

FIVE ESTUARIES OFFSHORE WIND FARM

6.6.4.18 ONSHORE BIODIVERSITY NET GAIN INDICATIVE DESIGN STAGE REPORT (CLEAN)

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FIVE ESTUARIES OFFSHORE WIND FARM

Biodiversity Net Gain Indicative Design Stage Report

Prepared for: GoBe Consultants (on behalf of Five Estuaries Offshore Wind Farm Ltd)



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1.0 Introduction

SLR Consulting was initially commissioned by GoBe Consultants, on behalf of Five Estuaries Offshore Wind Farm Ltd, in March 2021 to undertake the onshore ecological work necessary to inform the Environmental Impact Assessment (EIA). This report sets out an approach to the evaluation of biodiversity performance for the onshore element of the Five Estuaries (VE) project. It has been prepared using the project description information detailed in Volume 6, Part 3, Chapter 1: Onshore Project Description of the Environmental Statement (ES), and the baseline data gathered as part of the Ecological Impact Assessment, which is reported in full in Volume 6, Part 3, Chapter 4: Onshore Biodiversity and Nature Conservation.

DEFRA¹ describe Biodiversity Net Gain (BNG) as "a way of creating and improving natural habitats. BNG makes sure development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before development." The Environment Act 2021 (the Environment Act) gained Royal Assent on 9 November 2021 and is now enshrined within UK law. While the Environment Act is now part of UK law, some of its provisions have not yet been brought into force. There remain a range of preparatory actions that need to be undertaken before further implementation of the wider legal framework (through the introduction of secondary legislation) is due to take place.

Part 6 of the Environment Act sets out provisions for 'Biodiversity gain as condition of planning permission'. Once enacted, amendments to the Planning Act 2008 will from November 2025 require NSIPs to deliver biodiversity net gain. DEFRA Policy Paper (23 Feb 2023) Nationally Significant Infrastructure: action plan for reforms to the planning process states in Section 4.7 that:

"We will incorporate biodiversity net gain (BNG) requirements for all (terrestrial) NSIP projects from November 2025 and develop an approach for marine net gain (MNG). The biodiversity net gain requirement for NSIPs is to achieve at least 10% measurable net gain on all terrestrial and intertidal development, which is to be secured for at least 30 years. Defra is developing a draft biodiversity gain statement, which will set out the detail of the biodiversity net gain requirement for NSIPs. Defra plans to consult on this draft statement in early 2023".

BNG is not yet mandatory for NSIPs and provision of a set percentage gain is not a requirement for this Project at the time this document has been prepared, BNG is referenced in the updated National Policy Statements (NPS) and has been requested by stakeholders so consideration of potential implications for Five Estuaries (VE) is therefore required.

1.1 Purpose of this Report

The report seeks to:

- clearly set out the proposed approach to provide BNG;
- identify and justify any proposed deviations from the standard method of applying the Statutory Metric "the Metric"; and
- To provide a justified indication of the likely Biodiversity Unit (BU) loss and gain as a result of the project, based on key assumptions and the design available at DCO submission stage.

¹ DEFRA (2023). Understanding Biodiversity Net Gain https://www.gov.uk/guidance/understanding-biodiversity-net-gain .



1.2 Deliverables

All documents relating to the BNG assessment have been/ will be prepared with reference to published good practice guidance⁷ and professional experience of the BNG process. Further description of each stage of the process is described in the subsections below.

1.2.1 Application Stage (DCO Submission)

Key deliverables that are submitted within this Biodiversity Net Gain Indicative Design Stage Report as part of the DCO application process include:

- Habitat Impacts Plan: to make clear which habitats are included within the baseline, which are retained, lost then reinstated or lost then created.
- Baseline Habitat Plan (i.e. pre-development): A Habitat Plan identifying each habitat type included within the baseline.
- Post-Development Habitat Plan (i.e. after development, including all proposed mitigation, compensation and enhancement): A Habitat Plan identifying each habitat type present following completion of construction.
- Completed Statutory Metric spreadsheets. Two spreadsheets have been completed differing by one assumption (refer to section 4.1.4), to illustrate a key issue when applying the Statutory Metric to schemes with temporary impacts and no recourse to ongoing management thereafter.

The requirements for implementing and auditing against the BNG objectives are not included within this document, but would be set out within the final Landscape and Ecological Management Plan (LEMP).

1.2.2 Post DCO consent

To account for potential changes to the detailed scheme design, the Metric will be re-run post-DCO consent, and the BNG Final Design Report shall be prepared. It is proposed that is the subject of a DCO Requirement. The project is seeking a minimum of 10% BNG. Deliverables are anticipated to be the same as above, i.e. impacts, baseline and post-development plans along with a Statutory Metric spreadsheet.

The detailed LEMP, to be produced post-consent, will include the final requirements for monitoring of areas within the Order Limits against the BNG objectives set out in the Metric assessment, and any associated management actions. It is envisaged that monitoring and management requirements for off-site areas (if needed) would be dealt with separately.

1.3 Legal and Policy Requirement for an Assessment of Biodiversity Net Gain

Section 99 and Schedule 15 of the Environment Act set out provisions for 'Biodiversity gain in nationally significant infrastructure projects' which, subject to enactment through subsequent regulations, will make provision for amendment to Sections 37, 120 and 232 of the Planning Act 2008.

The amendments to the Planning Act 2008 state that if the project is subject to an NPS and that NPS includes a "biodiversity gain statement" or if such a "biodiversity gain statement" otherwise applies to the project, the Secretary of State must decide the application in accordance with the biodiversity gain statement. No such statement is currently in force for this project. Any forthcoming biodiversity gain statement is required to set the level of biodiversity gain to be achieved by NSIPs. The level of biodiversity gain that NSIPs will be expected to achieve is 10%.



The 2023 DEFRA policy paper² set out that once the provision comes into force, at least 10% measurable net gain will be required, and must be secured for at least 30 years. Provision will therefore need to be made for maintenance of those areas of habitats that are considered essential to the delivery of the project, including its biodiversity performance.

National Policy Statements relevant to the Project, EN-1 (the Overarching National Policy Statement for Energy, January 2024) includes several references to BNG and Section 4.6.7 states "In England applicants for onshore elements of any development are encouraged to use the latest version of the biodiversity metric to calculate their biodiversity baseline and present planned biodiversity net gain outcomes. This calculation data should be presented in full as part of their application"

² DEFRA (2023) Nationally Significant Infrastructure: action plan for reforms to the planning process



2.0 Method

2.1 Desk Study and Field Survey

Baseline habitat survey and habitat condition data have been collected during spring-autumn 2022 (the optimal season for habitat surveys runs from May to September inclusive) and are reported in full within the Ecology Chapter of the ES. Data comprise:

- Classification of habitats using UKHab v1.1³.
- Habitat Condition Assessment, undertaken in accordance with the Metric 3.1 (current at the time of survey), at each polygon or line of mapped habitat. The Metric requires values for a specific set of criteria to be recorded (this varies depending on habitat type) in order to determine the habitat condition score for each polygon/line.

The Statutory Metric condition assessment criteria (February 2024) for grassland, hedgerows, lines of trees and scrub differ very slightly from the Metric 3.1 criteria, mainly in terms of providing greater clarity. The differences are not considered likely to give rise to alternative condition assessment scores than have already been recorded; reliance on Metric 3.1 criteria for the baseline condition assessment is therefore considered appropriate.

The following baseline data are held within a GIS for each mapped line or polygon of habitat within the Order Limits:

- UKHab type; and
- Condition Assessment details including score per criterion, and overall.

2.2 Approach to Delivering Biodiversity Net Gain

BNG is an approach to development activities that leaves the natural environment in a measurably better state than it was before. BNG works with and does not replace the mitigation hierarchy. It does not replace existing legal requirements (e.g., in relation to protected species) and it should not be applied to compensate for impacts on irreplaceable habitats. The VE project is cognisant of the good practice in respect of BNG^{4,5,6,7}, and will align with the ten principles developed by CIEEM, IEMA and CIRIA summarised below.

- Principle 1. Apply the Mitigation Hierarchy Avoid and then minimise impacts on biodiversity. As a last resort, and in agreement with stakeholders and decision-makers, compensate for losses that cannot be avoided.
- Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere Avoid impacts on irreplaceable biodiversity these impacts cannot be offset.

⁷ CIEEM (2021). Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management, Winchester, UK



³ Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020) The UKHab Classification User Manual Version 1.1 at http://www.ukhab.org. Note that UKHab Ltd. published an updated v2.0 in July 2023, habitat data has been retained in v1.1 for this project.

⁴ Biodiversity Net Gain: Good practice principles for development CIEEM, CIRIA, IEMA, 2016

⁵ Baker, J., Hoskin, R., Butterworth, T. Biodiversity Net Gain: Good Practice Principles for Development, A Practical Guide (2019) CIRIA C776a

⁶ BS 8683:2021: Process for designing and implementing Biodiversity Net Gain. Specification (2021)

- Principle 3. Be inclusive and equitable Engage stakeholders in designing, implementing, monitoring and evaluating the approach to Net Gain. Share the benefits fairly among stakeholders.
- Principle 4. Address risks Mitigate difficulty and/or uncertainty using well-accepted ways to add contingency when calculating biodiversity losses and gains.
- Principle 5. Make a measurable Net Gain contribution Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
- Principle 6. Achieve the best outcomes for biodiversity Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge.
- Principle 7. Be additional Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway).
- Principle 8. Create a Net Gain legacy Ensure Net Gain generates long-term benefits.
- Principle 9. Optimise sustainability Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
- Principle 10. Be transparent Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

In respect of Principle 5, VE has/will use the Statutory Metric (or its successor) to demonstrate measurable Net Gain contribution.

It is worth highlighting that the Metric is a proxy for biodiversity and therefore it does not account for species-specific mitigation, compensation or enhancement. Loss/gains in this respect will be measured against monitoring targets set out within the relevant European Protected Species Licence(s) (if applicable) and outline LEMP.

2.2.1 Assessment Using the Metric

The Metric which is currently accepted for use in England is the Statutory Metric (henceforth 'the Metric'). The final version adopted for the purposes of planning applications submitted under the TCPA 1990, as amended by The Environment Act 2021, was published on 12th February 2024. It is not known if DEFRA will publish a modified version for terrestrial NSIP projects in advance of adoption of mandatory net gain for these projects in 2025.

The Metric uses a comparison of habitats as a proxy for biodiversity and describes these habitats using standard units referred to as biodiversity units (BUs). BUs are calculated using the size of a parcel of habitat and its quality.

Under the Metric there are 3 distinct types of BU and these are not of equivalence or interchangeable. They are:

- Habitat BUs which describe areas of habitat based on measurement in hectares;
- Linear BUs which describe hedgerows and lines of trees measured in kilometres; and
- Riparian BUs which describe rivers and streams measured again in kilometres.

The overall calculation of the change in biodiversity resulting from a project or development is made by subtracting the value of pre-project or 'baseline' BUs of an area of land from the number of post-project units. Post-project units incorporate temporary and permanent losses resulting from the project, along with the value of any mitigation, compensation and enhancement proposals include as part of the project.

The results are influenced by:

Habitat area/length;



- Distinctiveness (an indication of value);
- Condition an indication of quality; and
- Multipliers or risk factors that take account of the contribution to local priorities, the difficulty of habitat creation/management, the time it takes to deliver and variation in the location of habitat delivery.

2.2.2 Applying the Metric in this instance

For the purposes of BNG assessment to be submitted alongside the VE DCO application an indicative onshore scheme design has been assessed, which is considered to represent a reasonable worse case scenario compared with final design. This approach allows an understanding of the maximum area of land required in order to deliver BNG and if this can be met on site within the Order Limits. The BNG assessment will be updated post DCO decision, based on the detailed scheme design . By adopting the approach outlined above the BNG requirements at the detailed design stage would not exceed the indicative requirements identified at the pre-DCO stage.

2.2.3 Defining "On-Site" and "Off-Site"

DEFRA provide definitions of the terms 'on-site' and 'off-site' for use in considering all scales of development project except for very small residential developments. The User Guide⁸ defines these terms as follows:

- On-site refers to all land within a red line boundary of a development.
- Off-site, for the purposes of the biodiversity metric tool, refers to land outside of the on-site boundary, which is dedicated to habitat interventions (habitat enhancement or creation), regardless of proximity or ownership."

These definitions bring with them specific challenges when, for example, consideration is given to approaches such as the 'Rochdale Envelope' as described within PINS Advice Note 99. This approach is to incorporate flexibility within applications for development consent in order to address uncertainty. Where this becomes particularly relevant to the evaluation of a project's biodiversity performance is when the Rochdale Envelope is relied upon to present options that relate to location and therefore baseline habitat.

As the Metric evaluates biodiversity performance against an understanding of the baseline habitat value, changes in the project boundary in either extent or location influence:

- the 'on-site baseline' including the number and potentially type of BUs;
- what is achievable or appropriate to deliver in the 'On-site post-intervention';
- the 'Total net unit change' required;
- the reported 'Total on-site net % change plus off-site surplus'; and
- whether Trading Rules can be satisfied.

In this instance, the Order Limits (equivalent to the red line boundary quoted in the User Guide) presented at ES are larger than the anticipated project footprint, as a result of a need to allow for some design flexibility (for example to allow for archaeological or ecological micrositing) and due to the presence of trenchless techniques



⁸ DEFRA (2024) The Statutory Biodiversity Metric User Guide at https://assets.publishing.service.gov.uk/media/65c60e0514b83c000ca715f3/The_Statutory_Biodiversity_Metric--_User_Guide_.pdf

⁹ Planning Inspectorate (2018). Advice Note Nine: Rochdale Envelope.

for the landfall and parts of the route. Therefore, the Order Limits are not considered an appropriate baseline against which to measure. This has important implications, as the project should not be expected to provide 10% uplift in biodiversity units (habitats, hedgerows and rivers/streams) for areas that are not impacted by, or have been specifically avoided by the project (such as Holland Haven Marshes SSSI).

The following premise has therefore been applied:

- The "on-site" boundary for the purpose of applying the Metric at DCO submission stage shall be based upon an illustrative onshore project footprint as provided with the ES (i.e. above Mean High Water Springs and including areas needed for mitigation, compensation or enhancement). This will be updated post consent.
- "Off-site" relates to all other areas where no direct impact is anticipated.

The area comprising "on site" is shown on Drawings 1 - 3, with further detail in respect of the assumptions used when using the Metric included in Chapter 4.0.

- Drawings 1 Habitat Impacts See Appendix C
- Drawings 2 Baseline Habitats See Appendix D
- Drawings 3 Post Development Habitats See Appendix E

2.2.4 Defining Strategic Significance

The approach to Strategic Significance was developed by SLR and agreed at Expert Topic Group meetings with Natural England (NE) in advance of final publication of the Statutory Metric in February 2024. The approach set out here and agreed with NE is therefore slightly at variance with the latest statutory guidance on how to apply strategic significance. It is proposed that as part of the post-DCO update of the BNG calculations that the approach to strategic significance will be reviewed, in line with latest good practice and published guidance and, in particular, will be updated in the event that an LNRS has been published (in draft or final form) prior to this update taking place.

All habitat parcels (both baseline and post-intervention) must be assigned a strategic significance score as follows:

- High formally identified in local strategy, plan or policy;
- Medium location ecologically desirable but not identified in a local strategy, plan or policy; or
- Low not identified in a local strategy, plan or policy OR no strategy or plan is in place in the area.

Under the current guidance, the definition of "Strategic Significance" is open to interpretation by BNG assessors. "Local strategies" may include areas and/or habitat(s) identified in (for example) Local Nature Recovery Strategies, Local Biodiversity Plans, National Character Area objectives, Local Planning Authority Local Ecological Networks, Shoreline Management Plans, estuary strategies and green infrastructure strategies. At the time of writing, there is no Local Nature Recovery Strategy for the area and no Local Ecological Network and no other documents have been explicitly identified by the local authority as appropriate interim guidance for strategic significance. For the purposes of this project, SLR has made reference to the following biodiversity strategy documents:

 Tending District Local Plan 2013-2033 and Beyond – Publication Draft (June, 2017), Section 1 adopted in January 2021;



- Essex Green Infrastructure Strategy (2020);
- Green Essex Strategy (2019);
- Essex Biodiversity Action Plan 1999 (we are not aware of any more recent version); and
- National Character Area 111: North Thames Basin.
- Natural England's habitat network mapping data¹⁰.

Following review of the above documents, Table 2-1 below sets out the areas identified and how their strategic significance is assessed for the purposes of this project.

Table 2-1 Assessment of Strategic Significance

	Habitats Identified
High	 Specific areas of habitats identified in in the above bullet points, namely: PPL 4 in the Tendring District Local Plan identifies SSSI, SAC and SPA, plus locally important sites, ancient woodland and veteran trees as being important for nature conservation. Local Wildlife Sites (LWS) are viewed as green infrastructure within the Essex Green Infrastructure Strategy, therefore considered strategically significant.
Medium	Areas immediately adjacent to the above sites for nature conservation, with potential to support the features of interest of the site or buffer impacts (unrelated to VE) to it/them. This category is considered to apply to areas adjacent to Holland Haven Marshes SSSI and Great Holland Pits LWS. A minimum 100m buffer to these designated sites + adjacent corridor width has been applied and deemed to be of medium strategic significance. Areas which meet local LWS selection criteria but are not designated as such. No such areas have been identified. Areas of land identified in Natural England's habitat network mapping data including information on habitat restoration-creation, restorable habitat, plus fragmentation action, and network enhancement and expansion zones. Note that the NE dataset has been used to define this category, with areas subsequently drawn to the nearest field boundary.
Low	All remaining habitats not included in the above.

2.3 Statutory Metric Principles and Rules

The Metric User Guide sets out that assessments should be conducted with regard to four rules and nine

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¹⁰ Habitat Networks (England) - data.gov.uk

principles as set out below.

- Rule 1 The trading rules of this biodiversity metric must be followed.
- Rule 2 Biodiversity unit outputs, for each type of unit, must not be summed, traded, or converted between types. The requirement to deliver at least a 10% net gain applies to each type of unit.
- Rule 3 To accurately apply the biodiversity metric formula, you must use the statutory biodiversity metric calculation tool or small sites biodiversity metric tool (SSM) for small sites.
- Rule 4 In exceptional ecological circumstances, deviation from this biodiversity metric methodology may be permitted by the relevant planning authority.
- Principle 1 The metric assessment should be completed by a competent person.
- Principle 2 The use of this biodiversity metric does not override existing biodiversity protections, statutory
 obligations, policy requirements, ecological mitigation hierarchy or any other requirements. This includes
 consenting or licensing processes, for example woodlands.
- Principle 3 This biodiversity metric should be used in accordance with established good practice guidance and professional codes.
- Principle 4 This biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice.
- Principle 5 Biodiversity units are a proxy for biodiversity and should be treated as relative values.
- Principle 6 This biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance.
- Principle 7 Habitat interventions need to be realistic and deliverable within a relevant project timeframe.
- Principle 8 Created and enhanced habitats should be, where practical and reasonable, local to any impact and deliver strategically important outcomes for nature conservation.
- Principle 9 This biodiversity metric does not enforce a minimum habitat size ratio for compensation of losses. Proposals should aim to:
 - o maintain habitat extent supporting more, bigger, better and more joined up ecological networks
 - o ensure that proposed or retained habitat parcels are of sufficient size for ecological function

2.4 Evidence of Technical Competence and Experience

This assessment was undertaken by Jess Colebrook and Joe O'Reilly, both of SLR Consulting Ltd.

This report has been authored by Jess Colebrook, a Principal Ecologist at SLR Consulting with over 23 years' experience as a professional ecologist. She is a Chartered Environmentalist (CEnv) and a full member of CIEEM (MCIEEM). Jess is leading the onshore ecological work necessary to inform the EIA for the project.

GIS elements of the project were undertaken by Joe O'Reilly. Joe is an Associate GIS Analyst at SLR with over 6 years of experience in the development and implementation of spatial solutions for clients, specialising in the application of GIS at a landscape-scale to inform strategic planning. He is a member of the Association for Geographic Information and a Fellow of the Royal Geographic Society. Joe is the GIS lead for the project at SLR.

Additional technical support and Quality Assurance review has been provided by Bob Edmonds. Bob is the Technical Discipline Manager for the Ecology and Biodiversity team at SLR Consulting, Chartered Environmentalists (CEnv) and full member of CIEEM (MCIEEM) with over 25 years' professional ecological experience.



2.5 Limitations

Limitations relating to updates to versions of the Metric and associated guidance have been addressed (as set out in Section 2 above). No significant limitations have been encountered when collecting baseline data or performing the Metric calculations. The conclusions of this report are considered to be a fair representation of the likely effect of VE on the Metric BU score resulting from the proposed development.



3.0 Baseline Conditions

3.1 Important Ecological Features

Important ecological features that may be affected by the scheme are identified within the ES chapter, and their influence on the deliverability of BNG has been taken into account in this assessment, e.g., designated sites, protected and priority habitats and species.

3.2 Habitats

Baseline habitat survey and habitat condition data have been collected during spring-autumn 2022 (the optimal season for habitat surveys runs from May to September inclusive) and are reported in full within the Ecology Chapter of the ES. Data collection approach is set out in Section 2.1 above.

Drawing 2 comprises the Baseline Habitat Plan for the on-site areas considered within this assessment.

3.2.1 Consideration of Metric principles and rules

Protected and locally important species needs are not considered through the Metric. Such features need separate consideration under existing policy and legislation. Protected species are considered in the ES chapter, and no mitigation and/or compensation for these species is included in this assessment.

This assessment adheres to all four rules and nine principles of the Metric. For clarity, there is no irreplaceable or very high distinctiveness habitat on-site, though it does occur within the Order Limits. The project has made a commitment to meet all trading rules, via off-site offsetting if necessary.



4.0 Proposed Design and Key Assumptions

4.1 Proposed Design

The proposed design is Scenario 1 presented in the ES; i.e. VE undertakes the additional onshore cable trenching and ducting works for North Falls Offshore Wind Farm (NF), and provides a level platform in the OnSS area for the second substation as part of a single civils campaign. There is a commitment to use trenchless crossing techniques at a number of obstacles which include ecological features (refer to ES Volume 6, Part 6, Annex 1.1 Obstacle Crossings Register), and to target existing hedgerow gaps where open trenching is planned.

For the purpose of the calculations the approach has therefore been to prepare a potential impacts plan based on the above parameters, in order to clearly demonstrate the assumptions used (refer to Drawing 1). Key assumptions are set out below.

4.1.1 All areas

- In this iteration of the assessment no mitigation or compensation for protected species or protected sites has been included.
- Areas shown as not directly impacted will be considered "off-site". This includes areas for which there
 is a committed HDD or other trenchless crossing, areas avoided via targeting hedgerow gaps, access
 routes for which no vegetation clearance is required and hedgerows at the footprint boundary, where
 no vegetation clearance is required (i.e. at the edges of TCCs);
- It has been assumed that all watercourses identified during the habitat survey (noting that this may differ from other datasets; as a result of differences in how watercourses are defined) would be crossed by trenchless techniques and/ or that they would be unaffected.
- The haul route along the ECC will be presumed to remain in place for more than 2 years, such that affected habitats will be recorded as lost/ created in the Metric calculator.
- Where hedges (mapped as a line feature of no width, mapped on the hedge centreline) occur adjacent
 to visibility splays they have been considered as potentially affected by trimming (further detail is given
 below).
- A 20m standoff distance has been used for the committed trenchless crossings from ecological features.
 This will likely vary on a case-by-case basis once final scheme design is known, at this stage of the process 20m is the distance provided by the design team as being a fair approximation.

An example of the above bullet points is shown in Figure 1 below (which comprises an excerpt from the impacts plan). This shows trimmed hedgerow adjacent to visibility splay as orange, a 20m standoff from features as a result of HDD, with a haul route passing through and including removal and reinstatement of a short section of hedgerows shown green. Remaining areas are agricultural habitats; orange areas are lost and reinstated after 2 years, green areas are retained (lost and reinstated within 2 years). White areas are excluded from the baseline.



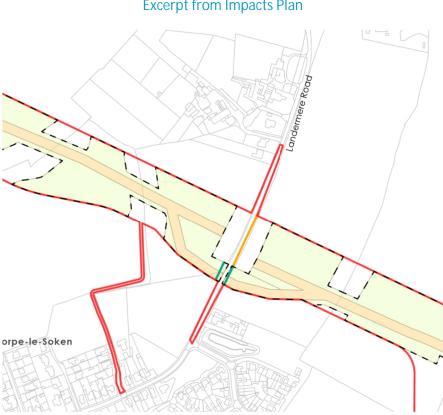


Figure 1
Excerpt from Impacts Plan

- In respect of cropland or agricultural grassland that is to be returned to its original use within 2 years, the impacts are considered to be temporary loss¹¹ and will be recorded as retained within the Metric. Note that for agricultural grassland and cropland, original use is considered to be topsoil reinstated and ready to be sown (in view of the fact that rotational agricultural practices and season have a determining role in agricultural land use).
- For all other habitats, the time delay between construction starting and habitat being re-instated to its baseline condition is likely to be at least 2 years for both the cable route, haul route and the substation area so will be considered as lost within the Metric.
- There will be no advance mitigation/compensation at the OnSS ahead of construction. At the substation area, in areas unaffected by construction, mitigation/compensation/enhancement will commence at the same time as construction.
- A minimum 30-year monitoring and management plan will be implemented at habitat enhancement areas under the developer's control such as around the substation, or other mitigation/compensation areas specifically committed to within the scheme (these will be set out in detail in the LEMP).
- After reinstatement, cropland and agricultural grassland will be subject to no monitoring or management.
- Hedgerows will be subject to post re-instatement visits to ensure successful establishment of habitat up to 5 years after scheme completion. Thereafter, management will be transferred back to the landowner, who shall continue to maintain them in accordance with their own land management.

¹¹ As defined in section 7.3.6 of the BNG Metric 4.0 User Guide. "A temporary loss is where there is restoration of a habitat, to its baseline type and condition within 2 years of the date of initial habitat loss, delivered in the same location. Where this applies, the habitat may be entered into the metric as 'retained'"



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4.1.2 Cable corridor

- The project footprint (baseline) for the cable corridor will be deemed to comprise the full 90m width (except for HDD areas and at hedgerows), all temporary construction compounds (TCCs) and access required to accommodate both VE and NF requirements. It will include a single haul route taking the western option (where options exist). The haul route will be based on 15m width, comprising 10m running width and 5m topsoil storage bund width. At final design stage the ECC is anticipated to be between 60m and 72m wide for open trench sections;
- For hedgerows where open trench crossing is used, stockpiles will not be continued through the hedgerow, meaning the expected width of hedgerow removed would be approximately 30m. For hedgerows where HDD is used, the haul road may need to pass through the hedgerow, which would mean a hedgerow width of approximately 10m would be removed.
- It is important to note that the BNG loss associated with the described combined VE/NF corridor indicated will be a c.25% overestimate. This is because the maximum corridor width used is 90m, however, in open trench locations the corridor is anticipated to reduce to 60m – 72m at final design stage.
- Consideration has been given as to how best to accommodate impacts associated with visibility splays where visually intrusive vegetation is retained but may be trimmed (i.e. there will potentially be a temporary reduction in condition, prior to return to original condition). Non-visually intrusive vegetation at visibility splays will be considered retained within the project footprint. Two condition assessment criteria for the Metric apply to hedgerow height (Criteria A1) and width (Criteria A2); if either measure is less than 1.5m than the criteria is deemed to have been failed (remaining criteria are considered unaffected by trimming). Therefore, if a hedgerow has passed Criteria A1 or A2 and is affected by visibility splay management then it has been assumed that both criteria A1 an A2 would be failed for the following 5 years until such time as regrowth restores width and height. Due to the data entry requirements of the Metric, the approach to downgrading habitat condition of a retained feature, as set out on page 30 of the Metric User Guide, has been applied. Specifically:
 - In the baseline sheet: recording the affected hedgerow length as a unique line feature that is lost.
 - o In the post-project sheet: recording an equivalent hedgerow length as created, with a 25 year advance creation date, to accommodate the 5 year delay to return to original condition.

4.1.3 OnSS

The baseline includes the footprint for both schemes, since the DCO seeks permission for groundworks associated with both VE and NF. The indicative landscaping and ecological enhancement at the OnSS (post-development habitat, as shown on Drawing 3) is set out in the OLEMP, upon which the BNG assessment within this document is based.

4.1.4 Management plan considerations: two options presented

Natural England has made clear in its Expert Topic Group consultation responses that in its view, BNG cannot be claimed for areas where habitat is lost and reinstated, unless the reinstated area is included in a 30 year management plan. For VE, this is primarily an issue in respect of hedgerow reinstatement, but also includes agricultural land than may be used for haul routes or TCCs for more than 2 years. In such cases, it is Natural England's assertion that habitat should be recorded as lost, with no creation thereafter.

Whilst this stance is in accordance with the Metric User Guide, this element of the User Guide is considered inappropriate for large NSIP schemes which result in temporary habitat loss. The rationale for this is:

- The project is re-instating all habitats along the ECC. For this not to be reasonably reflected in the Metric calculator provides no incentive for developers to re-instate, and gives rise to the anomalous conclusion that there would be a net loss of habitat along the ECC as a result of the scheme.
- Natural England's stance suggests that landowners would remove reinstated hedgerows at some point 5 years after planting (i.e. once the aftercare period has ended). This seems presumptuous and in any case could be argued for any hedgerow, including those retained by the development, not just the reinstated sections, landowners could in future seek to remove these.
- A NSIP cannot seek to interfere with landowners' rights to manage their own land beyond the extent needed to deliver the development. It would be disproportionate to compulsorily acquire rights to control a landowner's land management activities for 30 years simply in order to control a small section of reinstated hedgerow.
- There is no recourse for NSIPs to compulsory purchase areas of land for BNG purposes since BNG is not a statutory requirement for NSIPs at this time.
- The inclusion of secured funding for 30 years of hedgerow management for the short sections of individual hedgerows temporarily affected by VE project would create an administrative burden for landowners, who would be required to exclude these lengths of hedgerow from any existing or future agri-environment schemes or other nature-based funding that may arise.

This obviously has significant implications for the outcome of the BNG assessment. For this reason, two BNG calculations are presented; Appendix A "Option 1" in accordance with Natural England's stance in respect of temporary habitat loss (i.e. no re-creation thereafter), and Appendix B, "Option 2" where habitats are considered lost then created (the practical reality). Both options are presented for information, however the project proposes to use Option 2 when undertaking the post-DCO calculation

4.2 Proposed Habitats Plan

Drawing 3 comprises the Proposed Habitats Plan for the on-site areas associated with the proposed development.



5.0 BNG Metric

The headline results page for each of the two completed Metric calculator spreadsheets are included in this report at Appendix A: Option 1 (Unmanaged habitats counted as lost) and Appendix B: Option 2 (Unmanaged habitats counts as lost and created). A summary is provided in the tables below, followed by additional interpretation. Excel files comprising the full Metric calculations accompany this report, but are not appended as part of this document. Condition assessment data for each criterion for each polygon or line of habitat have been retained in a GIS and have not been provided at this stage. They would be supplied with the post-DCO BNG assessment for the final scheme design.

Table 5-1 Overall BU change Option 1 (Unmanaged habitats counted as lost)

	Baseline BU	Post Development BU	BU change
Habitats	588.35	509.81	-78.54
Additional BUs needed to achieve 10% gain on baseline	58.84	Project result % change	-13.35%
		Additional BUs needed to meet 10% gain	137.38
Hedgerows	19.72	40.50	20.78
Additional BUs needed to achieve 10% gain on baseline	1.97	Project result % change	105.38%
		Additional BUs needed to meet 10% gain	0.912

Table 5-2 Overall BU change Option 2 (Unmanaged habitats counts as lost and created)

	Baseline BU	Post Development BU	BU change
Habitats	588.35	638.64	50.29
Additional BUs needed to achieve 10% gain on baseline	58.84	Project result % change	108.55%
		Additional BUs needed to meet 10% gain	8.60
Hedgerows	19.72	46.94	27.21
Additional BUs needed to achieve 10% gain on baseline	1.97	Project result % change	137.98%
		Additional BUs needed to meet 10% gain	0 (25.24 BUs are provided over and above that required to meet 10%)

Using Option 1, the scheme meets the policy requirement to deliver measurable BNG for hedgerows, but fails in respect of habitat. In both cases it falls short of meeting the 10% uplift from baseline, significantly so in the case

of habitats.

Using Option 2, as is the intention, the scheme meets the policy requirement to deliver measurable BNG for hedgerows and habitats. However, it falls short of meeting 10% uplift from baseline in respect of habitats, and would need to deliver an addition 8.6 units in order to do so. It significantly over delivers in respect of hedgerows, but since the types of BUs are not interchangeable, this does not count toward the habitat BU balance.



6.0 Recommendations for achieving 10% Biodiversity Net Gain

It must be borne in mind that the figures presented in this report, the attached spreadsheets and drawings are based on an illustrative scheme footprint and with specific assumptions which have significant effect on the outcome. They are considered to represent a reasonable worst case scenario, and will be subject to change once final design is known.

6.1 Off-Site offsets (if relevant)

6.1.1 Off-site habitat creation/enhancement

In accordance with the mitigation hierarchy BNG should ideally be delivered on-site, near to where negative impacts occur, wherever possible. Providing BNG on-site may also enable BNG to be constructively added to other mitigation proposals, such as habitat-based mitigation for protected species. However, land ownership constraints may limit the scope to provide sufficient enhancement to meet a 10% net gain target within the Order Limits.

Discussions with several land owners/ organisations within Essex are ongoing in respect of potential offset locations, in the event that 10% gain cannot be achieved within the Order Limits. Some possible locations were identified in early 2023, and have already been subject to baseline habitat survey to enable further work to establish their potential feasibility to be completed.

Offset areas located off-site would also be subject to a minimum 30-year monitoring and management plan.

6.1.2 Purchase of Biodiversity Credits

The Biodiversity Net Gain consultation indicated that: "Nationally Significant Infrastructure Project (NSIP) providers will have a range of options available to deliver biodiversity net gain, including avoidance of impact through options appraisal and design, on-site mitigation, purchase of biodiversity units on the market, other delivery of off-site gains, and the purchase of statutory biodiversity credits."

If net gain cannot be delivered on or off-site, it may alternatively be achieved through the purchase of 'open market' biodiversity units, e.g. from a habitat bank or statutory biodiversity credits, or a combination of both sources. The option of buying statutory biodiversity credits is available as a last resort, where developers can demonstrate that they are unable to achieve BNG through the available on-site and off-site options. Statutory biodiversity credits will become available for purchase, where needed, at the introduction of mandatory BNG. An indication of the likely cost per statutory biodiversity credit for projects has been produced by DEFRA and is available on-line¹².

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SLR[♠]

¹² https://www.gov.uk/guidance/statutory-biodiversity-credit-prices

APPENDIX A

Option 1 (Unmanaged habitats counted as lost): Headline Results



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On-site baseline		Hedgerow units	19.72			
011	bite babellite		Watercourse units	0.00		
			Habitat units	509.81	i	
On-site post-intervention		Hedgerow units	40.50			
(Including habitat retention, creation & enhancement)			Watercourse units	0.00		
			Habitat units	-78.54	-13.35%	On-site net gain is less than target s
	ite net change		Hedgerow units	20.78	105.38%	
(1	inits & percentage)		Watercourse units	0.00	0.00%	
			Habitat units	0.00		
Off-	site baseline		Hedgerow units	0.00		
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	ed net unit char te habitat retention, creation		Habitat units Hedgerow units Watercourse units	-78.54 20.78 0.00		
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	Ārea created must match	area lost for both onsite	and offsite ▲			
Unit Type	Target	Baseline Units	Units Required	Unit Deficit		
	10.00%	588.35	647.19	137.37		
Habitat units Hedgerow units	10.00%	19.72	21.69	0.00	No oddir1	hedgerow units required to meet target

Input errors/rule breaks present in metric \blacktriangle

APPENDIX B

Option 2 (Unmanaged habitats count as lost and created): Headline Results



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Headline Results	results menu				
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		Habitat units	588.35		
On-site	baseline	Hedgerow units	19.72		
		Watercourse units	0.00		
O	Habitat units	638.64			
	st-intervention on, creation & enhancement)	Hedgerow units	46.94		
(including nabitat retent	on, creation & ennancement)	Watercourse units	0.00		
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	net change	Hedgerow units	27.21	138.00%	
(units &	percentage)	Watercourse units	0.00	0.00%	
		Habitat units	0.00		
Off-site	baseline	Hedgerow units	0.00		
		Watercourse units	0.00		
		Habitat units	0.00	1	
Off-site pos	st-intervention	Hedgerow units	0.00		
(Including habitat retent	on, creation & enhancement)	Watercourse units	0.00		
		Habitat units	0.00	0.00%	1
Off-site	net change	Hedgerow units	0.00	0.00%	
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(Including all on-site & off-site hab	itat retention, creation & enhancement)	Watercourse units	0.00		
	0/ 1	Habitat units	8.55%	Total net g	ain achieved is less than target set ▲
	tat retention, creation & enhancement)	Hedgerow units	138.00%		
34 340		Watercourse units	0.00%		
Trading ru	les satisfied?	Ye	5 √		
Unit Type	Target Baseline Unit	s Units Required	Unit Deficit	1	
Habitat units	10.00% 588.35	647.19	8.55		
Hedgerow units	10.00% 19.72 10.00% 0.00	21.69 0.00	0.00		edgerow units required to meet target ✓ atercourse units required to meet target ✓
Watercourse units					

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units 10.00% 0.00 0.00

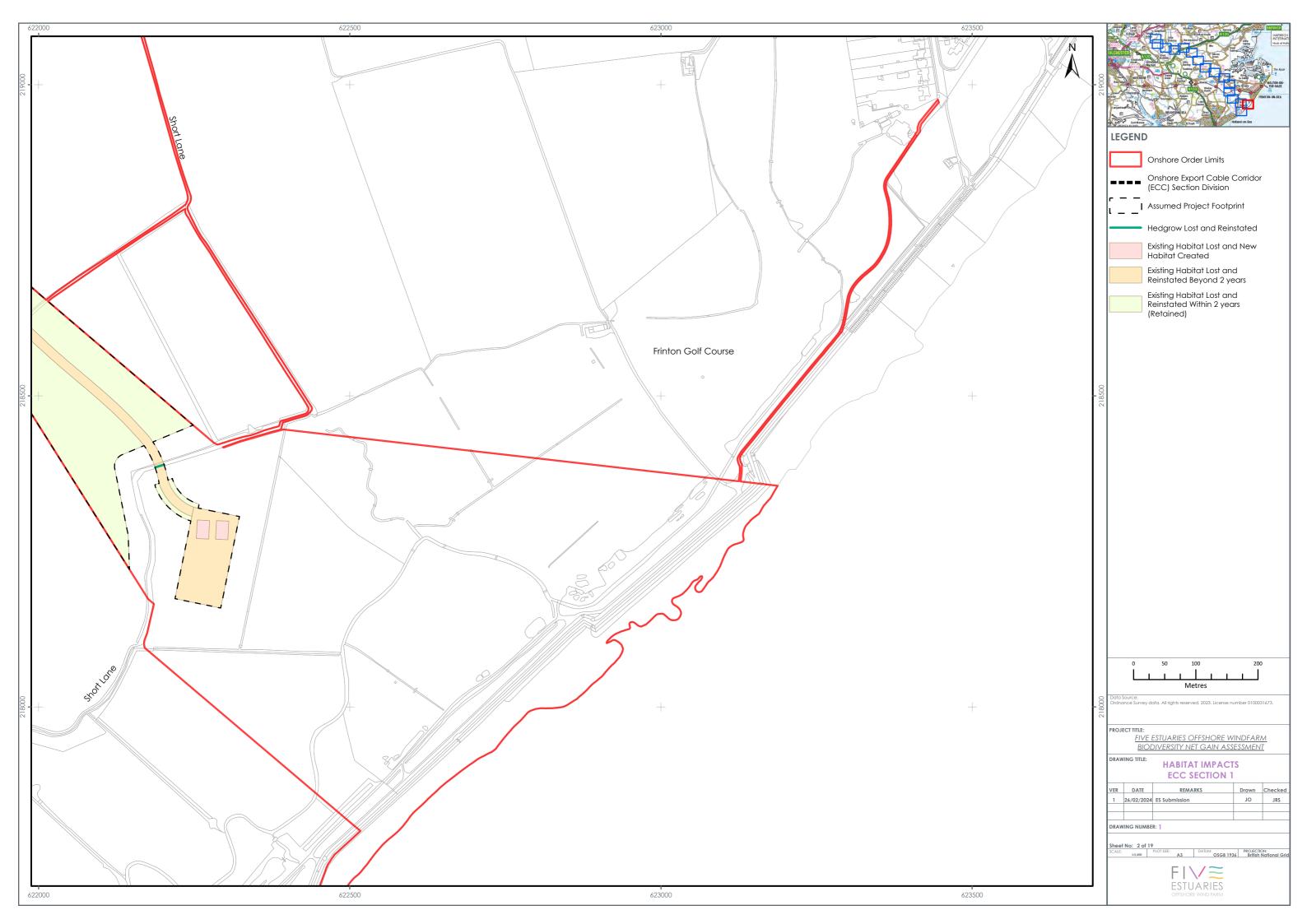
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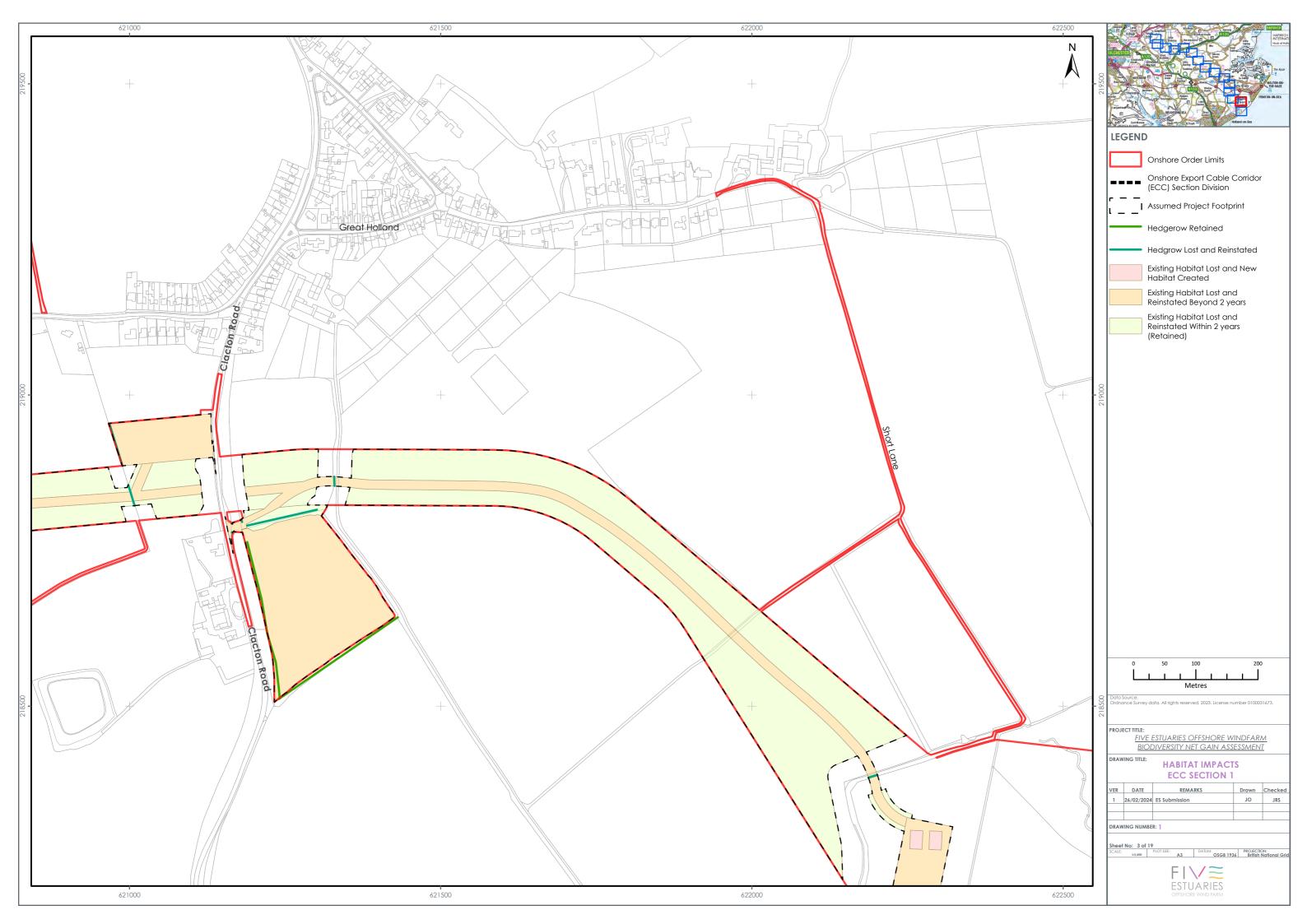
APPENDIX C

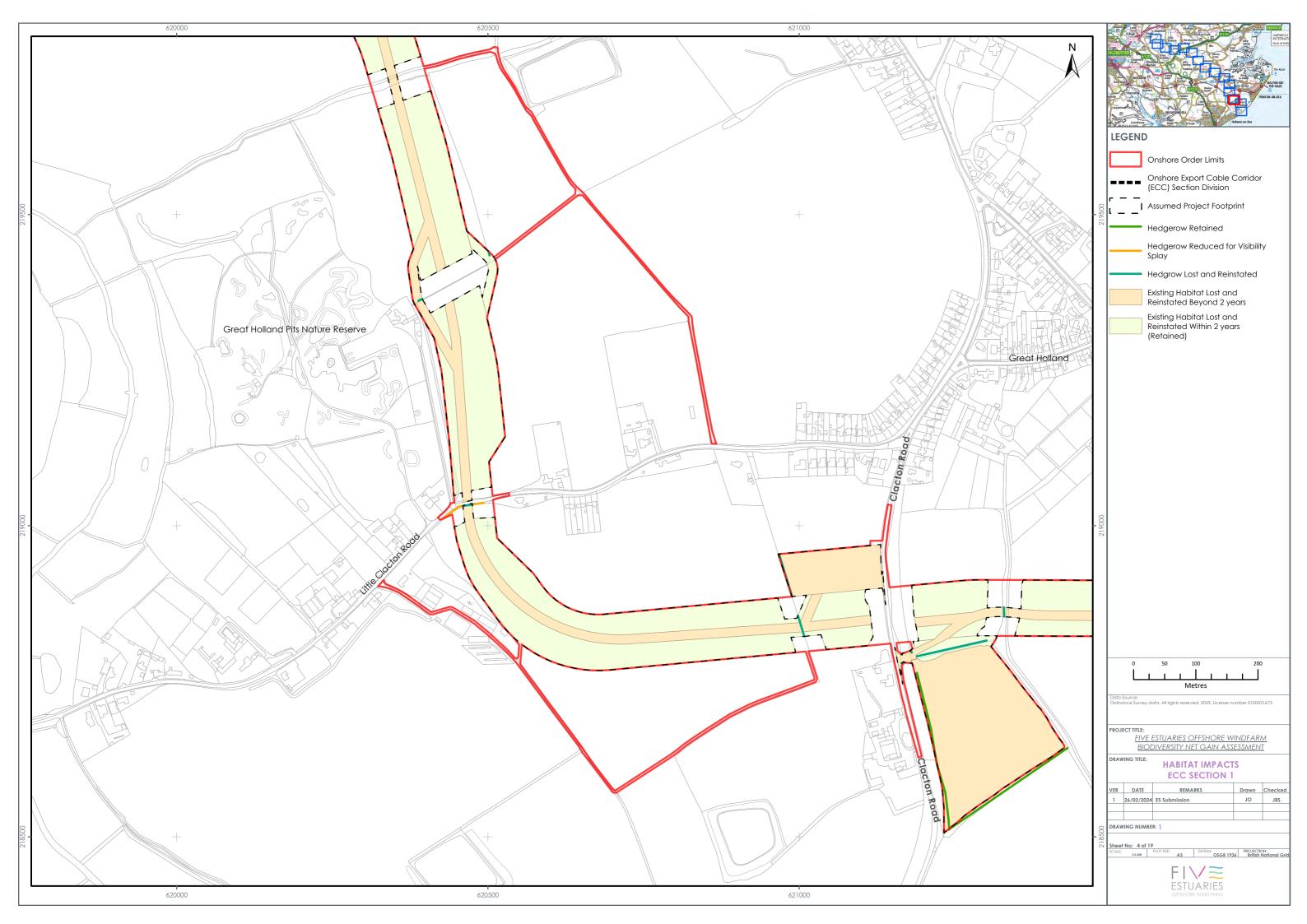
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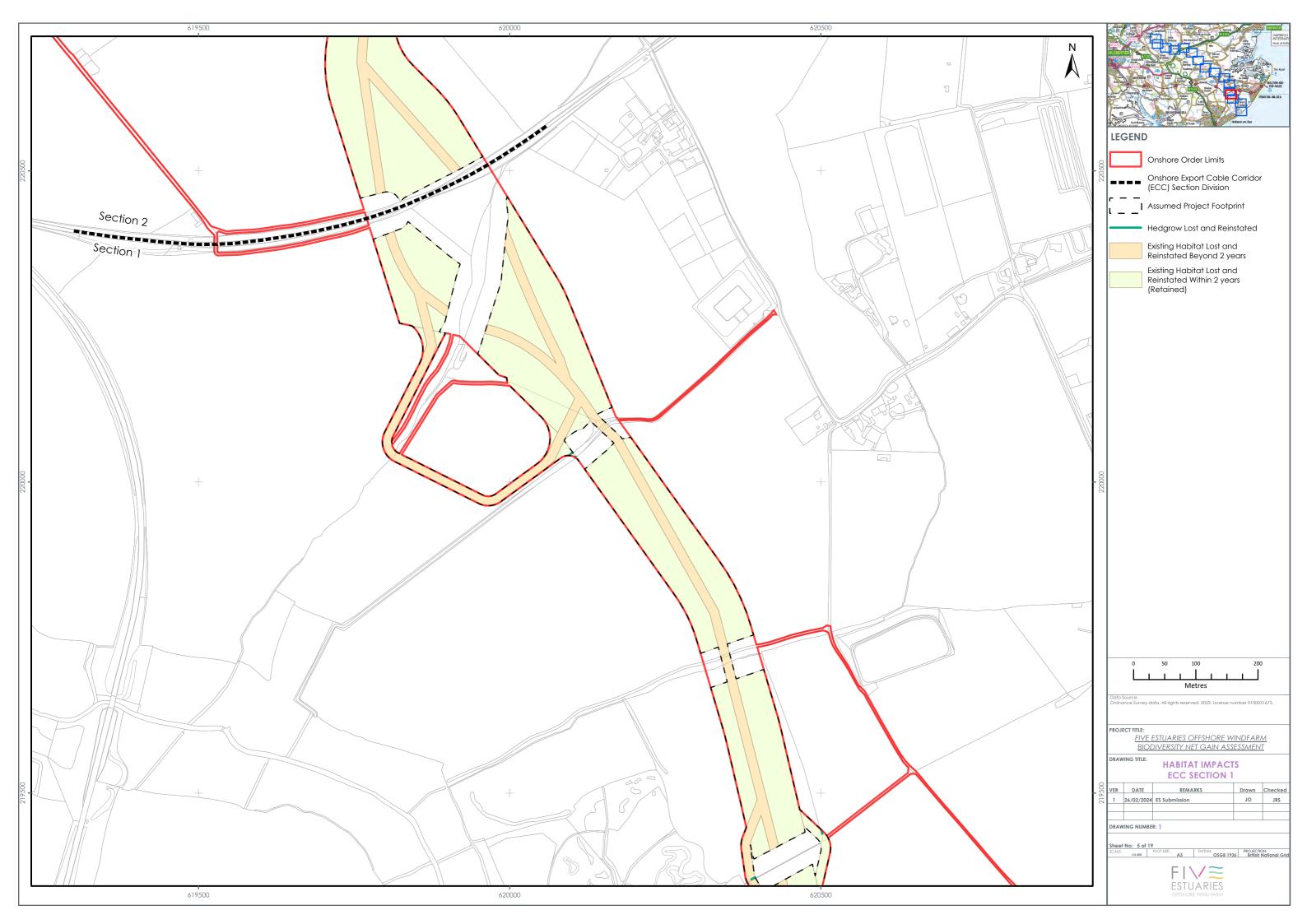


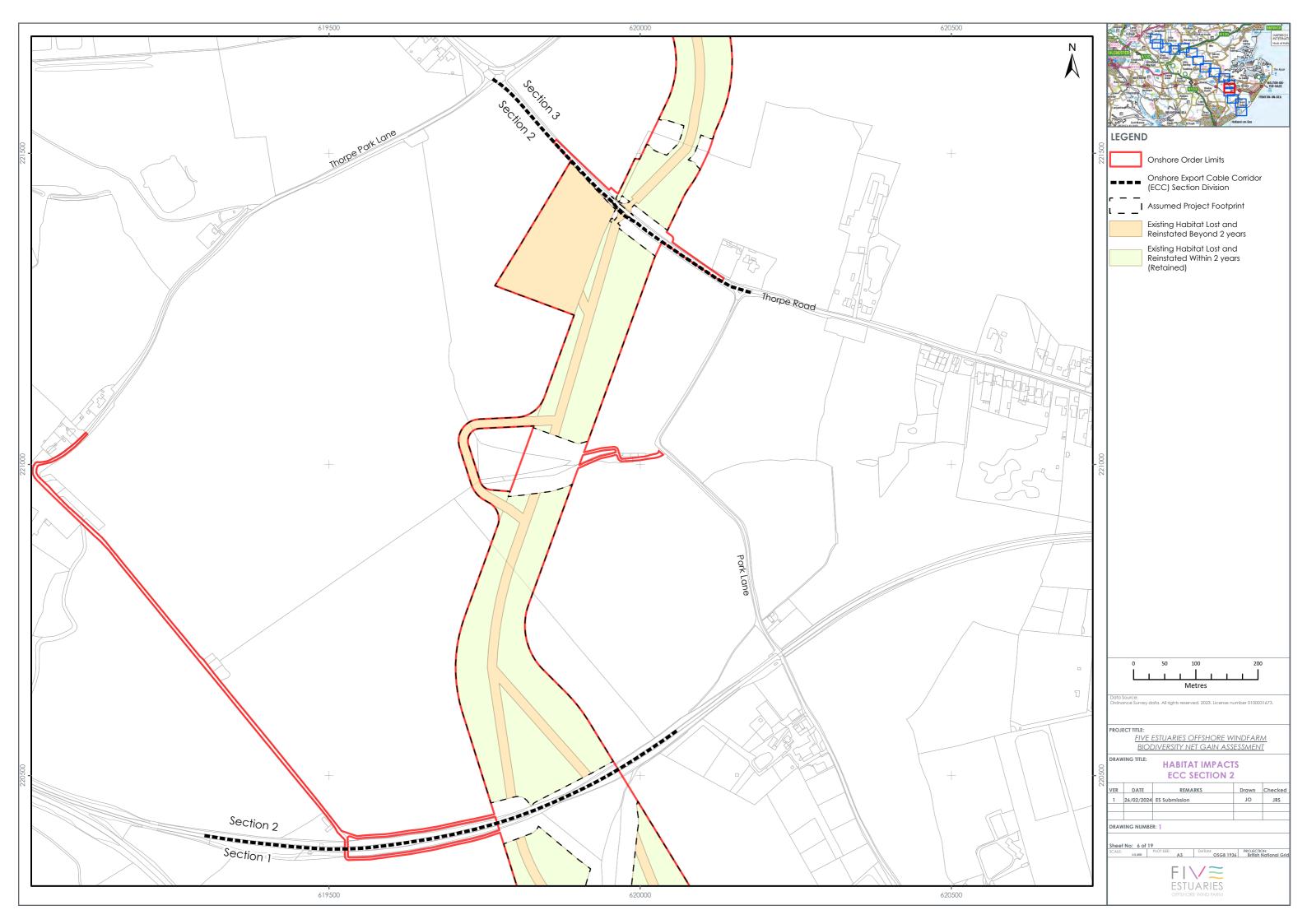


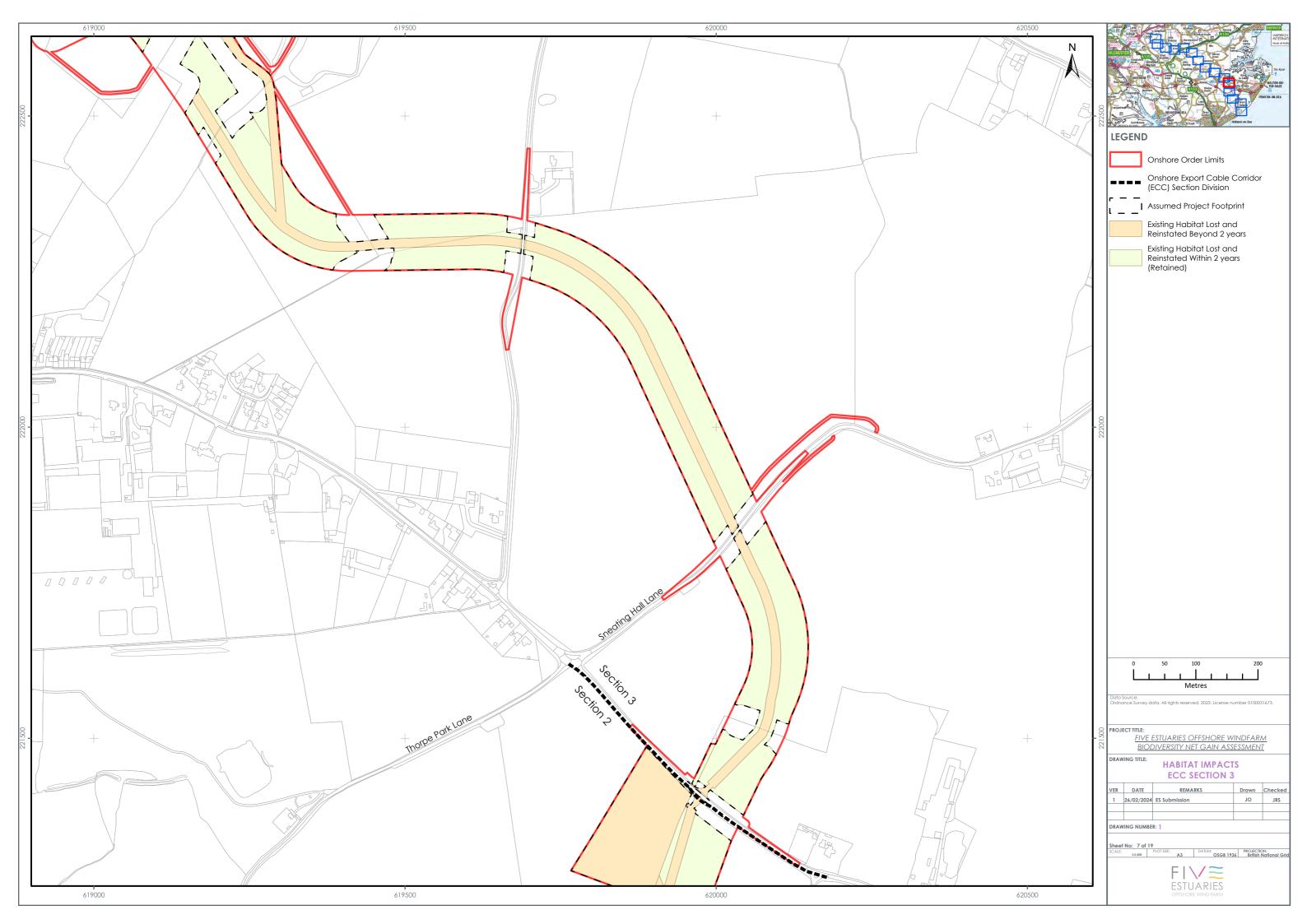


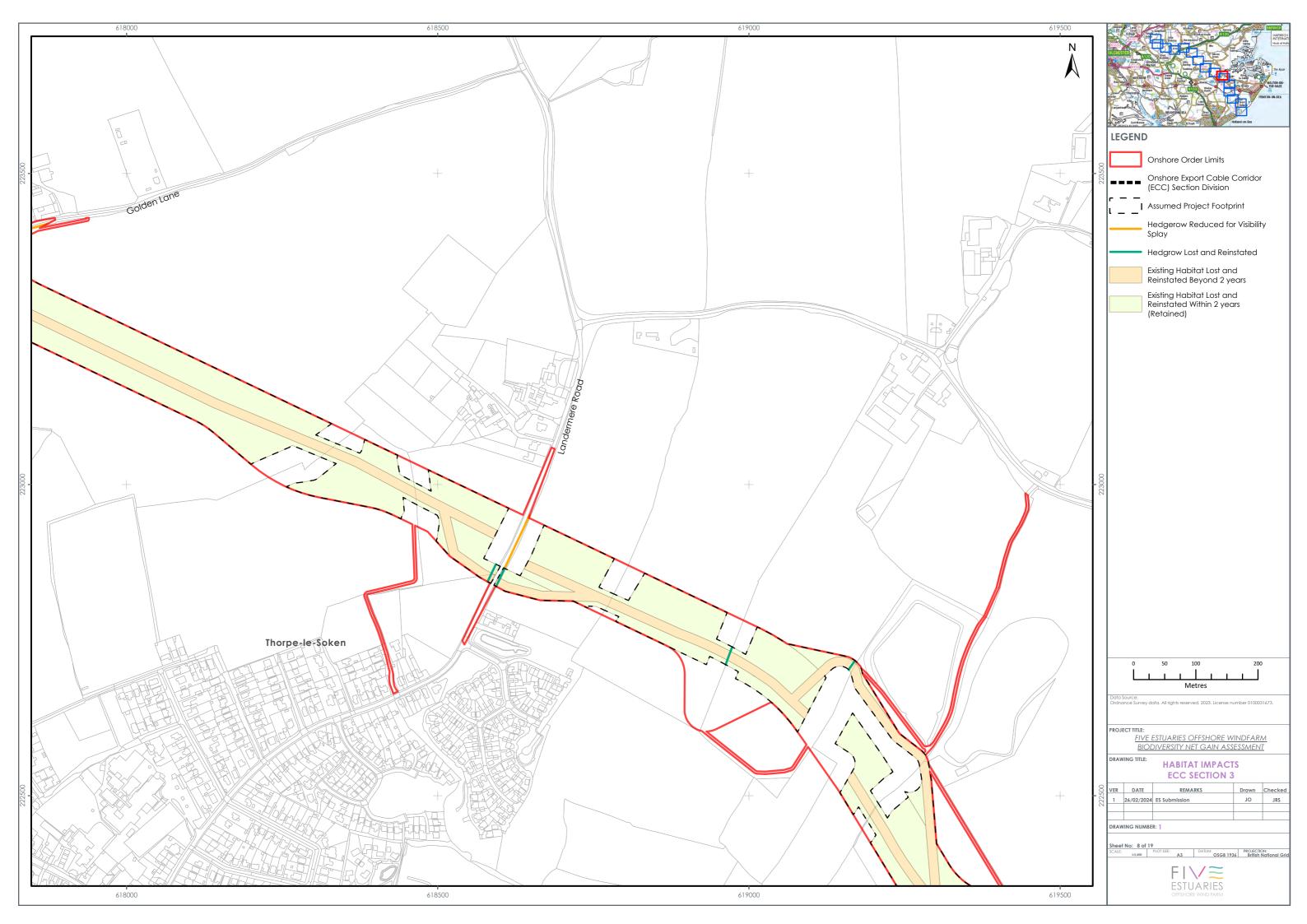


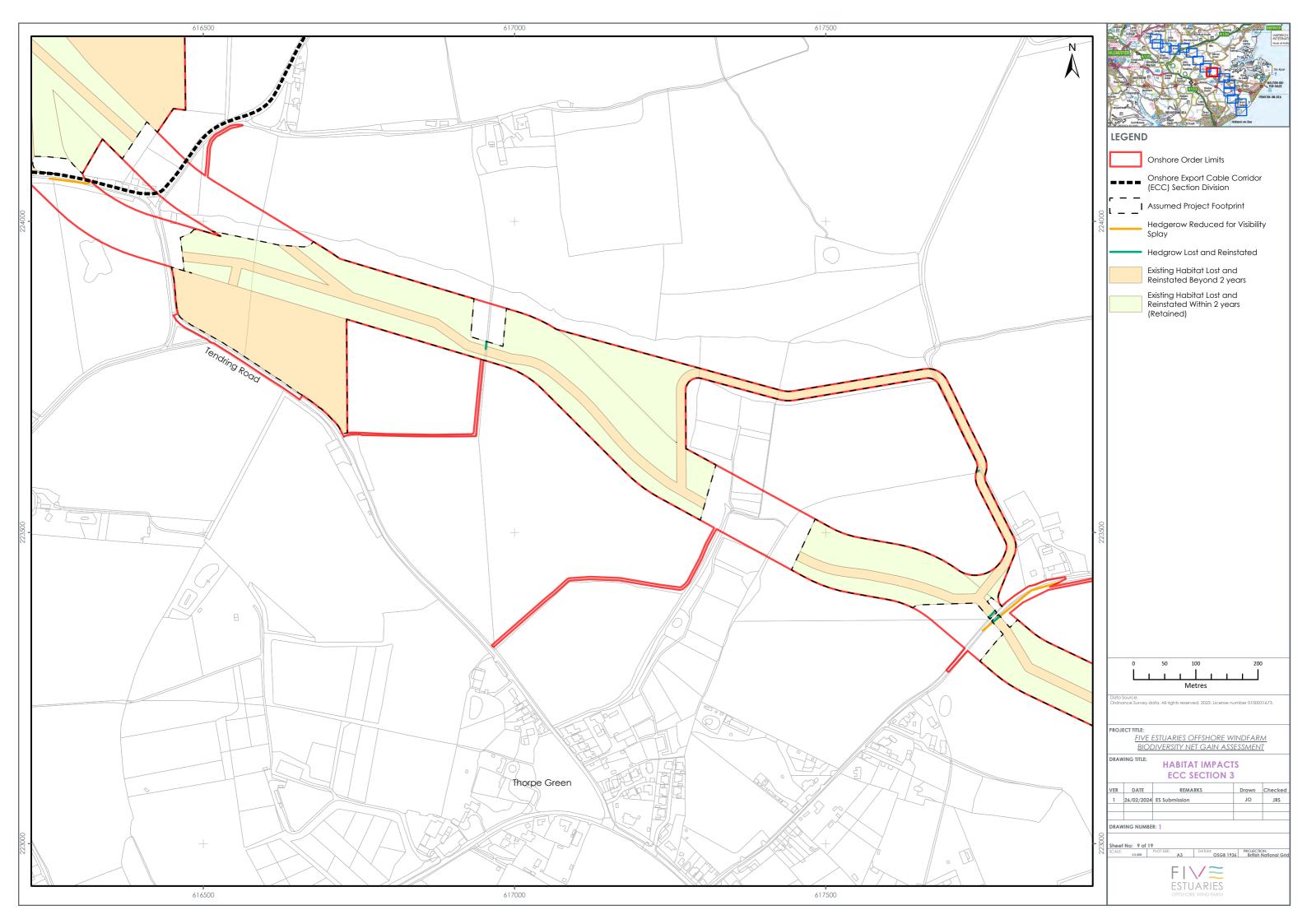


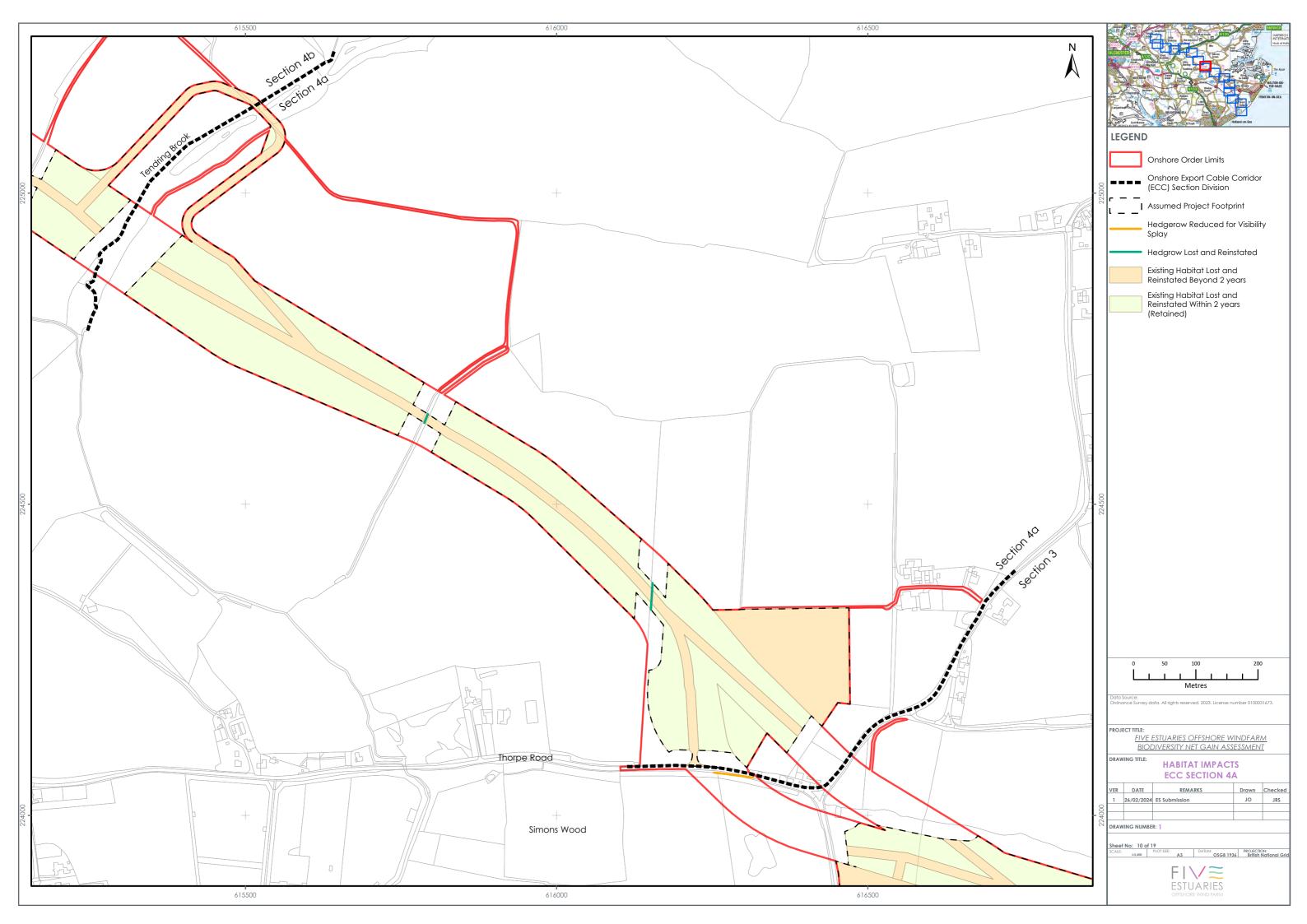


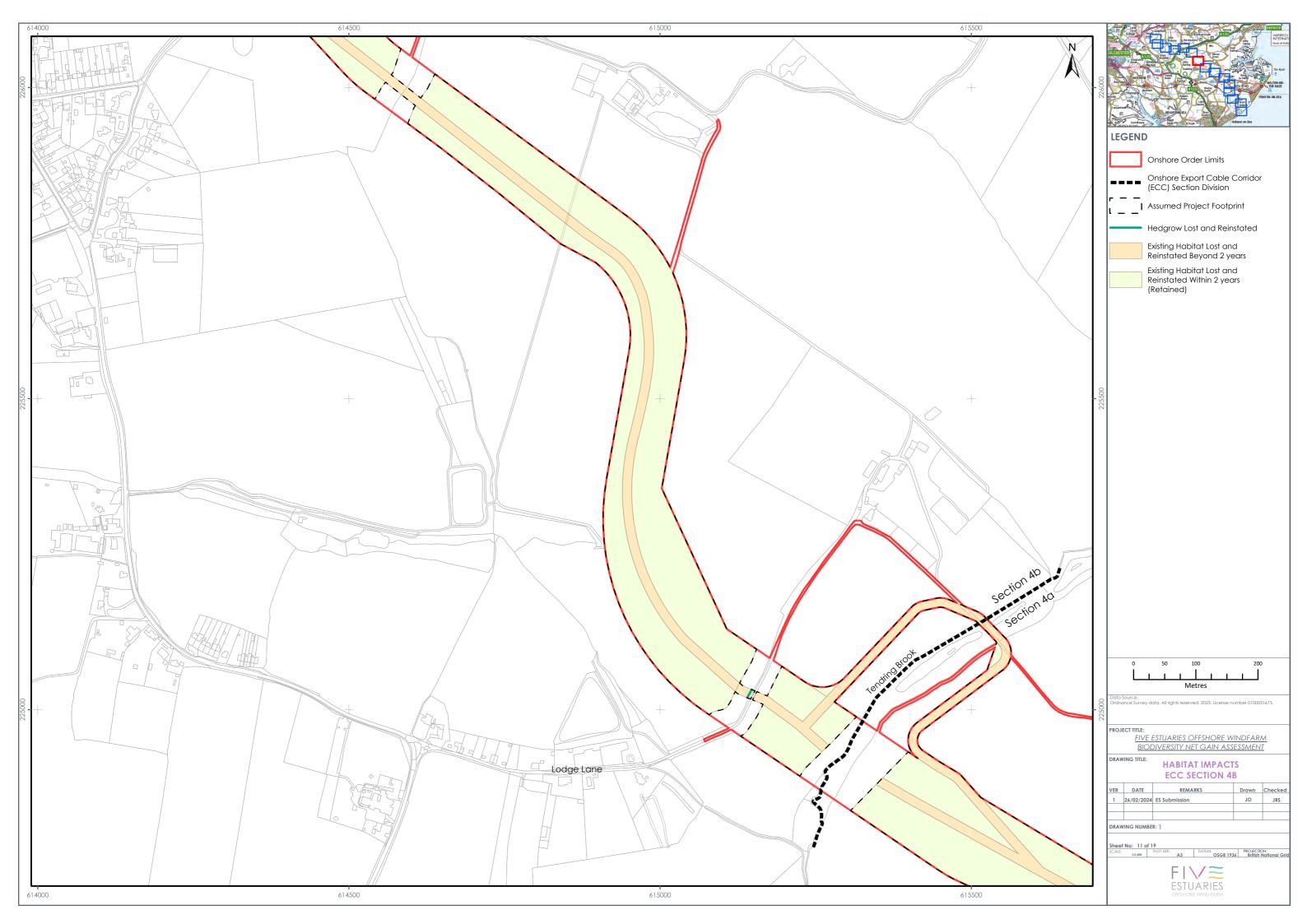


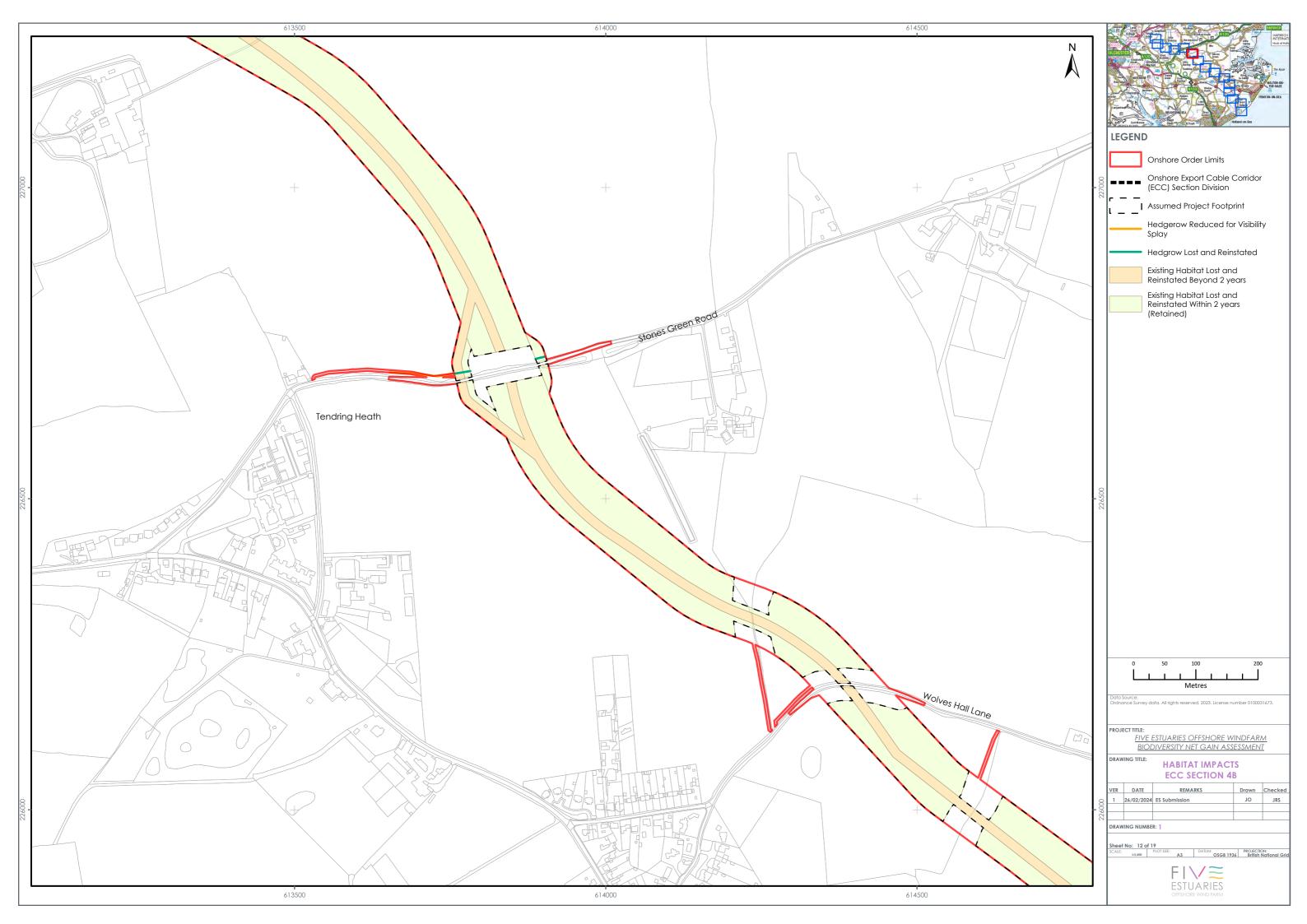


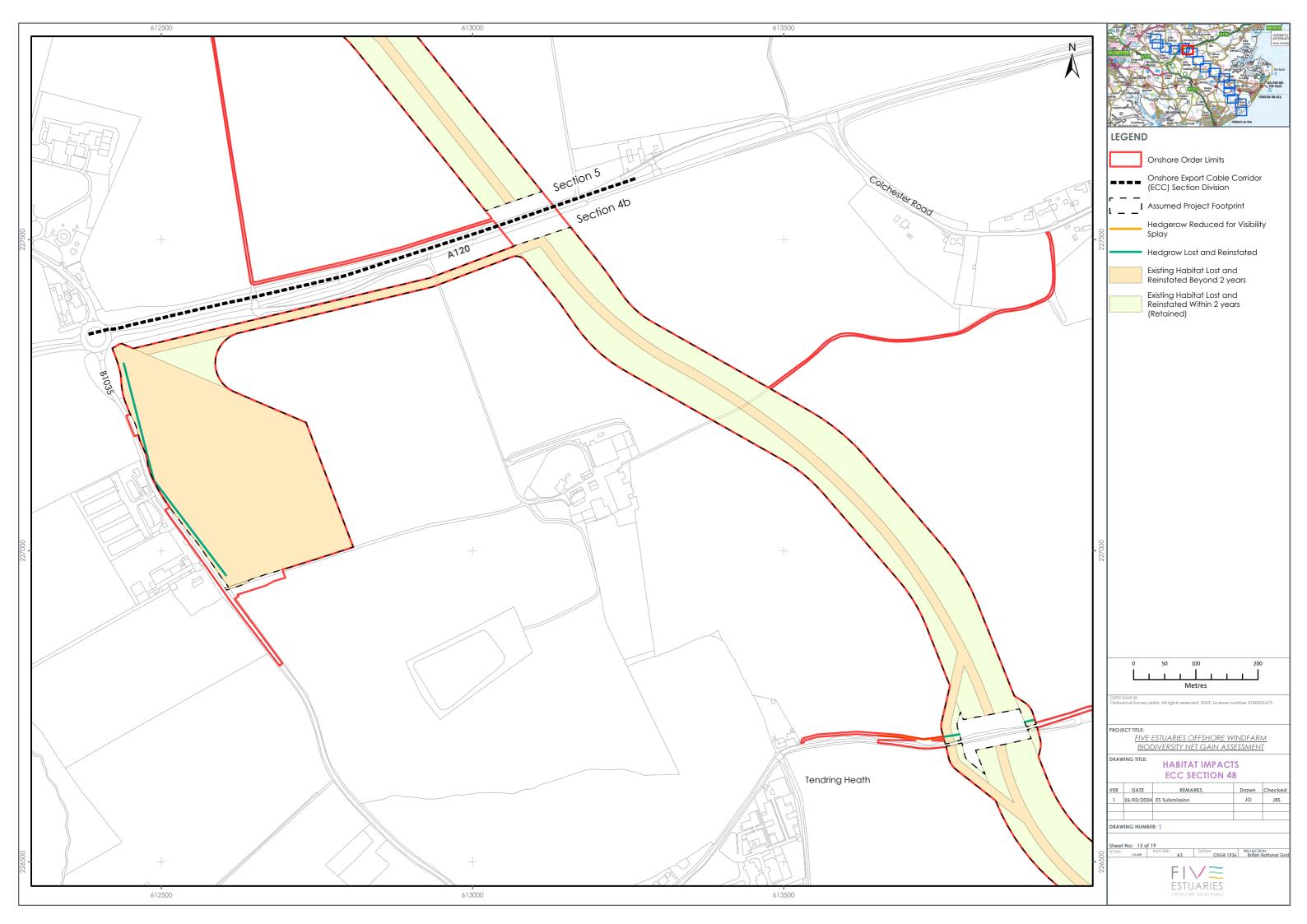


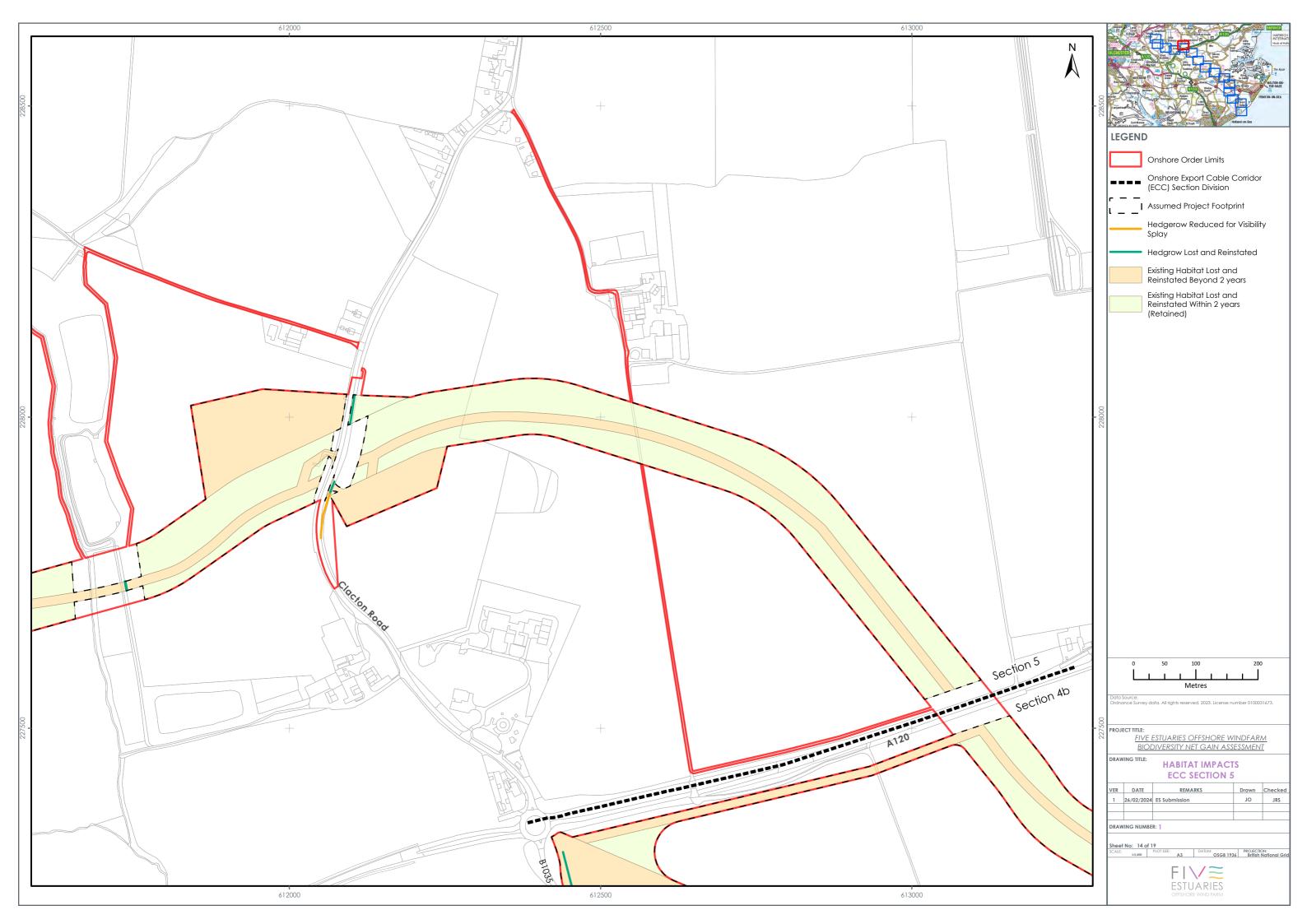




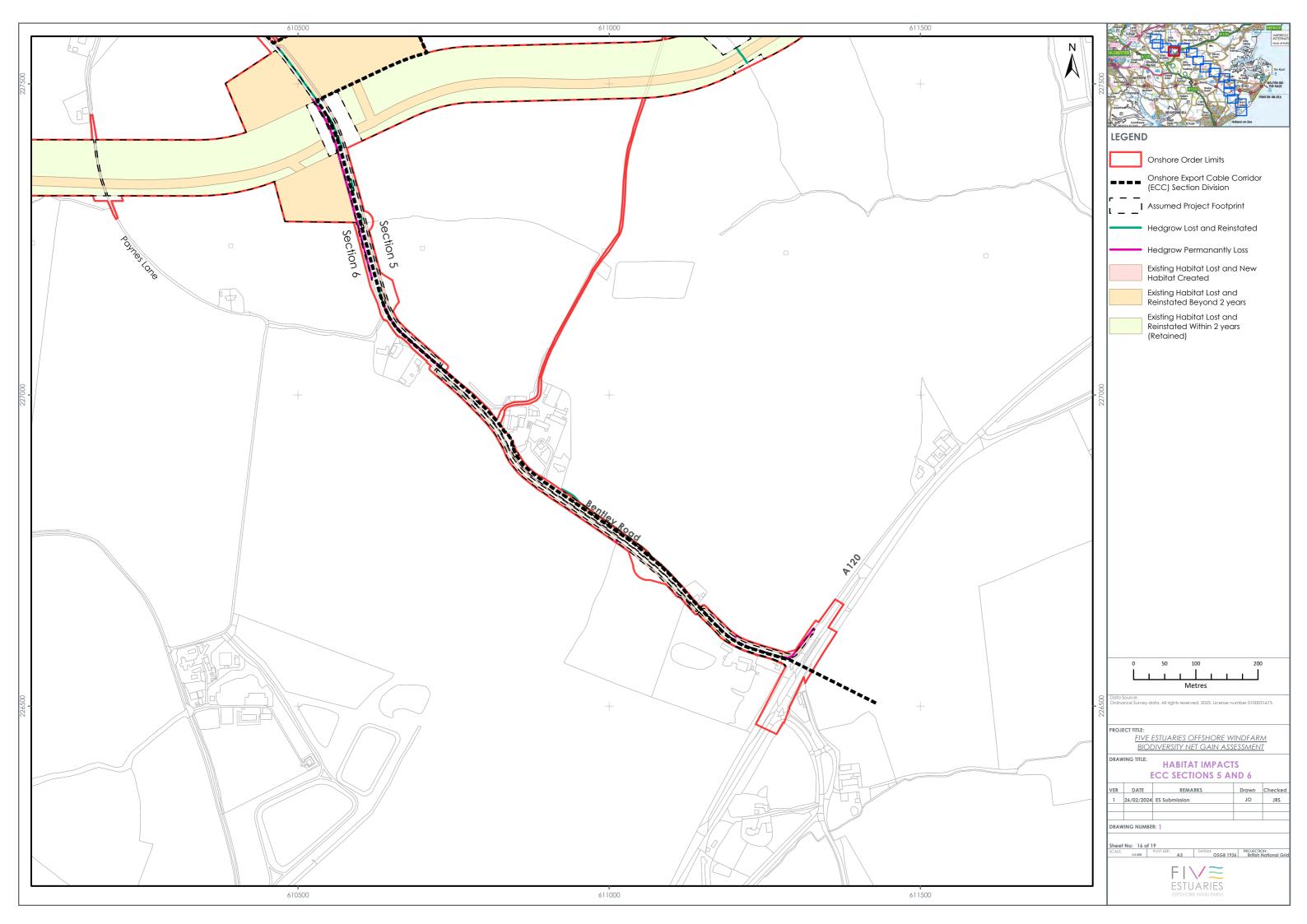


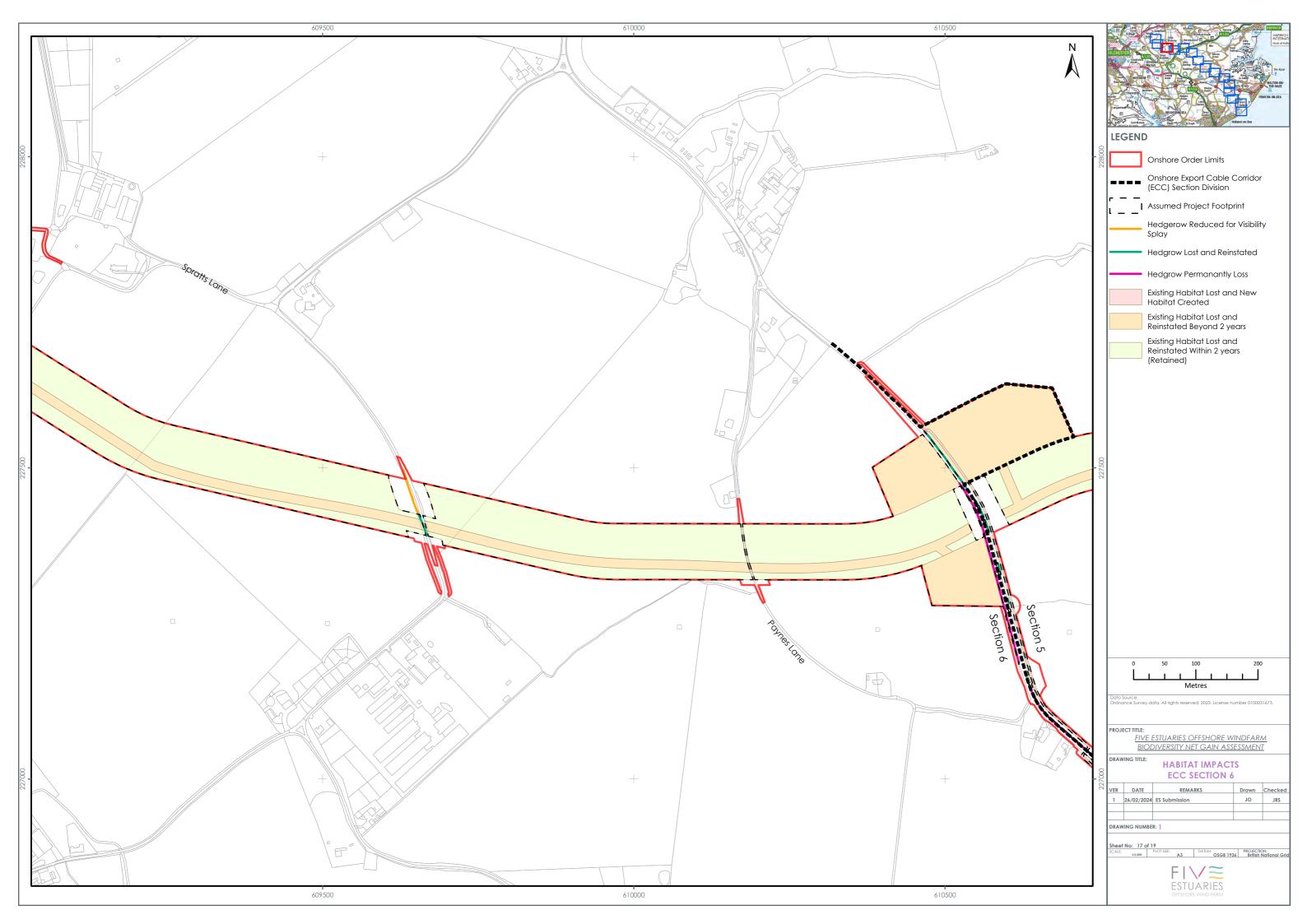


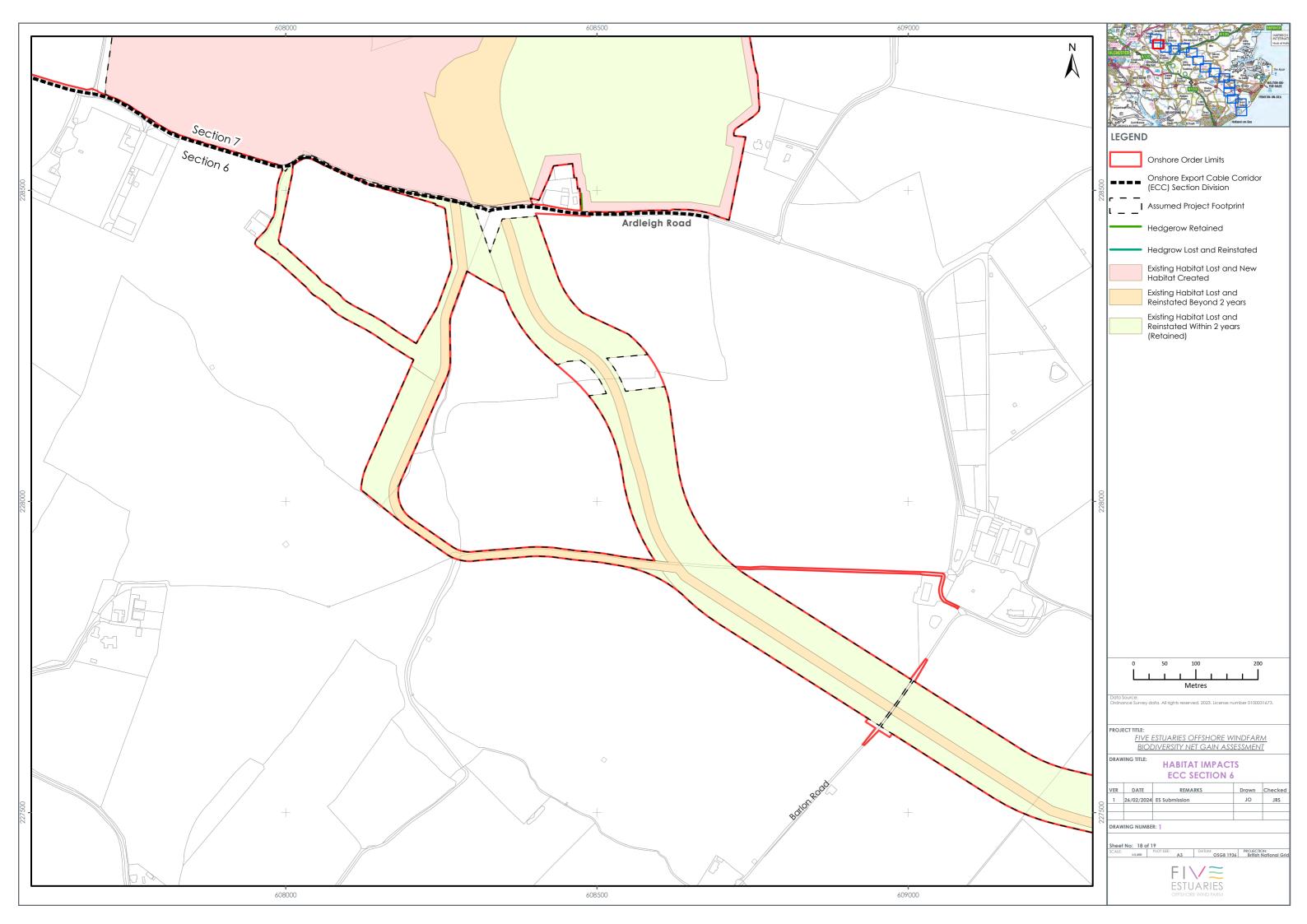


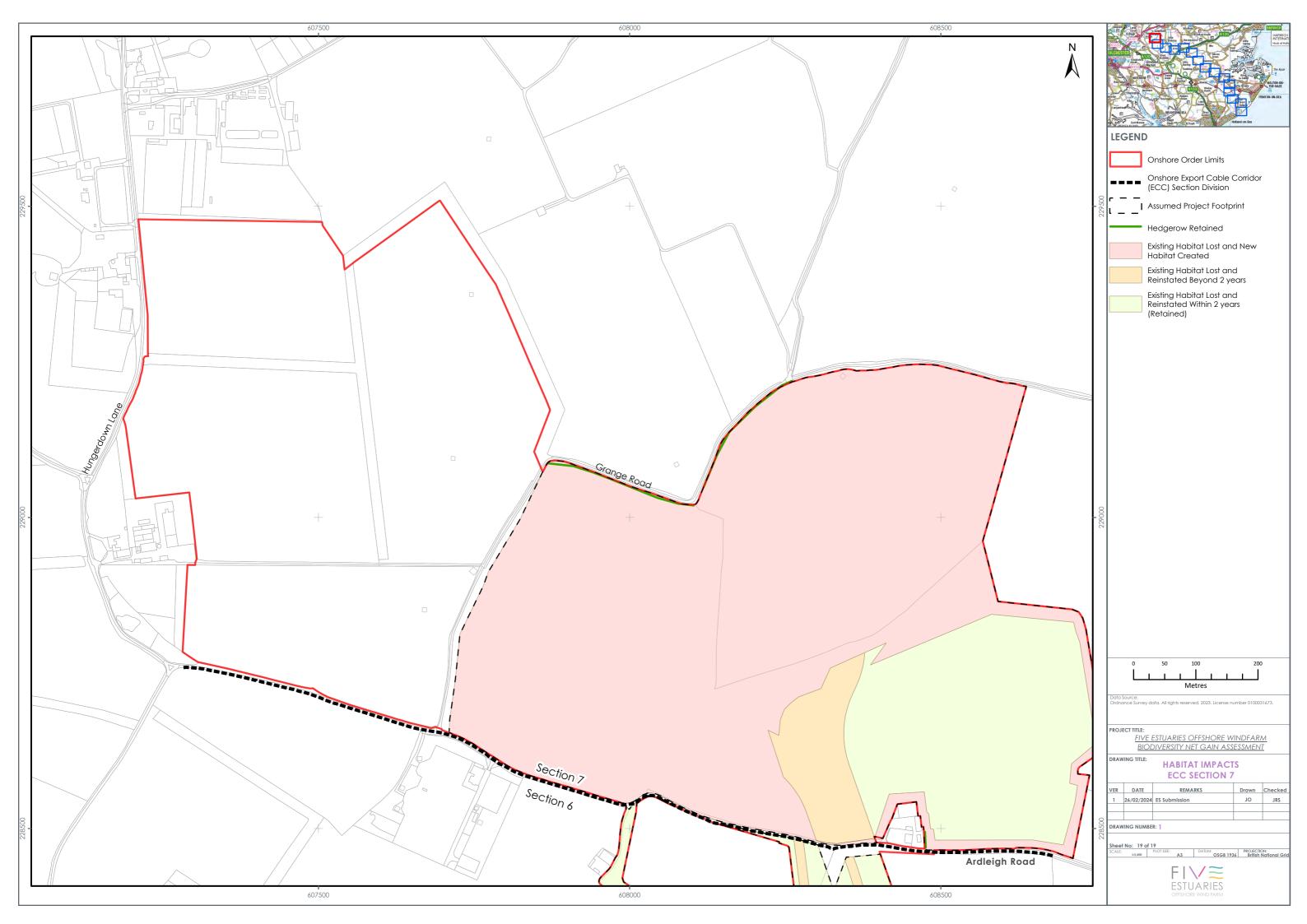










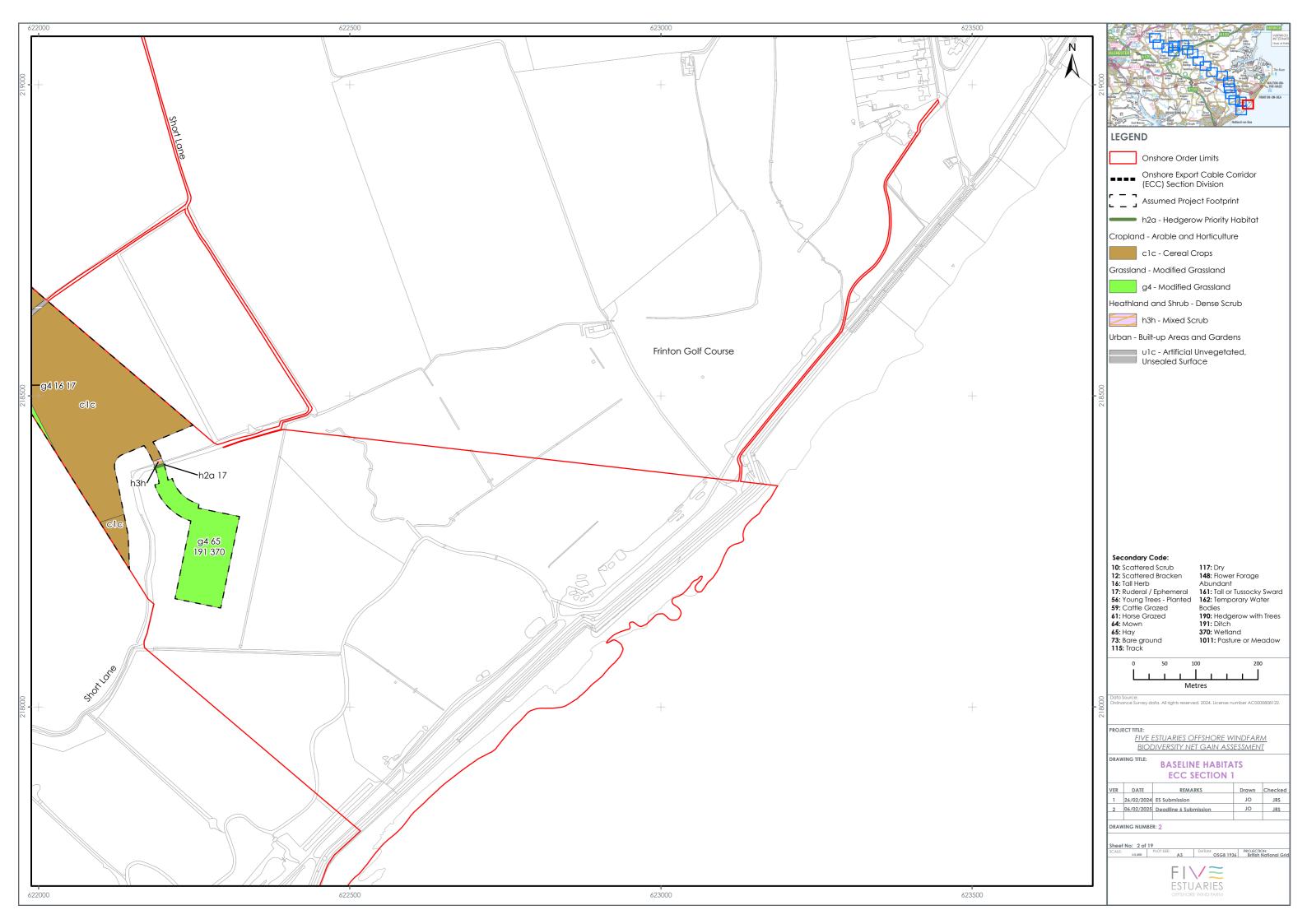


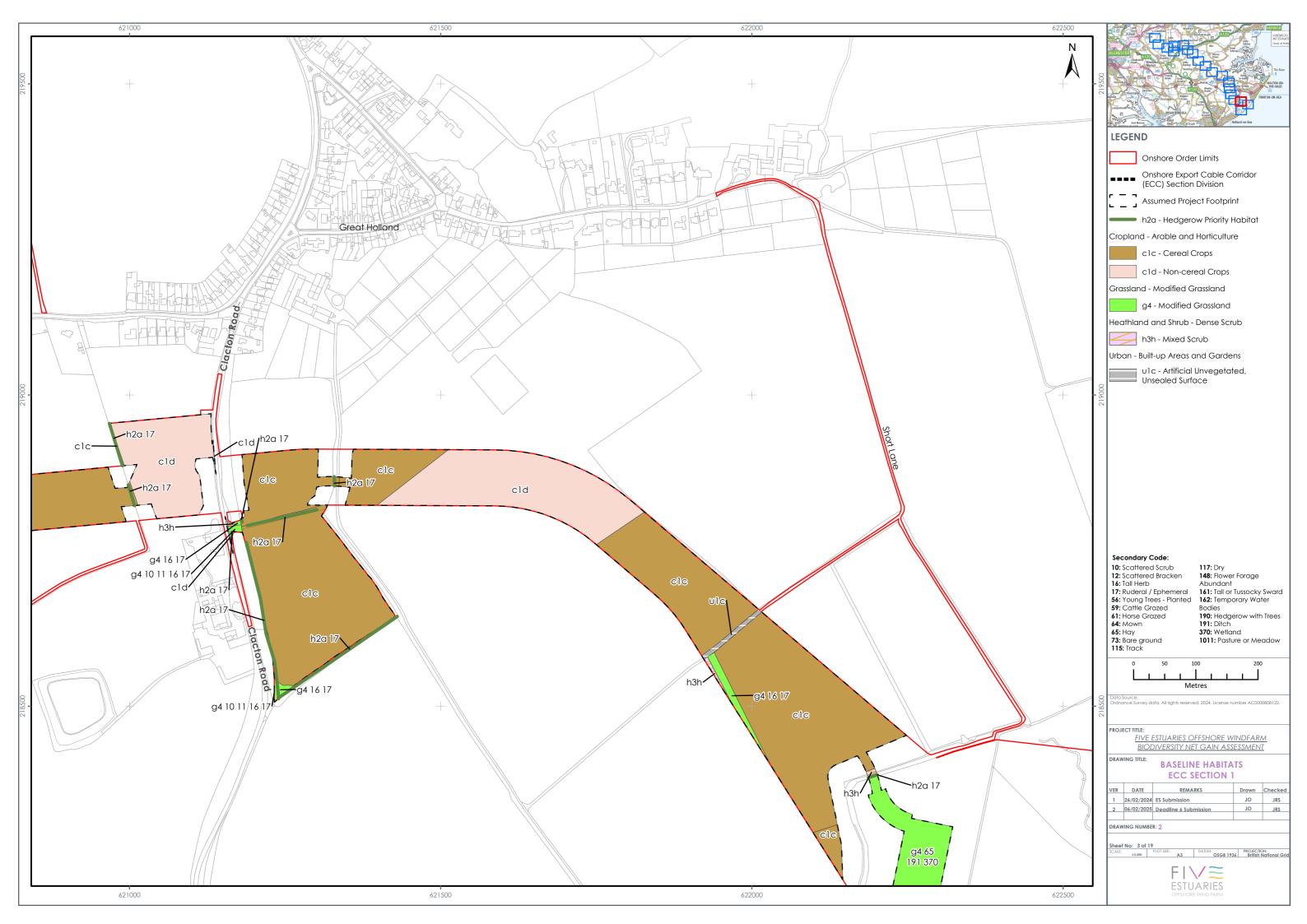
APPENDIX D

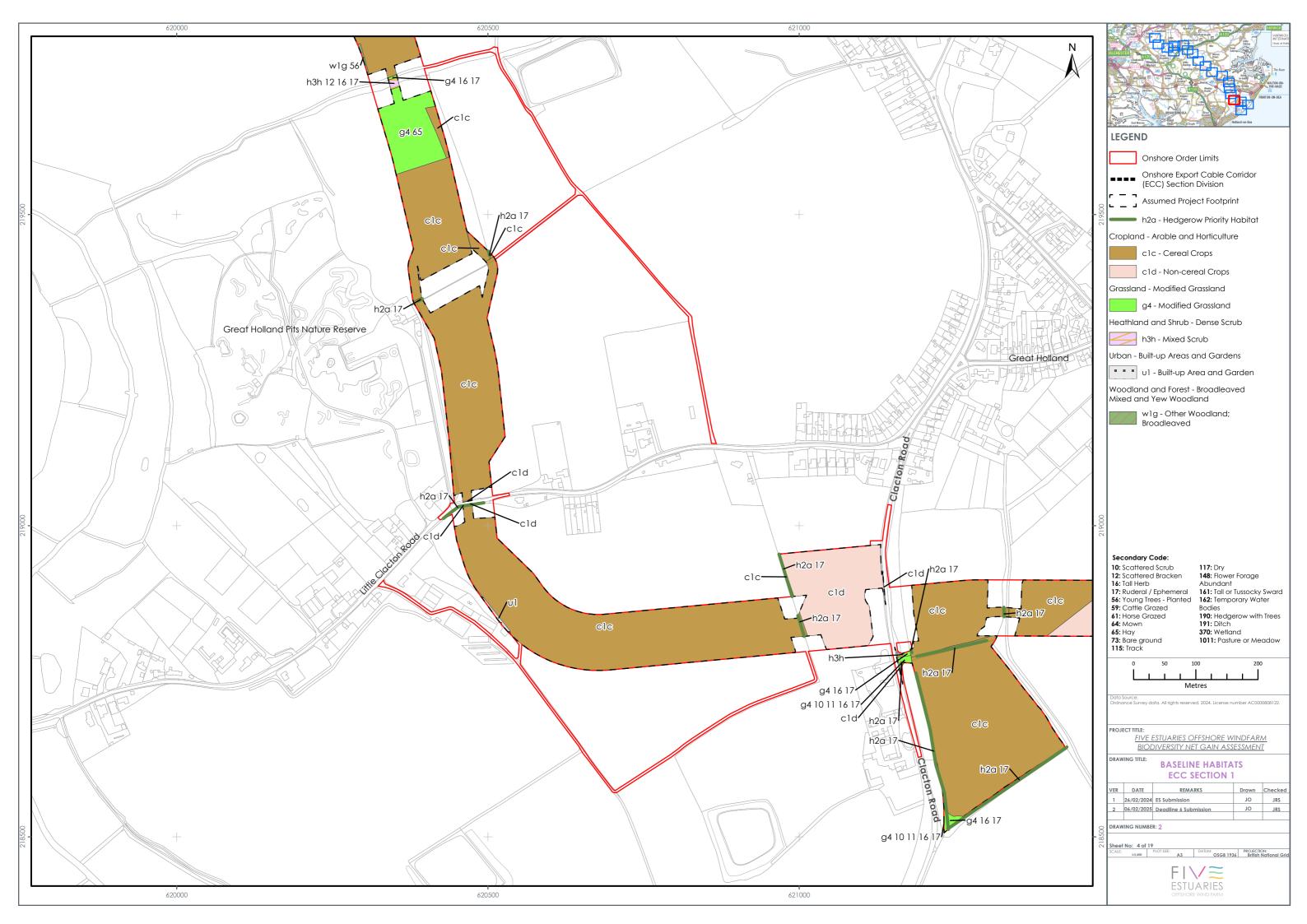
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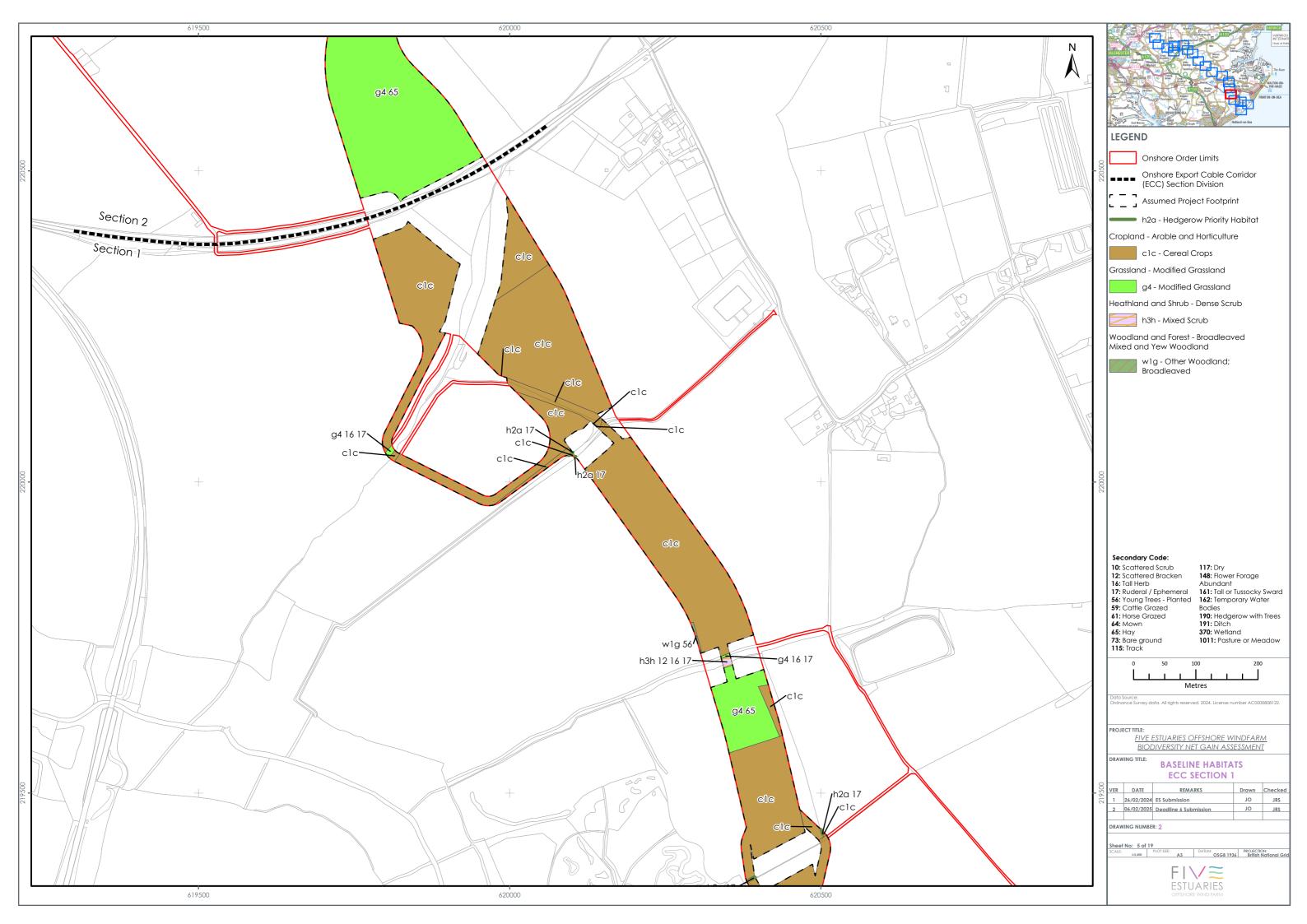


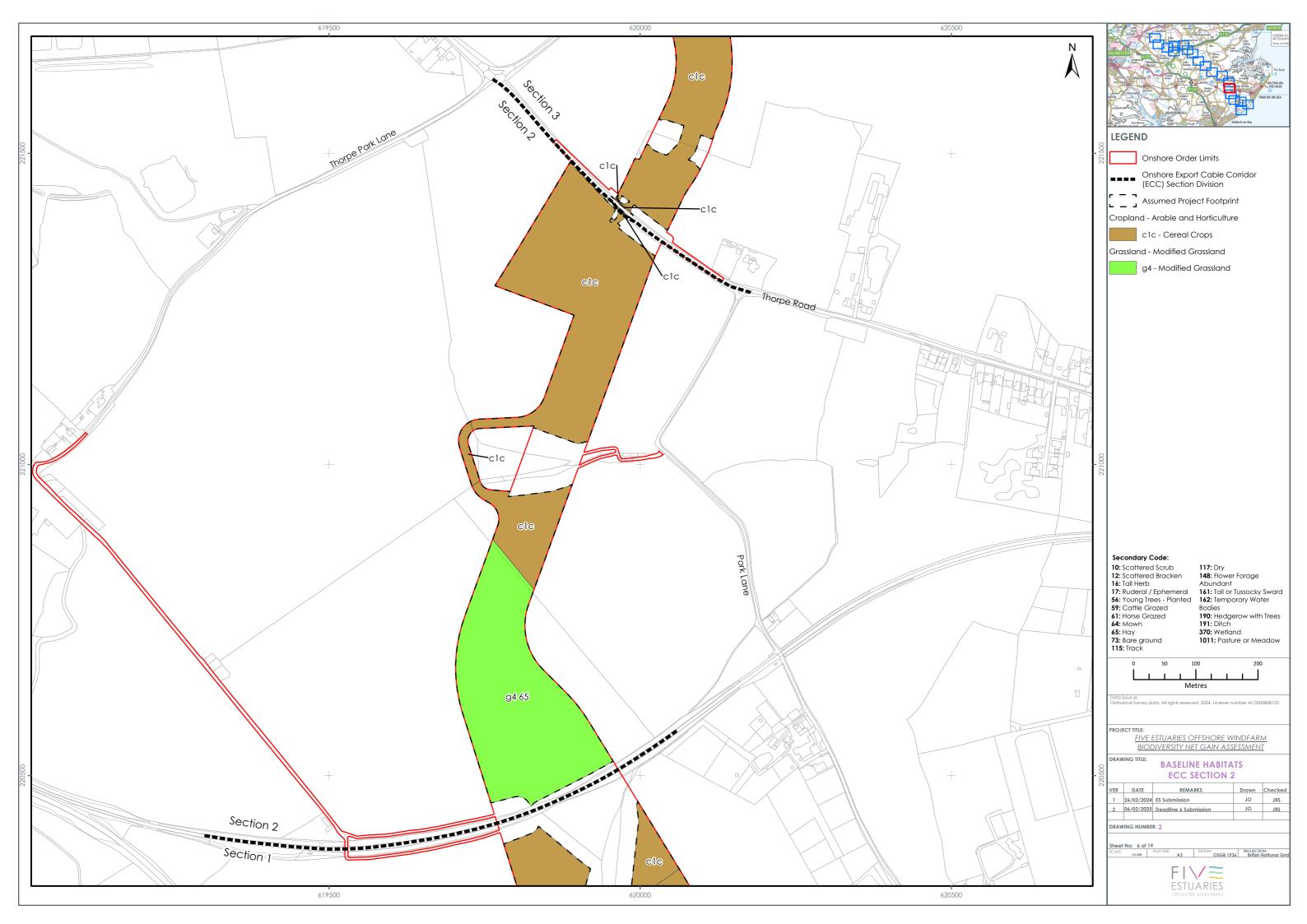


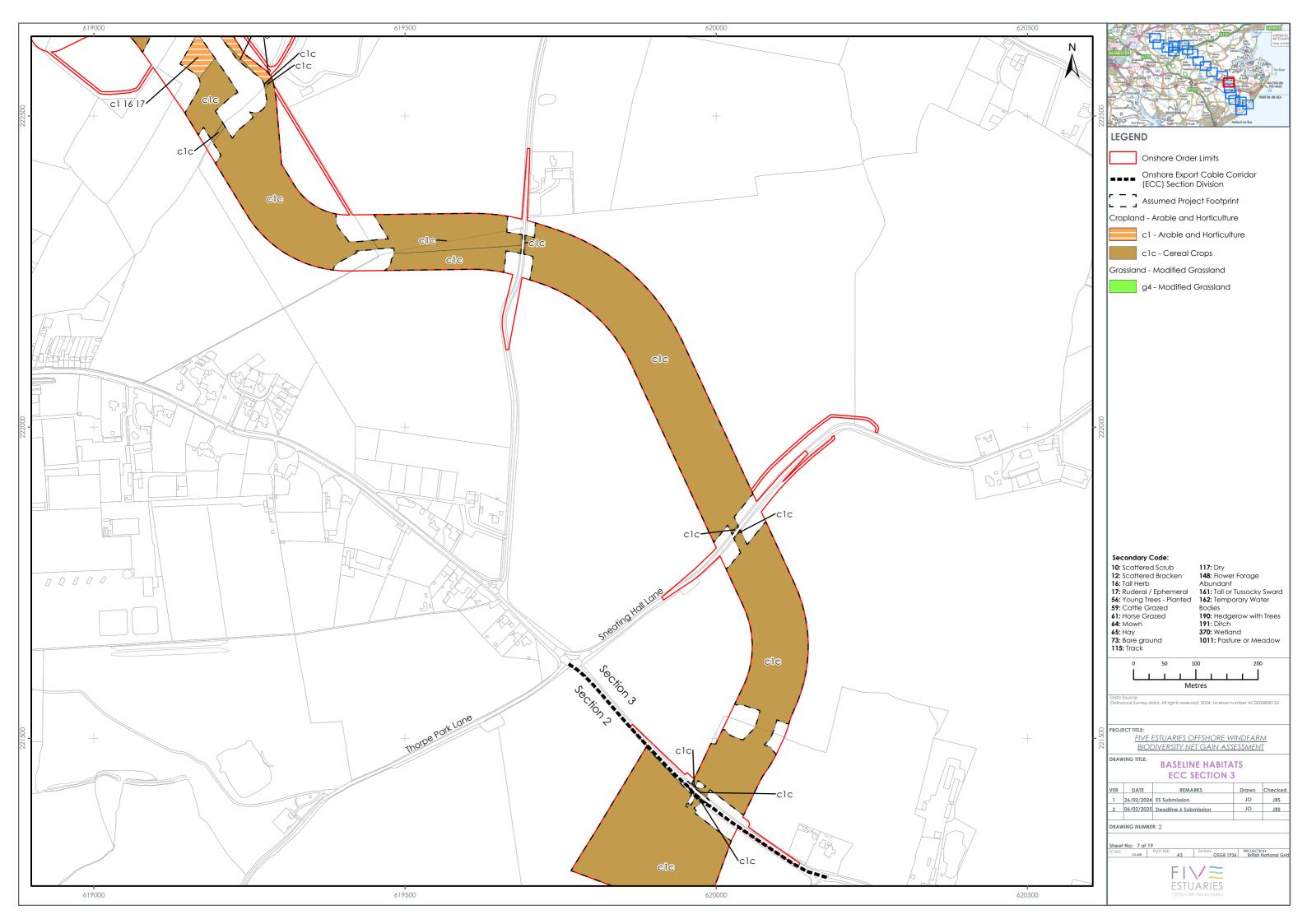


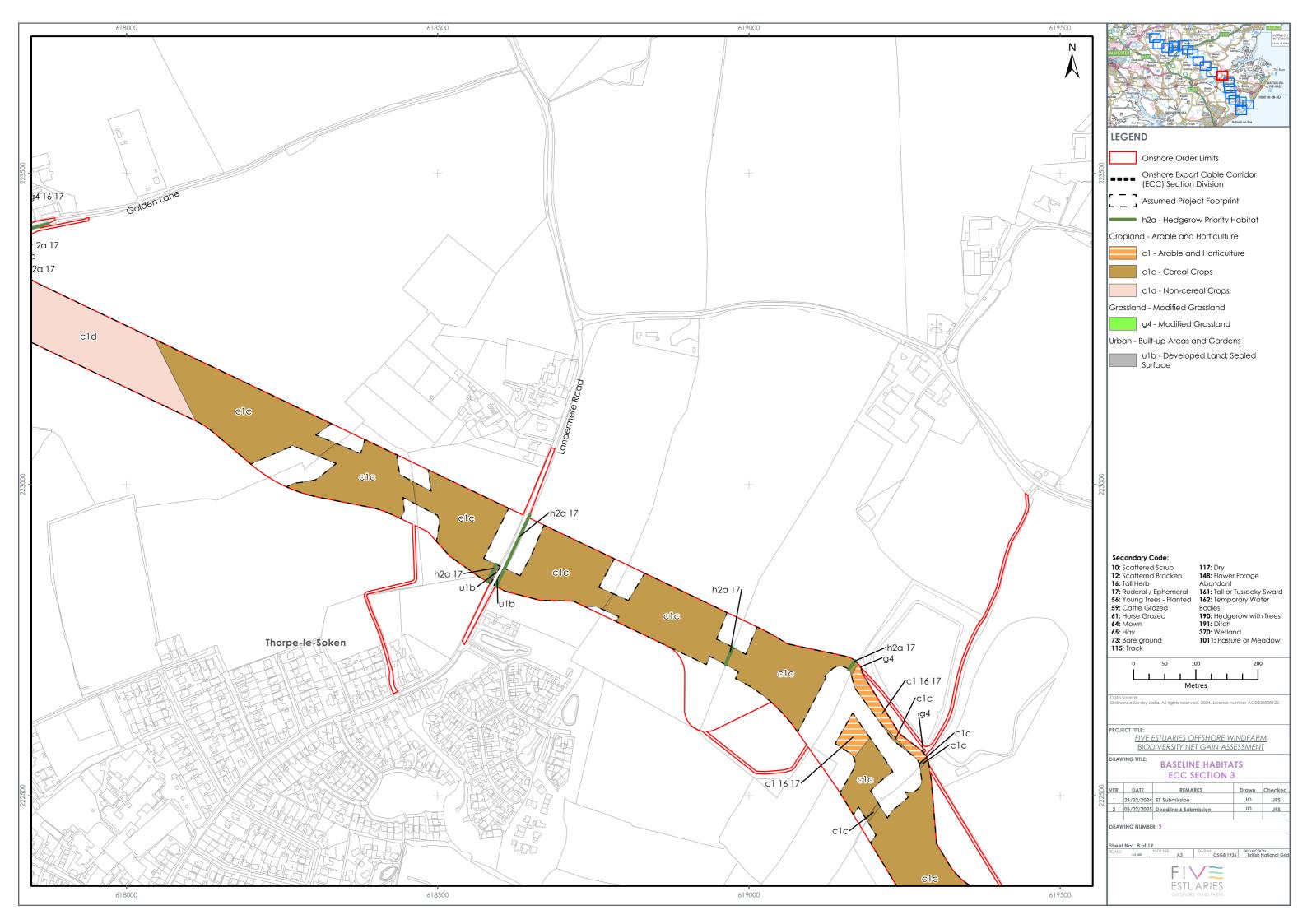


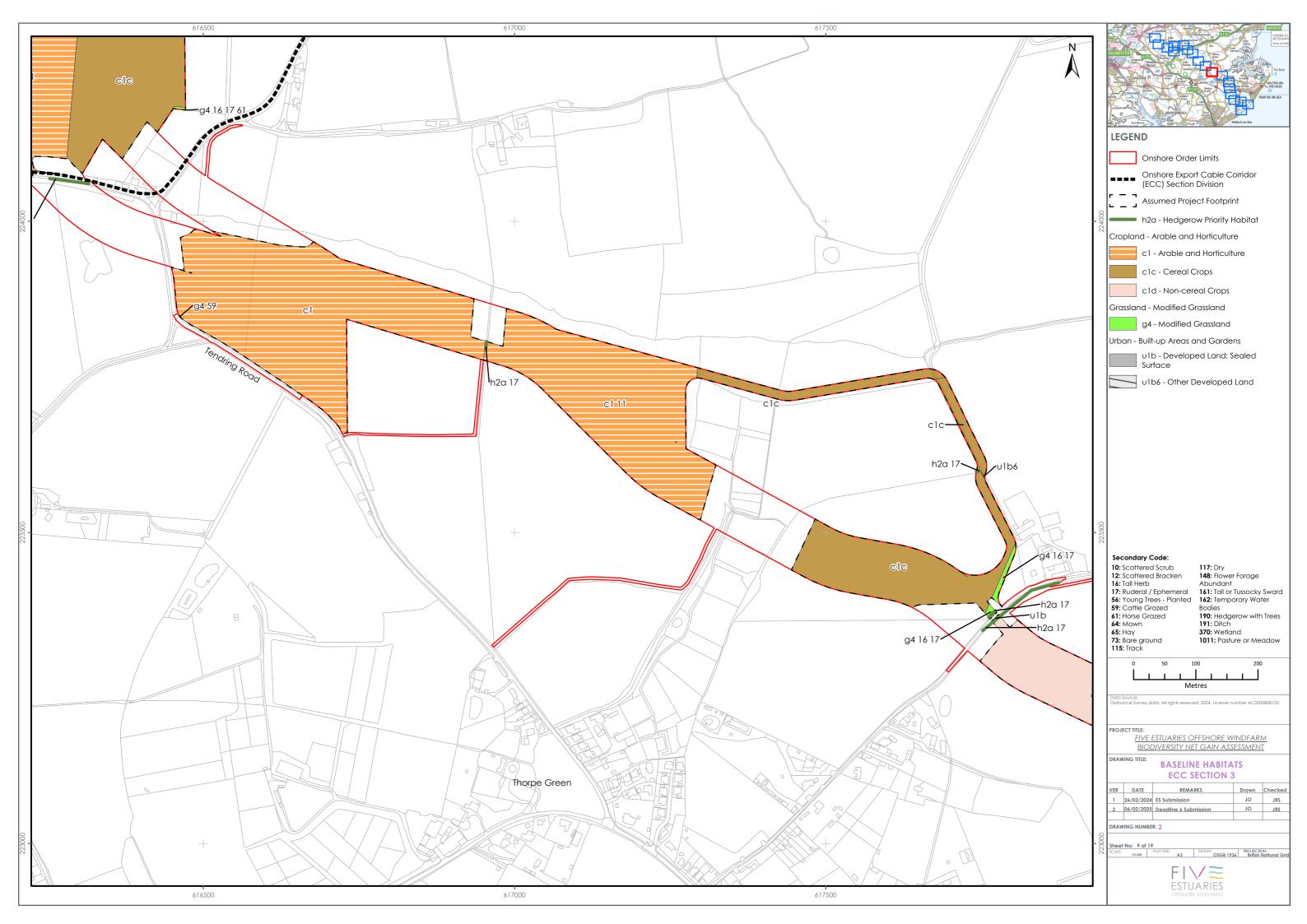


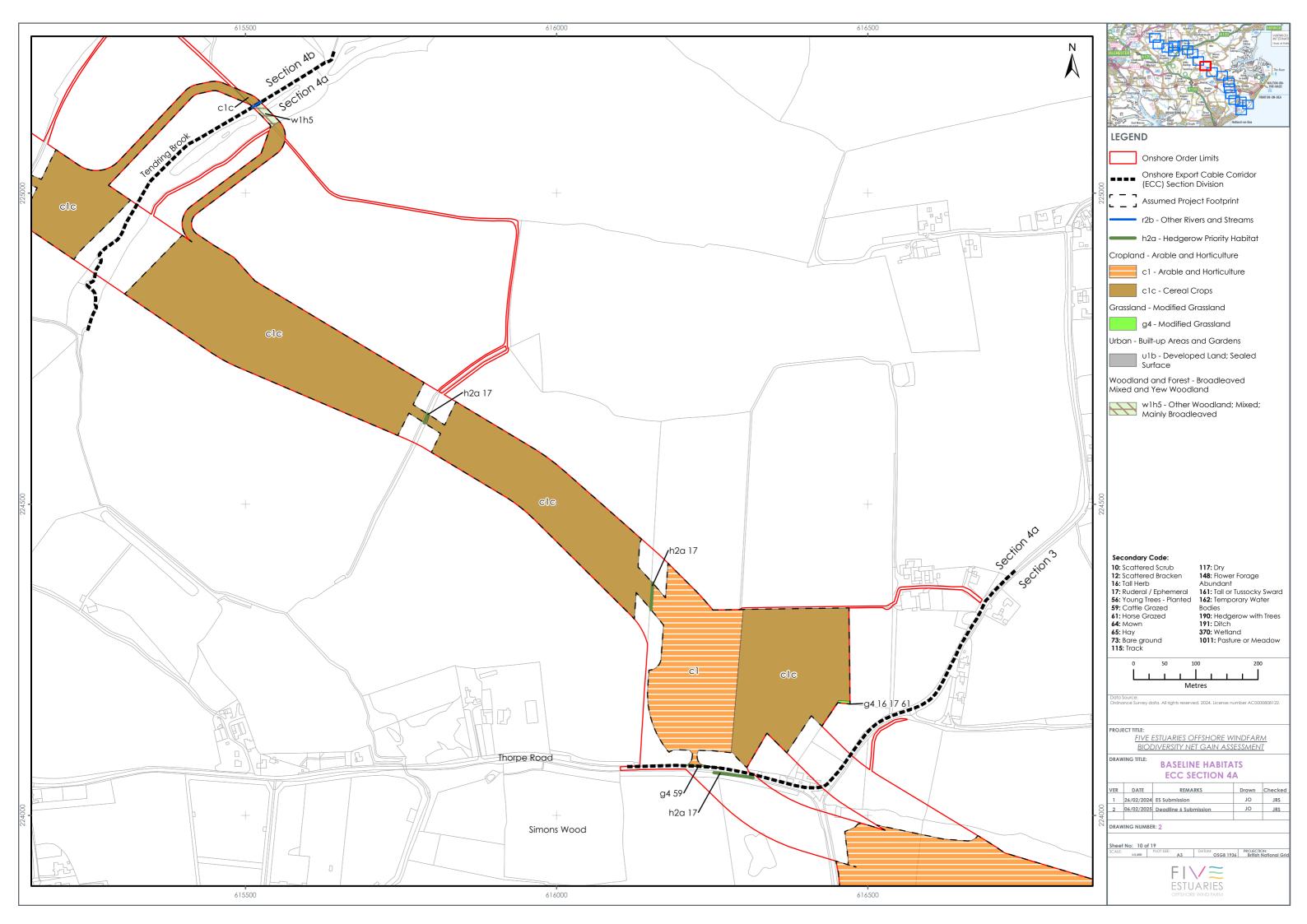


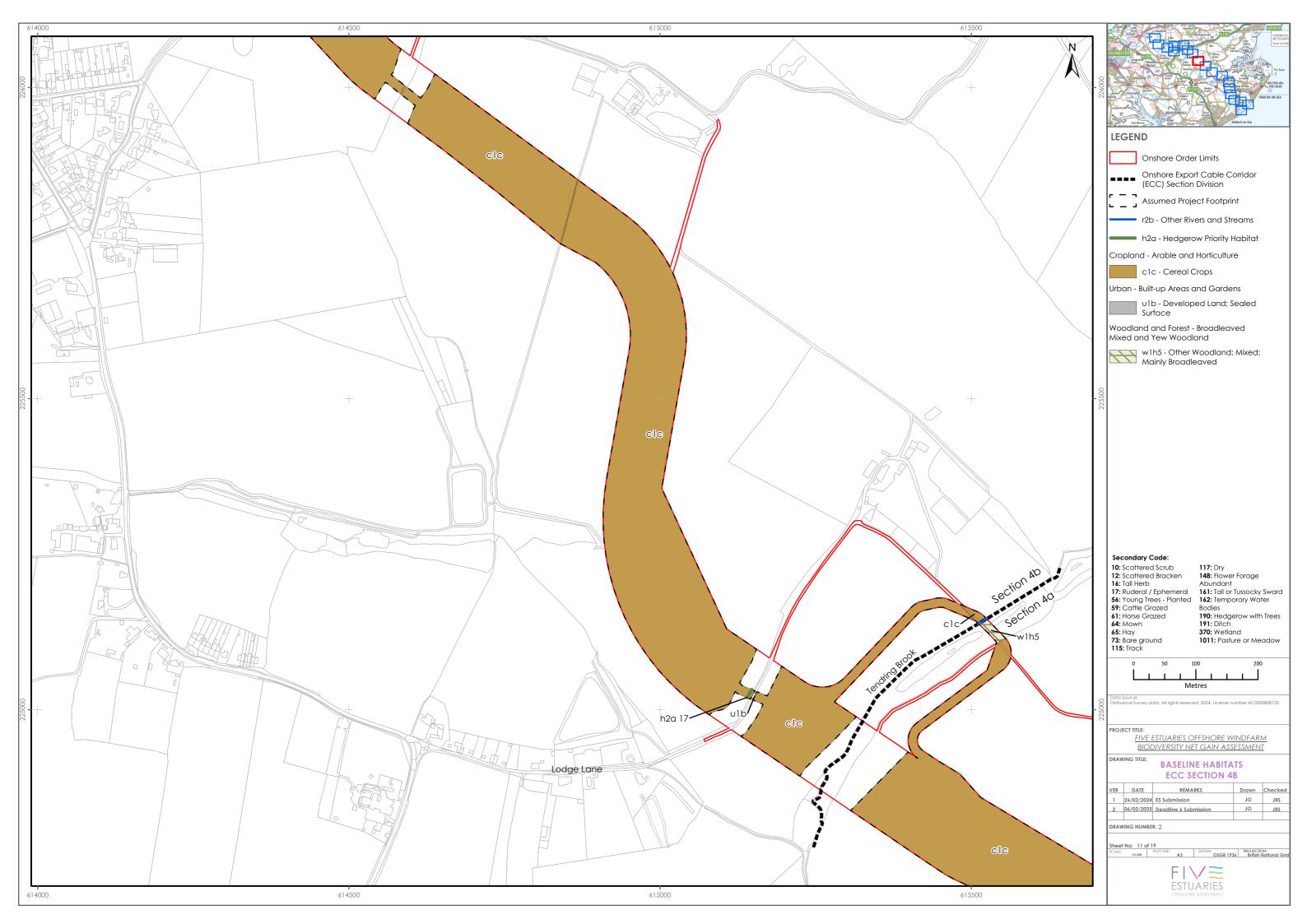


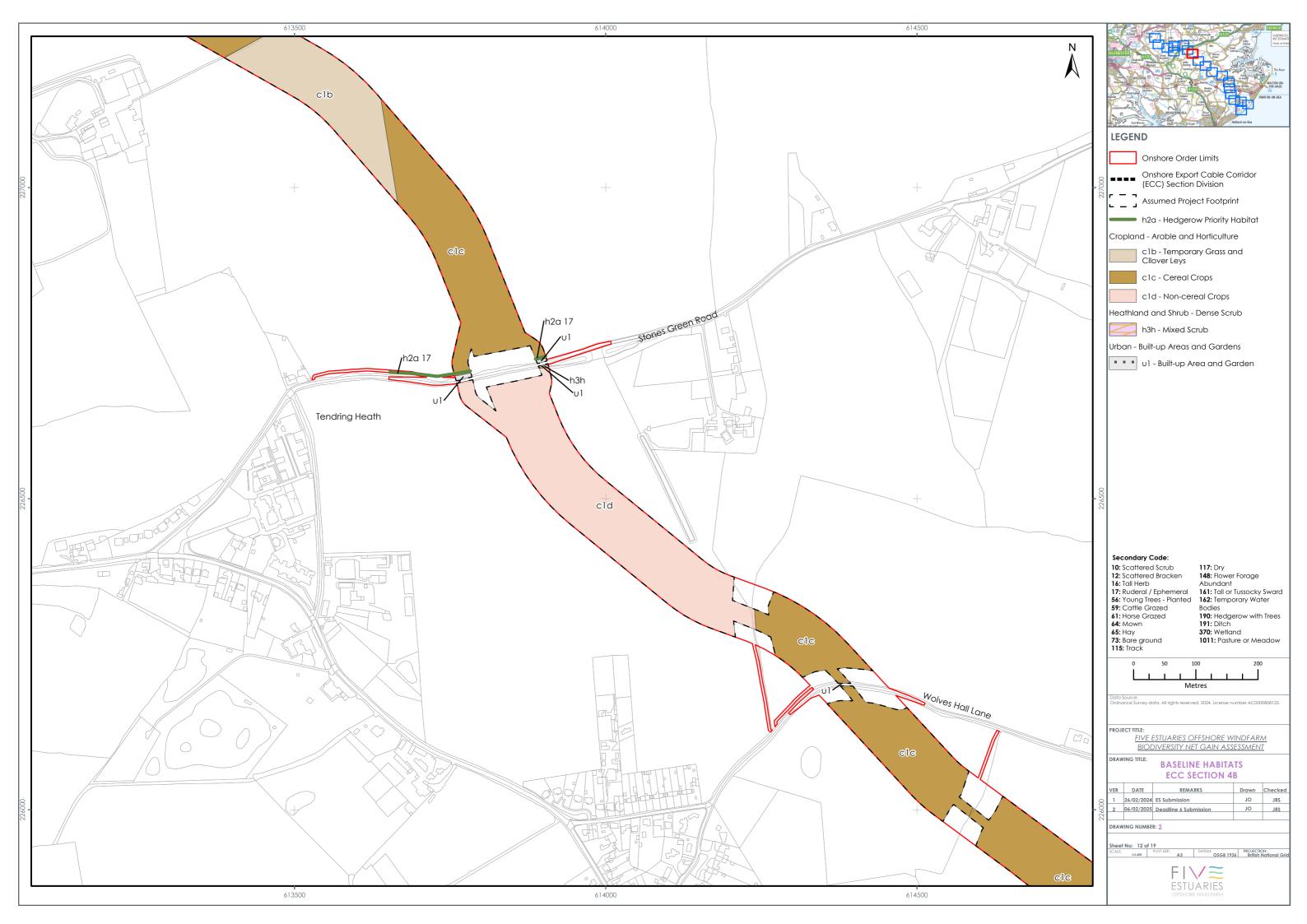


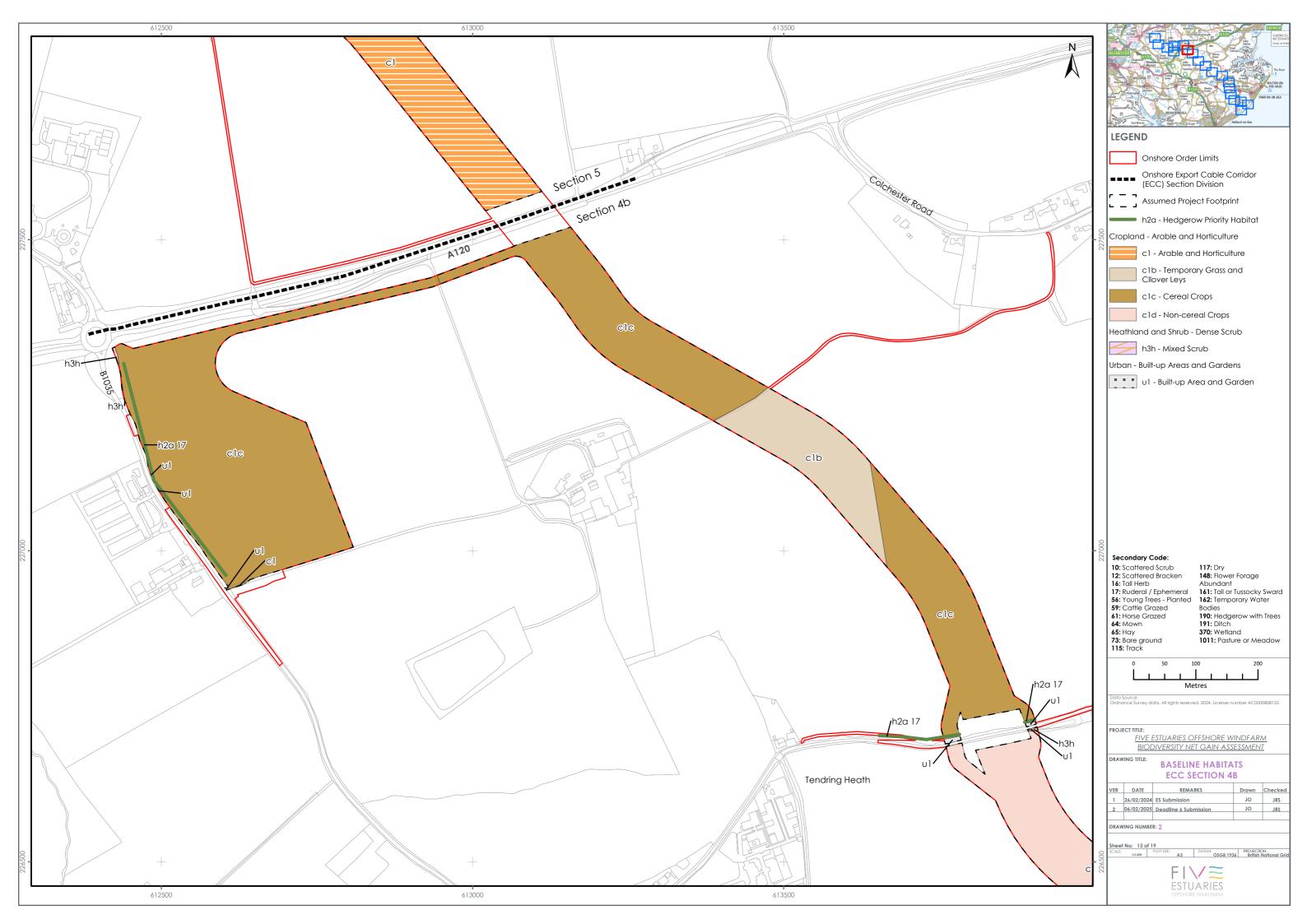




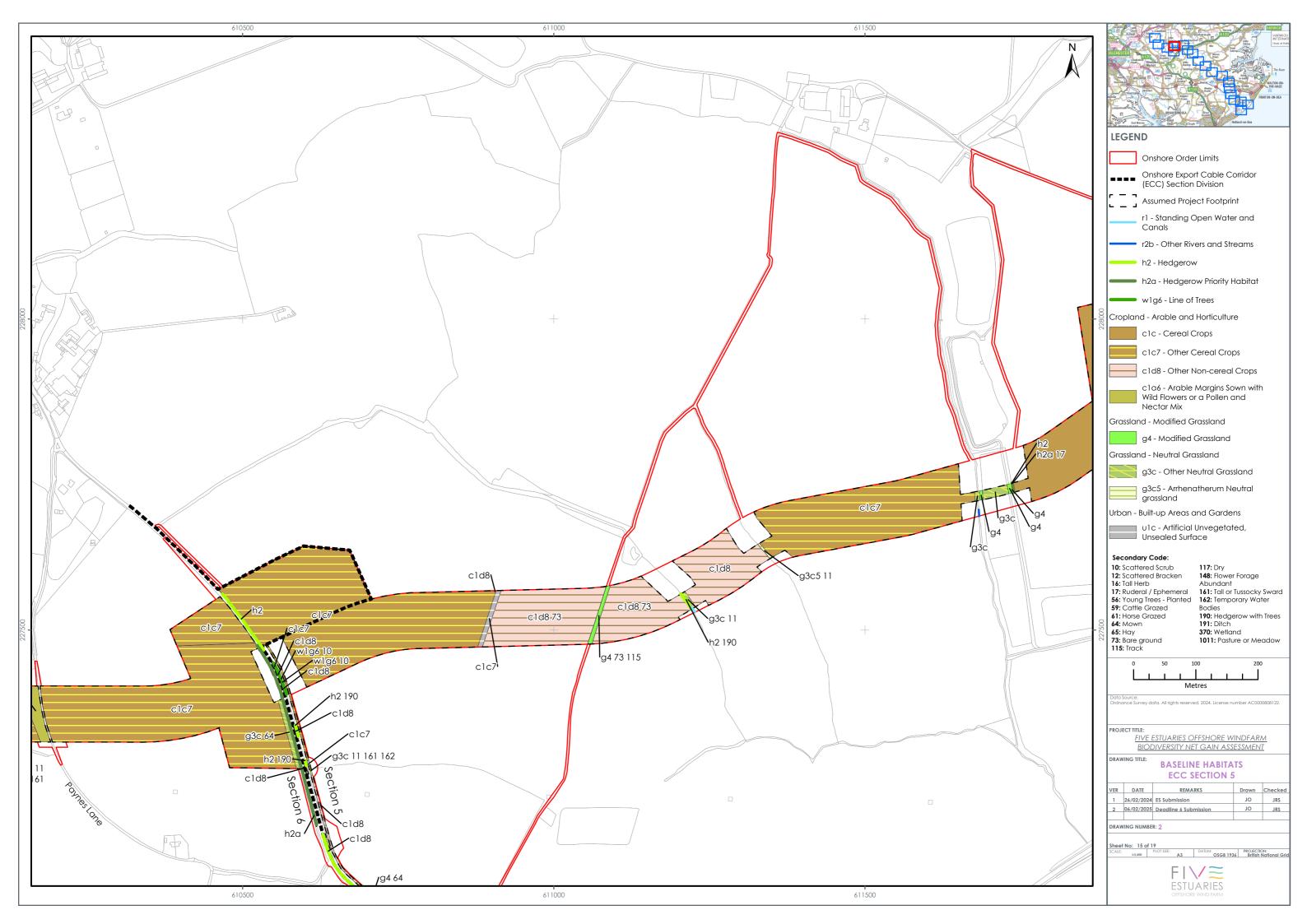


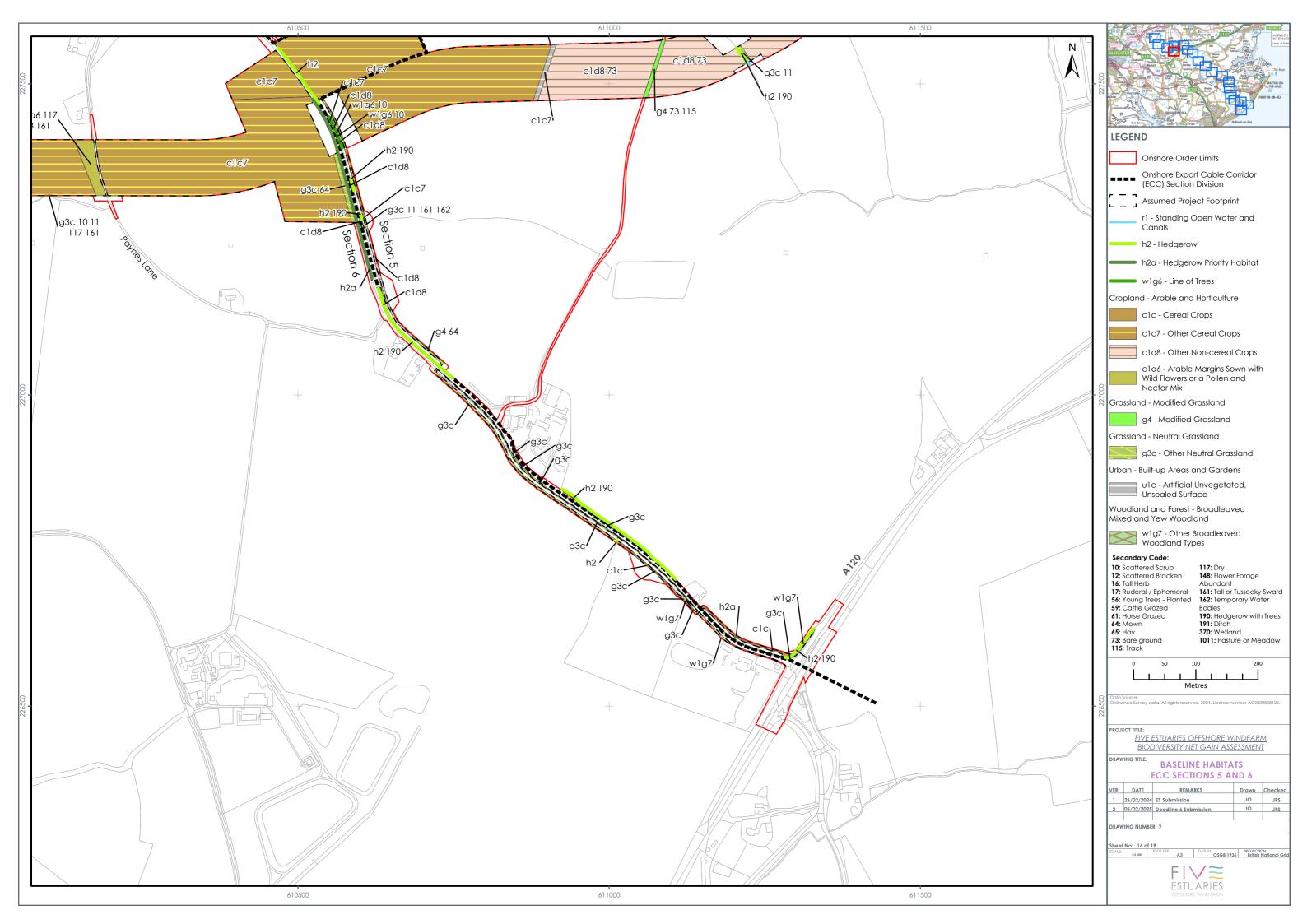


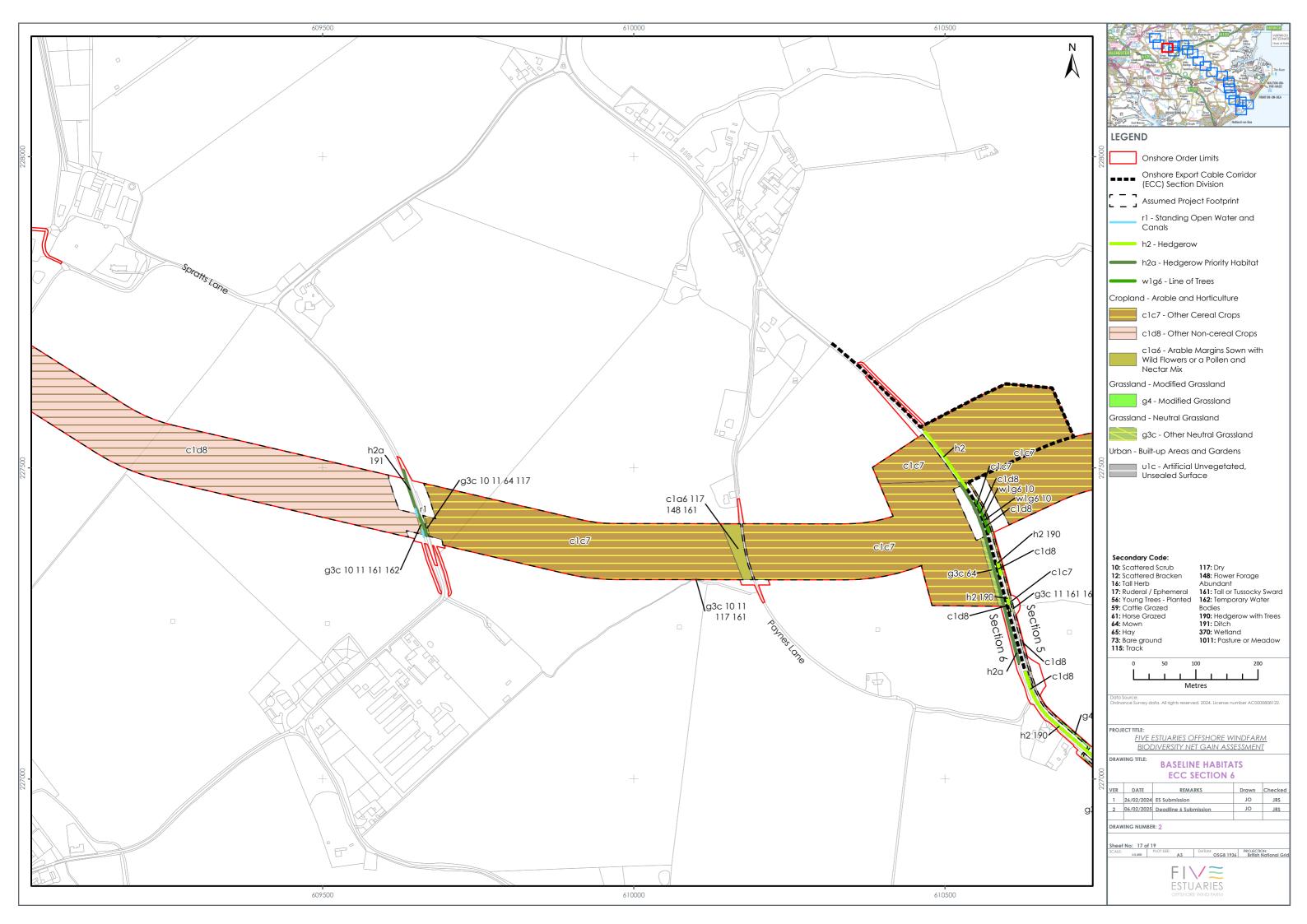


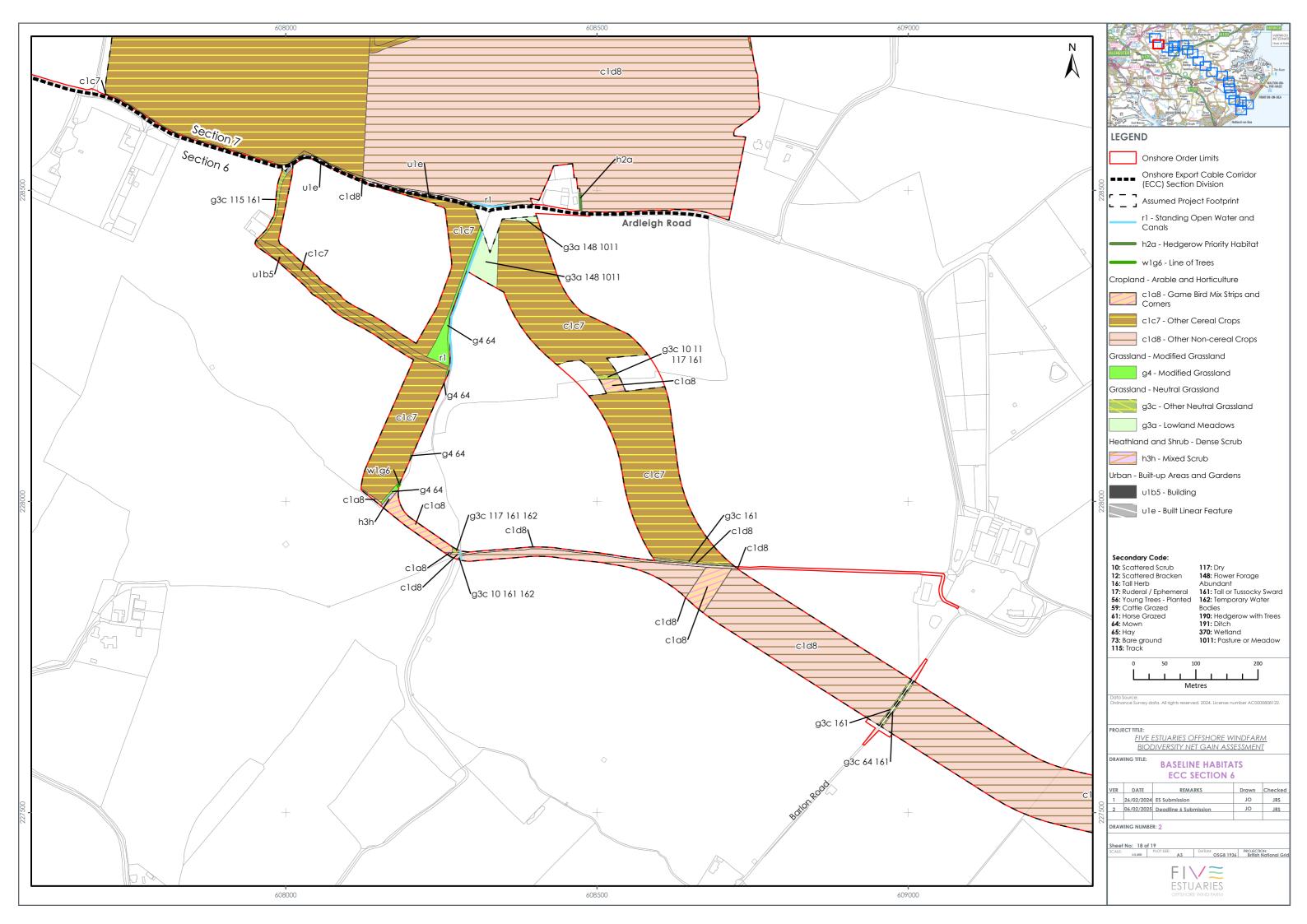


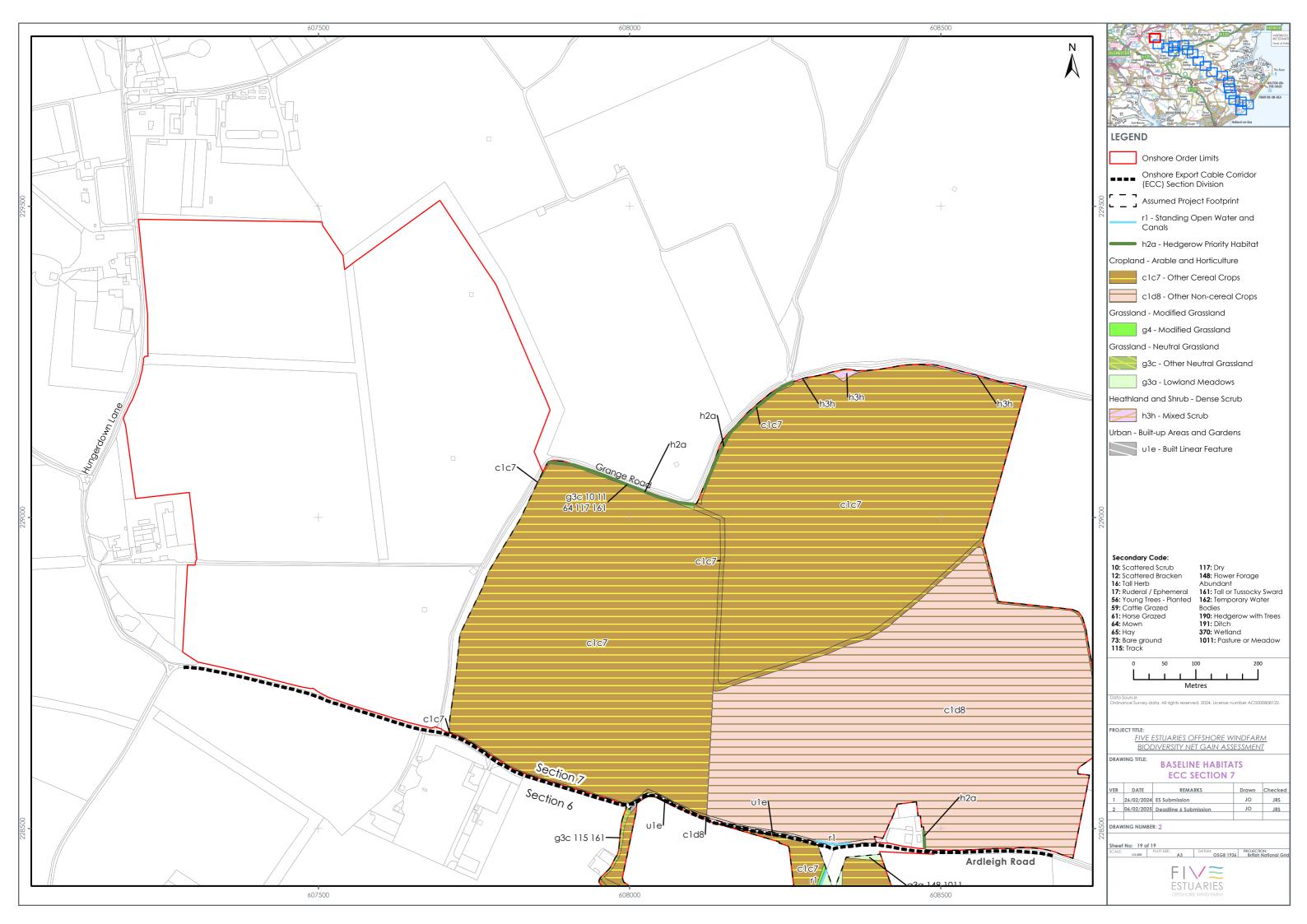










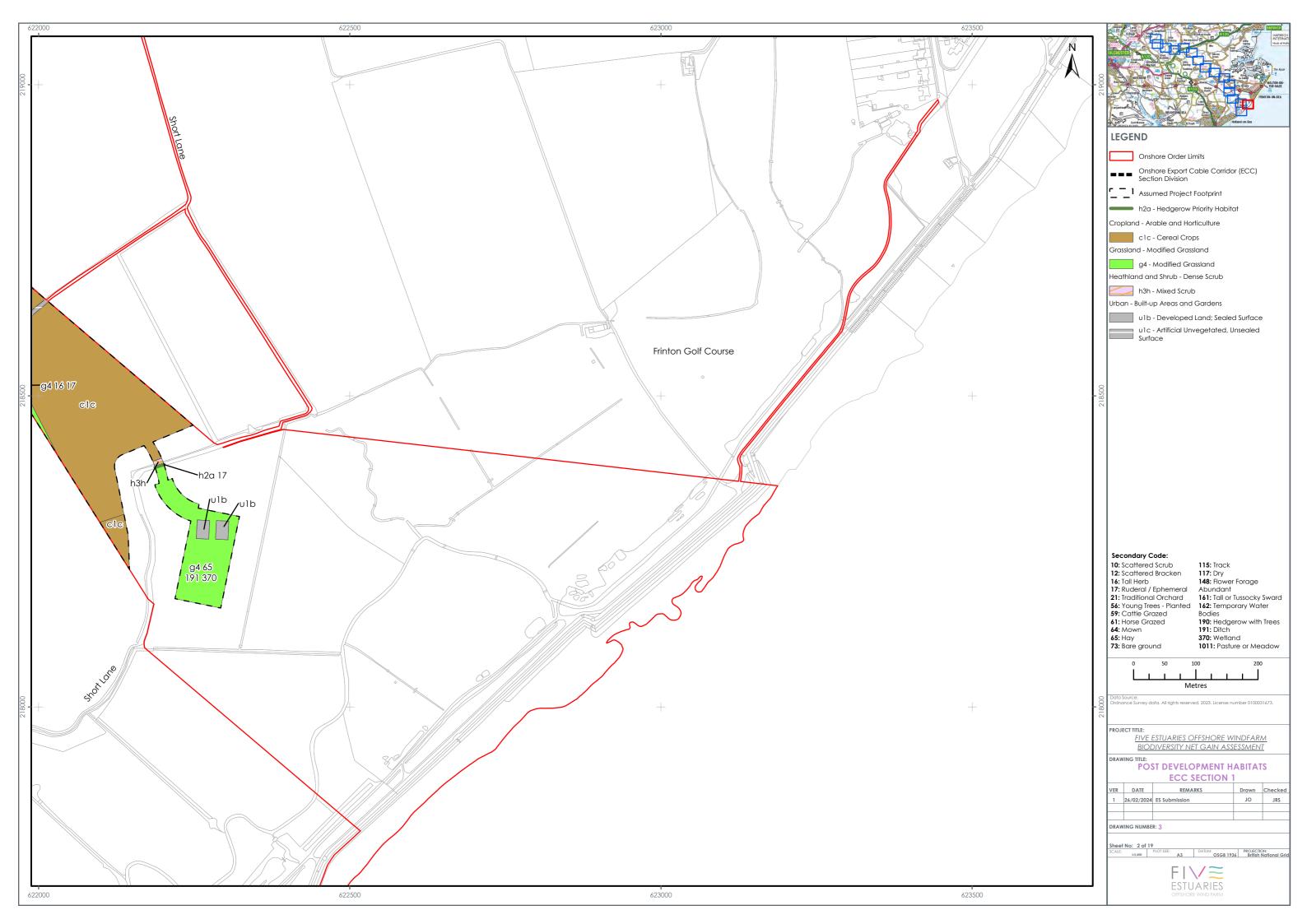


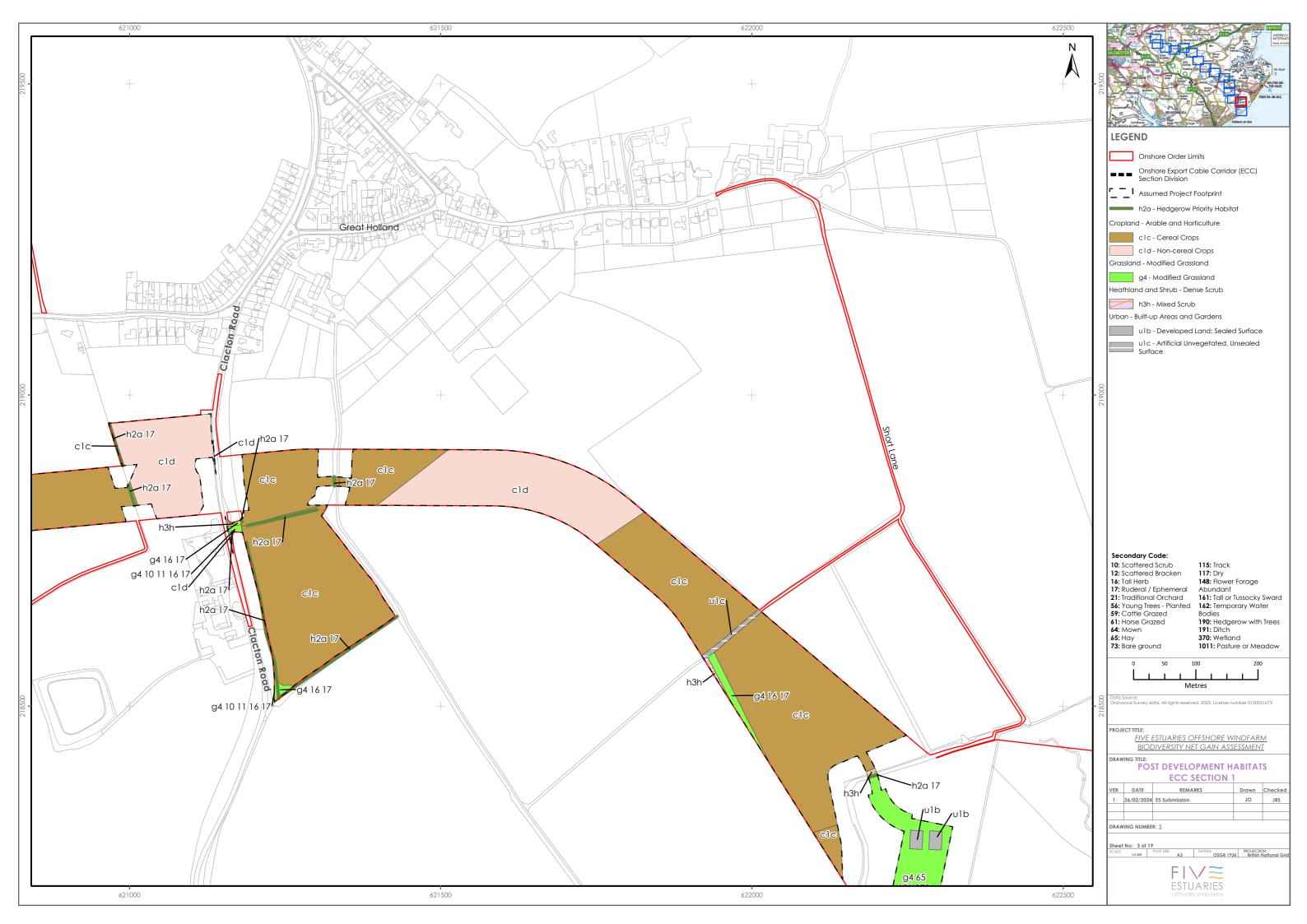
APPENDIX E

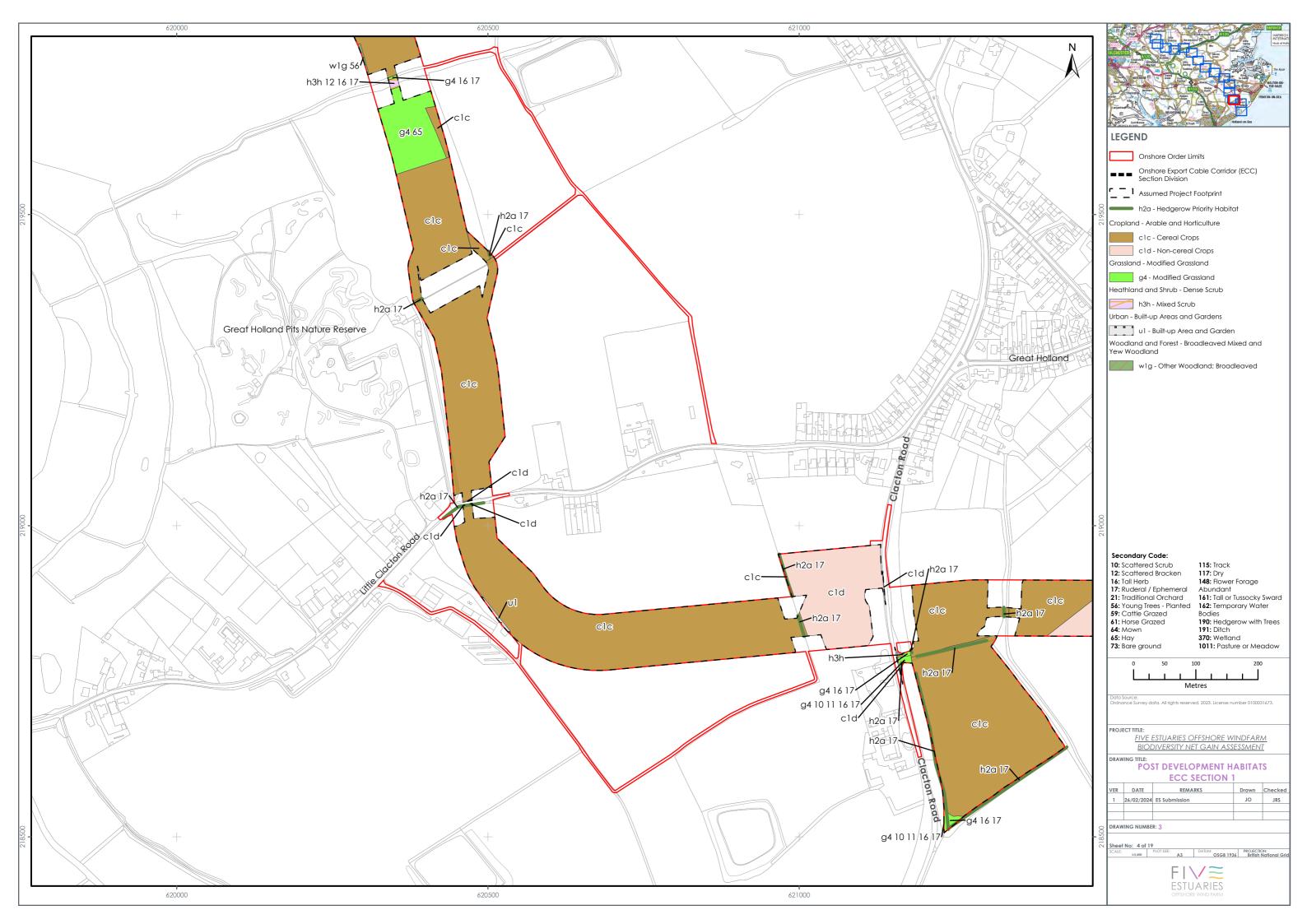
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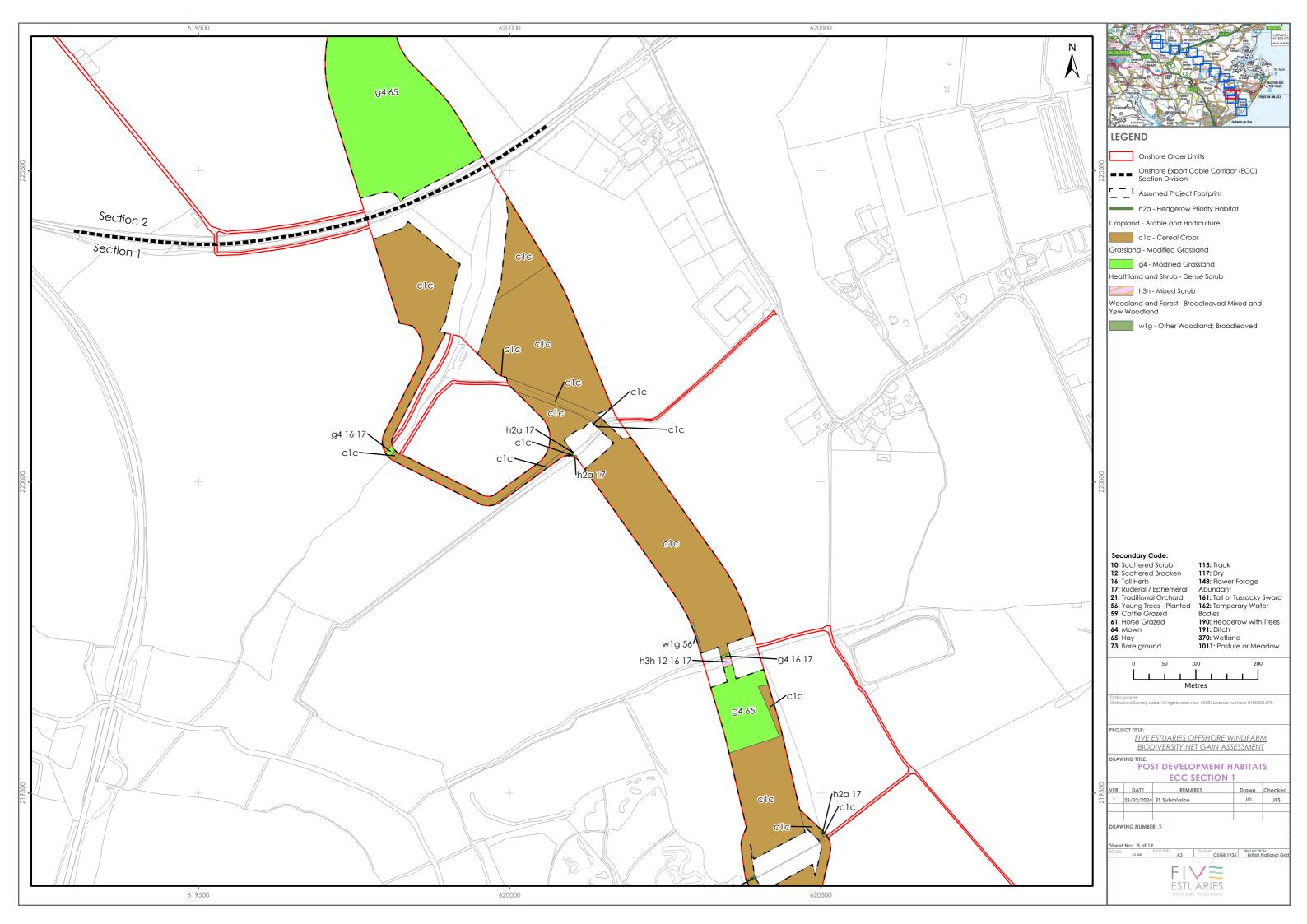


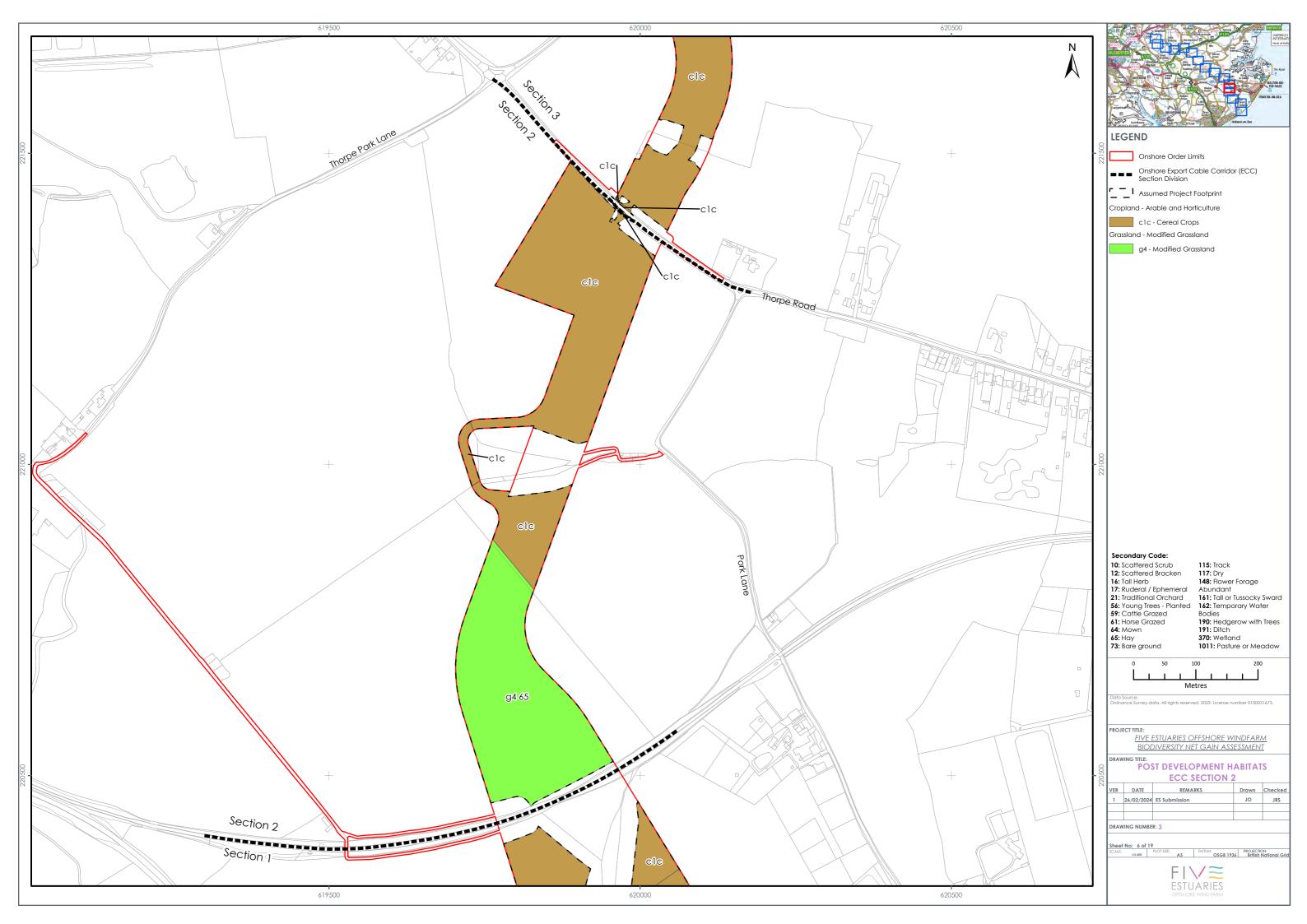




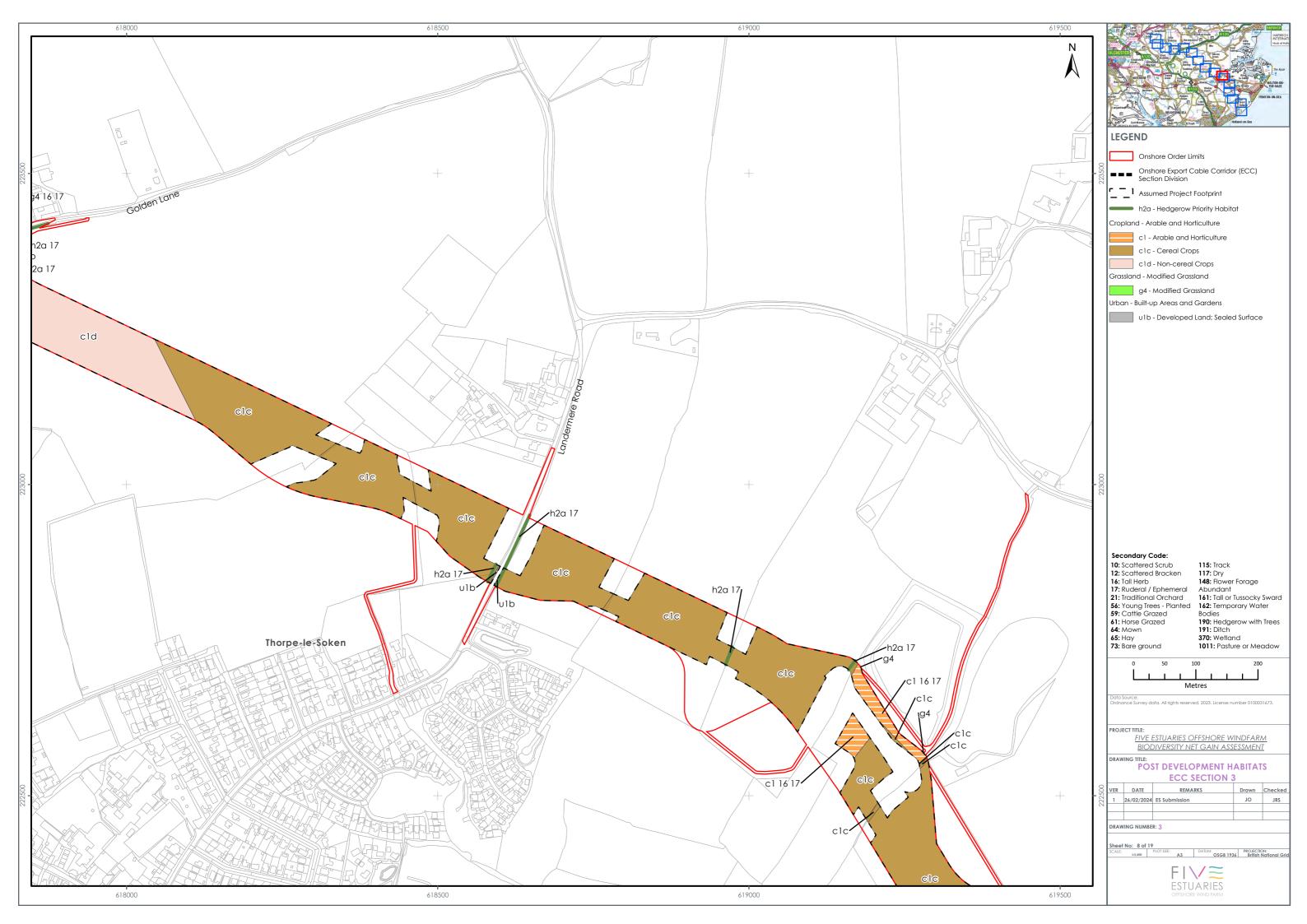


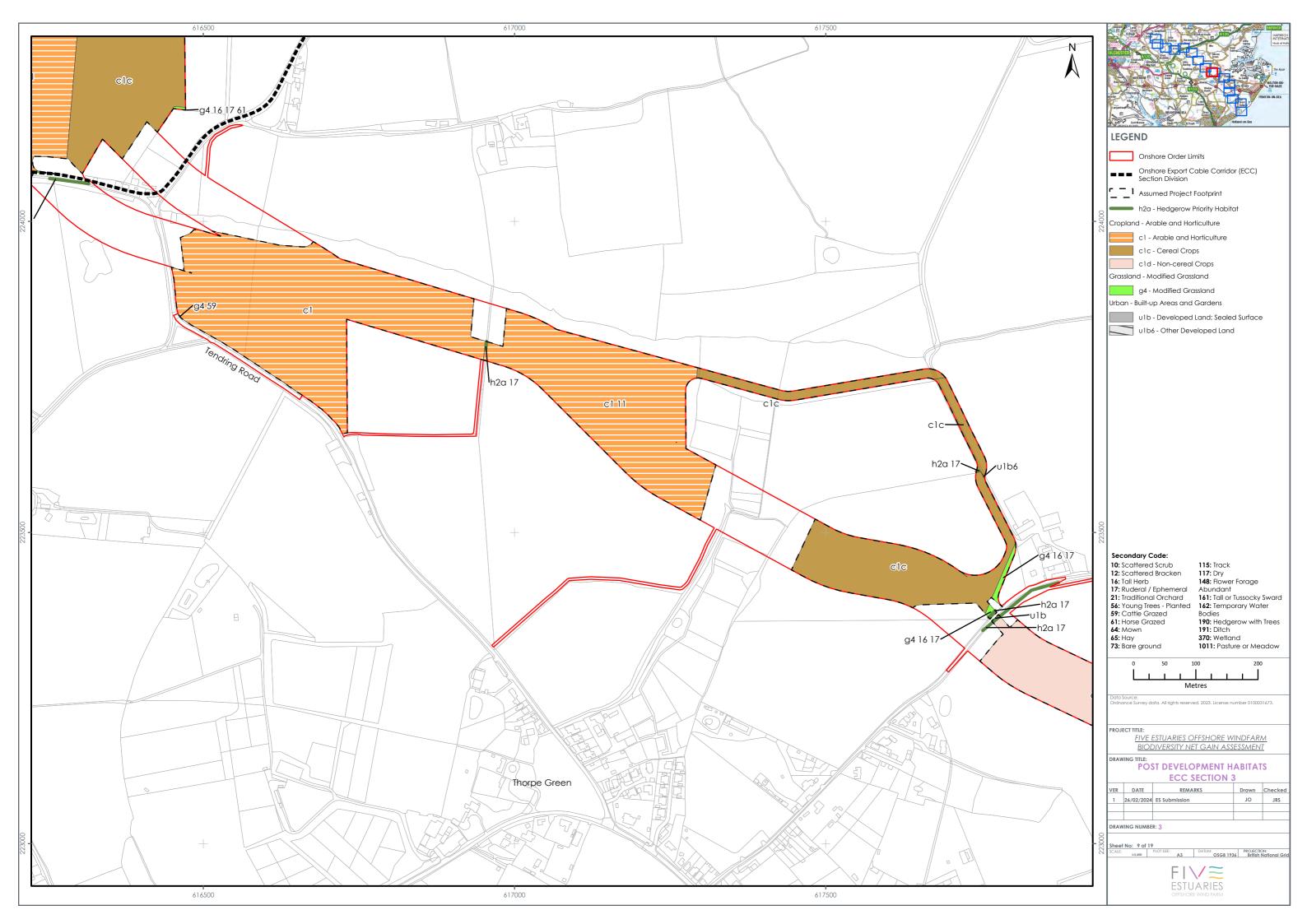


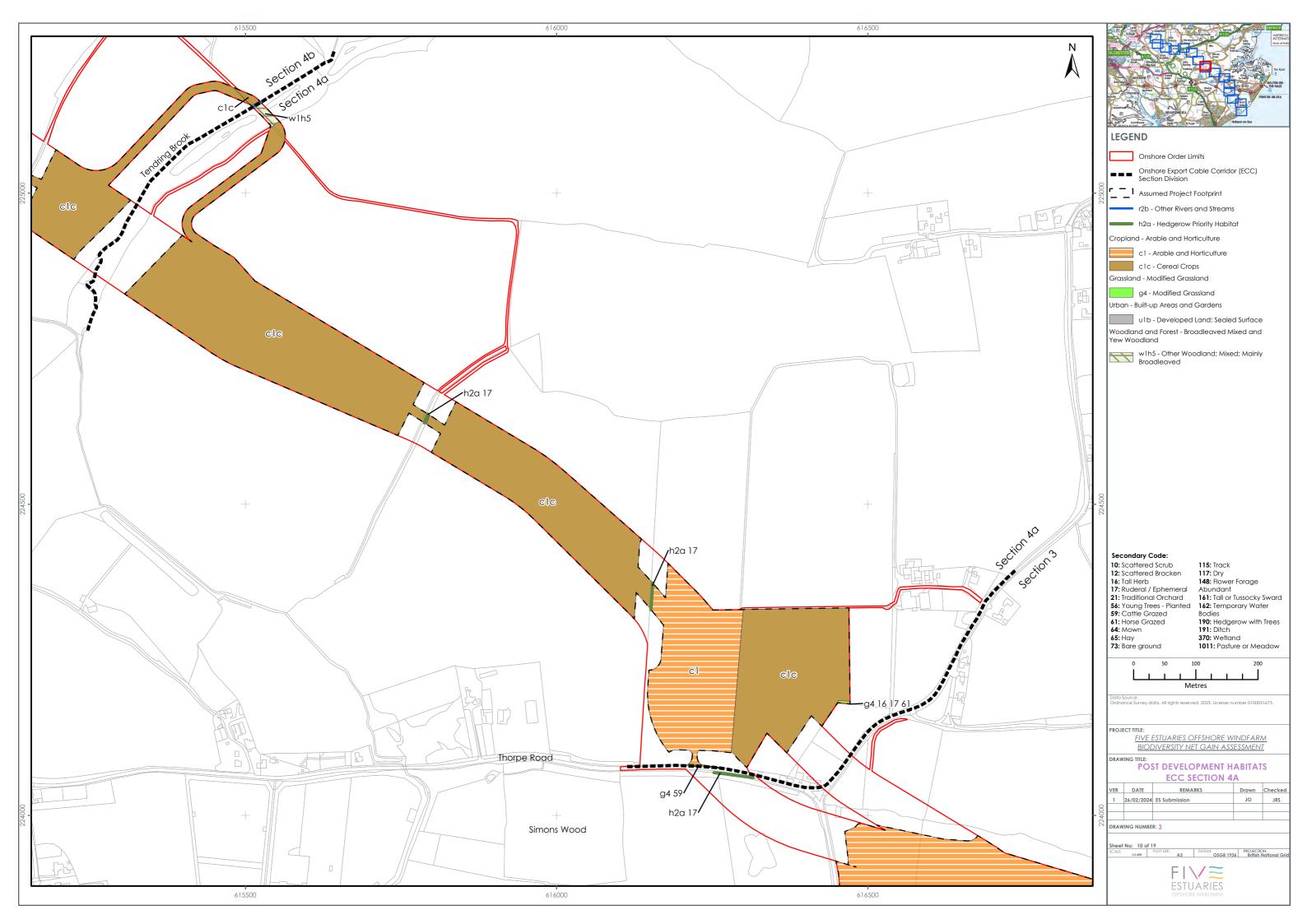


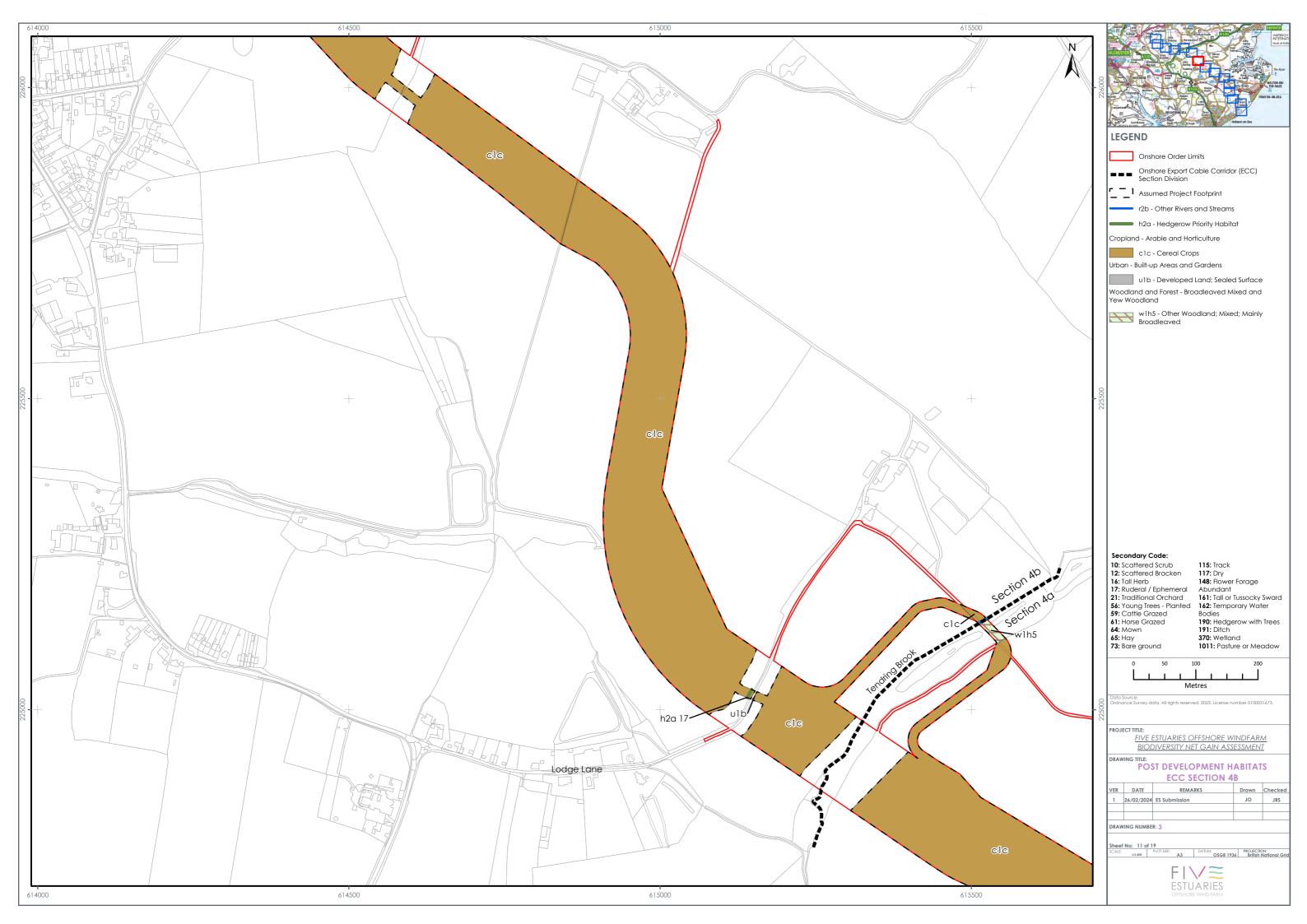


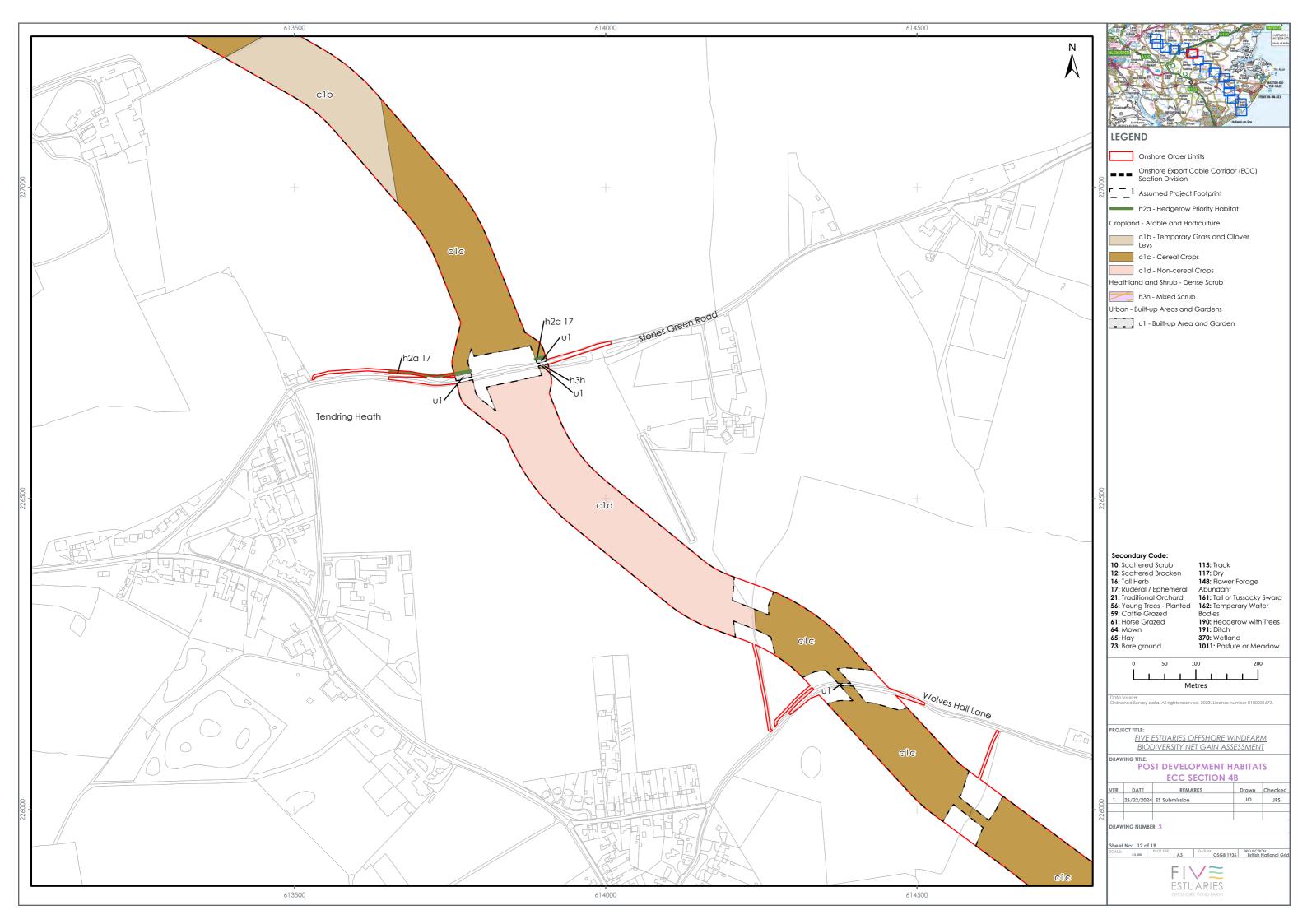








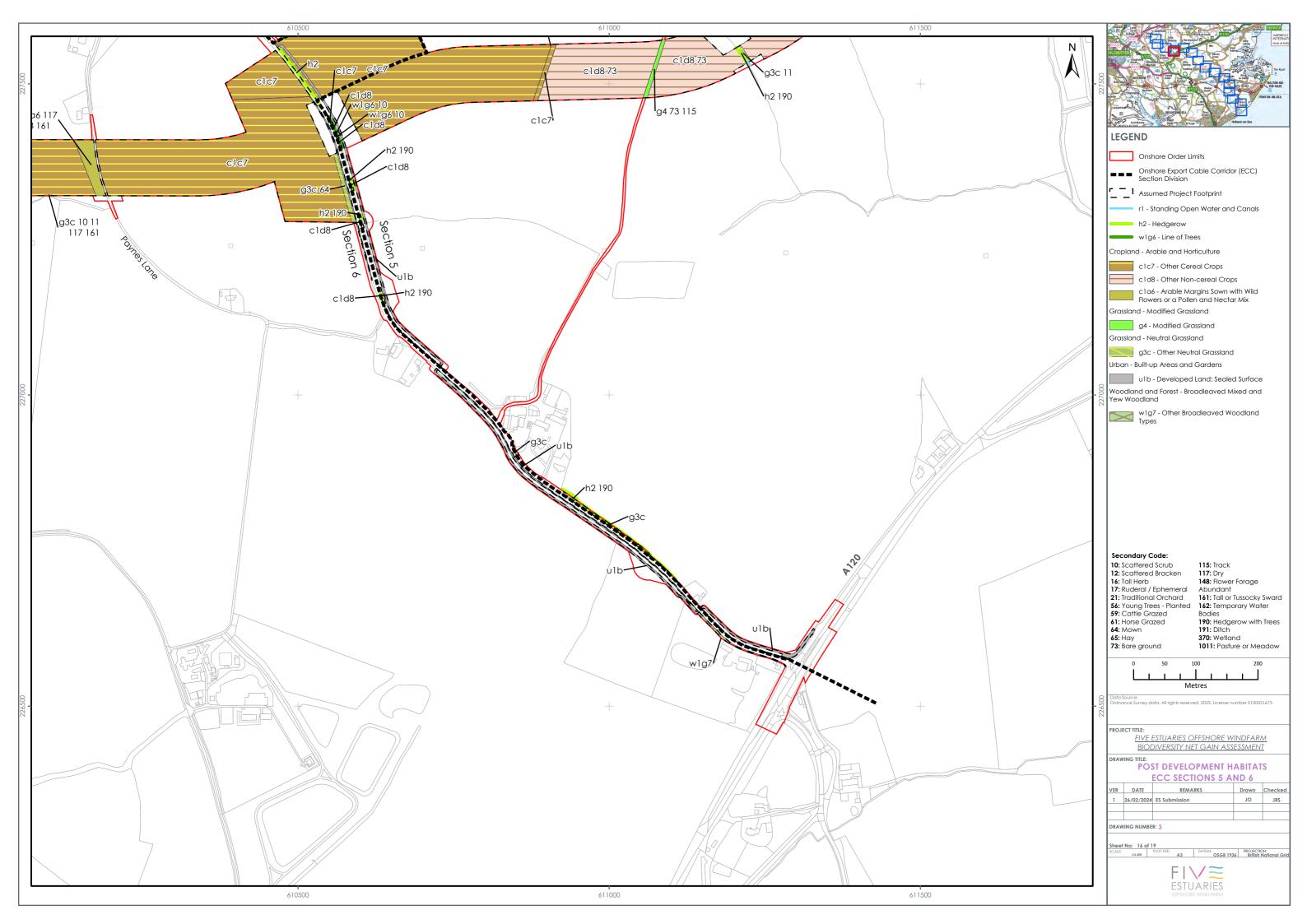


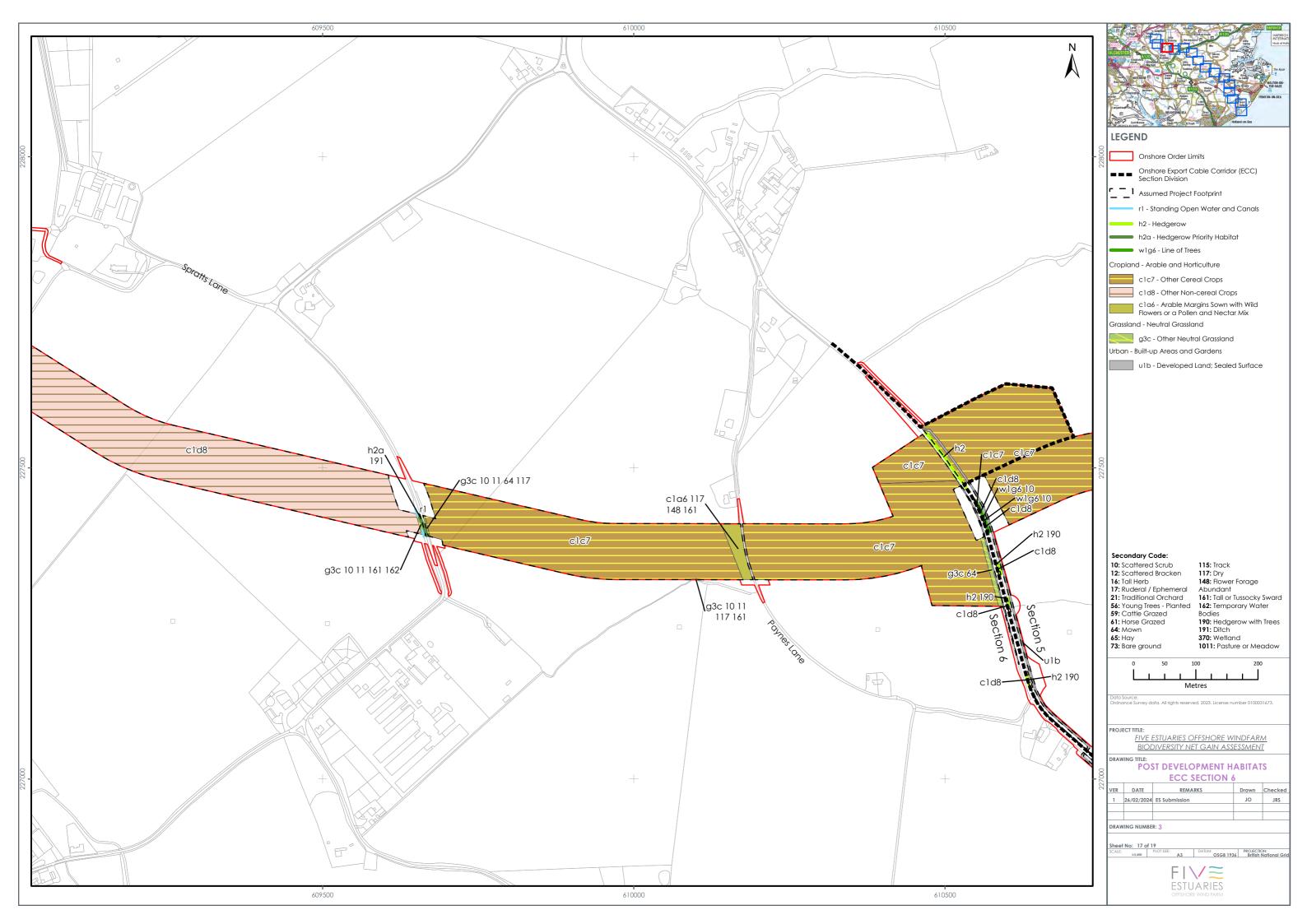


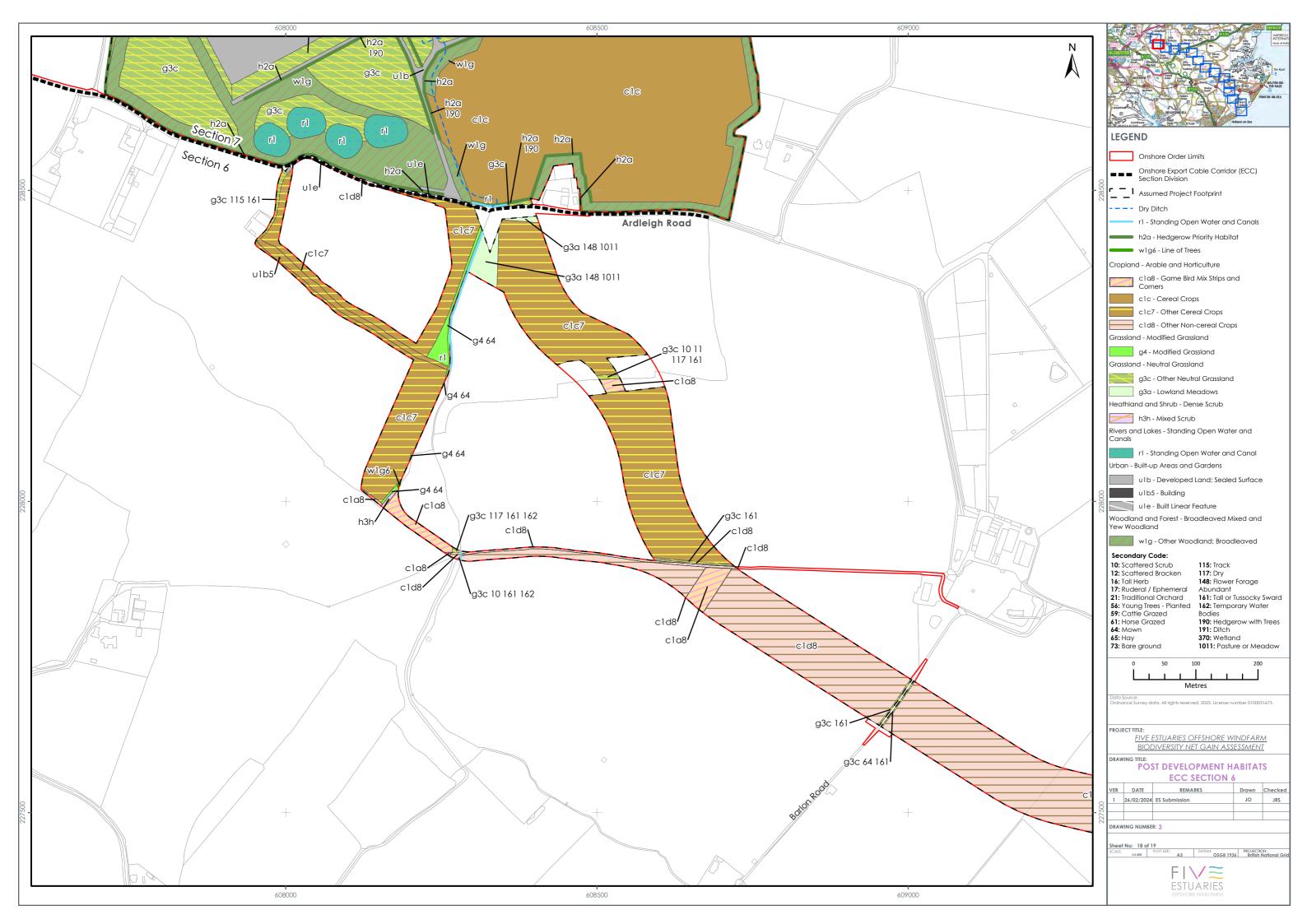














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