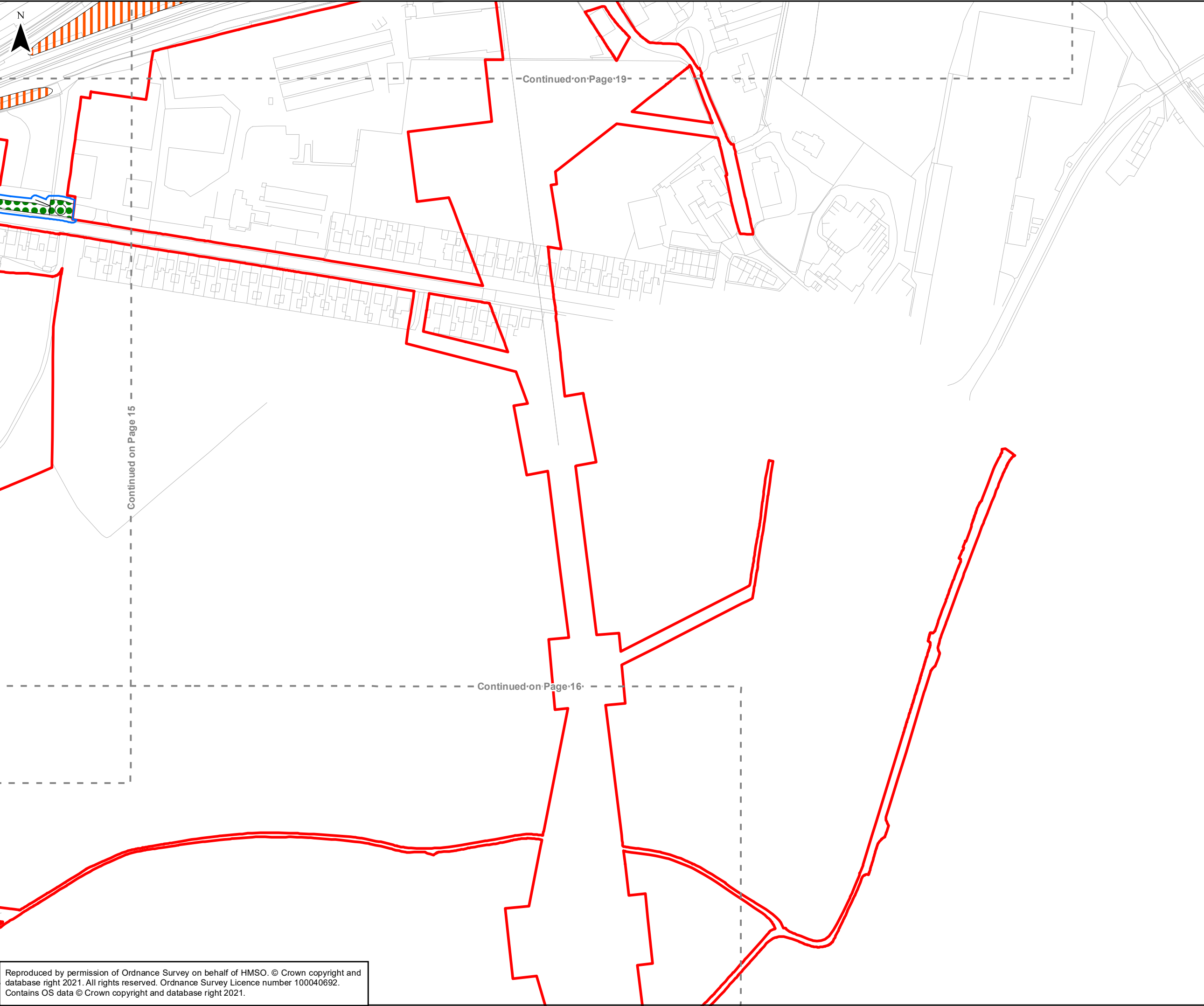
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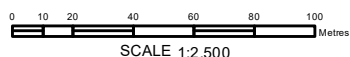
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Sheet Size A3 297 x 420



- Legend**
- Scheme Boundary
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Project
TRANSPENNINE ROUTE UPGRADE

Contract No.
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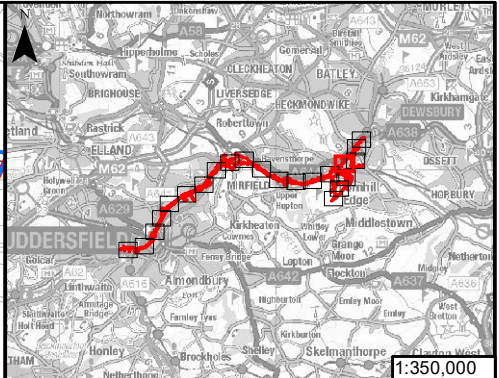
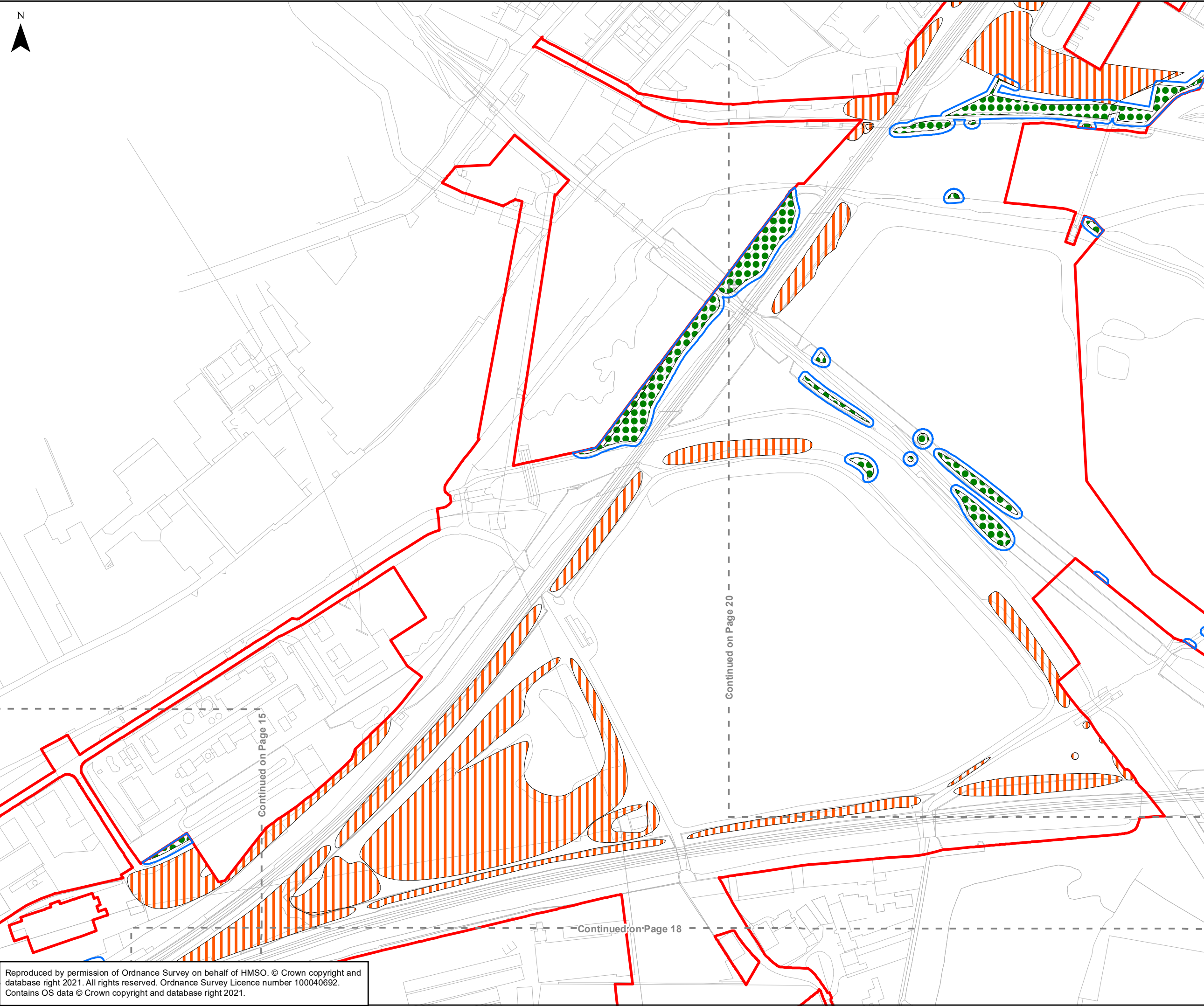
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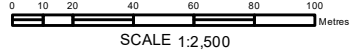
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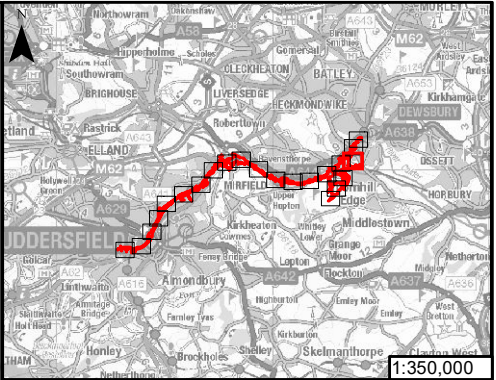
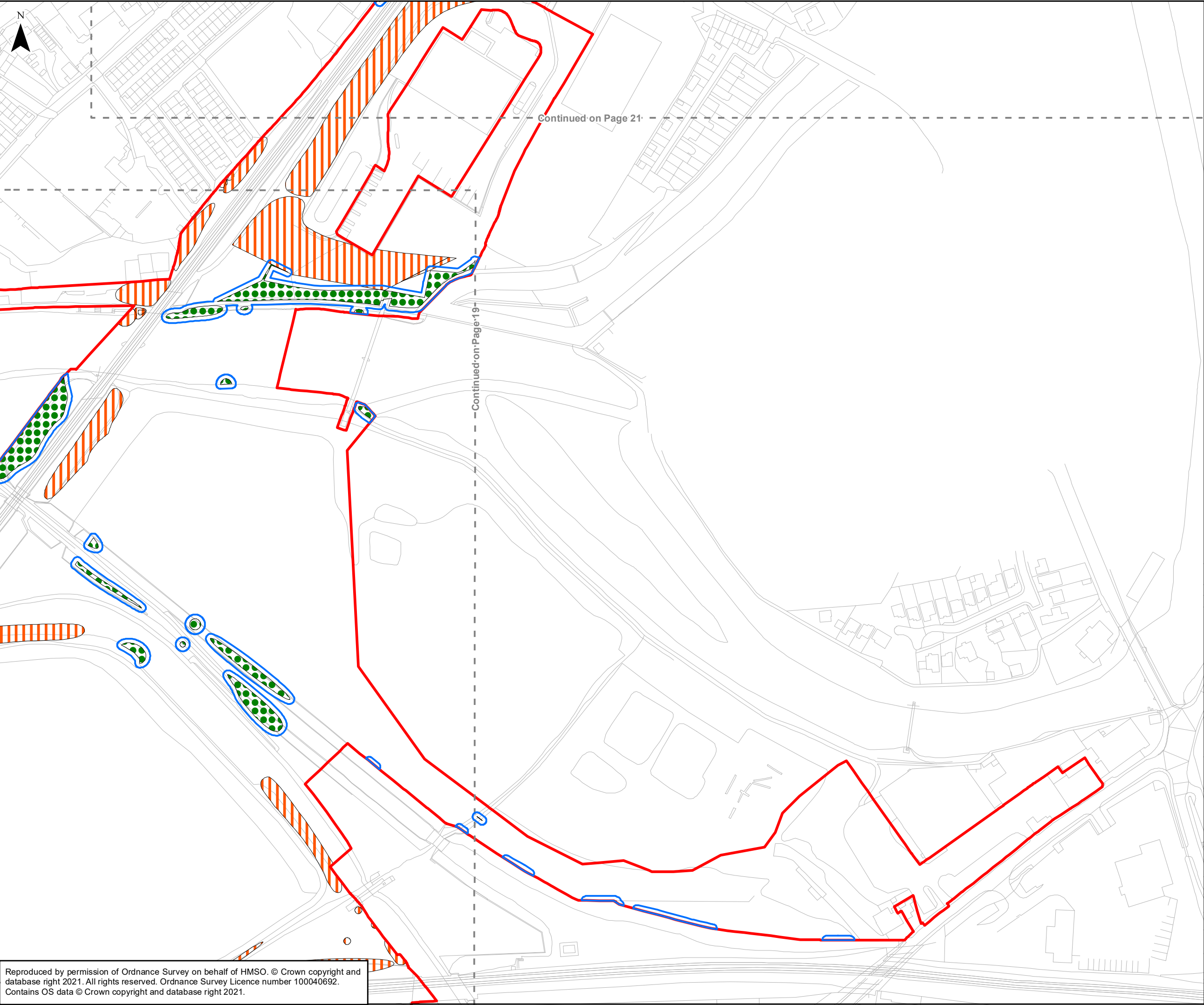
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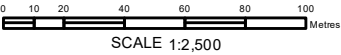
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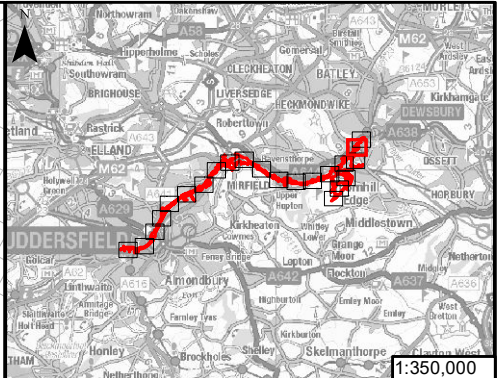
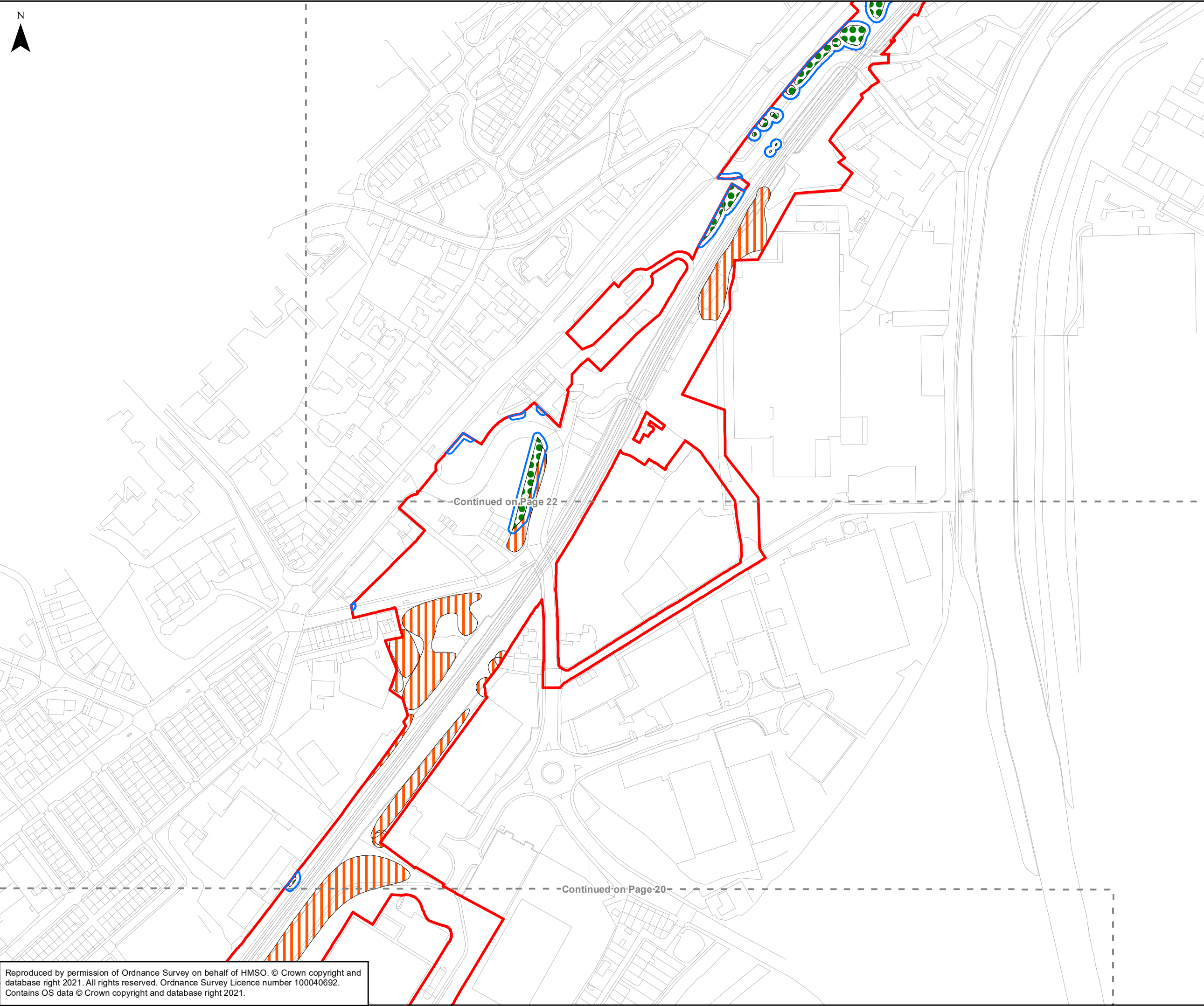
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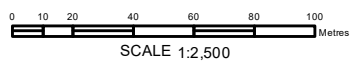
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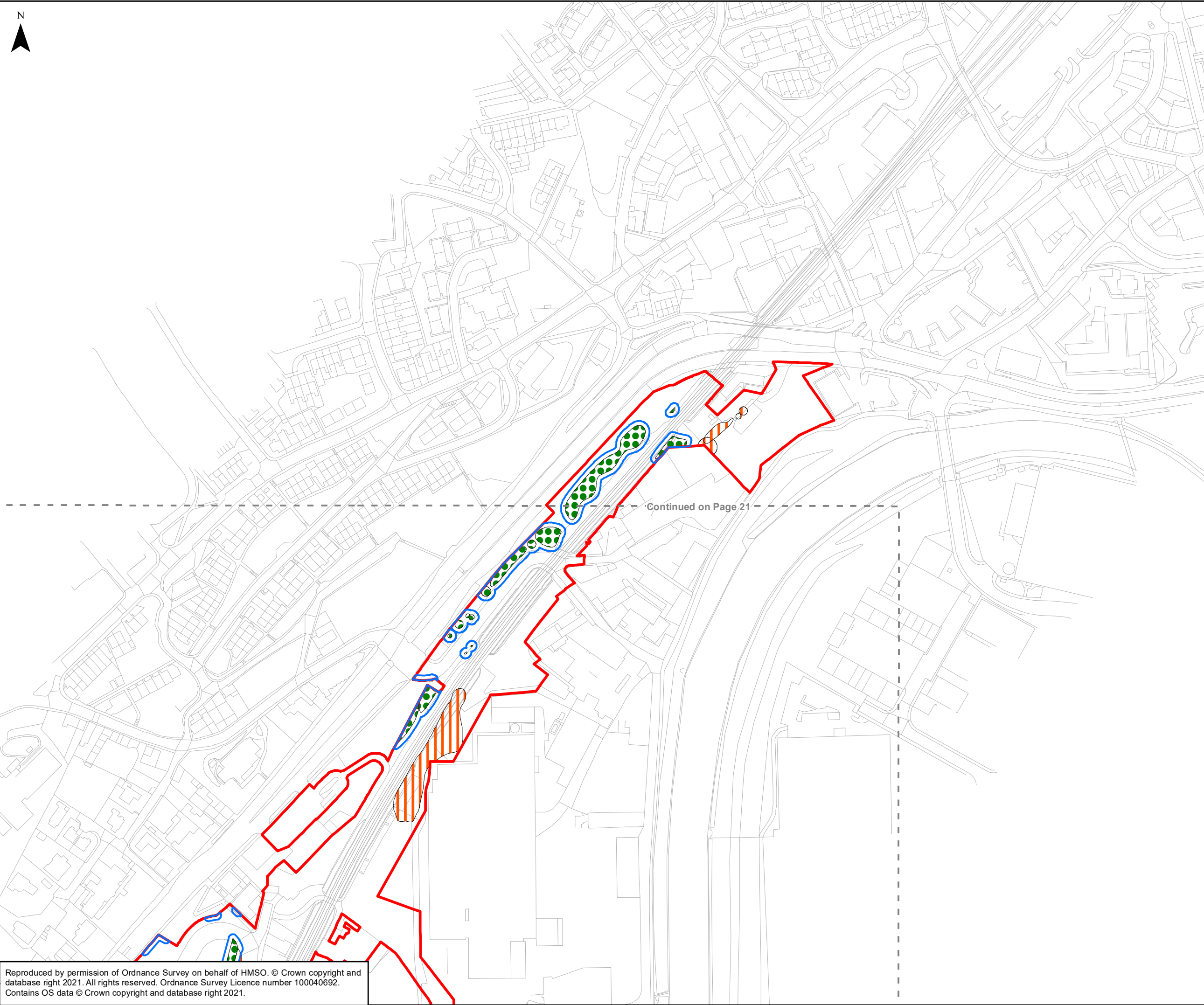
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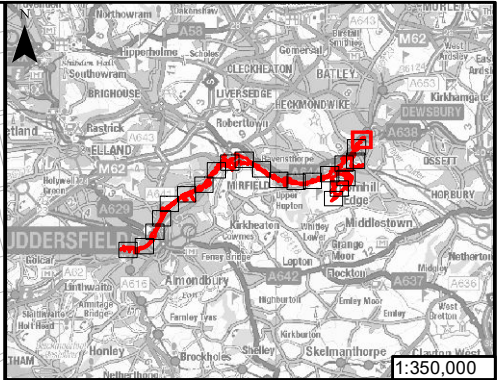
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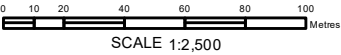


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- Legend**
- Scheme Boundary
 - Tree Loss
 - Tree Retained
 - Indicative Protective Tree Fencing

DRAFT



P01	18/03/21	FIRST ISSUE	KS	RA	PB
Rev	Date	Description of Revisions	Drwn	Chkd	Appr
Status	SHARED				Suitability



Project
TRANSPENNINE ROUTE UPGRADE

Contract No.
151667

Scheme Title
THE NETWORK RAIL (HUDDERSFIELD TO WESTTOWN (DEWSBURY) IMPROVEMENTS) ORDER

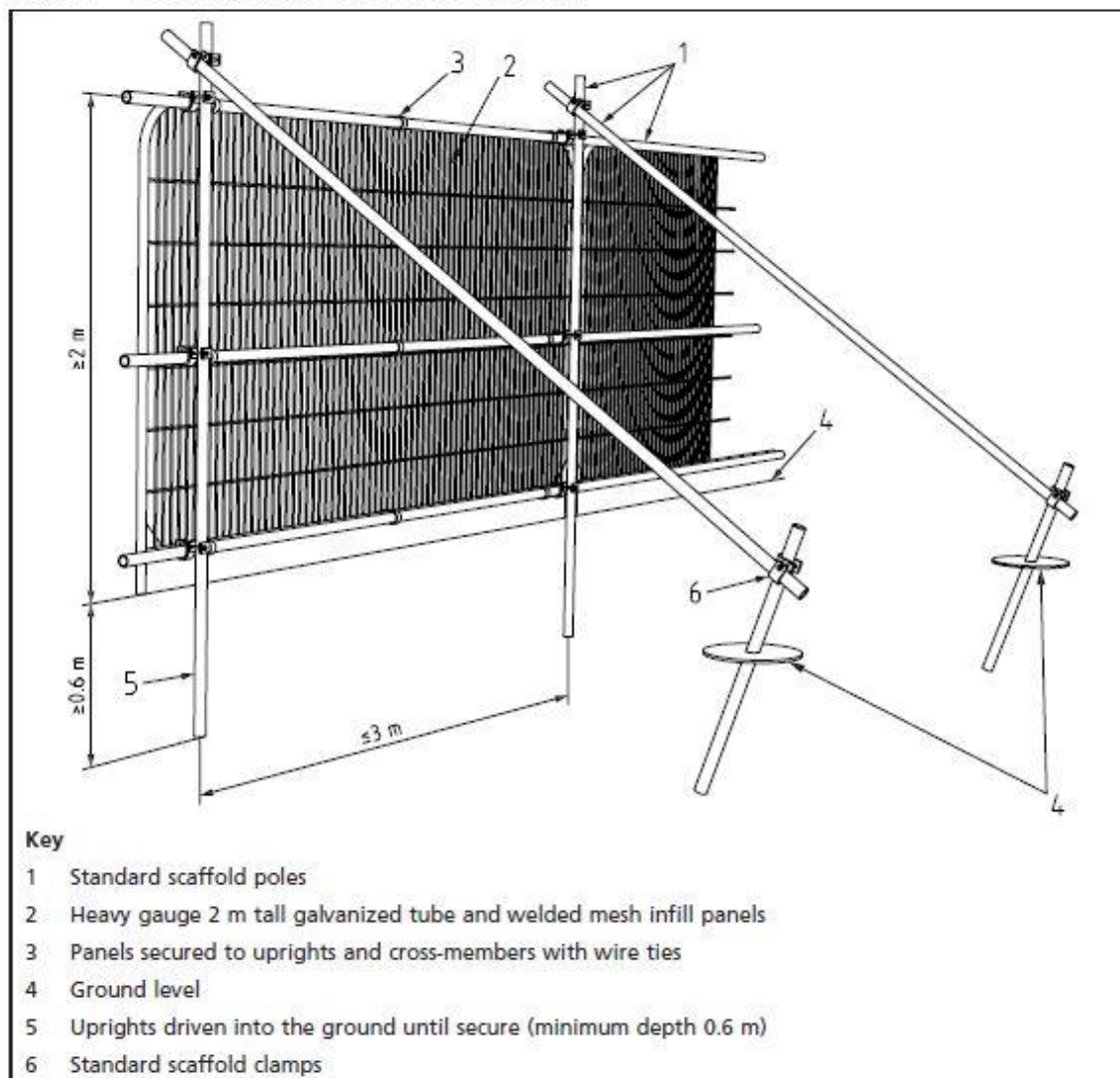
Drawing Title
TREE LOSS & RETENTION PLAN

Designed	S.Samsath	Signed Electronically	Date	18/01/2023
Drawn	S.Samsath	Signed Electronically	Date	18/01/2023
Checked	NB	Signed Electronically	Date	18/01/2023
Approved	PB	Signed Electronically	Date	18/01/2023
Scale(s) 1:2,500		ELR & Project Chainage ---		
Alternative Reference ---				Sheet
Drawing Number 151667-TSA-00-TRU-REP-W-EN-000117				Revision P01

APPENDIX B – TREE PROTECTION MEASURES

Extract from BS5837: Default Specification for Protective Barriers

Figure 2 Default specification for protective barrier



Example of Tree Protection Signage



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