



# Awel y Môr Offshore Wind Farm

## Environmental Statement

### Volume 3, Chapter 3.5: Onshore Biodiversity and Nature Conservation

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# Glossary of terms

TERM	DEFINITION
Compensation	Compensation describes measures taken to offset residual effects resulting in the loss of, or permanent damage to, ecological features despite mitigation. For example, it may take the form of replacement habitat or improvements to existing habitats.
Order Limits (OL)	The extent of development including all works, access routes, Temporary Construction Compounds (TCCs), visibility splays and discharge points.
Effect	Term used to express the consequence of an impact.
Enhancement	The provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.
Expert Topic Group	Key stakeholders and consultees involved in the scoping and design process, under the auspices of the EIA Evidence Plan process (application ref: 8.2).
Favourable conservation status	<p>As defined in Article 1 (i) of the Habitats Directive:</p> <p><i>The conservation status will be taken as "favourable" when:</i></p> <ul style="list-style-type: none"> <li>- <i>population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and</i></li> <li>- <i>the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and</i></li> </ul>

TERM	DEFINITION
	<i>- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis</i>
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial, resulting from the activities associated with the construction, operation and maintenance, or decommissioning of the project.
Maximum Design Scenario	The maximum design parameters of the combined project assets, or construction technique, that result in the greatest potential for change in relation to each impact assessed.
Mitigation	Mitigation measures are commitments made by the project to reduce and/ or eliminate the potential for significant effects to arise as a result of the project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
Order Limits	The area within which development will be carried out including all works, access routes, TCCs and visibility splays
Onshore Export Cable Corridor (onshore ECC)	The proposed cable route, which represents a corridor, typically 40 m to 60 m wide, within which the cable trenching, haul road and stockpiling areas associated with cable construction, will be located.
Preliminary Environmental Information Report (PEIR)	Preliminary Environmental Information Report. The PEIR was written in the style of a draft Environmental Statement (ES) and formed the basis of statutory consultation.

TERM	DEFINITION
Priority Habitat	Habitat listed on Section (S7) of the Environment (Wales) Act 2016
Priority Species	Species listed on S7 of the Environment (Wales) Act 2016
Route section	A defined section of the route.
Study area	This is the 2 km zone around the OL.
Substation construction area	The area within which the substation construction would take place. This area incorporates both the Substation footprint and areas of cut and fill required to construct the substation platform.
Substation footprint	The footprint for the substation which would incorporate either air insulated switchgear (AIS) or gas insulated switchgear (GIS) technology
Substation access zone	The area which will contain the final substation access route (both construction and operational). The route of the construction and operational access will be confirmed following detailed design (post consent).
Substation cable corridor zone	The area which will contain the final cable connection into and out of the substation. The route of the cable connections to the substation will be confirmed following detailed design (post consent). The cable route will be either east or west of the pond located immediately south of the substation.
Cable works TCC	TCC associated with cable works.
Survey area	Except where stated otherwise, this is the 100 m zone around the OL.
Waterbirds	The definition of waterbirds follows that used by the Wetland Bird Survey (WeBS) and includes wildfowl

TERM	DEFINITION
	(ducks, geese and swans), waders, rails, divers, grebes, cormorants and herons. Gulls were also included as waterbirds for the purposes of this assessment.

## Abbreviations and acronyms

TERM	DEFINITION
AIS	Air insulated switchgear
ARC	Amphibian and Reptile Conservation
ASNW	Ancient semi-natural woodland
AyM	Awel y Môr Offshore Wind Farm
CCBC	Conwy County Brough Council
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute for Ecology and Environmental Management
CoCP	Code of Construction Practice
CRoW Act	Countryside and Rights of Way Act 2000
DCC	Denbighshire County Council
ECC	Export Cable Corridor
EcIA	Ecological Impact Assessment
ECOW	Ecological Clerk of Works
EIA	Environmental Impact Assessment.
EPSL	European protected species licence
ES	Environmental Statement



TERM	DEFINITION
ETG	Expert Topic Group
EU	European Union
FCS	Favourable Conservation Status
GIS	Gas insulated switchgear
GCN	Great crested newt
HDD	Horizontal Directional Drilling
HRA	Habitats Regulations Assessment.
INNS	Invasive non-native species
IUCN	International Union for the Conservation of Nature
LBAP	Local biodiversity action plan
LDP	Local development plan
LEDPP	Landscape and Ecology Design Principles Plan
LEMP	Landscape and Ecological Management Plan
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
MDS	Maximum Design Scenario
NERC Act	Natural Environment and Rural Communities Act 2006
NPS	National Policy Statement
NRAP	Nature Recovery Action Plan for Wales 2020 – 2021
NRW	Natural Resources Wales
NSIP	Nationally Significant Infrastructure Project
NWWT	North Wales Wildlife Trust

TERM	DEFINITION
OLEMP	Outline Landscape and Ecological Management Plan
OnSS	Onshore Substation
PAWS	Plantation on Ancient Woodland Site
PEA	Preliminary Ecological Appraisal
PEIR	Preliminary Environmental Information Report
PPEIRP	Pollution Prevention and Emergency Incident Response Plan
PPW	Planning Policy Wales
RSPB	Royal Society for the Protection of Birds
S7	Section 7 of the Environment (Wales) Act 2016
SABP	St Asaph Business Park
SAC	Special Area of Conservation
SoNaRR	State of Natural Resources Report published by NRW
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
TCC	Temporary Construction Compound
TJB	Transition Joint Bay
TWT	The Wildlife Trusts
WeBS	Wetland Bird Survey

# Units

UNIT	DEFINITION
km	kilometre
m	metre
ha	hectare

# 5 Onshore Biodiversity and Nature Conservation

## 5.1 Introduction

1 This chapter of the Environmental Statement (ES) considers the likely significant effects associated with the onshore elements of the Awel y Môr Offshore Wind Farm (AyM) on onshore biodiversity and nature conservation receptors (including intertidal birds). It considers the construction, operational and decommissioning onshore activities. Relevant technical appendices that should be read alongside the chapter include:

- Volume 5, Annex 5.1: Preliminary Ecological Appraisal Report (application ref: 6.5.5.1);
- Volume 5, Annex 5.2: Habitat and Hedgerow Survey Report (application ref: 6.5.5.2);
- Volume 5, Annex 5.3: Wintering Bird Survey Report (application ref: 6.5.5.3);
- Volume 5, Annex 5.4: Reptile Survey Report (application ref: 6.5.5.4);
- Volume 5, Annex 5.5: Otter and Water Vole Survey Report (application ref: 6.5.5.5);
- Volume 5, Annex 5.6: Great Crested Newt Survey Report (application ref: 6.5.5.6);
- Volume 5, Annex 5.7: Dormouse Survey Report (application ref: 6.5.5.7);
- Volume 5, Annex 5.8: Breeding Bird Survey Report (application ref: 6.5.5.8);
- Volume 5, Annex 5.9: Badger Survey Report (application ref: 6.5.5.9);
- Volume 5, Annex 5.10: Bat Survey Report (application ref: 6.5.5.10);
- Outline Landscape and Ecological Management Plan (application ref: 8.4);
- Volume 5, Annex 5.11: Noise Modelling for Important Ornithological Features (Onshore) (application ref: 6.5.5.11); and
- Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12).

2 The chapter has also been informed by the following other ES chapters:

- Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1);
  - Volume 3, Chapter 2: Landscape and Visual Impact Assessment (LVIA) (application ref: 6.3.2);
  - Volume 3, Chapter 7: Hydrology, Hydrogeology and Flood Risk (application ref: 6.3.7);
  - Volume 3, Chapter 10: Airborne Noise and Vibration (application ref: 6.3.10); and
  - Volume 3, Chapter 11: Air Quality (application ref: 6.3.11).
- 3 Other ecological receptors which are covered in separate chapters are as follows:
- Volume 2, Chapter 4: Offshore Ornithology (application ref: 6.2.4);
  - Volume 2, Chapter 5: Benthic Ecology (application ref: 6.2.5);
  - Volume 2, Chapter 6: Fish and Shellfish (application ref: 6.2.6); and
  - Volume 2, Chapter 7: Marine Mammals (application ref: 6.2.7).

## 5.2 Statutory and Policy Context

- 4 This section identifies the legislation and policy that has informed the assessment of effects with respect to Onshore Biodiversity and Nature Conservation. A summary of the key provisions within the relevant legislation and policy is provided in Table 1.
- 5 Further information on policies relevant to the EIA and their status is provided in Volume 1, Chapter 2: Policy and legislative context (application ref: 6.1.2).

### 5.2.1 Relevant Legislation

#### Conservation of Habitats and Species Regulations 2017 (as amended)

- 6 The Conservation of Habitats and Species Regulations 2017 (as amended)(the Habitats Regulations) are one of the pieces of domestic law that transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) (known as the Nature Directives) into English and Welsh law. These regulations were last amended in 2019 to make them operable from 1 January 2021 despite the UK's withdrawal from the European Union (EU).
- 7 The Habitats Regulations cover the requirements for protecting sites that are internationally important for threatened habitats and species and set out a legal framework for species requiring strict protection.

#### Ramsar Convention

- 8 The Convention on Wetlands of International Importance especially as Waterfowl Habitat ('Ramsar Convention' or 'Wetlands Convention') was adopted in Ramsar, Iran in February 1971 and came into force in December 1975. It provides the only international mechanism for protecting sites of global importance and is thus of key conservation significance.
- 9 The UK ratified the Ramsar Convention and designated its first Ramsar Sites in 1976. The designation of UK Ramsar Sites has generally been underpinned through prior notification of these areas as Sites of Special Scientific Interest (SSSI). Government and the devolved administrations have also issued policy statements relating to Ramsar Sites which extend to them the same protection at a policy level as Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

## Wildlife and Countryside Act 1981

10 The Wildlife and Countryside Act 1981, consolidated and amended existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Birds Directive. The Wildlife and Countryside Act is divided into four parts.

- Part I is concerned with the protection of wildlife,
- Part II relates to the countryside and national parks (and the designation of protected areas),
- Part III covers public rights of way,
- Part IV deals with miscellaneous provisions of the Act.

## Protection of Badgers Act 1992

11 The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

## Hedgerow Regulations 1997

12 These regulations, enforced under the Environment Act 1995, restrict the removal of hedgerows. To be in protected under the regulations, a hedgerow must be at least 30 years old and over 20 m long and in addition must fulfil one of a number of criteria set out in the legislation.

## Well-being of Future Generations Act 2015

13 The Act includes a set of seven statutory sustainable development goals for Wales and place a well-being duty on public bodies. The goals encompass the need to act on the causes and adapt to the consequences of climate change, as well as ensuring that Wales is globally responsible in its actions.

## Environment (Wales) Act 2016

- 14 The Environment (Wales) Act 2016 seeks to ensure that natural resources are managed sustainably such that they are able to deliver social, economic and environmental benefits, including nature-based solutions to climate change adaptation and mitigation.

### 5.2.2 Relevant National (England and Wales) Planning Policy

#### National Policy Statements

- 15 The National Policy Statements (NPS) are a series of decision-making documents to guide decision making on Nationally Significant Infrastructure Projects (NSIP). Decisions under the Planning Act 2008 must be made in accordance with the relevant NPS where one is in force, and this assessment therefore makes explicit reference to the relevant NPS requirements.
- 16 Those relevant to this assessment are limited to Overarching National Policy Statement for Energy (EN-1).
- 17 Guidance specific to offshore wind farms is provided in NPS for Renewable Energy Infrastructure (EN-3), however the guidance regarding biodiversity relates to offshore impacts; for more generic ecology and biodiversity effects EN-3 refers to the relevant sections of EN-1. Similarly, guidance in relation to electricity network projects is provided within NPS for Electricity Networks Infrastructure (EN-5), however, with regard to biodiversity considerations for non-overhead line projects, EN-5 refers to relevant sections of EN-1.
- 18 In addition to the current NPS, draft NPSs were consulted upon in September to November 2021. The draft NPSs have been reviewed to determine the emerging expectations and changes from previous iterations of the NPSs. This includes the Draft Overarching NPS EN-1 (DECC, 2021a), draft EN-3 (DECC, 2021b) and draft EN-5 (DECC, 2021c).



### 5.2.3 Relevant Welsh Government Policy

#### Future Wales: The National Plan 2040

- 19 Future Wales: the National Plan 2040 is the national development framework, setting the direction for development in Wales to 2040. It addresses key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of communities.

#### Planning Policy Wales Edition 11 (2021)

- 20 Planning Policy Wales (PPW) sets out set out the Welsh Government's land use principles and what development plans must achieve. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. re
- 21 The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation.

#### Technical Advice Note 5 Nature Conservation and Planning

- 22 Technical Advice Note 5 provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation.

#### Natural Resources Policy (2017)

- 23 The focus of the Natural Resources Policy (NRP) is on improving management of natural resources. It is a key part of the delivery framework for the sustainable management of natural resources established by the Environment (Wales) Act 2016. It is also key to the delivery of the Well-being Goals set out within the Well-being of Future Generations (Wales) 2015Act and Wales international contribution to the delivery of the United Nation's (UN's) Global Goals.

## Natural Resources Wales (NRW) North East Wales Area Statement

- 24 Natural Resources Wales (NRW) has developed seven Area Statements that relate to different regions of Wales. Viewed together, the seven Area Statements presents NRW's response to the NRP. The North East Area Statement, which is the relevant area for AyM, identifies five themes which are provided in Table 1.

## Nature Recovery Action Plan for Wales 2020 – 2021

- 25 The above plan identifies five immediate priorities for further action:
- Aligning the responses to the climate emergency with the biodiversity crisis;
  - Addressing the post EU exit funding gap for agri-environment measures;
  - Providing spatial direction for targeting action for biodiversity;
  - Improving the condition of the Protected Sites Network; and
  - Exploring new and sustainable funding mechanisms for biodiversity action.
- 26 Further, more specific objectives are included in Table 1

### 5.2.4 Local Planning Policy

#### Denbighshire County Council (DCC) Adopted Local Development Plan (LDP) 2006 - 2018

- 27 DCC LDP 2006 – 2018 guides planning decisions within the county. It includes two policies of particular relevance to biodiversity and nature conservation which aim to protect key areas of importance and to conserve natural resources, see Table 1 for details.
- 28 The new LDP 2018 – 2033 is being progressed, and a draft Preferred Strategy (May 2019) has been prepared.

### 5.2.5 Guidance

- 29 The ecological impact assessment (EcIA) presented in this chapter has been carried out in accordance with the principles contained within:

- 'Guidelines for Preliminary Ecological Appraisal', 2nd edition, (CIEEM, 2017);
  - 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1'. (CIEEM, 2019); and
  - BS42020: Biodiversity – Code of Practice for Planning and Development.
- 30 Additional guidance in respect of the survey and/ or evaluation of habitats or species are referenced in the associated technical appendices and/ or the Method sections (Sections 5.4 and 5.5) below.

Table 1: Legislation and policy context

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
Legislation		
Conservation of Habitats and Species Regulations 2017	Protection of Special Protection Areas (SPAs) and Special Areas of Conservation (SAC). Protection of certain animal species and their places or rest or shelter. Protection of certain plant species.	The relevant provisions of the Conservation of Habitats and Species Regulations are addressed in Sections 5.4, 5.7, 5.9 and Sections 0-5.13. It is noted that effects on SPAs and SACs have been scoped out of the assessment due to intervening distance and lack of pathways by which qualifying features could be affected (see Table 5).
Wildlife and Countryside Act 1981	Protection of certain animals and plant species and their place of shelter or protection Prohibition of allowing certain plant species to grow or spread in the wild.	The relevant provisions of the Wildlife and Countryside Act are addressed in Sections 5.4, 5.7, 5.9 and Sections 0-5.13.
Protection of Badgers Act 1992	Protection of badgers <i>Meles meles</i> from killing and injury, and badger setts from disturbance.	The relevant provisions of the Protection of Badgers Act are addressed in Sections 5.4, 5.7, 5.9 and Sections 0-5.13.
Hedgerow Regulations 1997	Protection of hedgerows deemed "important" under ecological or historical criteria set out in the Regulations.	The relevant provisions of the Hedgerow Regulations are addressed in Sections 5.4, 5.7, 5.9 and 0.

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
Well-being of Future Generations Act (Wales) 2015	Requires development to be sustainable. Part 2 Section 4 Table 1 includes the goal:  <i>“A resilient Wales: A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change”.</i>	The relevant provisions of the Well-being of Future Generations Act (Wales) 2015 are addressed in Sections 5.9 -5.13.
Environment (Wales) Act 2016	Part 1 Section 6 of the Act introduces a biodiversity duty, that requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions and in so doing promote the resilience of ecosystems. Section 7 of the Environment (Wales) Act 2016 lists living organisms and types of habitat in Wales, considered to be of key significance to sustain and improve biodiversity in relation to Wales (hereafter referred to as “S7 Habitats” or “S7 species”).	The relevant provisions of the Environment (Wales) Act 2016 are addressed in Sections 5.4, 5.7, 5.9 and Sections 0-5.13.
National Planning Policy		
NPS EN-1	NPS EN-1 notes in paragraph 4.3.1 that prior to an order to grant development consent, due	Effects on SPAs, SACs and Ramsar sites have been scoped out of the assessment due to

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	consideration must be given as to whether the project may have a significant effect on a European site, or on any site to which the same protection is applied as a matter of policy, either alone or in combination with other plans or projects.	intervening distance and lack of pathways by which qualifying features could be affected (see Table 5).
NPS EN-1	<p>Paragraph 5.3 of NPS EN-1 discusses the generic biodiversity and geological conservation effects associated with energy infrastructure, recognising the need to protect the most important biodiversity and geological conservation interests.</p> <p>Where the development is subject to EIA, the applicant should ensure that the ES clearly sets out any effects on internationally, nationally and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity (NPS Section 5.3.3).</p> <p>The EIA should illustrate where the project has been able to use opportunities to conserve and</p>	<p>Effects on internationally, nationally and locally designated sites of ecological conservation importance (where relevant), on protected species and on habitats and other species identified as being of importance for the conservation of biodiversity are assessed in Sections 0-5.13.</p> <p>Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement, are included in the OLEMP (application ref: 8.4).</p>

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	enhance biodiversity interests (Section 5.3.4) and should aim to avoid significant harm through the use of mitigation and considering reasonable alternatives. Where significant harm cannot be avoided, then appropriate compensation measures should be provided (Section 5.3.7).	
Draft NPS EN-1	<p>Draft NPS EN-1 notes in paragraph 4.2.9 that prior to an order to grant development consent, due consideration must be given as to whether the project may have a significant effect on a European site, or on any site to which the same protection is applied as a matter of policy, either alone or in combination with other plans or projects.</p> <p>Paragraph 4.2.10 goes on to describe the steps and further information the applicant should provide where the proposed development is likely to adversely impact the integrity of Habitat Regulation Assessment (HRA) sites</p>	Effects on SPAs, SACs and Ramsar sites have been scoped out of the assessment due to intervening distance and lack of pathways by which qualifying features could be affected (see Table 5).
Draft NPS EN-1	Paragraph 5.4.3 sets out that where the development is subject to EIA the applicant should ensure that the ES clearly sets out any	Effects on internationally, nationally and locally designated sites of ecological conservation importance (where relevant),

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity.	on protected species and on habitats and other species identified as being of importance for the conservation of biodiversity are assessed in Sections 0-5.13.  Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement, are included in the OLEMP (application ref: 8.4).
Draft NPS EN-1	<p>The draft NPS EN-1 encourages the applicant to consider how proposals can contribute to Biodiversity Net Gain (BNG) in Paragraph 5.4.4, noting that the scope of potential gains is dependant on the type, scale and location of each project. Paragraph 5.4.17 of the draft NPS adds that</p> <p><i>‘Proposals should also consider any opportunities to maximise the restoration, creation, and enhancement of wider biodiversity. Consideration should be given to improvements to, and impacts on, habitats and species in, around and</i></p>	Proposals to provide enhancement been discussed with NRW and DCC via Onshore Ecology Expert Topic Group (ETG) meetings held in November 2021. These proposals which were agreed in principle with ETG members are presented within the Outline Landscape and Ecology Mitigation plan (OLEMP), that is provided in Document 8.4 (application ref: 8.4). The OLEMP sets out the in-principle measures which will be implemented to avoid, reduce, mitigate or compensate for potential impacts on landscape and biodiversity resources and measures intended to provide biodiversity



LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	<p><i>beyond developments, for wider ecosystem services and natural capital benefits, beyond those under protection and identified as being of principal importance. This may include considerations and opportunities identified through Local Nature Recovery Strategies, and national goals and targets set through the government's strategy for nature for example.'</i></p> <p>In addition, Paragraph 5.4.19 states that:</p> <p><i>'Applicants should consider producing and implementing a Biodiversity Management Strategy as part of their development proposals. This could include provision for biodiversity awareness training to employees and contractors so as to avoid unnecessary adverse impacts on biodiversity during the construction and operation stages.'</i></p>	<p>enhancements due to the onshore elements of AyM. The OLEMP would therefore serve as the <i>de facto</i> Biodiversity Management Strategy referenced by Draft NPS EN-1.</p> <p>The OLEMP sets out the key elements that will be secured in the final Landscape and Ecology Mitigation Plan (LEMP) which will be agreed with DCC, in consultation with Natural Resources Wales (NRW) prior to any construction works commencing.</p>

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
Welsh Government Policy		
Future Wales: The National Plan 2040	<p>Policy 9 – Resilient Ecological Networks and Green Infrastructure states that to ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure, the Welsh Government will work with key partners to:</p> <ul style="list-style-type: none"> <li>➤ identify areas which should be safeguarded and created as ecological networks for their importance for adaptation to climate change, for habitat protection, restoration or creation, to protect species, or which provide key ecosystems services, to ensure they are not unduly compromised by future development; and</li> <li>➤ identify opportunities where existing and potential green infrastructure could be maximised as part of place-making, requiring the use of nature-based solutions as a key mechanism for securing sustainable growth, ecological connectivity, social equality and well-being.</li> </ul> <p>Planning authorities should include these areas and/or opportunities in their development plan strategies and policies in order to promote and</p>	<p>Designated sites, protected species, and habitats and other species identified as being of importance for the conservation of biodiversity, are identified in Section 5.7. Effects upon important ecological features are assessed in Sections 0-5.13.</p> <p>Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4). These include woodland planting proposals that seek to address the requirement to promote the resilience of ecosystems.</p>

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	safeguard the functions and opportunities they provide. In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals through innovative, nature-based approaches to site planning and the design of the built environment.	
Future Wales: The National Plan 2040	Policy 17 - Renewable and Low Carbon Energy and Associated Infrastructure states that proposals should describe the net benefits the scheme will bring in terms of social, economic, environmental and cultural improvements to local communities.	Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4).
Planning Policy Wales Edition 11 2021	Section 6.4.3 states that Development plan strategies, policies and development proposals must consider the need to: <ul style="list-style-type: none"> <li>▲ support the conservation of biodiversity, in particular the conservation of wildlife and habitats;</li> <li>▲ ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;</li> </ul>	Designated sites, protected species, and habitats and other species identified as being of importance for the conservation of biodiversity, are identified in Section 5.7. Effects upon important ecological features are assessed in Sections 0-5.13. Outline proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4).

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	<ul style="list-style-type: none"> <li>▲ ensure statutorily and non-statutorily designated sites are properly protected and managed;</li> <li>▲ safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and</li> <li>▲ secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.</li> </ul>	
Planning Policy Wales Edition 11 2021	<p>Section 6.4.5 states that planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity. In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:</p> <ul style="list-style-type: none"> <li>▲ diversity between and within ecosystems;</li> </ul>	<p>Effects upon important ecological features are assessed in Sections 0-5.13.</p> <p>Outline proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4).</p>

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	<ul style="list-style-type: none"> <li>the connections between and within ecosystems;</li> <li>the scale of ecosystems;</li> <li>the condition of ecosystems including their structure and functioning; and</li> <li>the adaptability of ecosystems.</li> </ul>	
Planning Policy Wales Edition 11 2021	<p>Section 6.4.6 states that in fulfilling this duty, planning authorities must have regard to:</p> <ul style="list-style-type: none"> <li>the list of habitats and species of principal importance for Wales, published under S7 of the Environment (Wales) Act 2016;</li> <li>the State of Natural Resources Report (SoNaRR), published by NRW; and</li> <li>any Area Statement that covers all or part of the area in which the authority exercises its functions.</li> </ul>	Important ecological features are identified in Section 5.7, with reference to the relevant documents referred to here.
Planning Policy Wales Edition 11 2021	<p>Section 6.4.21 states that planning authorities must follow a stepwise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for; enhancement must be secured wherever possible.</p>	Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4).

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
Technical Advice Note 5 2009	<p>Includes the following key principles of positive planning for nature conservation:</p> <ul style="list-style-type: none"> <li>➤ work to achieve nature conservation objectives through a partnership between local planning authorities, CCW (now NRW), the Environment Agency Wales (also now NRW), voluntary organisations, developers, landowners and other key stakeholders;</li> <li>➤ integrate nature conservation into all planning decisions looking for development to deliver social, economic and environmental objectives together over time;</li> <li>➤ ensure that the UK's international and national obligations for site, species and habitat protection are fully met in all planning decisions;</li> <li>➤ look for development to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally;</li> <li>➤ help to ensure that development does not damage, or restrict access to, or the study of, geological sites and features or impede the evolution of natural processes and systems especially on rivers and the coast;</li> </ul>	<p>Important ecological features are identified in Section 5.7.</p> <p>Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4). Effects upon important ecological features are assessed in Sections 0-5.13.</p>

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	<ul style="list-style-type: none"> <li>▲ forge and strengthen links between the town and country planning system and biodiversity action planning particularly through policies in local development plans and the preparation of supplementary planning guidance that adds value to Local Biodiversity Action Plans (LBAPs) by highlighting the ways in which the planning system can help to deliver the objectives of LBAPs in practical ways;</li> <li>▲ plan to accommodate and reduce the effects of climate change by encouraging development that will reduce damaging emissions and energy consumption and that help habitats and species to respond to climate change.</li> </ul>	
Natural Resources Policy (2017)	A key principle is <i>“Through actions such as increasing resource efficiency or reducing pollution, the aim is to build greater resilience into our ecosystems. Those ecosystems are the complex natural systems on which we depend. Healthy, resilient ecosystems are more able to address the increasing pressures and demands that we face as a society. Their resilience is essential if we are to be able to continue to rely on</i>	Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4). These proposals seek to address the requirement to promote the resilience of ecosystems.

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	<i>our ecosystems for the vital range of benefits they give us."</i>	
NRW North East Wales Area Statement	<ul style="list-style-type: none"> <li>▲ The North East Area Statement identifies five themes:</li> <li>▲ Climate emergency: resilience and adaptation;</li> <li>▲ Develop and improve urban/rural green infrastructure;</li> <li>▲ Increasing woodland cover for social, environmental and economic benefits;</li> <li>▲ Promoting the resilience of ecosystems in maintaining and enhancing biodiversity; and</li> <li>▲ Protecting water and soil through farming and sustainable land management.</li> </ul>	Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4). These include woodland planting proposals which seek to address the requirement to promote the resilience of ecosystems.
Nature Recovery Action Plan (NRAP) for Wales 2020 – 2021	<ul style="list-style-type: none"> <li>▲ The objectives of the NRAP are:</li> <li>▲ Engage and support participation and understanding to embed biodiversity throughout decision making at all levels;</li> <li>▲ Safeguard species and habitats of principal importance and improve their management;</li> <li>▲ Increase the resilience of our natural environment by restoring degraded habitats and habitat creation;</li> <li>▲ Tackle key pressure on species and habitats;</li> </ul>	Important ecological features are identified in Section 5.7 and effects upon them are assessed in Sections 0-5.13. Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4).



LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	<ul style="list-style-type: none"> <li>➤ Improve our evidence, understanding and monitoring; and</li> <li>➤ Put in place a framework of governance and support for delivery.</li> </ul>	
<b>Local Planning Policy</b>		
DCC LDP 2006 - 2018	<p>Policy VOE 1 – Key Areas of importance: states that the following areas will be protected from development that would adversely affect them. Development proposals should maintain and, wherever possible, enhance these areas for their characteristics, local distinctiveness, and value to local communities in Denbighshire:</p> <ul style="list-style-type: none"> <li>➤ Statutory designated sites for nature conservation; and</li> <li>➤ Local areas designated or identified because of their natural landscape or biodiversity value.</li> </ul>	<p>Effects on statutory designated sites have been scoped out of the assessment due to intervening distance and lack of pathways by which qualifying features could be affected (see Table 5).</p> <p>Effects on locally designated sites are assessed in Sections 0-5.13.</p>
DCC LDP 2006 - 2018	<p>Policy VOE 5 – Conservation of natural resources states that development proposals that may have an impact on protected species or designated sites of nature conservation will be required to be supported by a biodiversity statement which must have regard to the County</p>	<p>Designated sites, protected species, and habitats and other species identified as being of importance for the conservation of biodiversity, are identified in Section 5.7.</p>

LEGISLATION/ POLICY	KEY PROVISIONS OF RELEVANCE TO THIS ASSESSMENT	SECTION WHERE KEY PROVISIONS ADDRESSED
	biodiversity aspiration for conservation, enhancement and restoration of habitats and species... Planning permission will not be granted for development proposals that are likely to cause significant harm to the qualifying features of internationally and nationally designated sites of nature conservation, priority habitats, priority species, regionally important geodiversity sites, or to species that are under threat.	Effects upon important ecological features are assessed in Sections 0-5.13. Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4).
DCC LDP draft preferred strategy 2018 - 2033	<p>One of the draft Key Policies is for the Natural and Built Environment and states:</p> <p>Denbighshire's natural and built environment will be protected from development that adversely affects their protected characteristics, features or their setting.</p> <p>All proposals must contribute towards the preservation and, where possible, the enhancement of the natural and built environment.</p>	<p>Designated sites, protected species, and habitats and other species identified as being of importance for the conservation of biodiversity, are identified in Section 5.7.</p> <p>Effects upon important ecological features are assessed in Sections 0-5.13.</p> <p>Embedded mitigation measures are set out in Section 5.9. Outline proposals for mitigation and compensation, along with proposals for biodiversity enhancement are included in the OLEMP (application ref: 8.4).</p>

## 5.3 Consultation and scoping

- 31 To date, consultation with regards the scope of the EclA has taken place via the Scoping Report (Innogy, 2020), via the AyM Evidence Plan (Onshore Ecology Expert Topic Group (ETG)) process, and statutory consultation under Section 42 of the Planning Act 2008.
- 32 A Scoping Opinion for AyM was sought from the Secretary of State (SoS) which included consultation responses from NRW, RSPB, Conwy County Borough Council (CCBC)<sup>i</sup> and NWWT (PINS, 2020). This included responses to the proposed assessment methodology for further consideration.
- 33 The ETG consultation process comprised the provision of technical papers on proposed methodology, provision of a draft copy of the Preliminary Ecological Appraisal (PEA) report, summary of results following completion of surveys, provision of a draft copy of landscape and ecology proposals at the Onshore Substation (OnSS) and discussion with NRW, DCC, Royal Society for the Protection of Birds (RSPB) and North Wales Wildlife Trust (NWWT). Onshore Ecology ETG meetings were held on 10 December 2019 (pre-Scoping), 21 September 2020, 26 February 2021 and, following the statutory consultation period described below, 24 November 2021
- 34 AyM statutory consultation, under Section 42 of the Planning Act 2008, ran from 31 August to 11 October 2021, a period of six weeks. A Preliminary Environmental Information Report (PEIR) was published as part of formal consultation which provided preliminary information on onshore ecology within Volume 3, Chapter 5: Biodiversity and Nature Conservation.
- 35 Further responses were received from Section 42 consultation in October 2021 following submission of the Preliminary Environmental Information Report (PEIR) in August 2021.

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<sup>i</sup> At scoping stage parts of the Area of Search included Conwy. This is no longer the case and as such further consultation with CCBC has ceased and CCBC consultation is excluded from Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12).

- 36 Further statutory consultation was undertaken in February 2022 on areas where the Order Limits (OL) extend beyond those included in the PEIR that were consulted on in Autumn 2021.
- 37 A comprehensive summary of relevant consultation comments received relating to onshore biodiversity and nature conservation, and associated responses is included at Annex 5.12 Consultation Feedback (application ref 6.5.5.12).

## 5.4 Scope and methodology

- 38 The assessment scope has been informed by relevant national and local planning policy and guidance, established best practice and experience, as well as via the consultation process.
- 39 The EclA seeks to:
- establish baseline conditions and identify important ecological features present (or those that could be present);
  - identify important ecological features that could be impacted by the project;
  - identify potential impacts and their significance; and
  - provide details for mitigation, compensation and enhancements, (noting that at this stage some recommendations are outline, to be finalised as part of the detailed project design (post consent)).
- 40 The design for the onshore elements is described in detail within Volume 3, Chapter 1. The EclA parameters are summarised in this chapter, in Section 5.8.

### 5.4.1 Study area

- 41 Assessment has been undertaken within a study area that varies depending upon the ecological feature and that has been defined and agreed with key stakeholders during preliminary consultation as described in Table 2.

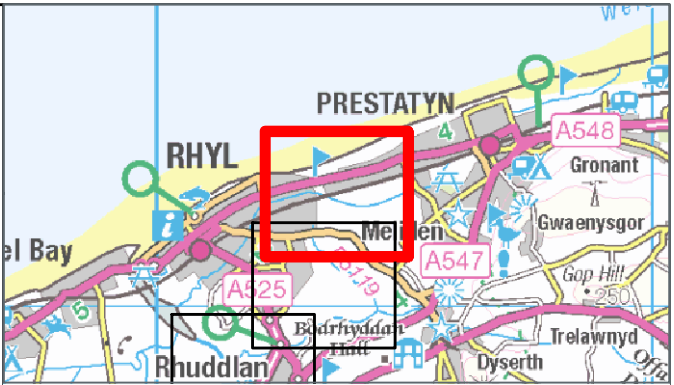
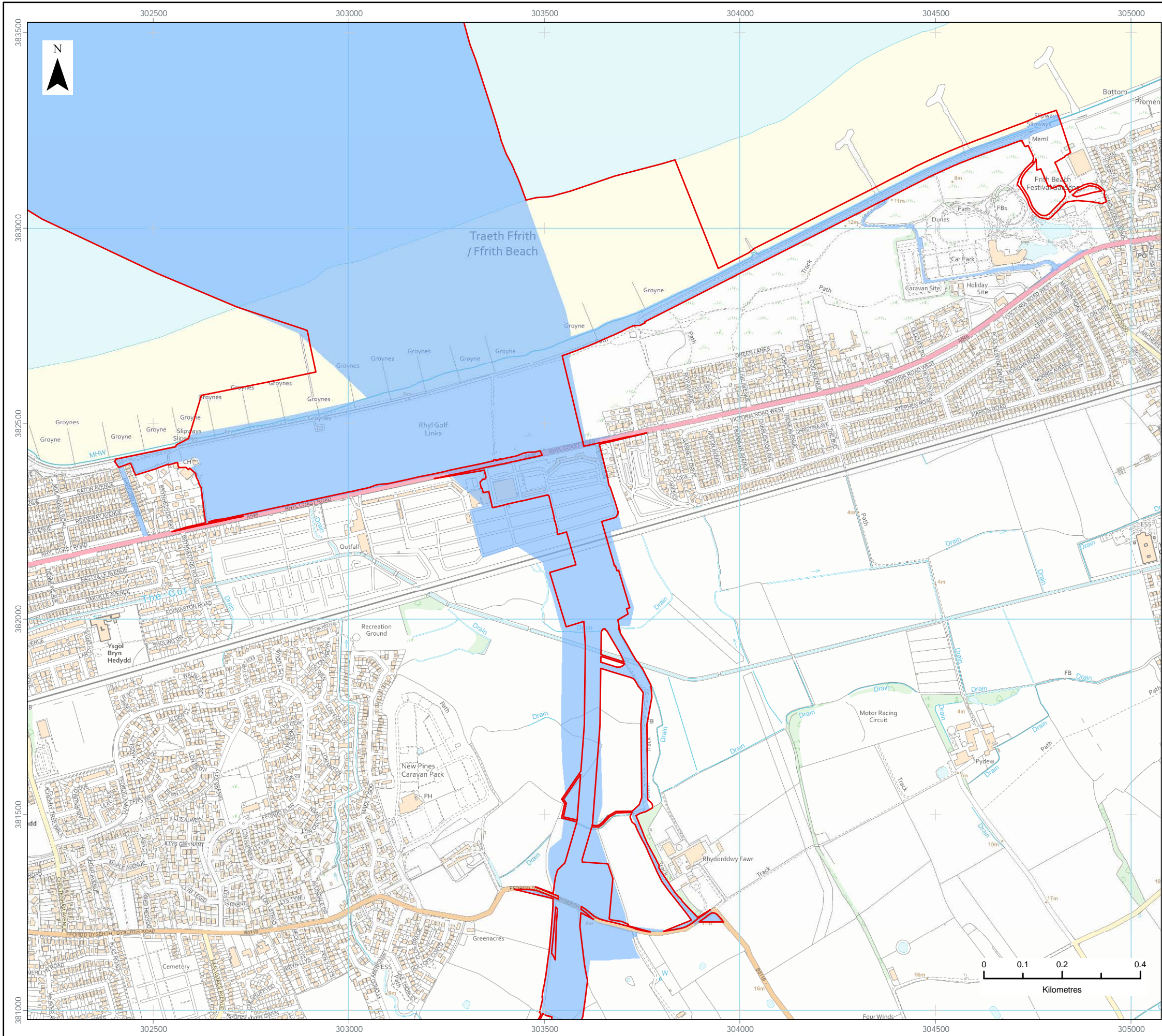
Table 2: Study Areas

ECOLOGICAL FEATURE	STUDY AREA
Habitats and protected/ notable species (except those mentioned below)	<p>Within the Order Limits (OL), plus the surrounding 100 m from the OL (i.e. 100 m either side of the onshore ECC and to all sides of any other infrastructure or works areas such as Temporary Construction Compounds (TCCs) and access tracks). This includes all areas landward of Mean High Water Springs (MHWS). Areas seaward of MHWS are covered in the relevant offshore chapters (Volume 2, Chapters 4-7).</p> <p>The 100 m buffer is based upon the premise that indirect impacts (such as noise or dust deposition) to un-designated habitats and/or species (except those noted at the bullet points below) are unlikely to be significant beyond 100 m.</p>
Wintering birds	<p>Intertidal and wetland habitats and coastal grasslands, within 250 m of the OL, where these could potentially be used by significant numbers of wintering waterbirds, within 250 m of the OL (see Figure 1 in Volume 5, Annex 5.2 (application ref: 6.5.5.2)). The 250 m buffer is based on evidence that behavioural responses to disturbance are unlikely beyond a maximum distance of 250 m for waders (Cutts et al. (2013). This was extended to cover a buffer of up to 1,000 m at the landfall where it is possible that driven piling may be required, which can cause disturbance over greater distances. See Volume 5, Annex 5.2 (application ref: 6.5.5.2) for further detail.</p>
Breeding birds	<p>In areas in which significant effects on protected or notable bird species are possible, and which are within 250 m of the OL where breeding waders or wildfowl may be present and</p>

ECOLOGICAL FEATURE	STUDY AREA
	within 100 m of the OL elsewhere. See Volume 5, Annex 5.1 (application ref: 6.5.5.1) and Annex 5.8 (application ref: 6.5.5.8) for further detail.
Otter, water vole and GCN.	<p>Water courses and water bodies up to 250 m from the OL where these may be suitable for use by otter, water vole or GCN.</p> <p>A 250 m up/downstream search area has been used for otter and water vole. This is because these are highly mobile, territorial species and it is possible that effects from the onshore elements of AyM, such as habitat loss, may impact populations of these species that occur outside the OL.</p> <p>The 250 m search area for GCN breeding ponds is based upon published guidance (English Nature, 2001, noting no Welsh equivalent exists) that states that the majority of adult GCN stay within 250 m of breeding ponds and that beyond 250 m impacts to GCN are normally low.</p>
Designated Sites	Intertidal (where relating to birds) and onshore elements of nationally designated sites (Sites of Special Scientific Interest (SSSI), Local Nature Reserves (LNR)) and Local Wildlife Sites (LWS) within 2 km of the onshore OL and internationally designated sites SAC, SPA and Ramsar Sites) within 10 km.

- 42 For further detail including the rationale for these distances, please refer to Table 76 in the Scoping Report and Section 1.2 of the PEA report (Volume 5, Annex 5.1 (application ref: 6.5.5.1)). Please note that the OL presented at statutory consultation differs from that presented in this ES, as shown on Figure 1 to Figure 5. Surveys were based on a draft OL under consideration at the time of survey (plus relevant buffers) and the implications of subsequent changes to the OL, following survey completion, are further discussed in Section 5.6.





LEGEND

- Order Limits
- Draft Order Limits at Statutory Consultation

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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM*

FIGURE TITLE:  
**DRAFT ORDER  
LIMIT CHANGES**

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 1**

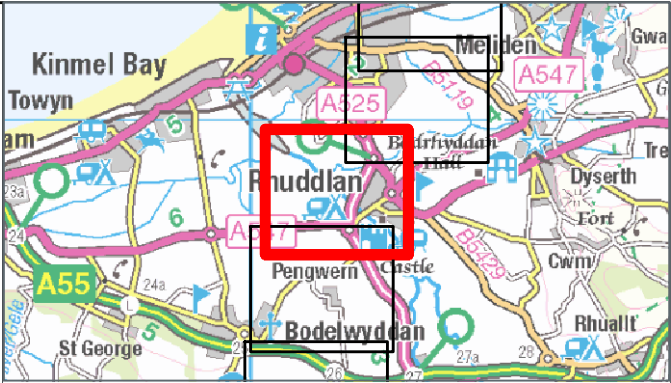
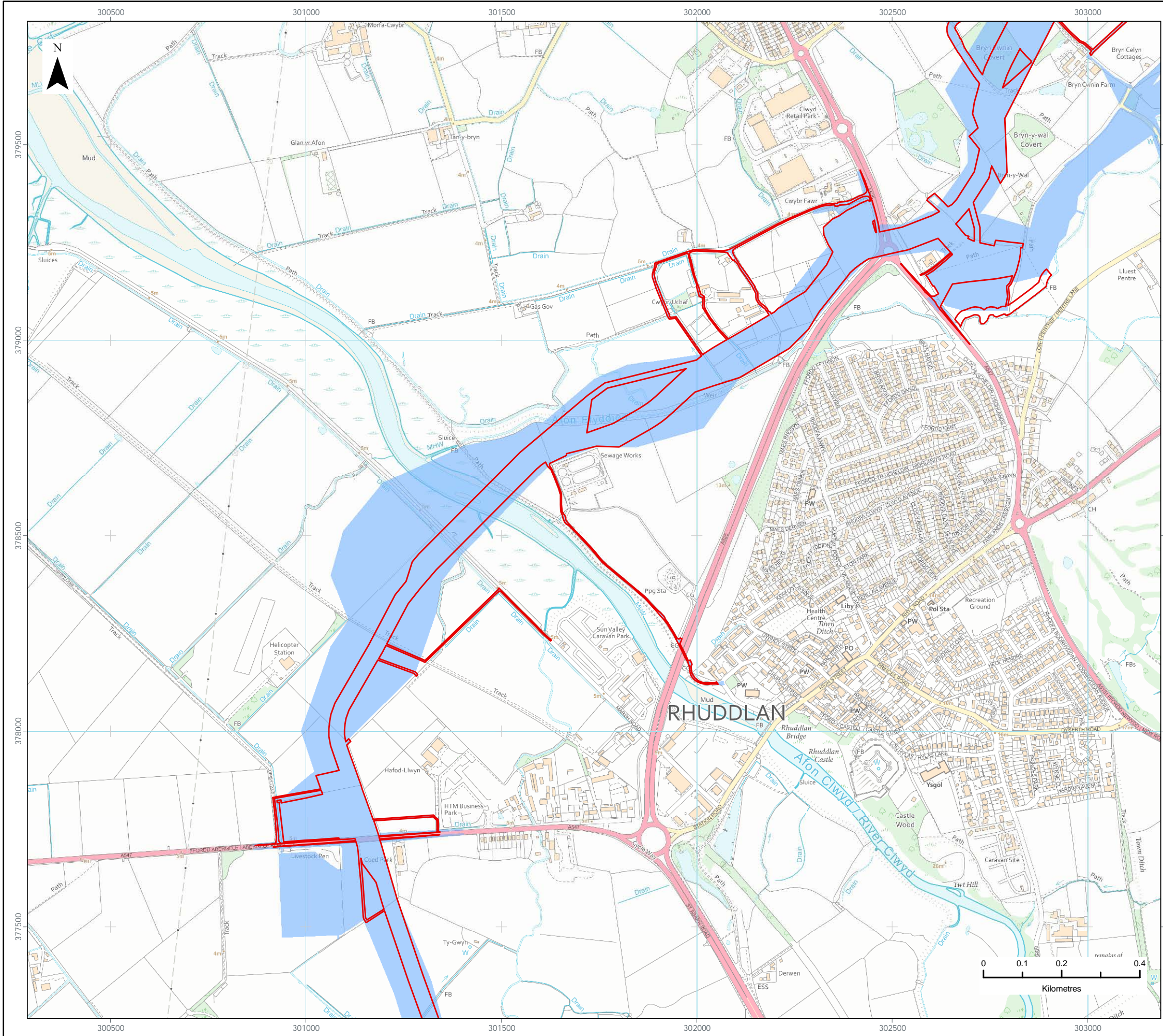
SCALE: 1:10,000 PLOT SIZE: A3 DATUM: ODN COORDINATE SYSTEM: British National Grid

Fferm Wynt Alltraeth  
**AWEL Y MÔR**  
Offshore Wind Farm









LEGEND

- Order Limits
- Draft Order Limits at Statutory Consultation

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PROJECT TITLE:  
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FIGURE TITLE:  
**DRAFT ORDER  
LIMIT CHANGES**

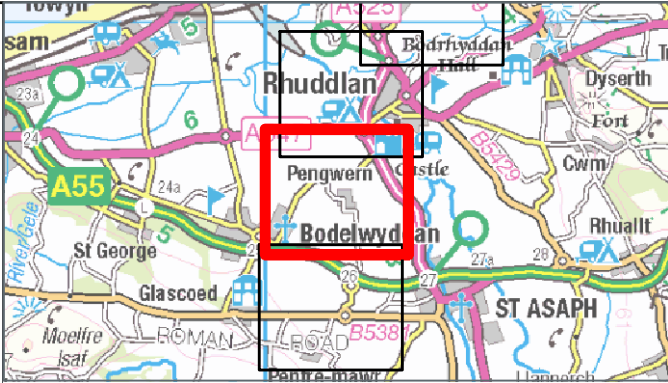
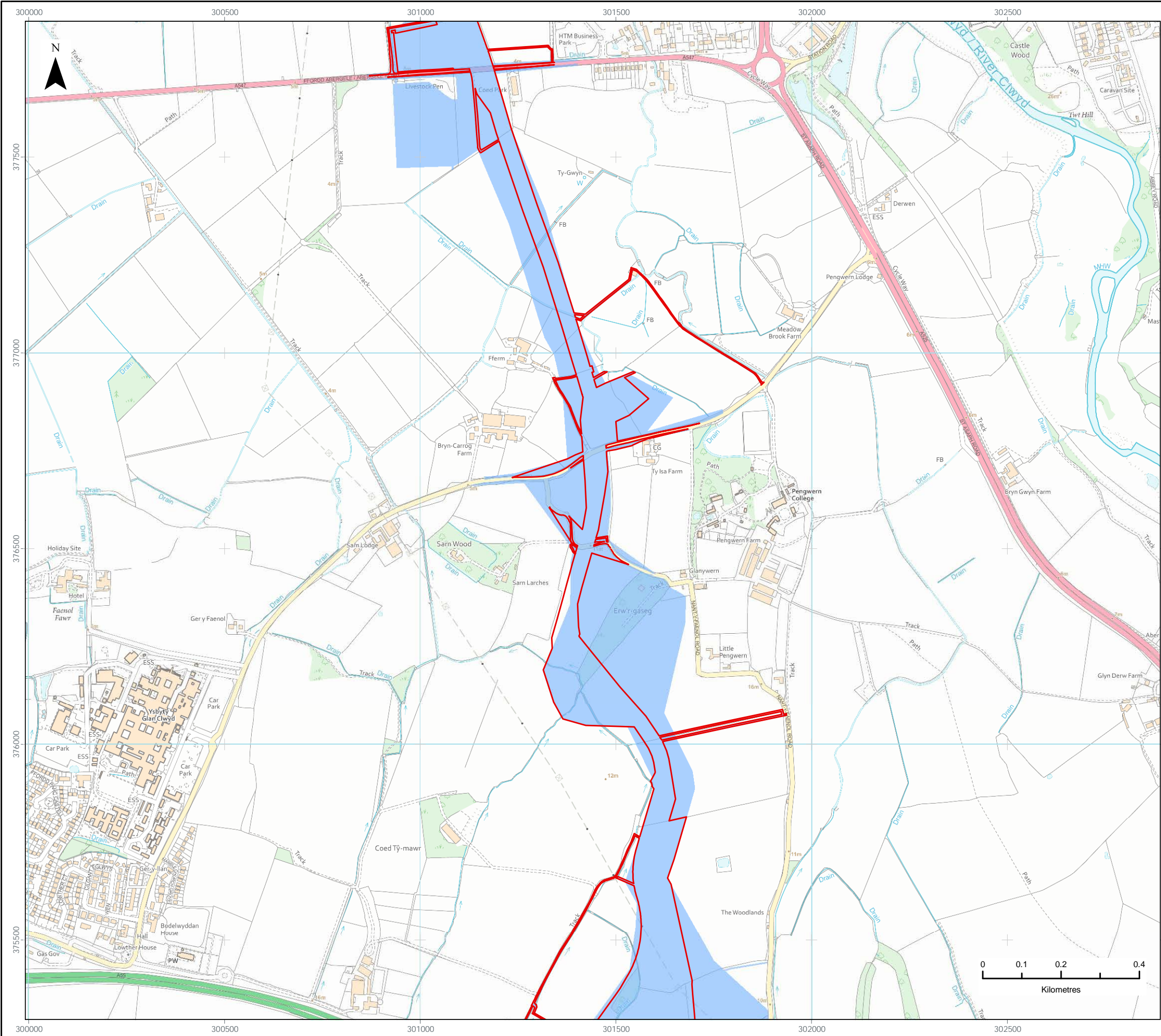
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 3**

SCALE: <b>1:10,000</b>	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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Fferm Wynt Alltraeth  
**AWEL Y MÔR**  
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LEGEND

- Order Limits
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PROJECT TITLE:  
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FIGURE TITLE:  
**DRAFT ORDER  
LIMIT CHANGES**

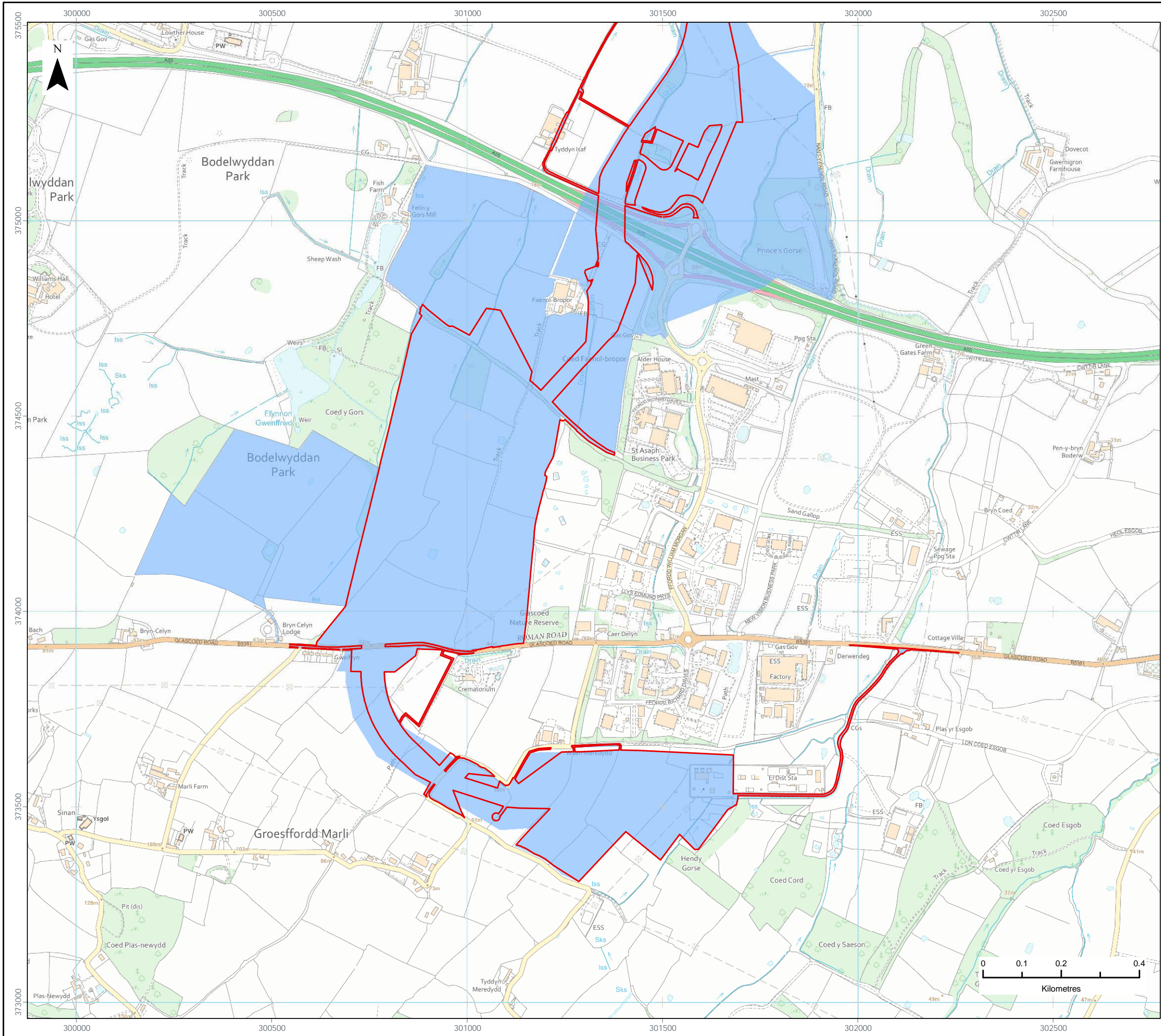
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1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 4**

SCALE: **1:10,000** PLOT SIZE: A3 DATUM: ODN COORDINATE SYSTEM: British National Grid

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LEGEND

- Order Limits
- Draft Order Limits at Statutory Consultation

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PROJECT TITLE:  
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FIGURE TITLE:  
**DRAFT ORDER  
LIMIT CHANGES**

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 5**

SCALE: **1:10,000** PLOT SIZE: A3 DATUM: ODN COORDINATE SYSTEM: British National Grid

Fferm Wynt Alltraeth  
**AWEL Y MÔR**  
Offshore Wind Farm

43 For clarity (given the various study and survey areas used and described in Table 2) hereafter within this report the following terms are used to mean:

- ▲ Study area: This is the 2 km zone around the onshore OL.
- ▲ Survey area: This is the 100 m zone around the onshore OL.
- ▲ Areas other than these, which have been included in the EcIA (such as ponds within 250 m, or internationally designated sites within 10 km), are specifically described.

## 5.4.2 Baseline Data Collection

44 Baseline data collection has been undertaken by a combination of desk study and field survey.

### Desk Study

45 A comprehensive desk-based data search has been undertaken and is described in the PEA Report (Volume 5, Annex 5.1 (application ref: 6.5.5.1)). This included gathering details for statutory and non-statutory designated sites for nature conservation, as well as pre-existing ecological records for protected and notable species (e.g. from the local biological records centre Cofnod). Due to the time elapsed, subsequent to the PEA, an updated data request was made to Cofnod for site and species records within c.2km of the Draft OL that was presented at Statutory Consultation. Relevant ecological data received up to 8th September 2021 from Cofnod, plus data from DCC received in November 2021 have been included in this report.

### Field Survey

46 A suite of field surveys have been undertaken and reports for each, including the scope and method, are provided at Volume 5, Annexes 5.2-5.10. A brief summary of survey methods is provided below and a brief summary of key findings is provided in Section 5.7.



## Habitat & Hedgerow Survey

- 47 Habitats were classified and mapped using UKHab v1.1 (Butcher *et al.*, 2020), during autumn 2020 and late spring/early summer 2021. A further survey update was made in December 2021 to include a small additional area at Y Ffrith, west of North Wales Bowling Centre, where a TCC is now proposed.
- 48 More detailed botanical recording was undertaken at areas that are known or suspected to support protected or notable plant species and that may be significantly impacted, specifically habitats at Rhyl Golf Course (albeit construction works are no longer proposed within the golf course) and adjacent the River Clwyd. The presence of invasive non-native plant species was also recorded during the habitat survey.
- 49 Sufficient data were also gathered during the habitat survey to determine whether hedgerows that could be breached/ removed as a result of the onshore elements of AyM might meet the definition of “important” under the Hedgerow Regulations 1997. Any such hedgerows were then subject to more detailed survey in May 2021.

## Wintering Bird Survey

- 50 As agreed in scoping, wintering bird surveys specifically targeted intertidal and wetland habitats and coastal grasslands, where these could potentially be used by significant numbers of wintering waterbirds. Given the potential impacts resulting from the onshore elements of AyM, it is considered that significant effects on other wintering bird species are unlikely and therefore surveys for other species were not considered necessary.

- 51     Wintering waterbird surveys were carried out once per month from October 2020 to March 2021 with different survey methods used for intertidal habitats and for the coastal fields. Intertidal surveys were undertaken at the landfall and at the River Clwyd. To account for changes in bird numbers and distribution due to the tidal state, each survey was undertaken 'through the tide', either starting at low tide and ending at high tide or *vice versa*. During each survey, counts were undertaken hourly and on each count the number and location of all waterbird species present within the survey area were mapped. Coastal fields within the survey area, where not covered by the intertidal surveys at the River Clwyd, were subject to a single count each month, during which the number and location of all waterbird species within the survey area was mapped.
- 52     In addition to mapping the number and distribution of waterbirds, the behaviour of each bird or flock was noted to provide an indication of how birds use the survey area. Any potential anthropogenic disturbance events that took place during each count were also recorded, to provide an indication of the levels of existing disturbance within the survey area (although a detailed study of existing disturbance was not carried out as the primary focus of the survey was to record bird numbers, distribution and activity).

### Reptile survey

- 53     The reptile survey comprised habitat suitability assessment at all parts of the survey area and presence/absence survey at moderate or high potential habitat where permanent habitat loss may occur, namely at the OnSS location.
- 54     Presence/absence survey was undertaken at the OnSS in accordance with good practice methods (Froglife, 1999). 100 artificial refugia were installed at the OnSS location in April 2021. These were each checked for basking or sheltering reptiles at least seven times thereafter spread over several months, before being retrieved at the end of September 2021.

## Otter and water vole survey

- 55 Surveys were undertaken in accordance with current good practice (Chanin, 2003 and Dean *et al*, 2016) at all water courses that may be breached by the onshore infrastructure options under consideration at the time of survey.
- 56 The section of the River Clwyd within the survey area was surveyed (for otter only) in August 2020, April and June 2021. The River Clwyd was not surveyed for water vole since it will not be directly affected by the development proposals (cables will be installed beneath the river using trenchless techniques), and the section within the survey area is tidal and therefore unsuitable for use by water vole. Surveys at all other locations were undertaken on 14 - 17 June 2021 (Visit 1) and between 23 and 26 August 2021 (Visit 2).
- 57 During each visit evidence indicating the presence of these species was sought, such as prints, paths, burrows/holts, feeding remains and droppings.

## Great crested newt survey

- 58 A total of 53 water bodies were initially identified through desk study and aerial photography as potentially requiring field survey. Field survey confirmed that five of these were no longer present/were not ponds such that a total 48 water bodies were subject to survey as follows:
- 11 ponds within 250m of potential temporary habitat loss were subject to environmental DNA (eDNA) survey, egg search and habitat suitability index (HSI) assessment.
  - 37 ponds within 250m of permanent habitat loss or 100m of temporary habitat loss were subject to HSI assessment plus presence/absence surveys using a minimum of three methods including trapping, netting, torching and egg search.
- 59 All surveys were undertaken in accordance survey timings recommended within published good practice guidance (English Nature, 2001 and Natural Resources Wales, undated) between April and June of 2021.



## Dormouse survey

- 60 The dormouse survey comprised:
- Hazelnut searches at all woodland within the survey area.
  - Habitat-based assessment at each hedgerow and woodland within the survey area, south of the A525. Hedgerows north of the A525 were scoped out, due to lack of suitable structure, foodplants and/or connectivity.
  - Presence/absence survey following standard methods (Bright *et al*, 2006) using nest tubes and nest boxes at all woodlands and hedgerows that may be breached by the onshore ECC south of the A525 and which are potentially suitable for use by dormice (identified during the habitat-based assessment above). The woodland survey also included use of nest boxes in addition to tubes.
- 61 The habitat-based assessment was undertaken in early April 2021, with nest boxes and tubes installed in May 2021. A total of 427 tubes and boxes were installed; approximately 25 tubes at each hedgerow or woodland, with an additional ten boxes also installed at the woodlands. The tubes and boxes were subject to monthly checks from June – November 2021 for evidence of the presence of dormice, after which they were removed.

## Breeding bird survey

- 62 Breeding bird survey was targeted at areas that could potentially be used by protected or notable breeding birds that are potentially susceptible to significant effects. This included the landfall area, River Clwyd and OnSS. A barn owl *Tyto alba* survey was also undertaken at all potentially suitable trees and structures within the survey area. Lastly, where not covered by other breeding bird surveys, a search for suitable nesting habitat for kingfisher *Alcedo atthis* was undertaken in conjunction with surveys for water vole and otter.

- 63 General breeding bird surveys were carried out over three visits evenly spaced between April and June (inclusive) 2021 so as to cover the main activity period of resident breeding birds and the arrival of migrant breeding birds. A territory-mapping approach (based on Marchant, 1983) was used to estimate the number and positions of territories for the majority of species recorded during the breeding season with other species-specific approaches (following Gilbert *et al.*, 1998) used for species for which territory mapping is not appropriate.
- 64 The barn owl survey was based on standard methods (Gilbert *et al.*, 1998; Shawyer, 2011) and comprised an initial preliminary search for potential or active nests and roosting sites in April 2021. Follow up inspection was then undertaken at potential nesting and roosting sites identified during the preliminary search during July 2021.

### Badger survey

- 65 The badger survey followed standard methods (Scottish Natural Heritage, 2003) and comprised a search of the survey area for the presence of active badger setts.
- 66 Field survey was undertaken in August - October 2020, and March – June 2021. Additional records were made in August, October and December 2021. Surveys included a search for the presence of badger setts and other signs such as dungpits or latrines, paths, prints and hairs. Where a sett was found, the location of each entrance was recorded (where practical) and a note made for those which appeared to be in active current use.

### Bat Survey

- 67 Methods used during each survey type were in accordance with published good practice (Collins, 2016).

- 68 Bat activity survey was targeted at hedgerows, woodlands and/or riparian areas which may be removed, illuminated or breached. Four transects were identified to cover these areas, which were walked once per month from April – October 2021 with all bat observations noted down and recorded via full spectrum detectors. A total of 22 full spectrum static bat detectors were also installed across these areas, each recording for a minimum of 5 nights per month from April – October 2021.
- 69 Data from the bat detectors were analysed via Kaleidoscope Pro software and the Bats of Europe 5.1.0 auto-id classifier, set to the United Kingdom. This software allows data to be classified automatically with bat species which fit the same call characteristics that each call file provides. While the software is efficient, it is not totally infallible, therefore manual checks by an experienced bat worker skilled in bat call identification was also made for locally rare/previously unrecorded species and to check the error rate of the software.
- 70 Preliminary roost inspections and presence/absence surveys were conducted during late spring and summer 2021 at trees which may be removed or disturbed.
- 71 All trees within the survey area were subject to a preliminary roost assessment during which they were assessed as having negligible, low, moderate or high potential to support bats.
- 72 Trees with moderate potential were then subject to a minimum of two presence/absence survey visits to determine likely bat absence, trees with high potential were subject to three, as follows:
- Each tree was subject to a detailed at-height inspection during the active season (May – September) where safe to do so. If full survey was possible during the inspection and given that all such inspections were undertaken in the summer period, the survey was deemed to count as a presence/absence survey.
  - Each tree was also subject to at least one dusk emergence and/or dawn re-entry survey to better determine bat presence/absence.
- 73 All bat activity was recorded using full spectrum detector equipment and thermal imaging cameras.

## 5.5 Assessment criteria and assignment of significance

- 74 Whilst Volume 1, Chapter 3: EIA Methodology (application ref: 6.1.3), provides an indicative EIA assessment matrix, it also identifies that assessment methodologies may differ in accordance with the prevailing technical area guidance and specific requirements of receptor groups. As such the following sections provide a description of the assessment criteria and assessment methodologies of relevance to onshore biodiversity and nature conservation, which are derived from best practice guidance documents applicable to this topic and differ from those presented in the broader EIA methodology chapter.
- 75 The ecological evaluation and impact assessment approach used in this report is based on CIEEM Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (“CIEEM guidelines”) (CIEEM, 2018, updated in September 2019), which are widely regarded as industry best practice.

### 5.5.1 Important ecological features

- 76 Ecological features can be important for a variety of reasons and the rationale used to identify them is explained below. Importance may relate, for example, to protected status, the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/ or species are threatened throughout their range, or to their rate of decline.
- 77 Important habitats are considered here to be those which:
- match descriptions of habitats listed on Annex 1 of the Habitats Directive, so far as it applies to the UK and as transposed by The Conservation of Habitats and Species Regulations 2017 (as amended);
  - match descriptions of habitats of principal importance for biodiversity under S7 of the Environment (Wales) Act 2016;
  - comprise irreplaceable habitats; such as (but not limited to) limestone pavement, sand dunes, ancient woodland and veteran trees <sup>ii</sup>; and/ or

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<sup>ii</sup> Referenced in Planning Policy Wales (PPW) Edition 11 (2021) and PPW Technical Advice Note 5. Nature Conservation and Planning (2009)

- comprise a significant habitat resource for an important species (see below).
- 78 It is worth noting here that the Local Biodiversity Action Plan (LBAP) was sought for Denbighshire but appears to no longer be available online, or elsewhere, having been archived in 2017. DCC confirmed this to be the case and also confirmed that there are no current LWS selection criteria for Denbighshire. LBAP status and LWS selection criteria have therefore not been used here to identify important habitats.
- 79 Important species are considered here to be those:
- of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive<sup>iii</sup>) so far as it applies to the UK and as transposed by The Conservation of Habitats and Species Regulations 2017 (as amended);
  - specially protected under the terms of the Wildlife and Countryside Act 1981 ;
  - of principal importance for biodiversity under S7 of the Environment (Wales) Act 2016;
  - Red listed or listed as near threatened using International Union for the Conservation of Nature (IUCN) criteria (IUCN, 2012; IUCN, 2016; IUCN 2019), e.g. in one of the UK Species Status Project<sup>iv</sup> reviews, or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book);
  - for birds, a potentially important population of a species which is red or amber listed in the UK (Eaton *et al.*, 2015) or Wales (Johnstone & Bladwell, 2016);
  - which are listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a nationally notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/ or
  - endemic to a country or geographic location (it is appropriate to recognise endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place).

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<sup>iii</sup> These pieces of legislation are based upon data that remains relevant to the UK, despite the UK having left the EU.

<sup>iv</sup> The Species Status project is the successor to the JNCC's Species Status Assessment project, providing up-to-date assessments of the threat status of various taxa using the internationally accepted Red List guidelines. It is available on the JNCC website

- 80 As noted above for habitats, LBAP data and LWS selection criteria are not available for Denbighshire and have therefore not been used here to identify important species.
- 81 The CIEEM guidelines state that the importance of an ecological feature should be considered within a defined geographical context. The following frame of reference is used:
- International;
  - UK;
  - National (i.e. Wales);
  - Regional (i.e. North Wales);
  - County (i.e. Denbighshire); and
  - Local (i.e. within circa 5 km of the OL).
- 82 For the purposes of this assessment only ecological features of local importance or greater and/ or subject to legal protection are subject to detailed assessment (and are referred to as “important ecological features”). Effects on other ecological features of lower importance are considered unlikely to be significant in legal or policy terms so are not subject to detailed assessment.

## 5.5.2 Impact Assessment

- 83 The impact assessment process involves the following steps:
- identifying and characterising potential impacts;
  - incorporating measures to avoid and mitigate (reduce) these impacts;
  - assessing the significance of any residual effects after mitigation;
  - identifying appropriate compensation measures to offset significant residual effects (if required); and
  - identifying opportunities for ecological enhancement.
- 84 When describing impacts, reference has been made to the following characteristics, as appropriate:
- Beneficial, negligible or adverse;
  - Extent;
  - Magnitude;

- Duration (short term <5years, mid-term 5-10 years, long term >10 years);
- Timing;
- Frequency; and
- Reversibility.

85 The impact assessment process considers both direct and indirect impacts:

- direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process.
- Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the interruption of water courses which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of downstream habitats.

## Significant Effects

86 The concept of ecological significance is addressed in paragraphs 5.24 through to 5.28 of the CIEEM guidelines. Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of an EclA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

87 Paragraphs 5.29 – 5.34 of the CIEEM guidelines cover how significant effects are determined. To summarise:

- for designated sites – effects may be significant if they are likely to undermine the conservation objectives of the site; or positively or negatively affect the conservation status of species or habitats for which the site is designated; or may have affect the condition of the site or its interest/qualifying features.

- ▲ for ecosystems – effects may be significant if the project is likely to result in a change in ecosystem structure and function. Consideration should be given as to whether any processes or key characteristics will be removed or changed, if there will be an effect on the nature, extent, structure and function of component habitats or if there is an effect on the average population size and viability of component species.
- ▲ for habitats and species - consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance. Conservation status is defined as follows:
  - Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
  - Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

## Cumulative and Inter-related Effects

- 88 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered cumulatively with impacts of other proposed or permitted plans and projects, can result in significant effects.
- 89 More detail in respect of the approach used for the cumulative effects assessment is provided in Volume 1, Chapter 3: EIA Methodology (application ref: 6.1.3) and in Section 5.13 of this chapter.
- 90 Inter-related effects assessment considers the potential for multiple impacts from the construction, operation or decommissioning of AyM on the same receptor to result in a greater effect than each impact when considered in isolation. More detail in respect of the approach used for the inter-related effects assessment is provided in Volume 1, Chapter 3: EIA Methodology (application ref 6.1.3) and in Section 5.14 of this chapter.



## Avoidance, Mitigation, Compensation and Enhancement

- 91 Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, residual effects are then identified along with any necessary compensation measures, and incorporation of proposals for biodiversity enhancement.
- 92 It is important for the EclA to clearly differentiate between avoidance mitigation, compensation and enhancement and these terms are defined here as follows:
- **Avoidance** is used where an impact has been avoided, e.g. through changes in scheme design;
  - **Mitigation**, seeks to reduce and/ or eliminate the potential for significant effects to arise as a result of the project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects;
  - **Compensation** describes measures taken to offset residual effects resulting in the loss of, or permanent damage to, ecological features despite mitigation. For example, it may take the form of replacement habitat provision or improvements to existing habitats.; and
  - **Enhancement** is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.
- 93 Within the EclA, mitigation measures should be described clearly and their likely success assessed. In Wales, there is currently no requirement within EclA to quantify losses and gains, e.g. using a metric, and the approach not to use a metric in this case has been agreed with NRW via ETG meetings.

- 94 When seeking mitigation or compensation solutions, the CIEEM guidelines state that efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population that is significant at a county scale should ensure, wherever possible, there are no adverse effects upon the population status at a county scale. The relative geographic scale at which the effect is significant therefore has a bearing on the required outcome which must be achieved.

## 5.6 Uncertainty and technical difficulties encountered

- 95 No significant limitations were associated with the surveys. Please refer to the reports in Volume 5, Annex 5.1-5.10 for details in respect of the main assumptions and limitations associated with each.
- 96 As noted in paragraph 42, field surveys have been undertaken using survey areas that corresponded to the draft OL that was under consideration when the survey was carried out. Generally, this aligns to the draft OL that was presented at Statutory Consultation and was included within many of the figures within the PEIR. Figure 1 to Figure 5 provides a comparison of the current OL (that is proposed in this application for development consent), against the draft OL presented within the PEIR. Figure 1 to Figure 5 show that there has generally been a reduction in geographic coverage as the AyM design went from a 100m wide cable corridor to the current 40-60m wide Onshore ECC as well as refinement of OnSS zones to the OnSS areas for which development consent is sought. The result is that surveys have been undertaken over an area appropriate to the OL, and remain appropriate for use in informing the impact assessment process.
- 97 As parts of the scheme design remain to be resolved post consent, the Maximum Design Scenario (MDS) identified in Table 12 has been selected as having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the details provided in the project description (Volume 3, Chapter 1 (application ref: 6.3.1)). Effects of greater significance are not predicted to arise should any other development scenario to that assessed here be taken forward in the final design scheme, within the assessed boundaries.

## 5.7 Existing environment

### 5.7.1 General Context

- 98 The study area is situated on the north Wales coast on low-lying predominantly agricultural land situated between the towns of Rhyl, Rhuddlan and SABP. The A55 dual carriageway crosses the area just north of SABP, with the A547 and A525 crossing to the west of Rhuddlan. The A548 is the main coastal road from Rhyl to Prestatyn.
- 99 The River Clwyd bisects the study area, flowing from St Asaph northward into Rhyl.
- 100 The onshore ECC has been broken down into a number of indicative route sections which describe the route in relation to significant local features. The route sections are listed in Table 3 along with a short description defining the extent of each respective section, they are also indicated on several of the figures associated with this chapter.

Table 3: Route sections for the onshore ECC

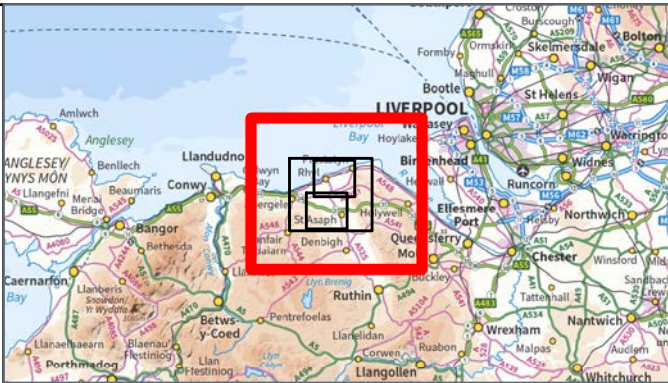
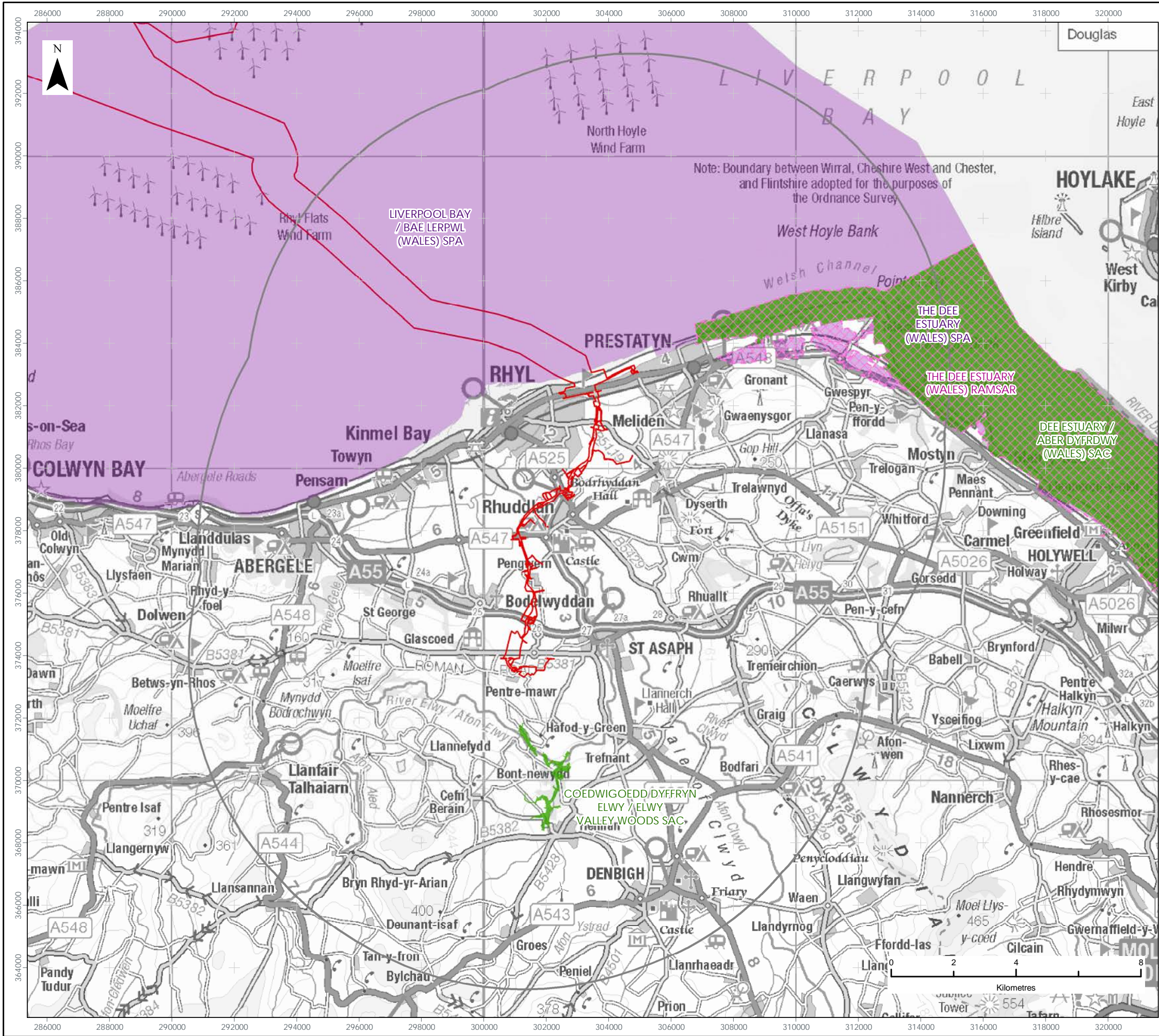
ROUTE SECTION – FULL NAME	DESCRIPTION	ECOLOGICAL CONTEXT
Route Section A – Intertidal Area	MHWS to MLWS	Coastal Strip: This area is densely populated, including extensive residential and holiday accommodation. Pedestrian footpaths are present directly adjacent to the beach, as is a golf course. Man-made sea-defences are present, along with a sand beach. Sand dunes and dune grassland are present at the proposed eastern access and TCC. Y Ffrith LWS is present in this section.
Route Section B – Intertidal to B5119	MHWS to B5119	
Route Section C – B5118 to A525	Agricultural land to east and south of Rhyl – generally low lying	North of the A55: the land is low lying with a network of drainage ditches; seasonally wet in places. A

ROUTE SECTION – FULL NAME	DESCRIPTION	ECOLOGICAL CONTEXT
	and outside flood risk areas	significant area comprises “Coastal and Floodplain Grazing Marsh”, and forms part of Clwyd Estuary and Adjacent Fields LWS. Bryn Cwnin LWS is also present in this section. Often intensively agricultural, most of the land is used for grazing sheep and cattle. Hedgerows and woodland are relatively scarce.
Route Section D: A525 to A547	Includes the Afon Clwyd crossing and associated HDD (or other trenchless crossing technique) works	
Route Section E: A547 to A55	Agricultural land that is slightly more undulating near the A55	
Route Section F: A55 to B5381 including OnSS	HDD (or other trenchless crossing technique) re-emergence for A55 crossing, OnSS access zones and OnSS cable connection to Glascoed Road (B5381)	South of the A55: Here the land begins to rise up on to the limestone, the topography is more undulating, field sizes are smaller, and boundaries are typically well-established hedgerows. Whilst still predominately agricultural, permanent pasture is more common, as are woodlands and hedges.
Route Section G: B5381 to National Grid Connection	From Glascoed Road (B5381) to the National Grid substation	

## 5.7.2 Designated Sites

- 101 Figure 6 to Figure 9 show the location of statutory and non-statutory designated sites in relation to the onshore elements of AyM. Summary descriptions for each site and a brief rationale for scoping sites in or out of the assessment (as agreed during the ETG meetings and by the NRW advice note dated 24 February 2021. Please see the Consultation report (application ref: 5.1) for further details) are provided in Table 4 and Table 5 respectively. Note that Table 5 includes some designated sites which have been scoped into the assessment of air quality effects (see Volume 3, Chapter 11) but have been scoped out of the assessment presented in this chapter.
- 102 Further information in respect of SACs, SPAs and Ramsar sites can also be found in the Report to Inform Appropriate Assessment (RIAA) (application ref: 5.2)).





LEGEND

- Order Limits
- Draft Order Limits 10 km Buffer (Onshore)
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)

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PROJECT TITLE:

*AWEL Y MÔR OFFSHORE WINDFARM*

FIGURE TITLE: **STATUTORY AND  
NON-STATUTORY DESIGNATED SITES**

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

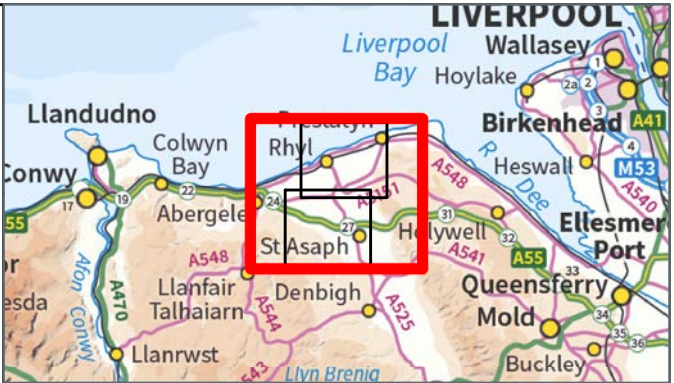
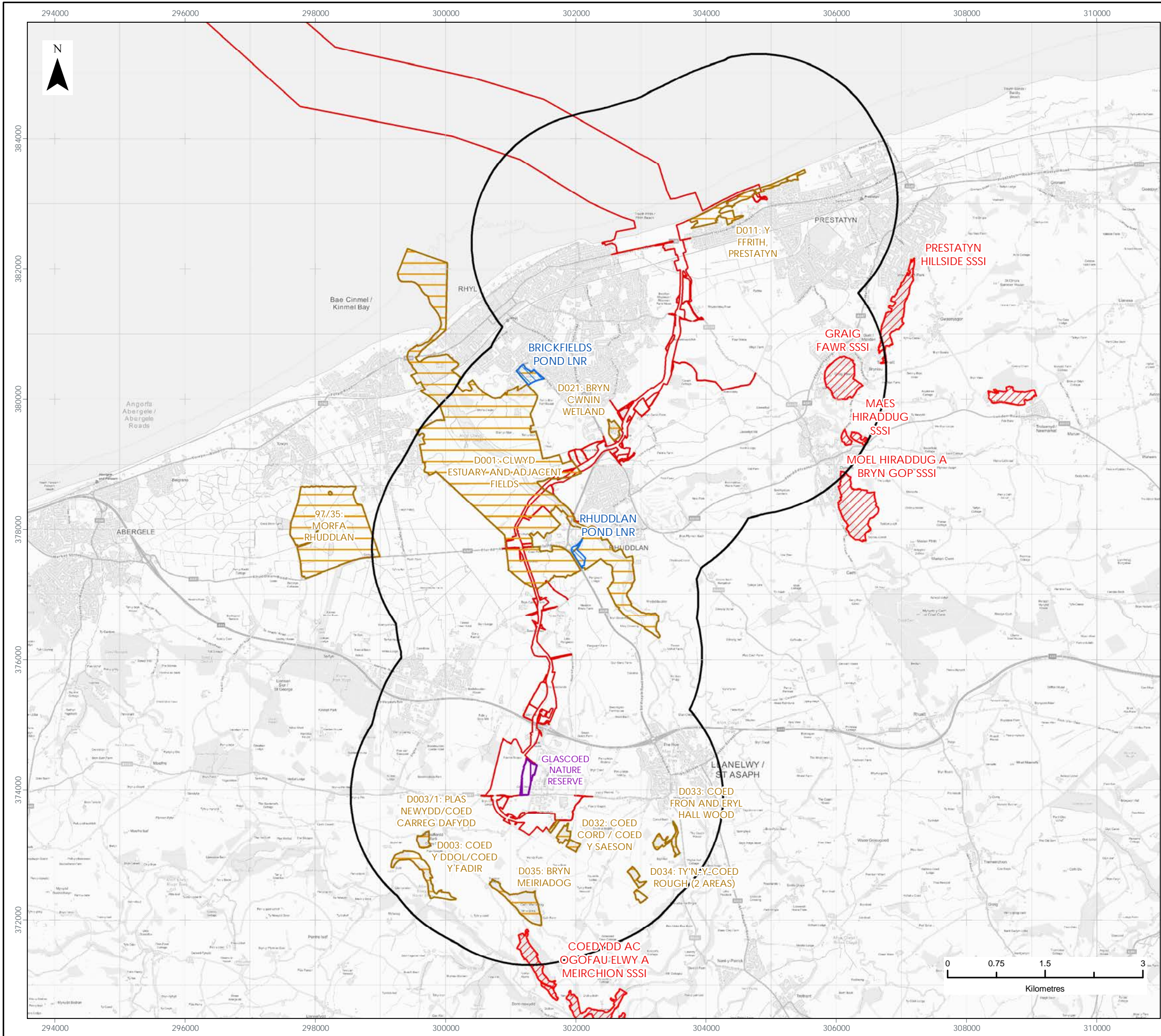
FIGURE NUMBER:

**FIGURE 6**

SCALE: 1:125,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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Fferm Wynt Alltraeth  
**AWEL Y MÔR**  
Offshore Wind Farm





**LEGEND**

- Order Limits
- Draft Order Limits 2 km Buffer (Onshore)
- Sites of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)
- Local Wildlife Site
- Other Nature Reserve

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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM*

FIGURE TITLE:  
**STATUTORY AND  
NON-STATUTORY DESIGNATED SITES**

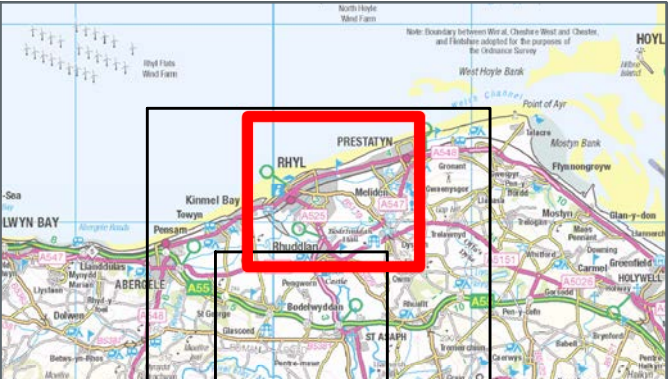
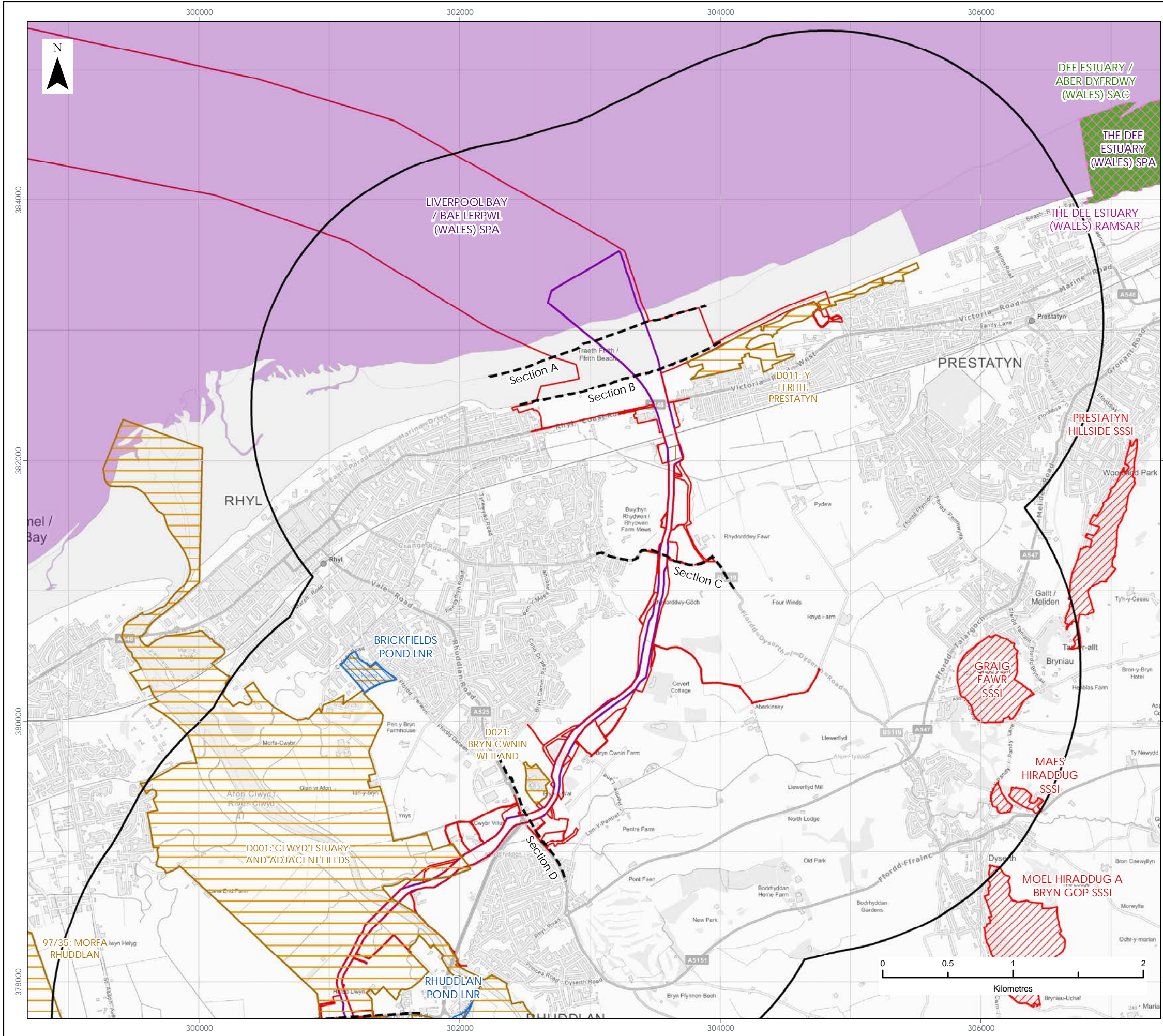
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 7**

SCALE: 1:60,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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- LEGEND**
- Order Limits
  - Onshore Cable Route Section Breaks
  - Proposed Onshore Export Cable Corridor
  - Proposed Transition Joint Bay Construction Compound
  - Draft Order Limits 2 km Buffer (Onshore)
  - Ramsar
  - Special Area of Conservation (SAC)
  - Special Protection Area (SPA)
  - Sites of Special Scientific Interest (SSSI)
  - Local Nature Reserve (LNR)
  - Local Wildlife Site

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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM*

FIGURE TITLE:  
**STATUTORY AND  
NON-STATUTORY DESIGNATED SITES**

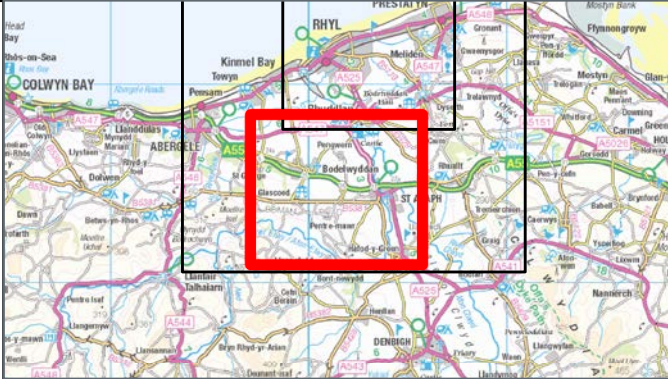
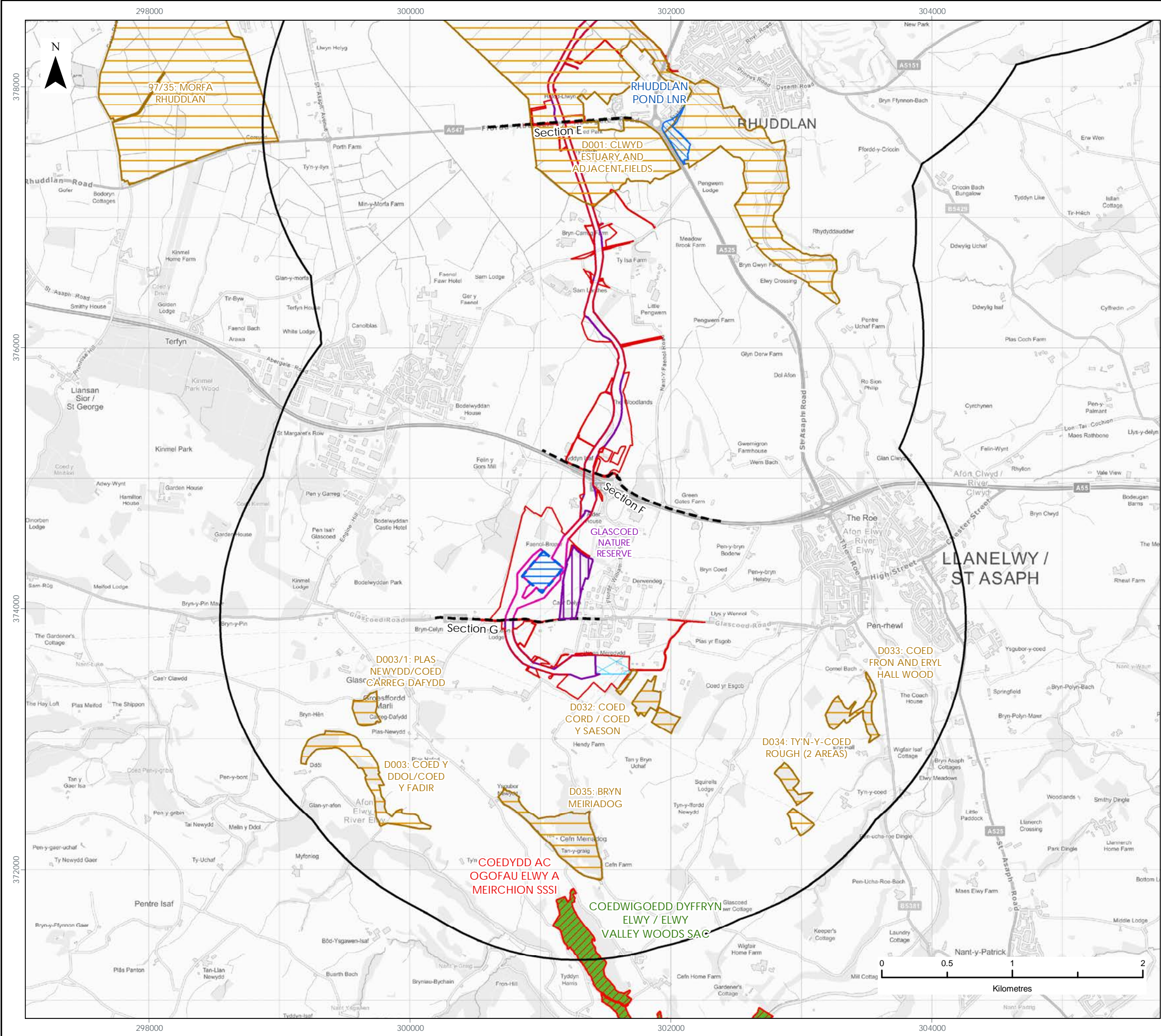
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 8**

SCALE: 1:30,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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- LEGEND**
- Order Limits
  - Onshore Cable Route Section Breaks
  - Proposed Onshore Export Cable Corridor
  - Proposed Substation Cable Corridor Zone
  - Proposed Onshore Substation (OnSS) Footprint
  - Unlicensed Work Zone
  - Draft Order Limits 2 km Buffer (Onshore)
  - Special Area of Conservation (SAC)
  - Sites of Special Scientific Interest (SSSI)
  - Local Nature Reserve (LNR)
  - Local Wildlife Site
  - Other Nature Reserve

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PROJECT TITLE:  
*AWEL Y MŌR OFFSHORE WINDFARM*

FIGURE TITLE:  
**STATUTORY AND  
NON-STATUTORY DESIGNATED SITES**

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 9**

SCALE: 1:30,000 PLOT SIZE: A3 DATUM: ODN COORDINATE SYSTEM: British National Grid

Fferm Wynt Alltraeth  
**AWEL Y MŌR**  
Offshore Wind Farm

Table 4: Designated Sites scoped into the assessment

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING IN
Y Ffrith, Prestatyn LWS	This site comprises sand dune and herb rich grassland. The dune is an important natural sea defence although a sea wall has been built along the coast in front. Bare ground and sparse vegetation occurs as a result of erosion caused by public access and sea defence works.	LWS partly lies within the OL (intersected by an existing access track that would be used by construction traffic, and mitigation area, both of which are within the OL) and may be indirectly affected.
Bryn Cwnin Wetland LWS	A swamp dominated by greater pond-sedge <i>Carex riparia</i> , lesser pond-sedge <i>Carex acutiformis</i> and a number of wetland plants. There are areas of open water and open ditches. Higher ground surrounding the swamp is rush pasture.	LWS partly lies within 100 m of the OL and may be indirectly affected.
Clwyd Estuary and Adjacent Fields LWS	An estuary including mudflats, where large numbers of birds feed, saltmarsh, a disused tip with botanical interest and supporting ground nesting birds, and adjacent fields and water bodies which support significant numbers of wintering waders and wildfowl.	LWS partly lies within the OL and would be directly affected.



Table 5: Designated Sites Scoped out of the Assessment

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
Liverpool Bay SPA	<p>The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I of the Birds Directive in any season:</p> <ul style="list-style-type: none"> <li>▲ Red-throated diver <i>Gavia stellata</i> (non-breeding);</li> <li>▲ Little gull <i>Hydrocoloeus minutus</i> (non-breeding);</li> <li>▲ Little tern (breeding); and</li> <li>▲ Common tern <i>Sterna hirundo</i> (breeding).</li> </ul> <p>The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:</p> <ul style="list-style-type: none"> <li>▲ Common scoter <i>Melanitta nigra</i> (non-breeding).</li> </ul>	<p>Where it lies within proximity to the landfall location, Liverpool Bay SPA does not include any intertidal habitat and none of the qualifying features are reliant on terrestrial habitat, except for little tern, which breeds outside the study area to the east.</p> <p>Consideration is given to the relevant receptors within Volume 2, Chapter 4 (Offshore Ornithology (application ref: 6.2.4)) and the Report to Inform Appropriate Assessment (RIAA) (application ref: 5:2)</p>

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
Dee Estuary SPA	<p>This site qualifies under Article 4.1 of the Birds Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:</p> <ul style="list-style-type: none"> <li>▲ During the breeding season; <ul style="list-style-type: none"> <li>▪ Common tern; and</li> <li>▪ Little tern.</li> </ul> </li> <li>▲ On passage; <ul style="list-style-type: none"> <li>▪ Sandwich tern <i>Sterna sandvicensis</i>.</li> </ul> </li> <li>▲ Over winter; <ul style="list-style-type: none"> <li>▪ Bar-tailed godwit <i>Limosa lapponica</i>.</li> </ul> </li> </ul> <p>This site also qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:</p> <ul style="list-style-type: none"> <li>▲ On passage; <ul style="list-style-type: none"> <li>▪ Redshank <i>Tringa totanus</i></li> </ul> </li> </ul>	<p>This site is &gt;3 km distant from the OL. Due to the separation distance and lack of (onshore) hydrological connection, no significant effects are anticipated to arise as a result of the onshore aspects of AyM. Consideration is given to the relevant receptors within Volume 2 (Offshore environment) and the RIAA (application ref: 5:2)</p>

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
	<p>▲ Over winter;</p> <ul style="list-style-type: none"> <li>▪ Black-tailed godwit <i>Limosa limosa islandica</i>;</li> <li>▪ Curlew;</li> <li>▪ Dunlin <i>Calidris alpina alpina</i>;</li> <li>▪ Grey plover <i>Pluvialis squatarola</i>;</li> <li>▪ Knot <i>Calidris canutus</i>;</li> <li>▪ Oystercatcher <i>Haematopus ostralegus</i>;</li> <li>▪ Pintail <i>Anas acuta</i>;</li> <li>▪ Redshank;</li> <li>▪ Shelduck <i>Tadorna tadorna</i>; and</li> <li>▪ Teal <i>Anas crecca</i>.</li> </ul> <p>Assemblage qualification: A wetland of international importance.</p> <p>The area qualifies under Article 4.2 of the Birds Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl</p> <p>Over winter, the area regularly supports 120,726 individual waterfowl (5-year peak mean 1991/92-1995/96).</p>	

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
Dee Estuary Ramsar	<p>The site qualifies under Ramsar Criteria 1, 2, 5 and 6 as follows:</p> <ul style="list-style-type: none"> <li>➤ Criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary.</li> <li>➤ Criterion 2, it supports breeding colonies of the vulnerable natterjack toad <i>Epidalea calamita</i>.</li> <li>➤ Criterion 5 <ul style="list-style-type: none"> <li>▪ Assemblages of international importance:</li> <li>▪ Species with peak counts in winter:</li> <li>▪ Non-breeding season regularly supports 120,726 individual waterbirds.</li> </ul> </li> <li>➤ Criterion 6 – species/populations occurring at levels of international importance.</li> </ul> <p>Qualifying Species/populations (as identified at the time of designation):</p> <ul style="list-style-type: none"> <li>➤ Species with peak counts in spring/autumn:</li> <li>➤ Redshank</li> <li>➤ Species with peak counts in winter:</li> </ul>	<p>This site is &gt;3 km distant from the OL. Due to the separation distance and lack of (onshore) hydrological connection, no significant effects are anticipated to arise as a result of the onshore aspects of AyM. - Consideration is given to the relevant receptors within Volume 2, Chapter 4 (Offshore Ornithology) and the RIAA (application ref 5:2)</p>

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
	<ul style="list-style-type: none"> <li>▪ Teal;</li> <li>▪ Shelduck;</li> <li>▪ Oystercatcher;</li> <li>▪ Curlew;</li> <li>▪ Pintail;</li> <li>▪ Grey plover;</li> <li>▪ Knot;</li> <li>▪ Dunlin;</li> <li>▪ Black-tailed godwit;</li> <li>▪ Bar-tailed godwit; and</li> <li>▪ Redshank.</li> </ul>	
Dee Estuary SAC	<p>Habitat Regulations Annex I habitats that are a primary reason for selection of this site:</p> <ul style="list-style-type: none"> <li>▲ Mudflats and sandflats not covered by seawater at low tide</li> <li>▲ Salicornia and other annuals colonizing mud and sand</li> <li>▲ Atlantic salt meadows (Glauco-Puccinellietalia maritimae)</li> </ul>	<p>This site is &gt;3 km distant from the OL. Due to the separation distance and lack of (onshore) hydrological connection, no significant effects are anticipated to arise as a result of the onshore aspects of AyM. Consideration is given to the relevant receptors within Volume 2 (Offshore environment) and the RIAA (application ref: 5:2)</p>

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
	<p>Habitat Regulations Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:</p> <ul style="list-style-type: none"> <li>➤ Estuaries</li> <li>➤ Annual vegetation of drift lines</li> <li>➤ Vegetated sea cliffs of the Atlantic and Baltic Coasts</li> <li>➤ Embryonic shifting dunes</li> <li>➤ "Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")"</li> <li>➤ "Fixed coastal dunes with herbaceous vegetation ("grey dunes")" * Priority feature</li> <li>➤ Humid dune slacks</li> </ul> <p>Habitats Regulations Annex II species present as a qualifying feature, but not a primary reason for site selection</p> <ul style="list-style-type: none"> <li>➤ Sea lamprey <i>Petromyzon marinus</i>;</li> <li>➤ River lamprey <i>Lampetra fluviatilis</i>; and</li> <li>➤ Petalwort <i>Petalophyllum ralfsii</i>.</li> </ul>	



SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
Llwyn SAC	<p>Habitats Regulations Annex I habitats that are a primary reason for selection of this site:</p> <p>▲ Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) * Priority feature</p>	<p>This site is &gt;10 km from the OL, has no mobile notified features (e.g. bats or birds) and no hydrological connection. It is therefore scoped out of further assessment.</p> <p>NRW agreed with this approach, as set out in Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12).</p>
Elwy Valley Woods SAC	<p>Habitats Regulations Annex I habitats that are a primary reason for selection of this site:</p> <p>▲ Tilio-Acerion forests of slopes, screes and ravines * Priority feature</p>	<p>This site is 1.5 km from the OL, has no mobile notified features (e.g. bats or birds) and no hydrological connection. It is therefore scoped out of further assessment.</p> <p>NRW agreed with this approach, as set out in Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12).</p>
Traeth Pensarn SSSI	<p>Traeth Pensarn is of special botanical interest for its vegetated shingle beach plant communities.</p>	<p>This site is 6.5 km from the OL, has no mobile notified features (e.g. bats or birds) and no hydrological connection. It is therefore scoped out of further assessment.</p>

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
		NRW agreed with this approach, as set out in Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12).
Coedydd ac Ogofau Elwy a Meirchion SSSI	The site is of special interest for its semi-natural broadleaved woodland, its rare flowering plant assemblage, its scarce bryophyte assemblage and the geological and palaeontological interest of Galltfaenan, Cefn and Pontnewydd Caves.	<p>This site is 1.5 km from the preferred cable OL, has no mobile notified features (e.g. bats or birds) and no hydrological connection. It is therefore scoped out of further assessment.</p> <p>NRW agreed with this approach, as set out in Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12).</p>
Graig Fawr SSSI	Graig Fawr is of special interest for its range of limestone (calicolous) grassland communities as well as its populations of vascular plants and lepidoptera.	This site is approximately 2 km from the preferred cable OL, has no substantially mobile notified features (e.g. bats or birds, though an important population of silver studded blue <i>Plebejus argus ssp. caernensis</i> butterflies are noted present) and no hydrological connection. It is therefore scoped out of further assessment.

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
		NRW agreed with this approach, as set out in Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12).
Rhuddlan Pond LNR Brickfields Pond LNR Kinmel Dunes LNR	Rhuddlan Pond Nature Reserve is an accessible reserve including ponds and meadows.  Brickfields Pond, set in west Rhyl, is a local nature reserve popular for a range of recreational activities, including a 1km circular route of the pond. The site was once a clay pit, which was later filled in to create the Brickfield Pond seen today.  Kinmel Dunes is one of the few surviving fragments of sand dune in the locality. This small sand dune system is home to a variety of native maritime plants. Seals can sometimes be seen close to the shore and bird life includes skylark <i>Alauda arvensis</i> , kestrel <i>Falco tinnunculus</i> and ringed plover.	These sites are between 0.5 and 3 km distant from the OL, such that no direct or indirect impacts are anticipated. They are therefore scoped out of further assessment.  NRW and DCC agreed with this approach, as set out in Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12)

SITE NAME & DESIGNATION	REASON FOR NOTIFICATION/DESIGNATION	REASON FOR SCOPING OUT
All other LWS not listed in Table 4	Various.	<p>Coed Cord/Coed y Saeson LWS is an ancient woodland located just under 100 m from the OL but is not hydrologically linked to it. No direct or indirect impacts are anticipated and it is therefore scoped out of further assessment.</p> <p>All other LWS are located &gt;250 m from the OL and are not hydrologically linked to it. No direct or indirect impacts are anticipated as a result of lack of potential impact pathways. They are therefore scoped out of further assessment.</p> <p>NRW and DCC agreed with this approach, as set out in Volume 5, Annex 5.12: Consultation Feedback (application ref: 6.5.5.12)</p>

### 5.7.3 Habitats

103 Table 6 and the figures provided in Volume 5, Annex 5.2: Habitat and Hedgerow Survey Report (application ref: 6.5.5.2), show all the types and locations of habitat types present within the survey area (further details are provided in the PEA and habitat survey report (Volume 5, Annex 5.1, application ref: 6.5.5.1) and 5.3 (application ref: 6.5.5.3) respectively). In line with the UKHab classification this is presented hierarchically in Table 6 and includes the relevant UKHab codes.

Table 6: Habitats present within the survey area.

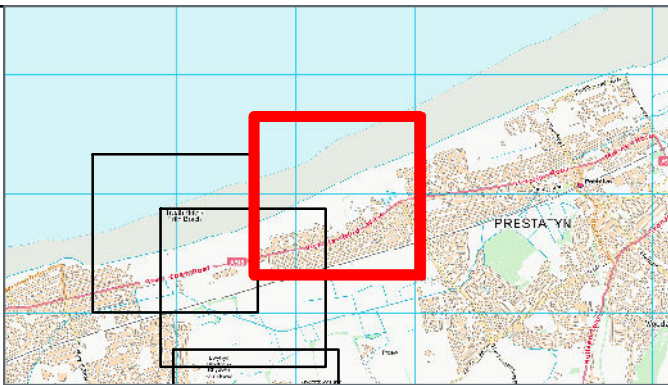
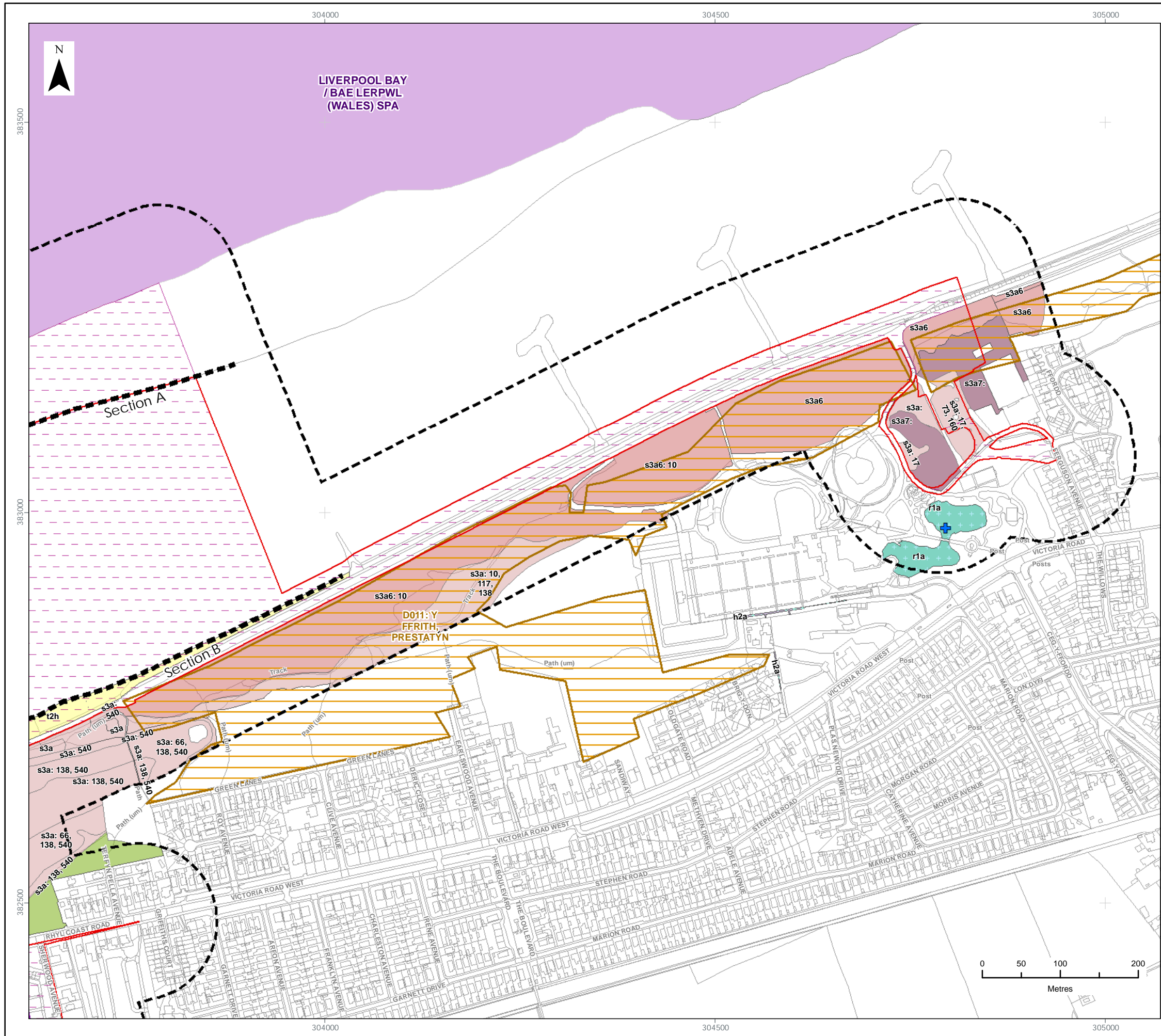
UKHAB LEVEL 3 HABITAT	UKHAB LEVEL 4 HABITAT (IF APPLICABLE AND MAPPED)	UKHAB LEVEL 5 HABITAT (IF APPLICABLE AND MAPPED)
Cropland (c1);	N/A	N/A
Fen Marsh and Swamp (f2);	f2a lowland fen (priority habitat) f2e reedbed (priority habitat) f2f other swamps	N/A
Neutral (g3) and modified (g4) grassland;	g3c other neutral grassland (note that Coastal and Floodplain Grazing Marsh is indicated by secondary code 25, see below)	N/A
Hedgerow (h2);	h2a hedgerow (priority habitat)	N/A
Scrub (h3)	h3d bramble scrub h3h mixed scrub	N/A

UKHAB LEVEL 3 HABITAT	UKHAB LEVEL 4 HABITAT (IF APPLICABLE AND MAPPED)	UKHAB LEVEL 5 HABITAT (IF APPLICABLE AND MAPPED)
Standing and open water (r1) (including numerous field ponds);	N/A (note that ponds are indicated by secondary code 19, see below)	N/A
Rivers and streams (r2)	r2a rivers (Priority habitat) r2b other rivers and streams	N/A
Supralittoral sediment (s3);	s3a coastal sand dunes (priority habitat)	s3a6 shifting dunes with marram (Annex 1 habitat H2120) s3a7 dune grassland (Annex 1 habitat H2130)
Littoral sediment (t2);	t2a coastal saltmarsh (priority habitat) t2h beach	N/A
Urban/man made (u1); and	u1b5 buildings	N/A
Woodland (w1 and w2)	w1f lowland mixed deciduous woodland (priority habitat) w1g other woodland; broadleaved w1h other woodland; mixed w2c other woodland; coniferous.	N/A

## Important Habitats

- 104 The above primary habitat types include S7 and Habitats Regulations Annex 1 habitat types. Some S7 habitat types exist as habitat mosaics and these are indicated via the application of relevant UKHab secondary codes which can be applied across a range of habitat types. Within the survey area the most pertinent include:
- 19 - Ponds (priority habitat) – note that when ponds are too small to map (i.e. less than 5 m x 5 m), this code has been applied to the area of habitat they occur within.
  - 25 - Coastal and Floodplain Grazing Marsh (priority habitat) – this applies to many of the low-lying fields near to the River Clwyd, irrespective of grassland type.
  - 33 Ancient Woodland Site – this applies to ASNW (and PAWS, with PAWS having the additional code 36 Plantation, applied).
- 105 Five hedgerows within the survey area are considered to meet the definition of ‘important hedgerows’ in relation to wildlife and landscape criteria under the Hedgerow Regulations 1997.
- 106 Lastly, a veteran oak tree is present in woodland in the south of the survey area, within Bodelwyddan Estate (location shown on Figure 20 and Figure 21). The tree comprises a five stemmed oak with a diameter of over 2 m.
- 107 Important habitats as well as important sites are shown in Figure 10 to Figure 22.





LEGEND

- Order Limits
- Onshore Cable Route
- Section Breaks
- Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure
- Proposed Onshore Export Cable Corridor
- Special Protection Area (SPA)
- Local Wildlife Site
- Pond Location
- Priority Habitats
- Grassland - Neutral Grassland
- g3 - Neutral Grassland
- Heathland and Shrub - Hedgerows
- h2a - Hedgerow (Priority Habitat)
- Sparsely Vegetated Land - Supralittoral Sediment
- s3a - Coastal Sand Dune
- s3a6 - Shifting Dunes with Marram (H2120)
- s3a7 - Dune Grassland (H2130)
- Rivers and Lakes - Standing Open Water and Canals
- r1a - Eutrophic Standing Waters
- Marine Inlets and Transitional Waters - Littoral Sediment
- t2h - Beach
- Secondary Codes
- 10 - Scattered scrub
- 11 - Scattered trees
- 12 - Scattered bracken
- 14 - Scattered rushes
- 15 - Rushes dominant
- 16 - Tall herb
- 17 - Ruderal / ephemeral
- 19 - Ponds (Priority Habitat)
- 25 - Coastal and flood plain grazing marsh
- 33 - Ancient woodland site
- 36 - Plantation
- 37 - Semi-natural woodland
- 38 - Secondary woodland
- 39 - Freshwater - man-made
- 40 - Freshwater - heavily modified
- 41 - Freshwater - natural
- 47 - Native
- 55 - High forest
- 57 - Young trees - self-set
- 58 - Grazed
- 64 - Mown
- 66 - Frequently mown
- 75 - Active management
- 76 - Recent management
- 80 - Unmanaged
- 81 - Failed hedgerow
- 86 - Accessible natural greenspace
- 94 - Green lane
- 117 - Dry
- 118 - Mesic
- 119 - Seasonally wet
- 120 - Wet
- 121 - Waterlogged
- 122 - Inundation vegetation
- 138 - Saline influence
- 147 - Failed dead wood abundant
- 148 - Flower forage abundant
- 159 - Standing dead wood abundant
- 162 - Temporary waterbodies
- 173 - Swamp
- 190 - Hedgerow with trees
- 191 - Ditch
- 540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM*

FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

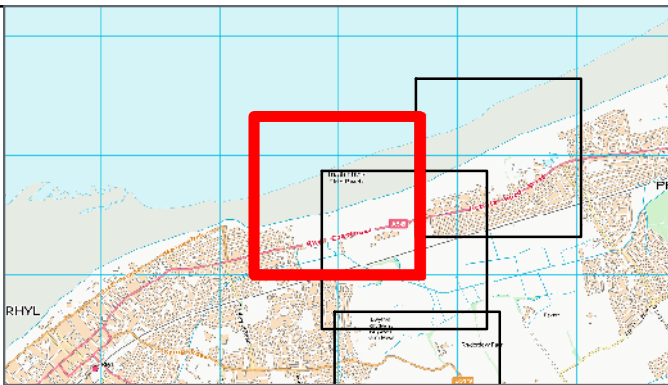
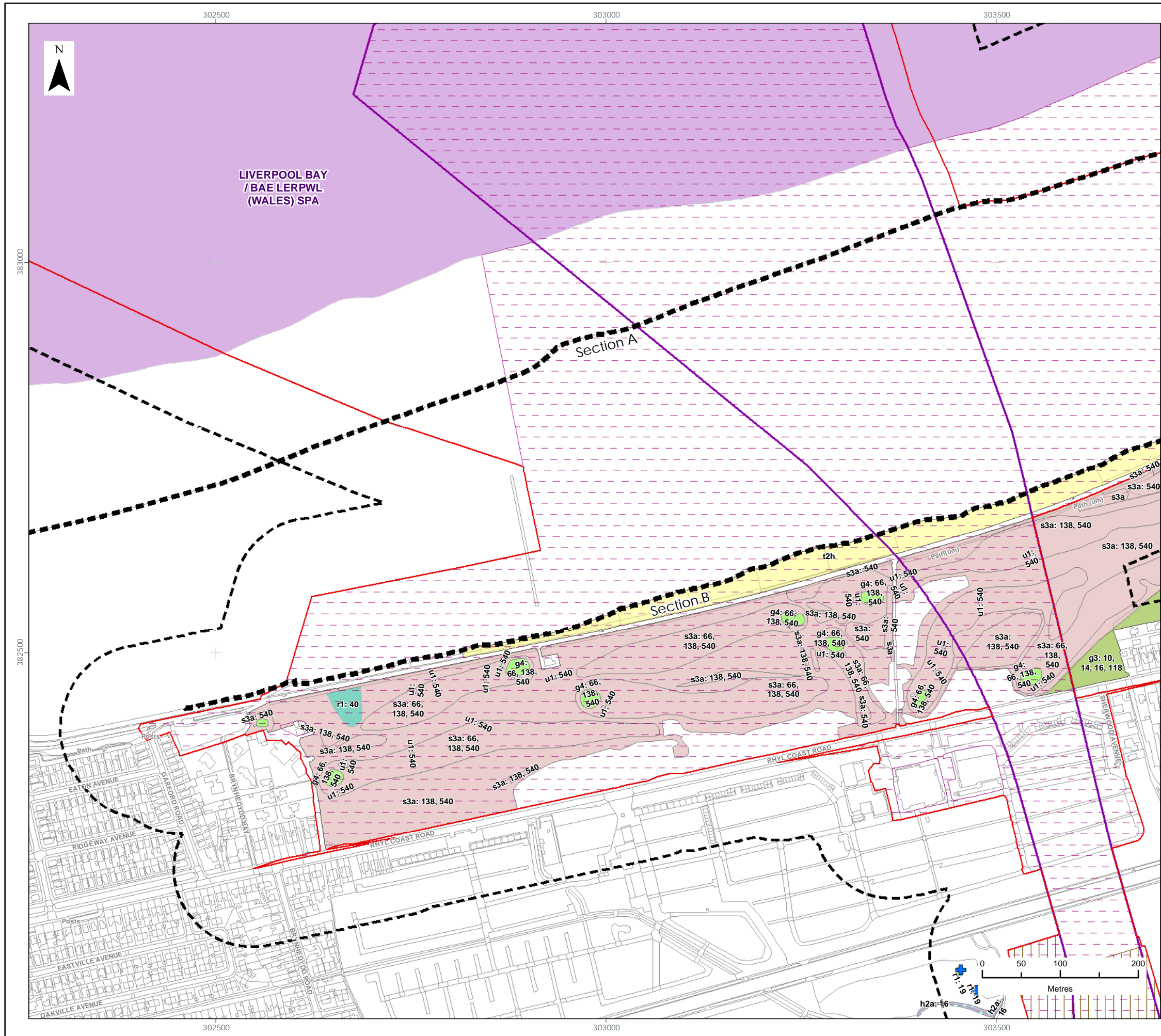
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1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 10**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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#### LEGEND

- Order Limits
- Onshore Cable Route Section Breaks
- Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure
- Proposed Onshore Export Cable Corridor
- Proposed Transition Joint
- Bay Construction Compound
- Special Protection Area (SPA)
- Pond Location
- Priority Habitats
- Grassland - Neutral Grassland
- Grassland - Modified
- Grassland - Ruderal / ephemeral
- Grassland - Ponds
- Heathland and Shrub - Hedgerows
- h2a - Hedgerow (Priority Habitat)
- Sparsely Vegetated Land - Supralittoral Sediment
- s3a - Coastal Sand Dune
- Urban - Built-up Areas and Gardens
- u1 - Built-up Area and Garden
- Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing Open Water and Canal
- Marine Inlets and Transitional Waters - Littoral Sediment
- t2h - Beach
- Secondary Codes
- 10 - Scattered scrub
- 11 - Scattered trees
- 12 - Scattered bracken
- 14 - Scattered rushes
- 15 - Rushes dominant
- 16 - Tall herb
- 17 - Ruderal / ephemeral
- 19 - Ponds
- 25 - Coastal and flood plain grazing marsh
- 33 - Ancient woodland site
- 36 - Plantation
- 37 - Semi-natural woodland
- 38 - Secondary woodland
- 39 - Freshwater - man-made
- 40 - Freshwater - heavily modified
- 41 - Freshwater - natural
- 47 - Native
- 55 - High forest
- 57 - Young trees - self-set
- 58 - Grazed
- 64 - Mown
- 66 - Frequently mown
- 75 - Active management
- 76 - Recent management
- 80 - Unmanaged
- 81 - Failed hedgerow
- 86 - Accessible natural greenspace
- 94 - Green lane
- 117 - Dry
- 118 - Mesic
- 119 - Seasonally wet
- 120 - Wet
- 121 - Waterlogged
- 122 - Inundation vegetation
- 138 - Saline influence
- 147 - Failed dead wood abundant
- 148 - Flower forage abundant
- 159 - Standing dead wood abundant
- 162 - Temporary waterbodies
- 173 - Swamp
- 190 - Hedgerow with trees
- 191 - Ditch
- 540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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#### FIGURE TITLE: IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 11**

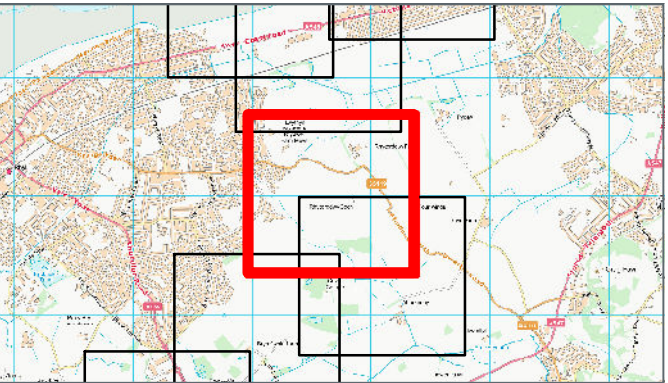
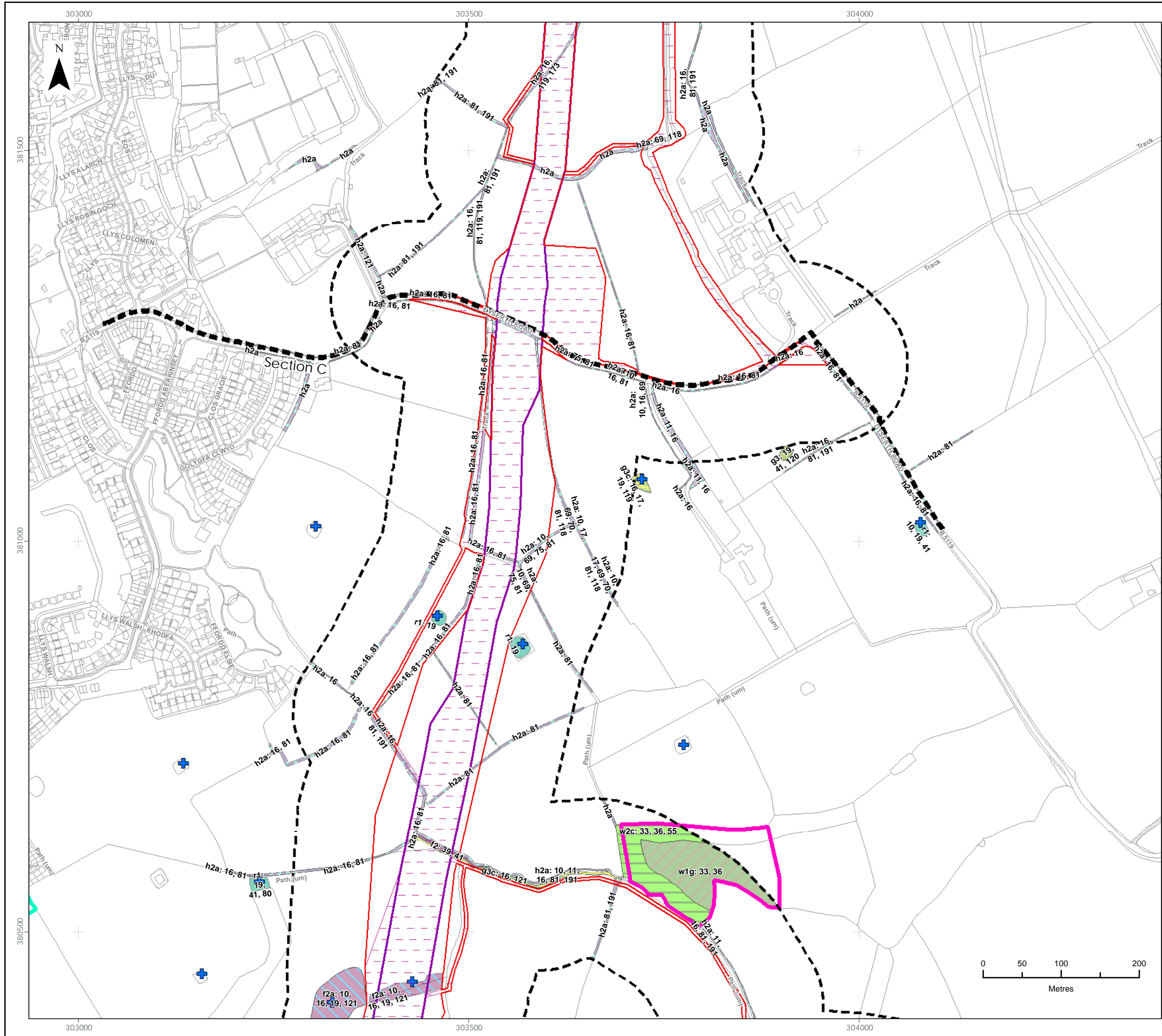
SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

- Order Limits
- Onshore Cable Route Section Breaks
- Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure
- Proposed Onshore Export Cable Corridor
- Ancient Semi Natural Woodland Site
- Plantation on Ancient Woodland Site
- Pond Location
- Priority Habitats
- Wetland - Fen Marsh and Swamp
- f2 - Fen Marsh and Swamp
- f2a - Lowland Fen
- Grassland - Neutral Grassland
- g3 - Neutral Grassland
- g3c - Other Neutral Grassland
- Heathland and Shrub - Hedgerows
- h2a - Hedgerow (Priority Habitat)
- Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1g - Other Woodland: Broadleaved
- Woodland and Forest - Coniferous Woodland
- w2c - Other Coniferous Woodland
- Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing Open Water and Canal
- Secondary Codes
- 66 - Frequently mown
- 75 - Active management
- 76 - Recent management
- 80 - Unmanaged
- 81 - Failed hedgerow
- 86 - Accessible natural greenspace
- 94 - Green lane
- 117 - Dry
- 118 - Mesic
- 119 - Seasonally wet
- 120 - Wet
- 121 - Waterlogged
- 122 - Inundation vegetation
- 138 - Saline influence
- 147 - Failed dead wood abundant
- 148 - Flower forage abundant
- 159 - Standing dead wood abundant
- 162 - Temporary waterbodies
- 173 - Swamp
- 190 - Hedgerow with trees
- 191 - Ditch
- 540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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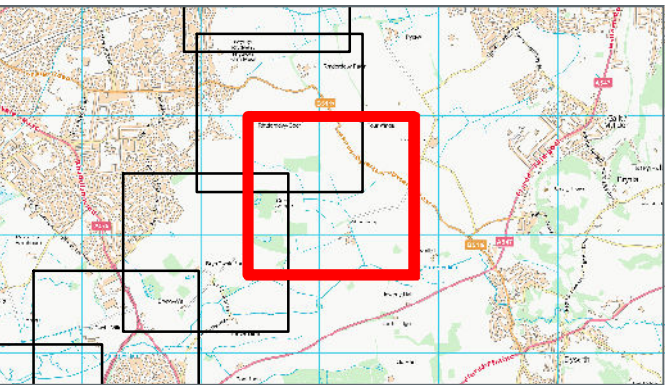
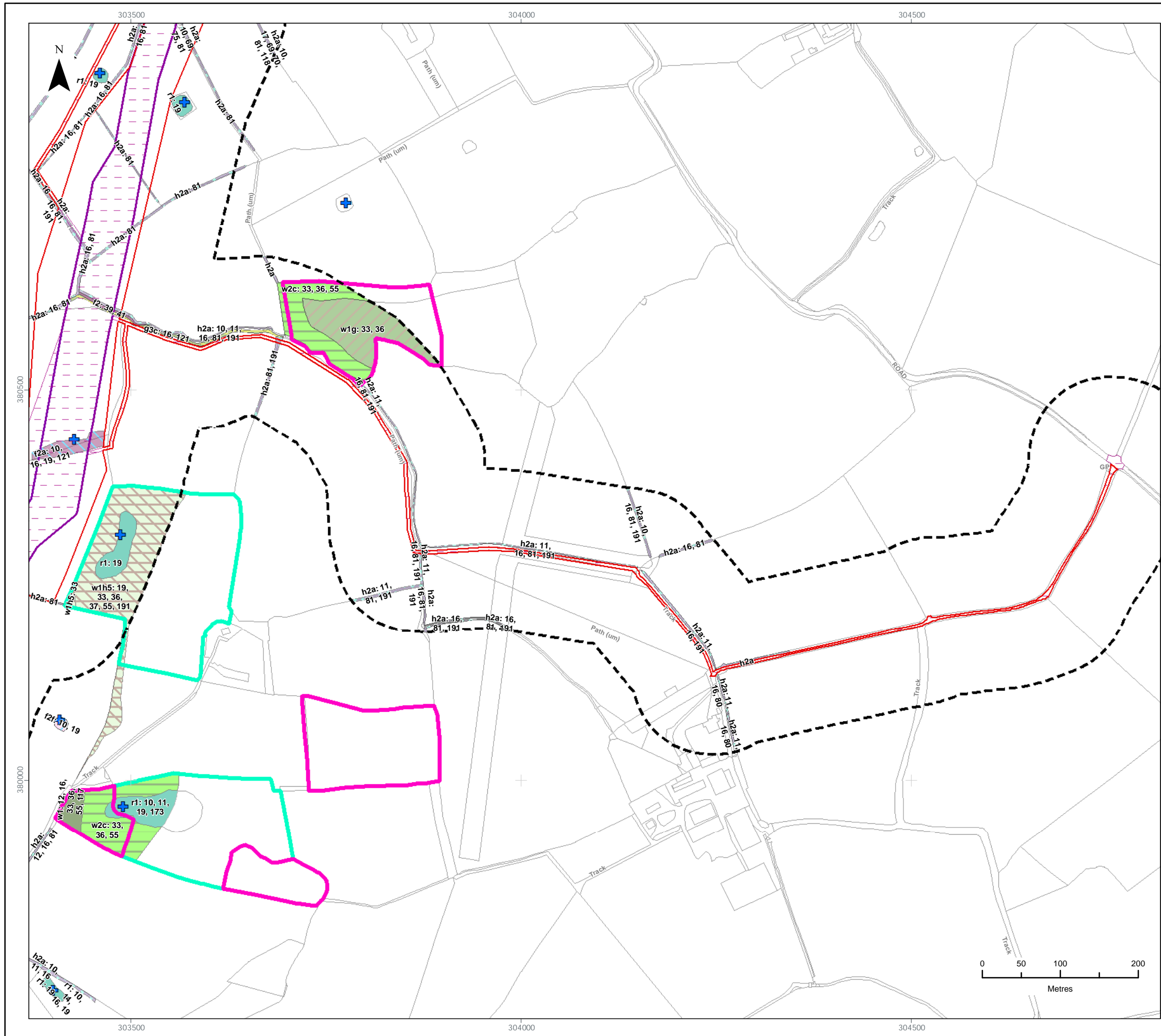
FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

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1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 13**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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#### LEGEND

- Order Limits
- Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure
- Proposed Onshore Export Cable Corridor
- Ancient Semi Natural Woodland Site
- Plantation on Ancient Woodland Site
- Pond Location
- Priority Habitats
  - Wetland - Fen Marsh and Swamp
    - f2 - Fen Marsh and Swamp
    - f2a - Lowland Fen
    - f2f - Other Swamp
  - Grassland - Neutral Grassland
    - g3c - Other Neutral Grassland
  - Heathland and Shrub - Hedgerows
    - h2a - Hedgerow (Priority Habitat)
  - Woodland and Forest - Broadleaved Mixed and Yew Woodland
    - w1 - Broadleaved Mixed and Yew Woodland
    - w1g - Other Woodland; Broadleaved
    - w1h5 - Other Woodland; Mixed; Mainly Broadleaved
  - Woodland and Forest - Coniferous Woodland
    - w2c - Other Coniferous Woodland
  - Rivers and Lakes - Standing Open Water and Canals
    - r1 - Standing Open Water and Canal
- Secondary Codes
  - 10 - Scattered scrub
  - 11 - Scattered trees
  - 12 - Scattered bracken
  - 14 - Scattered rushes
  - 15 - Rushes dominant
  - 16 - Tall herb
  - 17 - Ruderal / ephemeral
  - 19 - Ponds (Priority Habitat)
  - 25 - Coastal and flood plain grazing marsh
  - 33 - Ancient woodland site
  - 36 - Plantation
  - 37 - Semi-natural woodland
  - 38 - Secondary woodland
  - 39 - Freshwater - man-made
  - 40 - Freshwater - heavily modified
  - 41 - Freshwater - natural
  - 47 - Native
  - 55 - High forest
  - 57 - Young trees - self-set
  - 58 - Grazed
  - 64 - Mown
  - 66 - Frequently mown
  - 75 - Active management
  - 76 - Recent management
  - 80 - Unmanaged
  - 81 - Failed hedgerow
  - 86 - Accessible natural greenspace
  - 94 - Green lane
  - 117 - Dry
  - 118 - Mesic
  - 119 - Seasonally wet
  - 120 - Wet
  - 121 - Waterlogged
  - 122 - Inundation vegetation
  - 138 - Saline influence
  - 147 - Failed dead wood abundant
  - 148 - Flower forage abundant
  - 159 - Standing dead wood abundant
  - 162 - Temporary waterbodies
  - 173 - Swamp
  - 190 - Hedgerow with trees
  - 191 - Ditch
  - 540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM*

FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

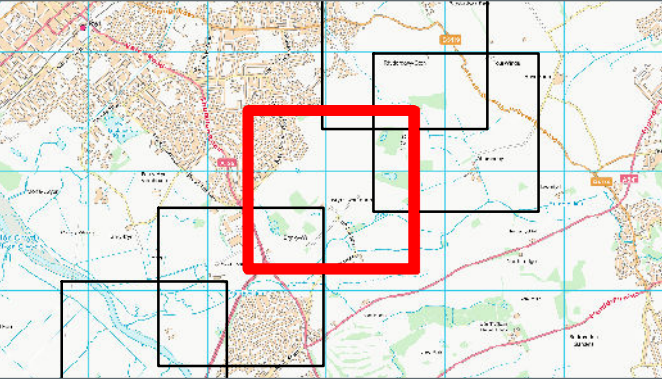
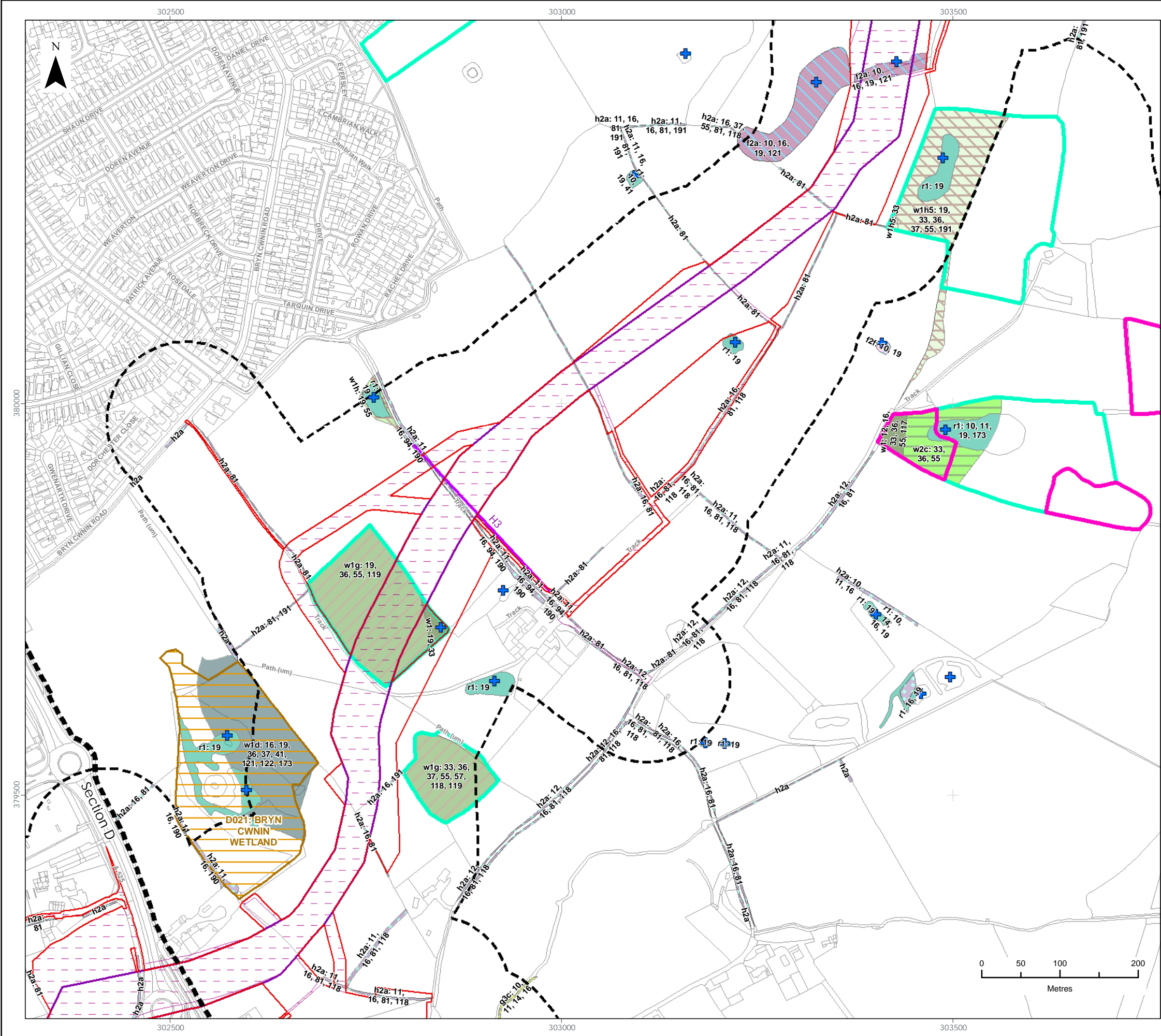
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 14**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

Order Limits

Onshore Cable Route Section Breaks

Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure

Proposed Onshore Export Cable Corridor

Local Wildlife Site

Ancient Semi Natural Woodland Site

Plantation on Ancient Woodland Site

Pond Location

Important Hedgerow

Priority Habitats

Wetland - Fen Marsh and Swamp

Grassland - Neutral Grassland

Heathland and Shrub - Hedgerows

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1h - Other Woodland; Mixed

w1h5 - Other Woodland; Mixed; Mainly Broadleaved

Woodland and Forest - Coniferous Woodland

w2c - Other Coniferous Woodland

Rivers and Lakes - Standing Open Water and Canals

r1 - Standing Open Water and Canal

f2a - Lowland Fen

f2f - Other Swamp

g3c - Other Neutral Grassland

h2a - Hedgerow (Priority Habitat)

w1 - Broadleaved Mixed and Yew Woodland

w1d - Wet Woodland

w1g - Other Woodland; Broadleaved

Secondary Codes

10 - Scattered scrub

11 - Scattered trees

12 - Scattered bracken

14 - Scattered rushes

15 - Rushes dominant

16 - Tall herb

17 - Ruderal / ephemeral

19 - Ponds (Priority Habitat)

25 - Coastal and flood plain grazing marsh

33 - Ancient woodland site

36 - Plantation

37 - Semi-natural woodland

38 - Secondary woodland

39 - Freshwater - man-made

40 - Freshwater - heavily modified

41 - Freshwater - natural

47 - Native

55 - High forest

57 - Young trees - self-set

58 - Grazed

64 - Mown

66 - Frequently mown

75 - Active management

76 - Recent management

80 - Unmanaged

81 - Failed hedgerow

86 - Accessible natural greenspace

94 - Green lane

117 - Dry

118 - Mesic

119 - Seasonally wet

120 - Wet

121 - Waterlogged

122 - Inundation vegetation

138 - Saline influence

147 - Failed dead wood abundant

148 - Flower forage abundant

159 - Standing dead wood abundant

162 - Temporary waterbodies

173 - Swamp

190 - Hedgerow with trees

191 - Ditch

540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

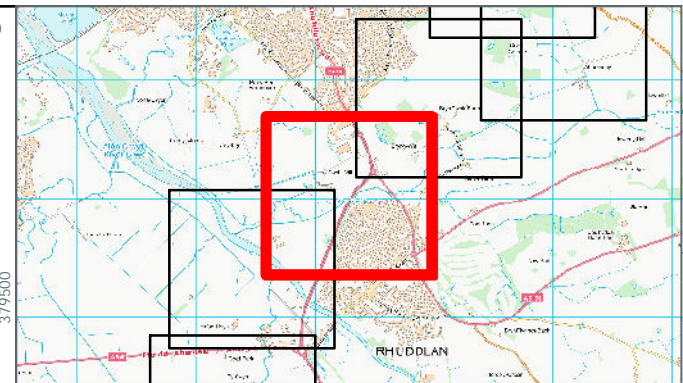
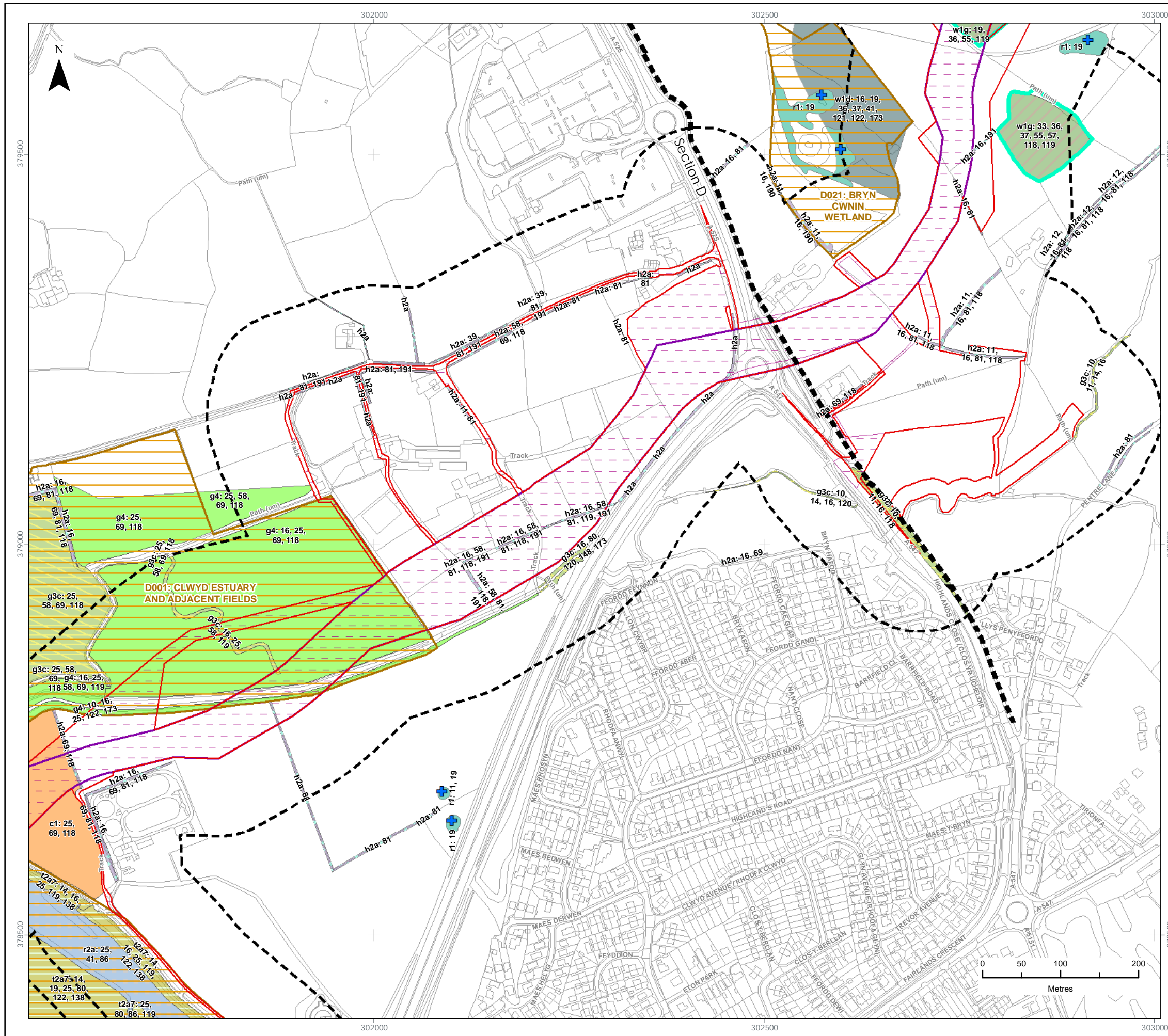
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 15**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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LEGEND		
	Order Limits	
	Onshore Cable Route Section Breaks	
	Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure	
	Proposed Onshore Export Cable Corridor	
	Local Wildlife Site	
	Ancient Semi Natural Woodland Site	
	Pond Location	
	Priority Habitats	
	Cropland - Arable and Horticulture	
	Grassland - Neutral Grassland	
	Grassland - Modified Grassland	
	Heathland and Shrub - Hedgerows	
	Woodland and Forest - Broadleaved Mixed and Yew Woodland	
	W1d - Wet Woodland	
	W1g - Other Woodland: Broadleaved	
	Rivers and Lakes - Standing Open Water and Canals	
	R1 - Standing Open Water and Canal	
	Rivers and Lakes - Rivers and Streams	
	R2a - Rivers (Priority Habitat)	
	Marine Inlets and Transitional Waters - Littoral Sediment	
	t2a7 - Atlantic Salt Meadows (H1330)	
Secondary Codes		
10 - Scattered scrub	66 - Frequently mown	
11 - Scattered trees	75 - Active management	
12 - Scattered bracken	76 - Recent management	
14 - Scattered rushes	80 - Unmanaged	
15 - Rushes dominant	81 - Failed hedgerow	
16 - Tall herb	86 - Accessible natural greenspace	
17 - Ruderal / ephemeral	94 - Green lane	
19 - Ponds (Priority Habitat)	117 - Dry	
25 - Coastal and flood plain grazing marsh	118 - Mesic	
33 - Ancient woodland site	119 - Seasonally wet	
36 - Plantation	120 - Wet	
37 - Semi-natural woodland	121 - Waterlogged vegetation	
38 - Secondary woodland	122 - Inundation	
39 - Freshwater - man-made	138 - Saline influence	
40 - Freshwater - heavily modified	147 - Failed dead wood abundant	
41 - Freshwater - natural	148 - Flower forage abundant	
47 - Native	159 - Standing dead wood abundant	
55 - High forest	162 - Temporary waterbodies	
57 - Young trees - self-set	173 - Swamp	
58 - Grazed	190 - Hedgerow with trees	
64 - Mown	191 - Ditch	
	540 - Golf course	

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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FIGURE TITLE:  
**IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

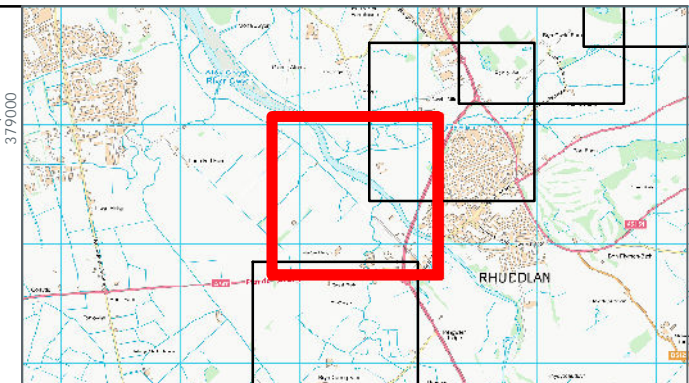
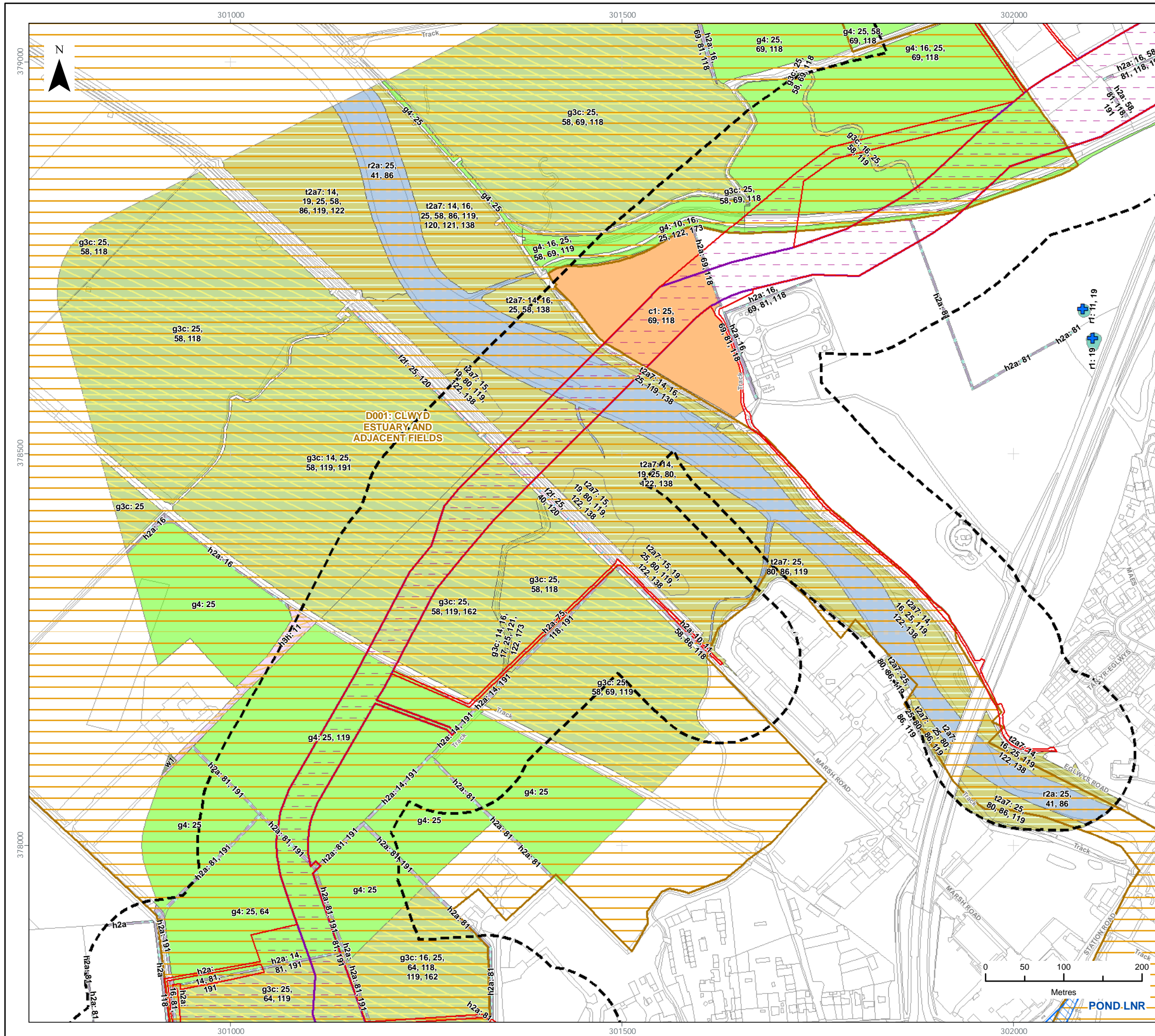
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 16**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

**Order Limits**

- Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure
- Proposed Onshore Export Cable Corridor
- Local Nature Reserve (LNR)
- Local Wildlife Site
- Pond Location

**Priority Habitats**

**Cropland - Arable and Horticulture**

- c1 - Arable and Horticulture

**Wetland - Fen Marsh and Swamp**

- f2f - Other Swamp

**Grassland - Neutral Grassland**

- g3c - Other Neutral Grassland

**Grassland - Modified Grassland**

- g4 - Modified Grassland (Priority Habitat)

**Heathland and Shrub - Hedgerows**

- h2a - Hedgerow (Priority Habitat)

**Heathland and Shrub - Dense Scrub**

- h3h - Mixed Scrub

**Woodland and Forest - Broadleaved Mixed and Yew Woodland**

- w1 - Broadleaved Mixed and Yew Woodland

**Rivers and Lakes - Standing Open Water and Canals**

- r1 - Standing Open Water and Canal

**Rivers and Lakes - Rivers and Streams**

- r2a - Rivers (Priority Habitat)

**Marine Inlets and Transitional Waters - Littoral Sediment**

- t2a7 - Atlantic Salt Meadows (H1330)

**Secondary Codes**

- 10 - Scattered scrub
- 11 - Scattered trees
- 12 - Scattered bracken
- 14 - Scattered rushes
- 15 - Rushes dominant
- 16 - Tall herb
- 17 - Ruderal / ephemeral
- 19 - Ponds (Priority Habitat)
- 25 - Coastal and flood plain grazing marsh
- 33 - Ancient woodland site
- 36 - Plantation
- 37 - Semi-natural woodland
- 38 - Secondary woodland
- 39 - Freshwater - man-made
- 40 - Freshwater - heavily modified
- 41 - Freshwater - natural
- 47 - Native
- 55 - High forest
- 57 - Young trees - self-set
- 58 - Grazed
- 64 - Mown
- 66 - Frequently mown
- 75 - Active management
- 76 - Recent management
- 80 - Unmanaged
- 81 - Failed hedgerow
- 86 - Accessible natural greenspace
- 94 - Green lane
- 117 - Dry
- 118 - Mesic
- 119 - Seasonally wet
- 120 - Wet
- 121 - Waterlogged
- 122 - Inundation vegetation
- 138 - Saline influence
- 147 - Failed dead wood abundant
- 148 - Flower forage abundant
- 159 - Standing dead wood abundant
- 162 - Temporary waterbodies
- 173 - Swamp
- 190 - Hedgerow with trees
- 191 - Ditch
- 540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

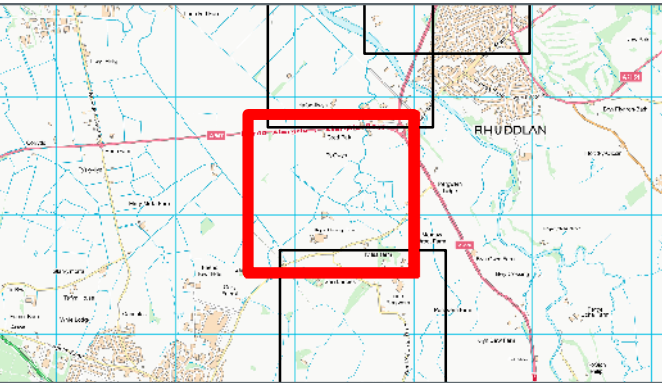
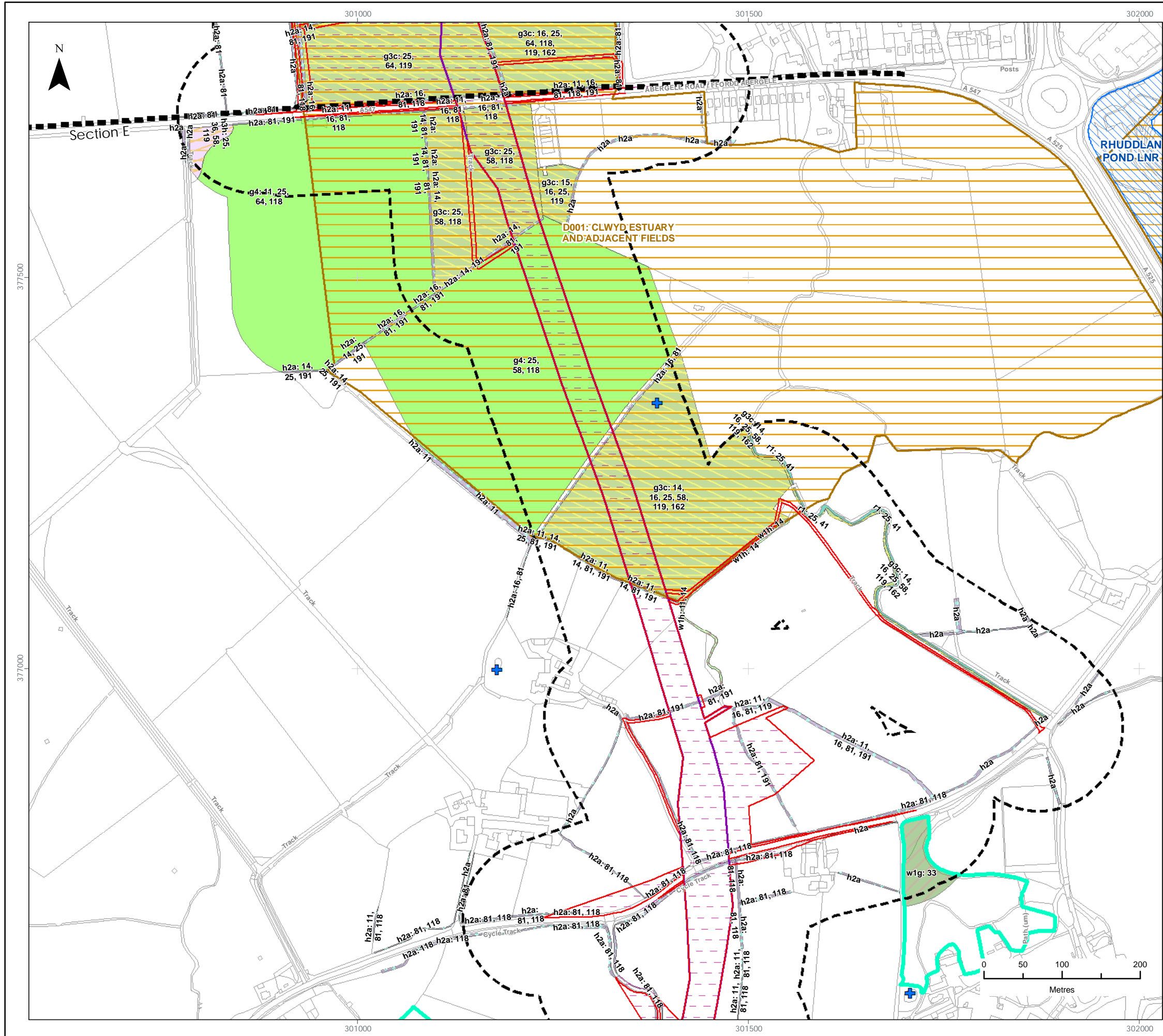
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 17**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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LEGEND		
	Order Limits	
	Onshore Cable Route Section Breaks	
	Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure	
	Proposed Onshore Export Cable Corridor	
	Local Nature Reserve (LNR)	
	Local Wildlife Site	
	Ancient Semi Natural Woodland Site	
	Pond Location	
Priority Habitats		
	Grassland - Neutral Grassland	
	Grassland - Modified Grassland	
	Heathland and Shrub - Hedgerows	
	Heathland and Shrub - Dense Scrub	
	Woodland and Forest - Broadleaved Mixed and Yew Woodland	
	Rivers and Lakes - Standing Open Water and Canals	
	Canal	
Secondary Codes		
10 - Scattered scrub	66 - Frequently mown	
11 - Scattered trees	75 - Active management	
12 - Scattered bracken	76 - Recent management	
14 - Scattered rushes	80 - Unmanaged	
15 - Rushes dominant	81 - Failed hedgerow	
16 - Tall herb	86 - Accessible natural greenspace	
17 - Ruderal / ephemeral	94 - Green lane	
19 - Ponds (Priority Habitat)	117 - Dry	
25 - Coastal and flood plain grazing marsh	118 - Mesic	
33 - Ancient woodland site	119 - Seasonally wet	
36 - Plantation	120 - Wet	
37 - Semi-natural woodland	121 - Waterlogged	
38 - Secondary woodland	122 - Inundation vegetation	
39 - Freshwater - man-made	138 - Saline influence	
40 - Freshwater - heavily modified	147 - Failed dead wood abundant	
41 - Freshwater - natural	148 - Flower forage abundant	
47 - Native	159 - Standing dead wood abundant	
55 - High forest	162 - Temporary waterbodies	
57 - Young trees - self-set	173 - Swamp	
58 - Grazed	190 - Hedgerow with trees	
64 - Mown	191 - Ditch	
	540 - Golf course	

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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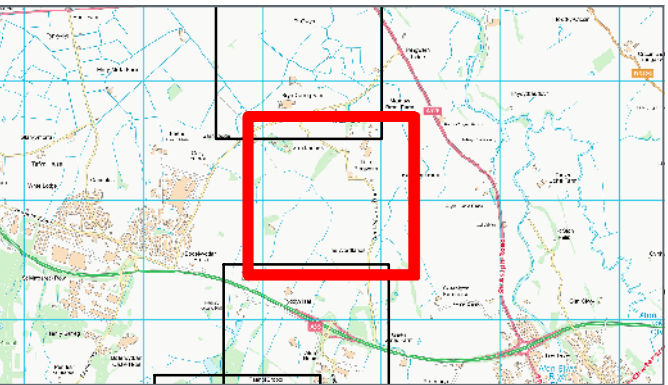
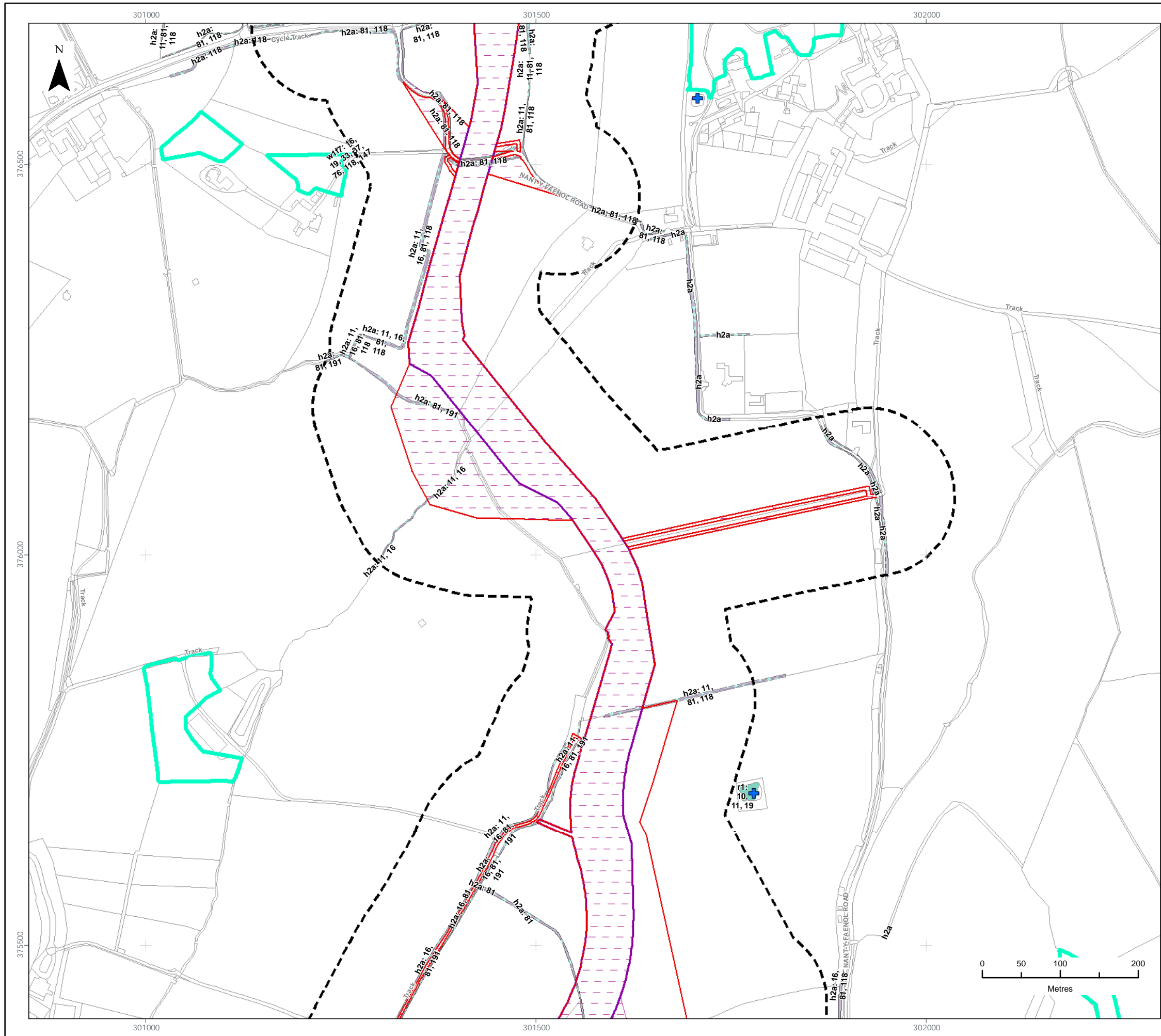
FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 18**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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LEGEND

- Order Limits
- Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure
- Proposed Onshore Export Cable Corridor
- Ancient Semi Natural Woodland Site
- Pond Location
- Priority Habitats
  - Wetland - Fen Marsh and Swamp
    - f2 - Fen Marsh and Swamp
  - Heathland and Shrub - Hedgerows
    - h2a - Hedgerow (Priority Habitat)
  - Woodland and Forest - Broadleaved Mixed and Yew Woodland
    - w1f7 - Other Lowland Mixed Deciduous Woodland
  - Rivers and Lakes - Standing Open Water and Canals
    - r1 - Standing Open Water and Canal
- Secondary Codes
  - 10 - Scattered scrub
  - 11 - Scattered trees
  - 12 - Scattered bracken
  - 14 - Scattered rushes
  - 15 - Rushes dominant
  - 16 - Tall herb
  - 17 - Ruderal / ephemeral
  - 19 - Ponds (Priority Habitat)
  - 25 - Coastal and flood plain grazing marsh
  - 33 - Ancient woodland site
  - 36 - Plantation
  - 37 - Semi-natural woodland
  - 38 - Secondary woodland
  - 39 - Freshwater - man-made
  - 40 - Freshwater - heavily modified
  - 41 - Freshwater - natural
  - 47 - Native
  - 55 - High forest
  - 57 - Young trees - self-set
  - 58 - Grazed
  - 64 - Mown
  - 66 - Frequently mown
  - 75 - Active management
  - 76 - Recent management
  - 80 - Unmanaged
  - 81 - Failed hedgerow
  - 86 - Accessible natural greenspace
  - 94 - Green lane
  - 117 - Dry
  - 118 - Mesic
  - 119 - Seasonally wet
  - 120 - Wet
  - 121 - Waterlogged
  - 122 - Inundation vegetation
  - 138 - Saline influence
  - 147 - Failed dead wood abundant
  - 148 - Flower forage abundant
  - 159 - Standing dead wood abundant
  - 162 - Temporary waterbodies
  - 173 - Swamp
  - 190 - Hedgerow with trees
  - 191 - Ditch
  - 540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

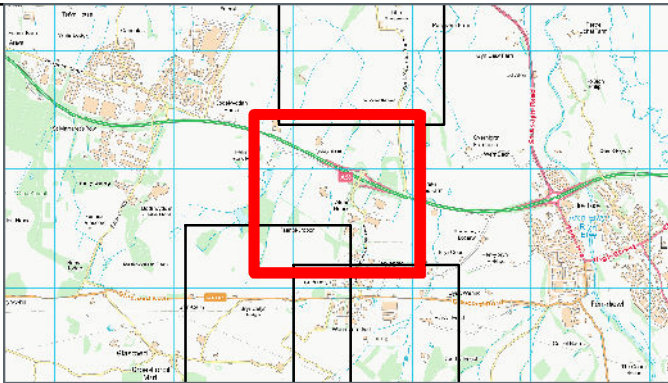
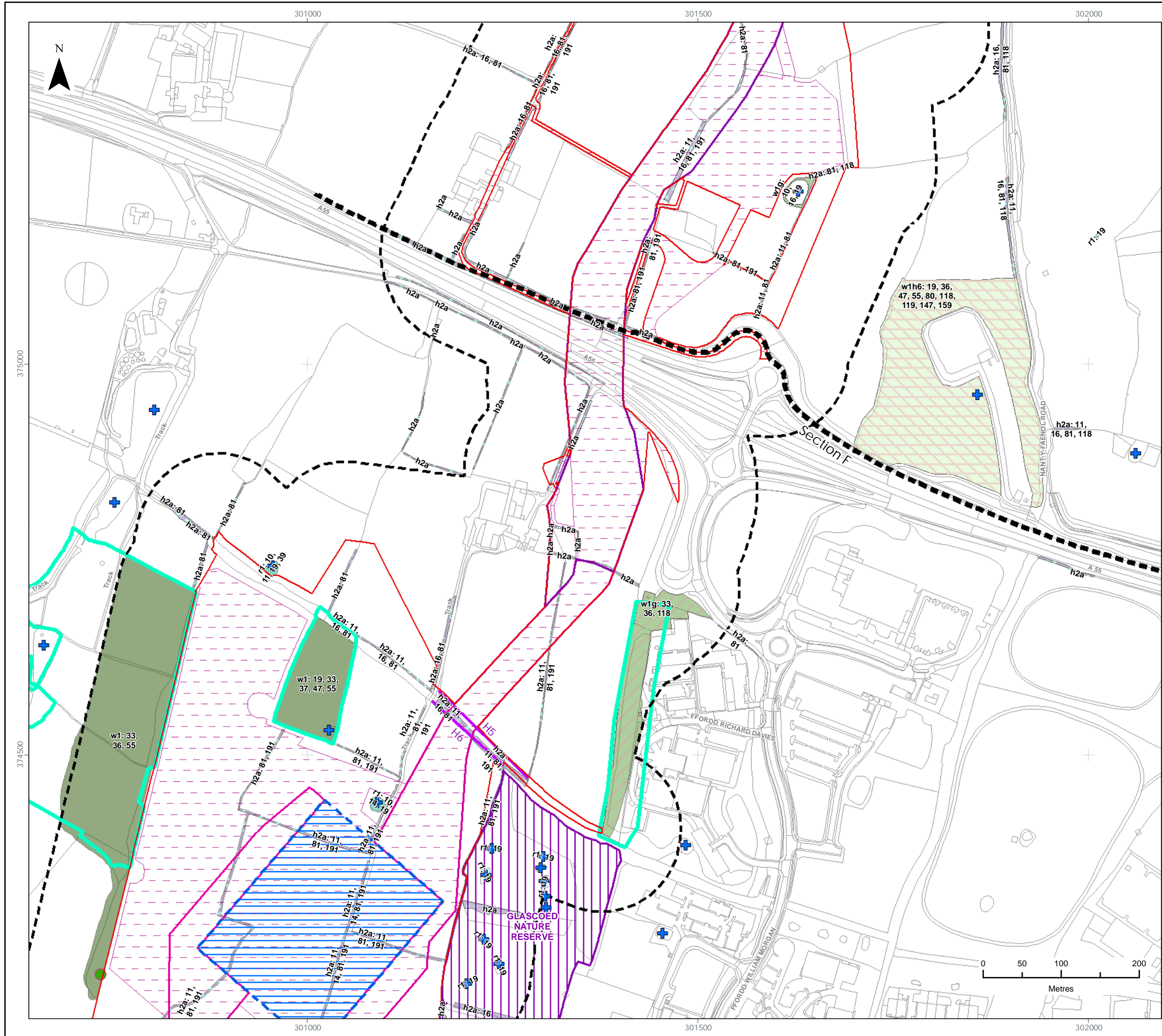
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 19**

SCALE:	PLOT SIZE:	DATUM:	COORDINATE SYSTEM:
1:5,000	A3	ODN	British National Grid







**LEGEND**

- Order Limits
- Onshore Cable Route Section Breaks
- Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure
- Proposed Onshore Export Cable Corridor
- Proposed Substation Cable Corridor Zone
- Proposed Onshore Substation (OnSS) Footprint
- Other Nature Reserve
- Ancient Semi Natural Woodland Site
- Pond Location
- Veteran Tree Location
- Important Hedgerow
- Priority Habitats
- Heathland and Shrub - Hedgerows
- Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved Mixed and Yew Woodland
- w1g - Other Woodland: Broadleaved
- w1h6 - Other Woodland: Mixed; mainly Conifer
- Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing Open Water and Canal
- Secondary Codes
- 66 - Frequently mown
- 75 - Active management
- 76 - Recent management
- 80 - Unmanaged
- 81 - Failed hedgerow
- 86 - Accessible natural greenspace
- 94 - Green lane
- 117 - Dry
- 118 - Mesic
- 119 - Seasonally wet
- 120 - Wet
- 121 - Waterlogged
- 122 - Inundation vegetation
- 148 - Flower forage abundant
- 159 - Standing dead wood abundant
- 162 - Temporary waterbodies
- 173 - Swamp
- 190 - Hedgerow with trees
- 191 - Ditch
- 540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM*

FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

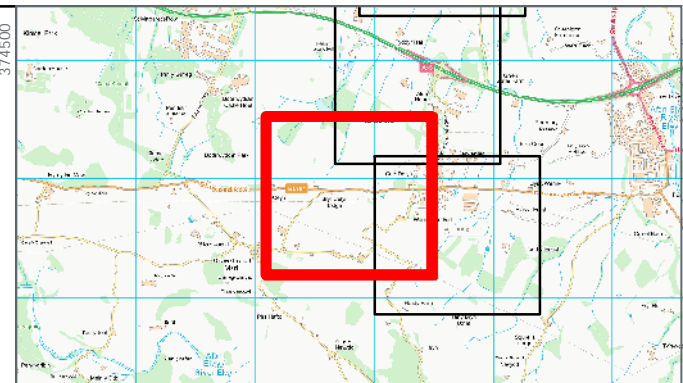
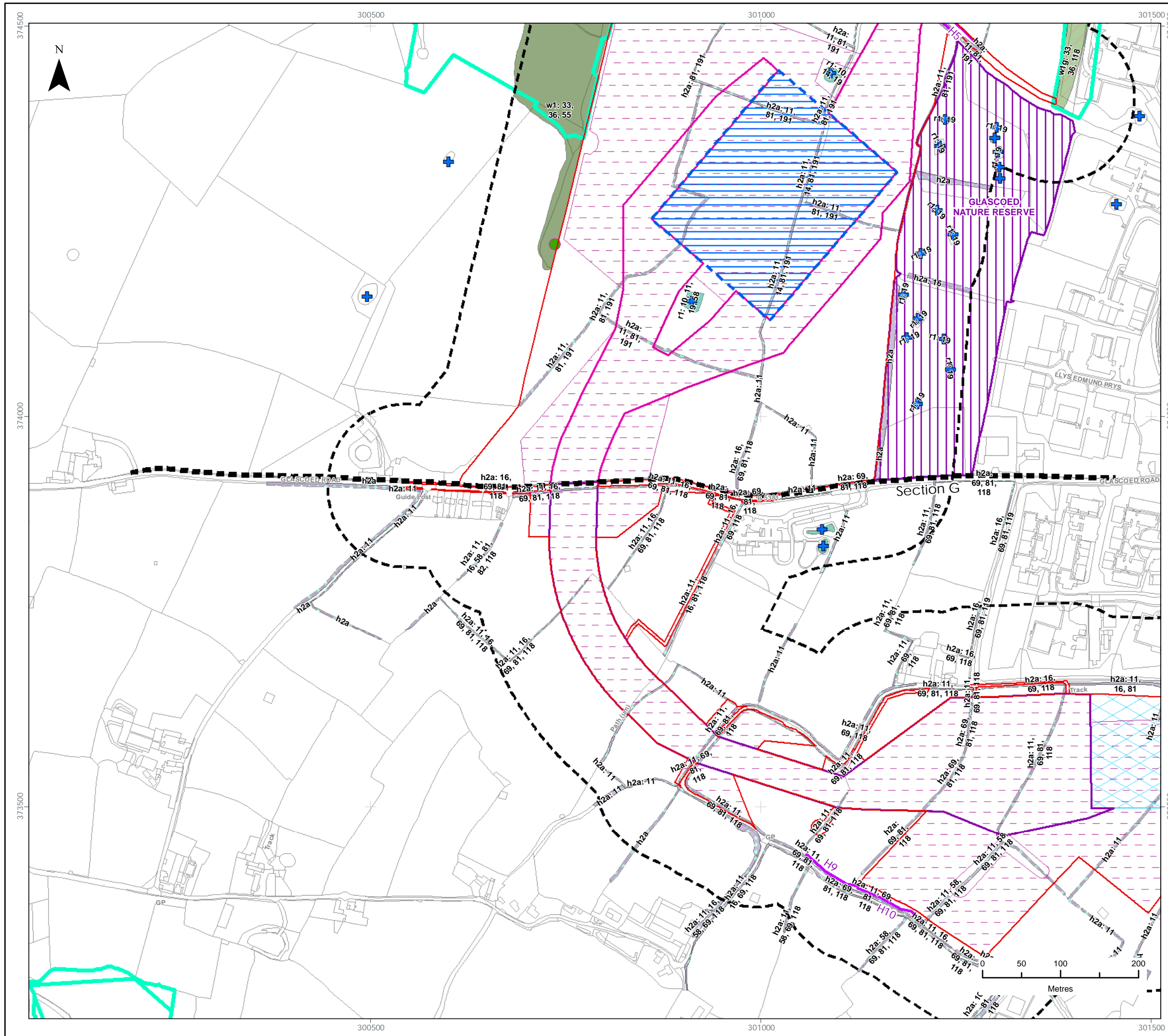
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 20**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

**Order Limits**

**Onshore Cable Route Section Breaks**

**Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure**

**Proposed Onshore Export Cable Corridor**

**Proposed Substation Cable Corridor Zone**

**Proposed Onshore Substation (OnSS) Footprint**

**Unlicensed Work Zone**

**Other Nature Reserve**

**Ancient Semi Natural Woodland Site**

**Pond Location**

**Veteran Tree Location**

**Important Hedgerow**

**Priority Habitats**

**Heathland and Shrub - Hedgerows**

**h2a - Hedgerow (Priority Habitat)**

**Woodland and Forest - Broadleaved Mixed and Yew Woodland**

**w1 - Broadleaved Mixed and Yew Woodland**

**w1g - Other Woodland: Broadleaved**

**Rivers and Lakes - Standing Open Water and Canals**

**r1 - Standing Open Water and Canal**

**Secondary Codes**

10 - Scattered scrub  
11 - Scattered trees  
12 - Scattered bracken  
14 - Scattered rushes  
15 - Rushes dominant  
16 - Tall herb  
17 - Ruderal / ephemeral  
19 - Ponds (Priority Habitat)  
25 - Coastal and flood plain grazing marsh  
33 - Ancient woodland site  
36 - Plantation  
37 - Semi-natural woodland  
38 - Secondary woodland  
39 - Freshwater - man-made  
40 - Freshwater - heavily modified  
41 - Freshwater - natural  
47 - Native  
55 - High forest  
57 - Young trees - self-set  
58 - Grazed  
64 - Mown  
66 - Frequently mown  
75 - Active management  
76 - Recent management  
80 - Unmanaged  
81 - Failed hedgerow  
86 - Accessible natural greenspace  
94 - Green lane  
117 - Dry  
118 - Mesic  
119 - Seasonally wet  
120 - Wet  
121 - Waterlogged  
122 - Inundation vegetation  
138 - Saline influence  
147 - Failed dead wood abundant  
148 - Flower forage abundant  
159 - Standing dead wood abundant  
162 - Temporary waterbodies  
173 - Swamp  
190 - Hedgerow with trees  
191 - Ditch  
540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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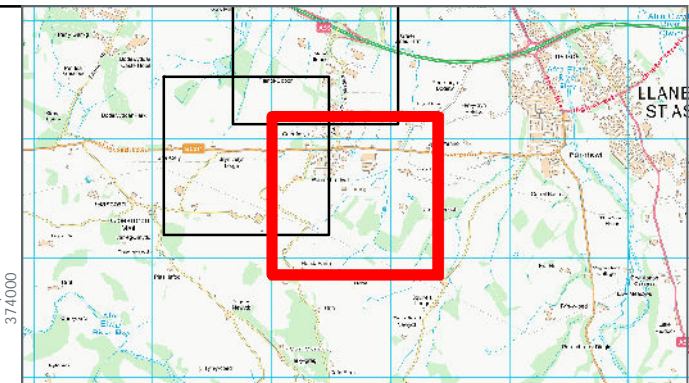
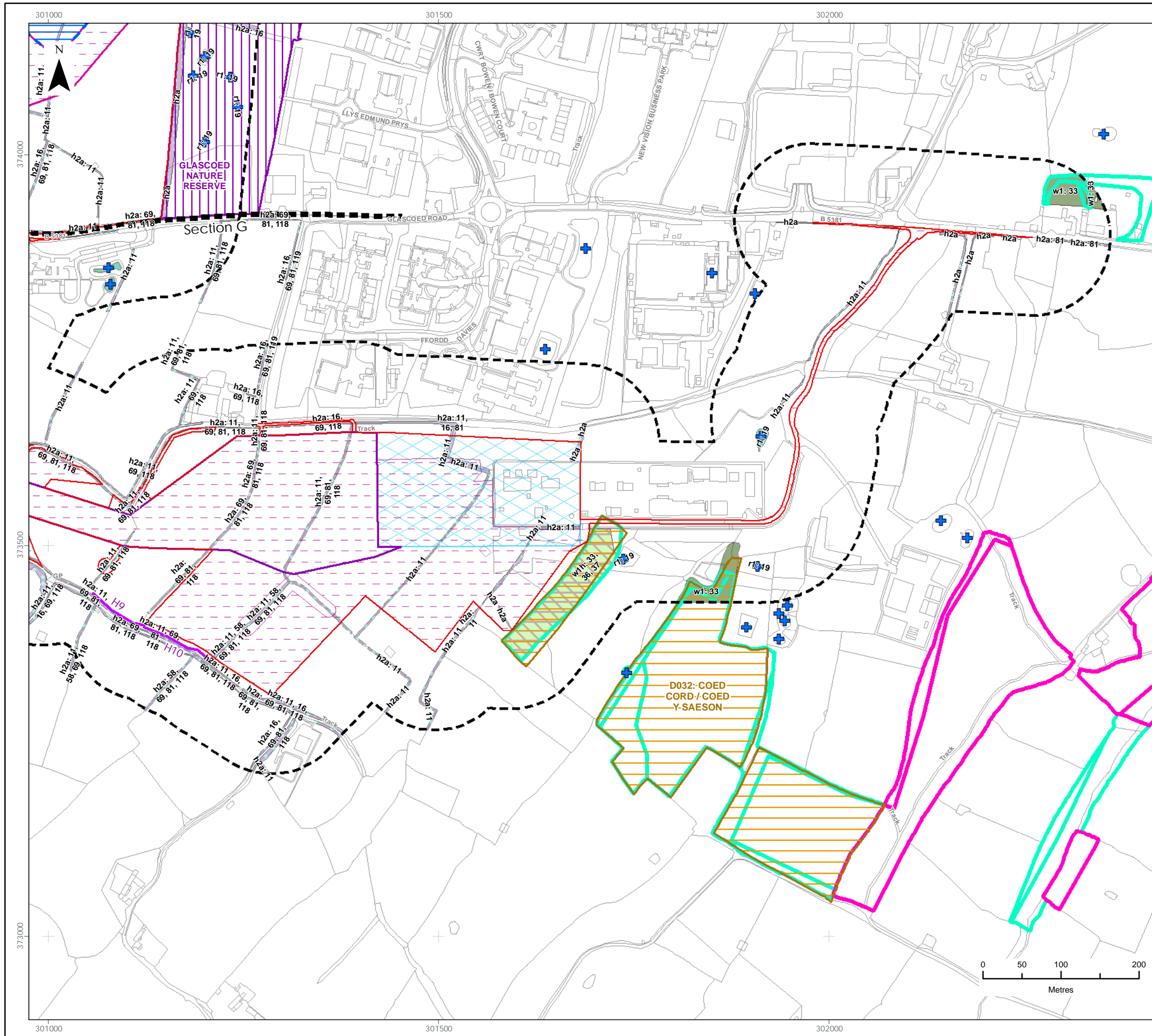
FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 21**

SCALE: 1:5,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

**Order Limits**

- Onshore Cable Route Section Breaks
- Proposed Onshore Export Cable Corridor, Substation Footprint and Associated Infrastructure
- Proposed Onshore Export Cable Corridor
- Proposed Substation Cable Corridor Zone
- Proposed Onshore Substation (OnSS) Footprint
- Unlicensed Work Zone
- Local Wildlife Site
- Other Nature Reserve
- Ancient Semi Natural Woodland Site
- Plantation on Ancient Woodland Site
- Pond Location
- Important Hedgerow
- Priority Habitats
- Heathland and Shrub - Hedgerows
- Woodland and Forest - Broadleaved Mixed and Yew Woodland
- W1 - Broadleaved Mixed and Yew Woodland
- W1h - Other Woodland: Mixed

**Rivers and Lakes - Standing Open Water and Canals**

- r1 - Standing Open Water and Canal

**Secondary Codes**

- 10 - Scattered scrub
- 11 - Scattered trees
- 12 - Scattered bracken
- 14 - Scattered rushes
- 15 - Rushes dominant
- 16 - Tall herb
- 17 - Ruderal / ephemeral
- 19 - Ponds (Priority Habitat)
- 25 - Coastal and flood plain grazing marsh
- 33 - Ancient woodland site
- 36 - Plantation
- 37 - Semi-natural woodland
- 38 - Secondary woodland
- 39 - Freshwater - man-made
- 40 - Freshwater - heavily modified
- 41 - Freshwater - natural
- 47 - Native
- 55 - High forest
- 57 - Young trees - self-set
- 58 - Grazed
- 64 - Mown
- 66 - Frequently mown
- 75 - Active management
- 76 - Recent management
- 80 - Unmanaged
- 81 - Failed hedgerow
- 86 - Accessible natural greenspace
- 94 - Green lane
- 117 - Dry
- 118 - Mesic
- 119 - Seasonally wet
- 120 - Wet
- 121 - Waterlogged
- 122 - Inundation vegetation
- 138 - Saline influence
- 147 - Failed dead wood abundant
- 148 - Flower forage abundant
- 159 - Standing dead wood abundant
- 162 - Temporary waterbodies
- 173 - Swamp
- 190 - Hedgerow with trees
- 191 - Ditch
- 540 - Golf course

Note:  
Please refer to Chapter 3.1, Figures 4-16 for detailed proposed infrastructure layout  
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FIGURE TITLE: **IMPORTANT SITES AND HABITATS POTENTIALLY AFFECTED**

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 22**

SCALE:	PLOT SIZE:	DATUM:	COORDINATE SYSTEM:
1:5,000	A3	ODN	British National Grid





## 5.7.4 Species

108 The following sections are based on a combination of desk study information and field survey data to provide an assessment of the value of the habitats present for each species or group of species.

### Plants

109 The desk study confirms that numerous notable plant species occur within 2 km of the proposed onshore infrastructure; those for which there are records within the survey area are listed in Table 7.

Table 7: Notable Plant species recorded within the survey area (Cofnod dataset)

SCIENTIFIC NAME	ENGLISH NAME	STATUS*
<i>Ruscus aculeatus</i>	Butcher's-broom	HDir, RD1(Wales) Vulnerable
<i>Buxus sempervirens</i>	Box	RD1(UK) Data deficient, RD2(UK) Rare
<i>Hypericum montanum</i>	Pale St John's-wort	RD1(UK) Near threatened
<i>Viola canina</i>	Heath Dog-violet	RD1(UK) Near threatened
<i>Euphorbia exigua</i>	Dwarf Spurge	RD1(UK) Near threatened, RD1(Wales) Near threatened
<i>Papaver argemone</i>	Prickly Poppy	RD1(UK) Vulnerable, RD1(Wales) Endangered
<i>Hordeum marinum</i>	Sea Barley	RD1(UK) Vulnerable, RD2(UK) Scarce, S7

SCIENTIFIC NAME	ENGLISH NAME	STATUS*
<i>Fumaria purpurea</i>	Purple Ramping-fumitory	RD1(Wales) Critically endangered, RD2(UK) Scarce, S7
<i>Hippuris vulgaris</i>	Mare's-tail	RD1(Wales) Near threatened
<i>Marrubium vulgare</i>	White Horehound	RD1(Wales) Near threatened, RD2(UK) Scarce
<i>Sinapis arvensis</i>	Charlock	RD1(Wales) Vulnerable
<i>Butomus umbellatus</i>	Flowering-rush	RD1(Wales) Vulnerable
<i>Brassica oleracea</i>	Wild Cabbage	RD2(UK) Scarce
<i>Medicago sativa</i> subsp. <i>falcata</i>	Sickle Medick	RD2(UK) Scarce
<i>Hyacinthoides non-scripta</i>	Bluebell	WCA8

\* HDir – Habitats Directive Annex V (plant species of Community interest whose taking in the wild and exploitation may be subject to management measures), RD1(UK) - Red Data Book listing for the UK based on IUCN guidelines<sup>v</sup>, RD1(Wales) - Red Data Book listing for Wales based on IUCN guidelines, RD2(UK) - Red Data Book listing for the UK not based on IUCN guidelines, S7 - Environment (Wales) Act 2016 (S7), WCA8 - Wildlife & Countryside Act 1981 Schedule 8 (Plants which are protected).

110 In addition to the above species, a further 61 species of local importance<sup>vi</sup> are noted to occur in the survey area by Cofnod, as set out in Appendix A of the habitat survey report (Volume 5, Annex 5.3).

111 Most of the records are associated with coastal habitats, habitats along the River Clwyd or woodlands. Whilst there is a record for Butcher's broom within the survey area, it is close to the remains of a dwelling and is considered most likely a garden escape in this instance.

<sup>v</sup> See the JNCC Conservation Designations for UK Taxa 2020 available at the JNCC website

<sup>vi</sup> As defined within the Denbighshire (VC50) Country Rare Plants Register May 2014 available online via the BSBI website

- 112 More detailed botanical recording was undertaken during the habitat survey at locations where notable plants were most anticipated to occur; namely coastal habitats, the River Clwyd and woodlands. This recorded many of the locally important species set out in Appendix A of the habitat survey report (Volume 5, Annex 5.3 (application ref: 6.5.5.3)) but no additional notable or locally important species. However, it should be borne in mind that exhaustive searching for particular species has not been undertaken, and as plants may only be evident at certain times of year the presence of additional species remains a possibility.
- 113 INNS including those listed on Schedule 9 of the Wildlife and Countryside Act 1981 are present in the dataset provided by Cofnod and within the survey area are listed in Table 8. Of these, Japanese rose *Rosa rugosa* was recorded during the surveys at coastal habitats. The other species listed were not encountered, though it is not possible to conclude absence from the survey area for the same reasons as given for notable plants above.

Table 8: Invasive non-native species previously recorded within the survey area (Cofnod data set)

SCIENTIFIC NAME	ENGLISH NAME	LISTED ON SCHEDULE 9 <sup>vii</sup>	APPROXIMATE LOCATION
<i>Azolla filiculoides</i>	Water Fern	Y	Pont Robin, north of Pengwern Two ponds within Glascoed Nature Reserve
<i>Carpobrotus edulis</i>	Hottentot-fig	Y	Extreme northwest edge of the survey area (spurious record, location within sea)

<sup>vii</sup> Schedule 9 of the Wildlife & Countryside Act 1981 .



SCIENTIFIC NAME	ENGLISH NAME	LISTED ON SCHEDULE 9 <sup>vii</sup>	APPROXIMATE LOCATION
<i>Fallopia japonica</i>	Japanese Knotweed	Y	Pengwern
<i>Heracleum mantegazzianum</i>	Giant Hogweed	Y	Within drainage basin at Princes Gorse
<i>Hydrocotyle ranunculoides</i>	Floating Pennywort	Y	Within roadside ditch south of Rhyd Wen Farm Mews
<i>Rosa rugosa</i>	Japanese Rose	Y	Eastern extreme of survey area, at Y Ffrith
<i>Hippophae rhamnoides</i>	Sea-buckthorn	N	Eastern extreme of survey area, at Y Ffrith
<i>Hyacinthoides hispanica</i>	Spanish Bluebell	N	Eastern extreme of survey area, at Y Ffrith
<i>Cortaderia selloana</i>	Pampas grass	N	Eastern extreme of survey area, at Y Ffrith
<i>Sedum album</i>	White stonecrop	N	South of OnSS

114 In addition to the species listed in Table 8, Himalayan balsam *Impatiens glandulifera*, was recorded on the banks of Glanffyddion Cut and at water courses adjacent to Princes Gorse woodland. *Rhododendron ponticum* was also noted to occur in Princes Gorse woodland.

- 115 Locations for INNS recorded during the field survey or in Table 8 are included on Figure 4 of the habitat survey report (Volume 5, Annex 5.3 (application ref: 6.5.5.3)).

## Fish

- 116 European eel *Anguilla anguilla*, Atlantic salmon *Salmo salar*, brown trout *Salmo trutta* and bullhead *Cottus gobio* have been recorded in the River Clwyd and/or its tributaries. NRW confirmed at the February 2021 ETG meeting that bullhead were unlikely to be present within the study area, however (see Consultation report for copy of meeting minutes (application ref 5.1)). The remaining species are considered important for the following reasons:
- European Eel – Listed as Critically Endangered on the IUCN Red List and is a S7 species listed in the Environment Act (Wales) 2016;
  - Atlantic salmon is included on Schedule 4 of the Habitats Regulations (may not be taken or killed in certain ways) and also included on the list under S7 of the Environment Act (Wales) 2016; and
  - Brown trout – included on the list under S7 of the Environment Act (Wales) 2016.
- 117 Whilst the Atlantic salmon and brown trout records are confined to the main river system and tributaries, it is possible that European eel make use of other smaller water courses and ponds within the study area.
- 118 NRW confirms that based upon data for the period 2009 – 2018<sup>viii</sup> stocks of salmon are decreasing and are likely to continue to decline (downward trend). The Clwyd has seen the most notable decline in adult/juvenile salmon numbers in North Wales. Trout numbers are also falling and predicted to continue declining (uncertain trend). Additional detail in respect of the marine element of these species' life stages can be found in Volume 2 Chapter 6 Fish and Shellfish (application ref: 6.2.6) and associated Annexes.

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<sup>viii</sup> Know Your River – Clwyd Salmon & Sea Trout Catchment Summary 2019 available at the NRW website

## Invertebrates

- 119 The desk study confirms that numerous notable invertebrate species occur within 2 km of the OL; the majority of records are for butterflies and moths recorded at Bodelwyddan, SABP and Rhuddlan (see Appendix C in the PEA report (Volume 5, Annex 5.1, application ref: 6.5.5.1) for the full list). This includes two species listed (in respect of sale only) in Schedule 5 of the Wildlife and Countryside Act 1981 and under S7 of the Environment (Wales) Act 2016; white-letter hairstreak *Satyrrium w-album* and pearl-bordered fritillary *Boloria euphrosyne*. Pearl-bordered fritillary is associated with woodland habitats and needs abundant foodplants (violet *Viola* species) growing in short, sparse vegetation, where there is abundant leaf litter. White-letter hairstreak is dependent on elm *Ulmus* species; wych elm was noted to be abundant in some hedgerows south of SABP.
- 120 A further 40 of the recorded species are listed under S7, four of which are also included in the Red Data Book (UK); small pearl-bordered fritillary *Boloria selene* which uses damp grassland, plus small heath *Coenonympha pamphilus*, wall *Lasiommata megera* and grayling *Hipparchia semele* which are associated with dry grassland and/or open stony habitats.
- 121 Habitats within the study area that are considered to be most valuable to invertebrate species broadly match those listed for important plant species, namely habitats immediately adjacent to the River Clwyd, coastal habitats, hedgerows and ancient or semi-natural woodland.

## Amphibians

- 122 The desk study confirms that breeding GCN have been recorded at many of the ponds within the study area, with a well recorded population at SABP. GCN is protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended), it is also a S7 species. Glascoed Nature Reserve (location indicated on Figure 9) at the extreme southwest of the business park includes numerous breeding ponds and is managed for the benefit of the species. Mitigation for GCN has been and remains an integral part of the development of the business park.

- 123 In addition, common toad *Bufo bufo*, listed under S7 of the Environment (Wales) Act 2016, smooth newt *Lissotriton vulgaris*, palmate newt *Lissotriton helveticus* and common frog *Rana temporaria* have been widely recorded at ponds within the study area.
- 124 Three records for natterjack toad were included in the Cofnod dataset within 2 km of the OL. The records were from Rhyl, Abergele and Pensarn with unspecified dates prior to 1919, prior to 1960 and prior to 1995. It is understood from discussion during ETG meetings that no extant populations occur at these locations currently.
- 125 During the field survey, GCN, common toad, common frog, smooth newt and palmate newt were recorded in many of the ponds (refer to the GCN report in Volume 5, Annex 5.6, application ref: 6.5.5.6, which includes raw data for all amphibian species as well as figures showing pond numbers and locations). GCN are discussed in greater detail below. The remaining species were recorded in low numbers such that none of the ponds are considered to support a significant single-species population or multi-species assemblage.
- 126 GCN populations typically occur as a metapopulation, i.e. a group of spatially separated populations which interact at some level across a landscape of breeding ponds and terrestrial habitat. This study has identified four metapopulations within the survey area, with the following combined peak population sizes (as defined by England Nature, 2001):
- ▲ Ponds 2 and 3 (south of the railway): small;
  - ▲ Ponds 4 – 26, Pond 53 and the Bruton Park ponds (all east of Rhyl, north of Rhuddlan): medium;
  - ▲ Ponds 35-39 and Pond 41 (north of the A55): small; and
  - ▲ Ponds 40, 42-52, 54, Glascoed Ponds, St Asaph Business Park (SABP) Ponds, Bodelwyddan Ponds, all other ponds within SABP): Whilst full survey details for this entire metapopulation are not available for 2021, it seems possible that the SSSI Selection criteria for an “exceptional site” (a single night count of over 100 individuals) may be met. NRW has confirmed (ETG meeting on 24 November 2021) that the population here is not considered to be at favourable conservation status at the current time.



- 127 Urban (with the exception of private gardens), cropland and short sward modified grassland habitats are considered to be of low value to GCN, as well as other locally occurring amphibians, at all stages of its lifecycle. All gardens, woodlands, hedgerows, scrub and wetlands within 250m of ponds supporting GCN are considered to be of high value to sheltering, hibernating and foraging GCN, as well as providing routes between ponds and foraging areas. Grassland (excluding short sward modified grassland) and other vegetated habitat is considered to be of moderate value to sheltering and foraging GCN.
- 128 It is worth noting that no GCN were incidentally recorded at the artificial refugia installed at the OnSS location during the reptile survey (refer to Volume 5, Annex 5.4 (application ref: 6.5.5.4)). Nor have any GCN been recorded during site investigation work at the OnSS location in September 2021, which involved fingertip searches of terrestrial habitats at trench and borehole locations.

## Reptiles

- 129 Habitats that may be suitable for use by reptiles occur across the survey area and include coastal sand dunes and salt marsh, rough grassland, field margins, hedgerows, scrub, woodland edges and wetlands.
- 130 Desk study data confirms that four species of native reptiles are present locally, and at St Asaph Cemetery, Glan Clwyd Hospital and coastal habitats in particular; suitable habitats within the onshore ECC linked to these areas are considered likely to assist with supporting the following local populations:
- ▲ Adder *Vipera berus* – a single record from St Asaph, dated 1907;
  - ▲ Slow worm *Anguis fragilis* - 14 records, the majority of which are from St Asaph Cemetery;
  - ▲ Grass snake *Natrix natrix* - 11 records from St Asaph Cemetery, SABP and Glan Clwyd Hospital; and
  - ▲ Common lizard *Zootoca vivipara* - 35 records, also from St Asaph Cemetery, coastal habitats at Rhyl and Glan Clwyd Hospital.
- 131 All the above species are protected from intentional killing, injuring and sale under Schedule 5 of the Wildlife and Countryside Act 1981 and are listed under S7 of the Environment Act (Wales) 2016.

- 132 No evidence of reptiles was found during the presence/ absence survey at the OnSS. Reptiles are considered to be absent from the OnSS location at the current time, based on negative results during all surveys.
- 133 Based upon the relatively few records for the area and the modest amounts of suitable habitat present, the survey area is considered unlikely to support large populations of reptiles. However, small populations in areas of suitable habitat (away from the OnSS) cannot be ruled out, especially where these are linked with larger areas of habitat that are known to support reptiles. This is considered to be especially the case in areas linked to Y Ffrith, where large populations have been reported by DCC. The TCC location at Y Ffrith is however specifically located in an area primarily supporting very short grassland, of limited use to this species group.

## Breeding Birds

- 134 The results of breeding bird surveys and desk study data for breeding birds, including a series of figures, are presented in detail in Volume 5, Annex 5.8 (application ref: 6.5.5.8), with a brief summary of key findings provided below.

### Landfall Survey Area

- 135 Fifteen priority species (see Volume 5, Annex 5.8 (application ref: 6.5.5.8) for definition of priority bird species) were recorded within the Landfall survey area of which four were confirmed to be breeding;
- ▲ skylark *Alauda arvensis*,
  - ▲ song thrush *Turdus philomelos*,
  - ▲ dunnock *Prunella modularis* and
  - ▲ linnet *Linaria cannabina*),
- 136 two were probably breeding, three were possibly breeding, two were unlikely to be breeding and four were non-breeding due to the lack of suitable nesting features within the survey area.

- 137 No species included on Annex 1 of the Birds Directive or Schedule 1 of the Wildlife & Countryside Act 1981 were recorded within the landfall survey area and no wader species were recorded. One wildfowl species (mallard *Anas platyrhynchos*) was considered to be possibly breeding but no other wildfowl species were recorded.

### River Clwyd Survey Area

- 138 Thirty priority species were recorded within the River Clwyd survey area, of which seven were confirmed to be breeding (mallard, skylark, swallow *Hirundo rustica*, song thrush, dunnoek, house sparrow *Passer domesticus* and reed bunting *Emberiza schoeniclus*), five were probably breeding, six were possibly breeding, three were unlikely to be breeding and nine were non-breeding.
- 139 One species included on Annex 1 of the Birds Directive and Schedule 1 of the Wildlife & Countryside Act 1981 was recorded within the survey area –kingfisher (see below).
- 140 One other species listed on Schedule 1 of the Wildlife & Countryside Act 1981– little ringed plover *Charadrius dubius* – was recorded within the River Clwyd survey area. This species was only seen during the April 2021 survey and as no suitable breeding habitat is present, the record is likely to refer to birds on passage and it is considered that this species is not breeding within the survey area.
- 141 Fourteen species of waterbirds (including two gull species) were recorded within the survey area, of which one, mallard, was confirmed to be breeding. Shelduck, oystercatcher *Haematopus ostralegus* and redshank and snipe *Gallinago gallinago* were observed within suitable breeding habitat though no behaviour indicative of breeding was recorded and in the case of shelduck the species was only observed in large flocks. Mute swan *Cygnus olor* was observed in pairs, though no nests were found along the River Clwyd or any other watercourses within the survey area and this species has therefore been classified as possibly breeding. All other waterbird species were classified as non-breeding on the basis of the records obtained and the lack of suitable nesting habitat within the survey area.

## OnSS Survey Area

- 142 Thirteen priority species were recorded within the OnSS survey area, of which eight were confirmed to be breeding (tawny owl *Strix aluco*, song thrush, redstart *Phoenicurus ochruros*, dunnock, willow warbler *Phylloscopus trochilus*, coal tit *Periparus ater*, long-tailed tit *Aegithalos caudatus* and bullfinch *Pyrrhula pyrrhula*), two were probably breeding, one was unlikely to be breeding and two were non-breeding.
- 143 No species included on Annex 1 of the Birds Directive or Schedule 1 of the Wildlife & Countryside Act 1981 were recorded within the OnSS survey area and no wader species were recorded. No wildfowl were observed on the ponds or watercourses, although a pair of mallard were flushed from close to the wall along the Bodelwyddan estate in May.

## Barn Owl Survey

- 144 Nesting barn owls were confirmed to be present in a derelict house and within a mature oak tree, though the latter nest appeared to have been abandoned. Pellets were also present in a barn owl box close to the OnSS survey area, suggesting they had been present within the last 12 months.

## Kingfisher Survey

- 145 One kingfisher was seen during the breeding bird survey in a ditch to the north of Clwyd View Caravan Park, west of the River Clwyd. No holes were found along the ditch, although long and dense vegetation obscured the view of the ditch in places and it has been classified as possibly breeding. However, it is noted that this ditch is >200m from the OL.
- 146 No kingfishers or field signs indicating their presence were observed along any of the other ditches and watercourses surveyed during the otter and water vole surveys. Many of the ditches surveyed were shallow (less than 0.5m deep) or were dry at the time of the survey indicating that suitable habitat is not widespread throughout the kingfisher survey area.



## Additional Desk Study Data

- 147 It is understood that little tern has historically bred at Rhyl Harbour but there are no recent records (as confirmed by DCC). The extant little tern colony at Gronant lies outside the 2 km study area to the east; Volume 2 Chapter 4 Offshore Ornithology (application ref: 6.2.4) considers the implications of the project on this/ wider offshore bird populations.

## Non-breeding (Wintering) Birds

- 148 The results of wintering bird surveys and desk study data for wintering birds, including a series of figures showing the distribution and relative abundance of all waterbird species recorded, are presented in detail in Volume 5, Annex 5.2 (application ref: 5.5.5.2), with a brief summary of key findings provided below.
- 149 A total of 27 waterbird species were recorded over the survey period. 14 species were recorded at the landfall, 25 species were recorded at the River Clwyd and seven species were recorded in the coastal fields. Of these three species are listed on Annex 1 of the Birds Directive; six are S7 species, four are red-listed in the UK and eight are red-listed in Wales. The three Annex 1 species recorded were whooper swan *Cygnus cygnus* (one flyover record at the River Clwyd), bar-tailed godwit peak count of 2 at the River Clwyd, recorded on <6% of counts only) and little egret *Egretta garzetta* (regularly recorded on the River Clwyd with a peak count of nine, with 1-2 recorded occasionally elsewhere).
- 150 Peak counts for each of the waterbird species recorded at each survey location, during the survey period, are shown in Table 9.

Table 9: Peak counts of waterbird species recorded at each survey location, October 2020 – March 2021

ENGLISH NAME	SCIENTIFIC NAME	PEAK COUNT – LANDFALL	PEAK COUNT – RIVER CLWYD	PEAK COUNT – COASTAL FIELDS
Canada goose	<i>Branta canadensis</i>	0	182	0
Greylag goose	<i>Anser anser</i>	0	105	0
Mute swan	<i>Cygnus olor</i>	0	4	13
Whooper swan	<i>Cygnus cygnus</i>	0	6	0
Shelduck	<i>Tadorna tadorna</i>	0	7	6
Wigeon	<i>Mareca penelope</i>	0	61	0
Mallard	<i>Anas platyrhynchos</i>	0	23	0
Teal	<i>Anas crecca</i>	0	35	0
Goosander	<i>Mergus merganser</i>	0	2	0
Great crested grebe	<i>Podiceps cristatus</i>	0	3	0

ENGLISH NAME	SCIENTIFIC NAME	PEAK COUNT – LANDFALL	PEAK COUNT – RIVER CLWYD	PEAK COUNT – COASTAL FIELDS
Oystercatcher	<i>Haematopus ostralegus</i>	102	7	0
Lapwing	<i>Vanellus vanellus</i>	0	34	26
Ringed plover	<i>Charadrius hiaticula</i>	9	0	0
Curlew	<i>Numenius arquata</i>	2	1	0
Bar-tailed godwit	<i>Limosa lapponica</i>	0	2	0
Turnstone	<i>Arenaria interpres</i>	46	1	0
Sanderling	<i>Calidris alba</i>	47	0	0
Dunlin	<i>Calidris alpina</i>	32	4	0
Common sandpiper	<i>Actitis hypoleucos</i>	0	1	0
Redshank	<i>Tringa totanus</i>	23	4	0
Black-headed gull	<i>Chroicocephalus ridibundus</i>	30	78	80
Common gull	<i>Larus canus</i>	450	230	160

ENGLISH NAME	SCIENTIFIC NAME	PEAK COUNT – LANDFALL	PEAK COUNT – RIVER CLWYD	PEAK COUNT – COASTAL FIELDS
Great black-backed gull	<i>Larus marinus</i>	2	2	0
Herring gull	<i>Larus argentatus</i>	78	92	150
Lesser black-backed gull	<i>Larus fuscus</i>	2	4	0
Cormorant	<i>Phalacrocorax carbo</i>	12	3	0
Little egret	<i>Egretta garzetta</i>	1	9	2



- 151 At the landfall, waterbirds were observed along the entirety of the foreshore at mid-low and low-mid tide. At high tide, flocks of gulls and waders were recorded on the golf course, but mostly in small numbers and limited to a relatively small number of species (see Figures 2-13 in Volume 5, Annex 5.2 (application ref: 6.5.5.2)). At the River Clwyd, most species were recorded within the estuary itself, with the largest numbers of birds recorded at mid-low and low-mid tide around a shingle bank in the middle of the river. Regular use of the adjacent fields was limited to a relatively small number of species including Canada and greylag geese, shelduck, lapwing and oystercatcher, with most of these using the arable fields to the northeast of the river (see Figures 14-31 in Volume 5, Annex 5.2 (application ref: 6.5.5.2)). The majority of waterbirds recorded within the coastal fields were gulls, mainly black-headed gulls and herring gulls, which were frequently observed in the fields either side of the A547.
- 152 Survey data for the River Clwyd were compared with Wetland Bird Survey (WeBS) mean peak count data<sup>ix</sup> for the Clwyd Estuary – Sector 1 (which includes the River Clwyd survey area, plus a much larger area upstream and downstream and encompasses most of the intertidal habitat within the Clwyd Estuary and Adjacent Fields LWS) for the period 2015-2020,
- 153 Although direct comparisons between different datasets should be treated with caution, the comparison indicates that the proportion of the wider Clwyd Estuary populations recorded within the survey area was relatively small for most species, ranging from 4-33% for wildfowl (excluding Canada goose) and 10% or less for waders. For gulls the peak count of common gull within the survey area represented 98% of the WeBS peak count for 2015-20 but for other gull species the proportion ranged from 5-27%. The proportion of the WeBS count sector peak count for little egret was relatively high at 64%. These data suggest that in the context of the wider River Clwyd estuary, the survey area is most important for wildfowl, gulls (notably common gull) and little egret.

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<sup>ix</sup> Data were provided by WeBS, a Partnership jointly funded by the British Trust for Ornithology, Royal Society for the Protection of Birds and Joint Nature Conservation Committee, in association with The Wildfowl & Wetlands Trust, with fieldwork conducted by volunteers.

- 154 With respect to behaviour, foraging was the most frequent behaviour recorded in all areas. Loafing was the next most frequent behaviour observed, followed by roosting and maintenance respectively. Roosting represented a relatively low percentage of recorded behaviours, though (mostly small) roosting flocks were consistently recorded in the same locations throughout the survey season. These included the fields north of Afon Ffyddion and southwest of Cwybr Uchaf (within the River Clwyd survey area), on Rhyl golf course, and within the saltmarsh and mudbanks of the River Clwyd.
- 155 Disturbance was recorded at the landfall only. The footpaths along the River Clwyd, particularly along the eastern bank, are regularly used by walkers, runners, dogs and cyclists but their presence did not cause any disturbance events during the surveys. The most frequently recorded source of disturbance at the landfall was from walkers with dogs, followed by walkers without dogs, on the beach. People walking, cycling, or running along the track on the seawall did not provoke a disturbance response during the surveys. The golf course was not in use for the majority of the surveys due to Covid 19 restrictions so birds roosting or foraging in this area were generally not disturbed by human activity. Of the 18 disturbance events recorded, 14 led to a weak response and four led to a moderate response, mostly affecting birds using the foreshore at low tide. Although there are no data available to compare the survey data against, these results suggest regular use of the beach by walkers with dogs and some habituation by waterbirds to their presence.

## Bats

- 156 All bat species in the UK are protected through inclusion in Schedule 5 of the Wildlife and Countryside Act and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). Noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus* and lesser horseshoe bat *Rhinolophus hipposideros* are also S7 Species.

- 157 The results of the bat surveys and desk study data for bats, including a series of figures showing tree numbers, locations and survey results, are presented in detail in Volume 5, Annex 5.10 (application ref: 6.5.5.10), with a brief summary of key findings provided below.
- 158 There are 55 trees within the survey area with moderate or high potential to support bats. Three species of bat are confirmed to roost within five trees within the survey area:
- ▲ Common pipistrelle– maternity roost and dayroost(s);
  - ▲ Soprano pipistrelle– dayroosts; and
  - ▲ Noctule – dayroost.
- 159 At least a further seven species have been recorded foraging at the site and are considered therefore to roost within a relatively short distance (between 1km and 4km, depending on the core sustenance zone (CSZ) of the species involved). Several of these species are known to roost in trees and therefore there is considered to be a greater likelihood of a roost being present within the survey area, currently or in future. This includes Nathusius’ pipistrelle *Pipistrellus nathusii* and whiskered bat *Myotis mystacinus*.
- 160 The activity survey has identified that activity levels vary across the survey area. Broadly speaking, the central parts of the survey area are less well used by bats than northern and southern parts.
- 161 A synopsis for each recorded species is provided in Table 10 below.

Table 10: Bat Species Synopsis

SPECIES	ROOSTING	FORAGING
Noctule	<p>A noctule dayroost was recorded at Tree 64 during July 2021. This roost is considered to be of low conservation significance (as defined in Mitchell-Jones, 2004).</p> <p>Noctule roost(s) are considered highly likely to be present in the vicinity of the survey area, at locations other than Tree 64</p>	<p>The species was recorded regularly at all locations across the survey area. The mosaic of mature trees, watercourses, agricultural land and small woodlands present is considered highly suitable for use by this species.</p>
Lesser horseshoe bat	<p>The species is not known to roost in trees and there are no known roosts within the OL. However, five roosts occur outside the OL at the northern end and a further two to the south; in all cases within buildings or caves.</p> <p>The activity data could be interpreted as demonstrating the presence of a hibernation site close to Location 20, outside of the OL. This may relate to bats travelling to/from known roost locations that occur nearby, or to previously unrecorded site(s).</p>	<p>The woodland and hedgerow networks at the northern and southern extremes of the survey area are considered to be of most value to the local lesser horseshoe bat population, given the proximity of known roosts (outside the OL) and the pattern of activity observed. Hedgerows and woodlands in these areas comprise foraging and flightlines used by lesser horseshoe bats, with the species most frequently recorded at Locations 4, 17-20 and 22. These locations</p>



SPECIES	ROOSTING	FORAGING
	Activity data from Locations 17 and 18 may suggest the presence of a summer colony nearby however, there are no known maternity colonies within 2km of these locations.	may be critical to the maintenance of colonies that occur within 2km.
Greater horseshoe bat	There are no known roosts for this species within 3km of the OL.	A single pass by this species was recorded at Location 20 in September 2021. Therefore, whilst the habitats in the south of the survey area are potentially highly suitable for use by foraging greater horseshoe bats, the lack of regular evidence, or of peaks of higher activity suggests the survey area is not a well-used resource by the local population at the time of survey.
Nathusius' pipistrelle	There are no known roosts for this species within 20 km of the OL.  No evidence of a roost was found during the tree surveys, but activity survey data may indicate that a bat/ small numbers of bats roosted nearby to Location 3 in July 2021.	It is considered most likely that Nathusius' pipistrelle occasionally pass through the survey area, and in particular along routes adjacent to/passing rivers, ponds, ditches or streams (all locations where the species was recorded match this, with the exception of Location 22). Any such bats would be

SPECIES	ROOSTING	FORAGING
		<p>expected to stop to forage upon abundant sources of prey, this may in turn be related to invertebrate emergence events. The lack of regular evidence, or of peaks of higher activity suggests the survey area is not a well-used resource by the local population at the time of survey.</p>
<i>Myotis</i> species	<p>No evidence of a roost for a <i>Myotis</i> species of bats was found during the 2021 surveys.</p> <p>High levels of activity were recorded at Location 20 in September and Location 16 in June 2021; in both instances attributed to whiskered bat by auto-id software. This high level of activity is considered to indicate the presence of a whiskered bat roost within a relatively short distance of those locations (&lt;1km), at those times.</p>	<p>The mosaic of mature trees, watercourses, agricultural land and small woodlands present across the survey area is considered highly suitable for use by this species group.</p> <p>The activity data may point toward the existence of an autumn swarming site (<i>Myotis</i> species gather in autumn at caves and similar features) relatively close to Location 20, given the prolonged higher than usual activity there in September 2021, and to a lesser extent October. This could relate to the cave roost historically recorded at Glascoed, or another underground site nearby.</p>

SPECIES	ROOSTING	FORAGING
Common and soprano pipistrelle	<p>Five roosts were confirmed at five trees during the 2021 surveys follows:</p> <p>one common pipistrelle maternity colony (Tree 64) and one dayroost (Tree 68);</p> <p>two soprano pipistrelle dayroosts (Tree 21 and 27); and</p> <p>one common or soprano pipistrelle dayroost (Tree 81).</p> <p>These roosts are considered to be of low conservation significance (as defined in Mitchell-Jones, 2004).</p> <p>The activity data also suggests that roosts may also have been present close to Location 5, 19 and 20 during June – September 2021.</p>	<p>Both species were recorded in all months at all locations. The mosaic of mature trees, watercourses, agricultural land and small woodlands present across the survey area is considered highly suitable for use by this species group.</p>
Brown long-eared bat	<p>No evidence of a roost for this species has been discovered during the 2021 surveys, based upon tree inspections or inferred from activity survey data.</p>	<p>Due to the difficulties in detecting this species, it is difficult to draw firm conclusions about the specific locations which may be of most value. It is considered highly likely that brown long-eared bats pass through the survey area, but are most likely to forage</p>

SPECIES	ROOSTING	FORAGING
		within the small woodlands, rather than hedgerows or open habitats that dominate the majority of the area.



## Badger

- 162 Badger receives protection through the Protection of Badgers Act 1992 and Wildlife and Countryside Act 1981.
- 163 Further details of the badger surveys are included in the badger survey report at Volume 5, Annex 5.9. A confidential version of the Annex has been provided to key consultees, which includes full details including sett locations (these are omitted from the publicly available version due to the potential for badger persecution should sett locations enter the public domain). A brief summary of key findings provided below.
- 164 Badger is confirmed to occur throughout the survey area, with main, subsidiary and outlier setts all recorded. Based on desk study and field survey information it is considered likely that the survey area helps to support at least five clans throughout the year. Agricultural fields were found not to support any setts; this is likely due to the lack of cover and degree of disturbance, but also the low-lying nature of much of the area within the survey area, where the water table is relatively high for parts of the year.

## Otter

- 165 Otter is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 and in Schedule 2 of The Conservation of Habitats and Species Regulations 2017, it is also a S7 species.
- 166 The results of the otter survey and desk study data for otter, including a series of figures showing survey results, are presented in detail in Volume 5, Annex 5.5 (application ref: 6.5.5.5), with a brief summary of key findings provided below.
- 167 Otter is confirmed to occur within the survey area at the River Clwyd and Glanfyddion Cut. Relatively limited evidence was found during the surveys in 2021, just two spraints on the Glanfyddion Cut and one on the River Clwyd (though the tidal nature of the river at this point would regularly remove signs).

- 168 Based on the relative lack of evidence it is considered most likely that otters are periodically using the Glanfyddion Cut for foraging and movement. High quality hunting opportunities are present at the watercourse and the woodland, trees, scrub and rushes growing along the edges of the watercourse provide potential habitat for sheltering and/or breeding (although no evidence of such use was recorded).
- 169 The River Clwyd was also recorded to support otter and is highly suitable for passage, foraging and shelter. The section within the survey area is relatively disturbed by the adjacent public rights of way on both banks, which are regularly used by dogwalkers. This is considered to significantly reduce its potential for sheltering otter, though this remains possible in areas of denser, taller vegetation. The saltmarsh areas adjacent to the river, within 100m of the OL have been repeatedly visited and observed during other field surveys (notably the habitat survey, badger survey, wintering and breeding bird surveys) and with the exception of a single spraint, no additional evidence of otter has been noted.
- 170 It is likely that other watercourses or ponds within the survey area could occasionally be used by this species for passage; those with sufficient water to support fish or amphibian populations may also be used on occasion, or seasonally, for foraging.
- 171 Cofnod records confirm that otter has been recorded on all the major watercourses in the study area, and many of the smaller ones. No records for otter holts are contained in the available data, but a mother and two cubs were recorded in 2006 and 2007 on the River Clwyd at Rhuddlan and a fresh spraint was noted adjacent to the River Clwyd at Rhuddlan during the habitat survey.

## Water Vole

- 172 Water vole is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981, it is also a S7 species.
- 173 The results of the water vole survey and desk study data for water vole, including a series of figures showing survey locations and results, are presented in detail in Volume 5, Annex 5.5 (application ref; 6.5.5.5), with a brief summary of key findings provided below.

- 174 No conclusive evidence of water vole presence was found in any of the surveyed watercourses in 2021. However, desk study information suggests that the species was recorded “before 2004” at watercourse 14 (upper parts of Glanfyddion Cut, north east of Rhuddlan) and potentially also in 2000 at Watercourses 11, 12 and/or 13 (east of Rhyl).
- 175 Of those surveyed, the Glanfyddion provides the most suitable habitat for water vole, in places appearing ideal and including potential burrows. Potential burrows were also noted at Watercourses 22 (drainage ditch at west side of River Clwyd) and 49 (field drain north of Bodelwyddan Road). However, if the species was present in 2021 it is considered that latrine and/or other evidence would have been noted. It is possible that the presence of mink (spraint recorded at Watercourse 21 at the confluence of Glanfyddion and River Clwyd), may have had a negative impact on water vole numbers due to predation.
- 176 The survey area is considered unlikely to support a population of water vole at present. However, the presence of possible burrows, the relatively high mobility of water vole and the number of previous records in the wider study area means it is possible that this species may recolonise the most suitable watercourses within the survey area in the future.

## Dormouse

- 177 Dormouse is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017, it is also a S7 species.
- 178 The results of the dormouse survey and desk study data for dormouse are presented in detail in Volume 5, Annex 5.7 (application ref: 6.5.7), with a brief summary of key findings provided below.
- 179 Desk study data confirms that the nearest dormouse record is from approximately 600m distant, to the south of the OL; suitable connecting habitats within the survey area therefore have potential to assist with supporting the local population.
- 180 However, dormice are considered to be absent from the OL, based on negative survey results from nut searches and presence/absence survey.

## Other Mammals

181 Three other S7 mammal species are noted to occur within the 2 km study area: polecat *Mustela putorius*, hedgehog *Erinaceus europaeus* and brown hare *Lepus europaeus*. Whilst no evidence of these species has been identified during the field surveys at the time of writing, habitats are suitable for all three. Polecats typically use lowland woodland habitats, wetlands and farm buildings; these habitats are widespread across the survey area. The survey area also includes numerous habitats that are suitable for use by hedgehog such as hedgerows, woodland edges, scrub, and gardens. Suitable habitat for brown hare is also present across the survey area, including the grassland for foraging and woodland and hedgerows for cover.

### 5.7.5 Summary of Important Ecological Features

182 Table 11 outlines the Important Ecological Features that have been identified within the study area, or which based upon desk study information, habitat suitability or via more recent survey data are considered likely to be present within the study area, and which may be affected by the project. The locations of important ecological features and relevant designated sites are shown in Figure 10 to Figure 22.



Table 11: Important Ecological Features within the study area that may be affected

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
Y Ffrith, Prestatyn LWS	Sand dunes and herb rich grassland recognized as of value with Denbighshire, designated as LWS and protected through local planning policies.  Likely to support other important invertebrate and plant species (see below).	County
Bryn Cwnin Wetland LWS	Swamp habitat recognized as of value with Denbighshire, designated as LWS and protected through local planning policies.  Likely to support other important invertebrate and plant species.	County
Clwyd Estuary and Adjacent Fields LWS	Estuary and low-lying adjacent fields, of botanical interest and of value to wintering birds (see below). Recognised as of value within Denbighshire, designated as LWS and protected through local planning policies.	County
ASNW and PAWS (including veteran oak tree)	As listed in the Ancient Woodland Inventory and retaining some ancient woodland indicator species.  Irreplaceable resource, protected under local, national and UK planning policies.	UK

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	Likely to support other important invertebrate, amphibian, bird, mammal and plant species.	
Woodlands (excluding ASNW and PAWS)	Large woodland blocks at Pengwern and Princes Gorse, in addition to smaller or linear areas form an important part of the wider network of woods, trees, hedges and scrub and are likely to support important invertebrate, amphibian, bird, mammal and/or plant species.	Local
Hedgerows	<p>Most meet the S7 definition, which is:</p> <p><i>“A hedgerow is defined as any boundary line of trees or shrubs over 20 m long and less than 5 m wide, and where any gaps between the trees or shrub species are less than 20 m wide. Any bank, wall, ditch or tree within 2 m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2 m of the centre of the hedgerow. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, where each UK country can define the list of woody species native to their respective country”</i></p> <p>Most hedgerows within the survey area are relatively species-poor but some are more species-rich and five are “Important” under the</p>	Local

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	Hedgerow Regulations 1997. Likely to support other important invertebrate, amphibian, bird, mammal and plant species.	
Lowland fen	<p>The fen at The Flash is considered to meet the S7 description, which is:</p> <p><i>"Fens are peatlands which receive water and nutrients from the soil, rock and ground water as well as from rainfall: they are minerotrophic."</i></p> <p>The Flash is unlikely to comprise a significant proportion of the total resource of this habitat type within Denbighshire, although it has potential to support other important invertebrate and plant species.</p>	Local
Reedbeds	<p>The largest linear reedbeds are considered to meet the S7 description:</p> <p><i>"Reedbeds are wetlands dominated by stands of the common reed Phragmites australis, wherein the water table is at or above ground level for most of the year. They tend to incorporate areas of open water and ditches, and small areas of wet grassland and carr woodland may be associated with them."</i></p> <p>The reedbeds within the survey area are unlikely to comprise a significant proportion of the total resource of this habitat type within Denbighshire.</p>	Local

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
Coastal sand dunes	<p>Areas within Rhyl Golf Course and Y Ffrith meet the S7 description, which states:</p> <p><i>“Coastal sand dunes develop where there is an adequate supply of sand (sediment within the size range 0.2 mm to 2.0 mm) in the intertidal zone and where onshore winds are prevalent. The critical factor is the presence of a sufficiently large beach plain whose surface dries out between high tides. The dry sand is then blown landwards and deposited above high-water mark, where it is trapped by specialised dune-building grasses which grow up through successive layers of deposited sand...</i></p> <p><i>Fixed dune grassland forms largely closed swards where accretion is no longer significant, the surface is stabilised and some soil development has taken place.”</i></p> <p>Certain locations within Rhyl Golf Course and Y Ffrith may also comprise Habitats Regulations Annex 1 habitat type dune grassland (H2130/UKHab s3a7), defined as:</p> <p><i>“Fixed dune vegetation occurs mainly on the largest dune systems, being those that have the width to allow it to develop. It typically occurs inland of the zone dominated by marram <i>Ammophila arenaria</i> on coastal dunes, and represents the</i></p>	Regional, but the TCC area that would be directly affected is considered to be of up to local importance.



IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	<p><i>vegetation that replaces marram as the dune stabilises and the organic content of the sand increases.</i></p> <p><i>In the UK the vegetation corresponds to the following NVC types:</i></p> <p><i>SD7 Ammophila arenaria – Festuca rubra semi-fixed dune community</i></p> <p><i>SD8 Festuca rubra – Galium verum fixed dune grassland</i></p> <p><i>SD9b Ammophila arenaria – Arrhenatherum elatius dune grassland, Geranium sanguineum sub-community</i></p> <p><i>SD11 Carex arenaria – Cornicularia aculeata dune community</i></p> <p><i>SD12 Carex arenaria – Festuca ovina – Agrostis capillaris dune grassland."</i></p> <p>Marram dominated dunes at Y Ffrith are considered to be UKHab s3a6 (Habitats Regulations Annex 1 habitat type H2120) "shifting dunes with marram" since they broadly fit the following definition:</p> <p><i>"Shifting dunes along the shoreline with Ammophila arenaria ("white dunes") encompasses most of the vegetation of unstable dunes where there is active sand movement. Under these conditions sand-binding marram Ammophila arenaria is always a prominent feature of the vegetation and is usually dominant. In</i></p>	

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	<p><i>the UK the majority of such vegetation falls within NVC type SD6 <i>Ammophila arenaria</i> mobile dune community."</i></p> <p>The dune habitat within the survey area is likely to comprise a significant proportion of the total resource of this habitat type within Denbighshire. It is also likely to support other important invertebrate and plant species.</p> <p>The TCC area at Y Ffrith that would be directly affected is a very degraded area of the coastal dune grassland and represents a small fraction of this habitat resource in Denbighshire.</p>	
Coastal saltmarsh	<p>Areas adjacent to the River Clwyd meet the S7 description, which states:</p> <p><i>"Coastal saltmarshes in the UK comprise the upper, vegetated portions of intertidal mudflats, lying approximately between mean high water neap tides and mean high water spring tides.</i></p> <p><i>Saltmarshes are usually restricted to comparatively sheltered locations in five main physiographic situations: in estuaries, in saline lagoons, behind barrier islands, at the heads of sea lochs, and on beach plains. The development of saltmarsh vegetation is dependent on the presence of intertidal mudflats.</i></p>	Regional

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	<p><i>Saltmarsh vegetation consists of a limited number of halophytic (salt tolerant) species adapted to regular immersion by the tides"</i></p> <p>This area is also considered to match the Habitats Regulations Annex 1 habitat description for Atlantic salt meadow.</p> <p>Atlantic salt meadows develop when halophytic vegetation colonises soft intertidal sediments of mud and sand in areas protected from strong wave action. This vegetation forms the middle and upper reaches of saltmarshes, where tidal inundation still occurs but with decreasing frequency and duration. A wide range of community types are represented and the saltmarshes can cover large areas, especially where there has been little or no enclosure on the landward side. The vegetation varies with climate and the frequency and duration of tidal inundation. Grazing by domestic livestock is particularly significant in determining the structure and species composition of the habitat type and in determining its relative value for plants, for invertebrates and for wintering or breeding waterfowl.</p> <p>The coastal saltmarsh within the survey area is likely to comprise a significant proportion of the total resource of this habitat type within Denbighshire. It is also likely to support other important invertebrate and plant species.</p>	

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
Coastal and floodplain grazing marsh	<p>Many of the fields north of the A55 and associated with the River Clwyd drainage network are considered to meet to the S7 description of Coastal and Floodplain Grazing Marsh (identified with the UKHab secondary code 25, within the Clwyd Estuary and Adjacent Fields LWS), including those that have been agriculturally improved, which is:</p> <p><i>“Grazing marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. The ditches are especially rich in plants and invertebrates. Almost all areas are grazed and some are cut for hay or silage. Sites may contain seasonal water-filled hollows and permanent ponds with emergent swamp communities, but not extensive areas of tall fen species like reeds; although they may abut with fen and reed swamp communities.”</i></p> <p>The coastal and floodplain grazing marsh within the survey area is likely to comprise a significant proportion of the total resource of this habitat type within Denbighshire and is also likely to support other important invertebrate and plant species. Many of the fields mapped as this habitat have been agriculturally improved however and the area of this habitat within the survey area is therefore not considered to be of value at greater than county level.</p>	County



IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
Ponds	Most ponds in the area are likely to meet the S7 definition by supporting GCN and/or other S7 or Red Data Book species. The number of ponds within the survey area is relatively large and together they are therefore considered to be of county value. The value of relevant species populations (e.g. GCN) within these ponds is assessed separately below.	County
Rivers	The River Clwyd and Glanfyddion Cut meet the S7 definition by virtue of supporting other protected and/or S7 species such as otter, fish and potentially invertebrates and bird species, rather than for habitat type/quality <i>per se</i> . Remaining water courses within the survey area are not considered to meet the definition.	County
Rare/notable plant species	Potential for S7 and/or red data book species, mostly associated with the coastal habitats, River Clwyd or woodland habitats. Numerous locally important species also present.  Populations of national or greater importance are unlikely based upon lack of designated sites for plant species, and desk study information.	County
INNS – twelve plant species	Eight of the 12 INNS recorded within the study area are listed on Schedule 9 of the Wildlife and Countryside Act 1981.	N/A

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
recorded within study area		
Fish: Atlantic salmon, brown trout and European eel	<p>Low population present of S7 species in the River Clwyd.</p> <p>European eel is also listed as Critically Endangered on the IUCN Red List and Atlantic salmon is included on Schedule 4 of the Habitats Regulations.</p> <p>NRW data suggest the population of important fish species in the Clwyd has declined in recent years and continues to do so. Data suggests the population is much lower than other rivers in the county.</p>	Local
Invertebrates	<p>Potential for populations of S7 species and/or Red Data Book (RDB) species associated with habitats immediately adjacent to the River Clwyd, coastal habitats, hedgerows and ancient or semi-natural woodland.</p> <p>Populations of national importance are unlikely based upon lack of designated sites for invertebrate species, and desk study information.</p>	County
GCN and common toad	GCN is protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act and in Schedule 2 of the Conservation of Habitats and	National

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	<p>Species Regulations 2017, it is also a S7 species. Common toad is also a S7 species.</p> <p>Survey during 2021 has confirmed that four metapopulations occur within the OL. The largest metapopulation of GCN is present at SABP; to classify as nationally important more than 100 individuals need to be recorded on a night count during the breeding season<sup>x</sup>. If all ponds within 500 m of each other at SABP are included then this level has been achieved in 2015, 2016, 2017 and 2019 (data provided by Cofnod). This figure was also reached for the collection of mitigation ponds at Bruton Park in 2018.</p> <p>Figures for common toad are not readily available but are not considered likely to increase the evaluation of this feature.</p>	
Reptiles	Potential for populations of S7 species to be present within areas of suitable habitat outside of the OnSS (where reptile absence has been proven).	Up to Local

<sup>x</sup> see Section 3.2.2 of the SSSI selection criteria at <https://data.jncc.gov.uk/data/765b2344-f86b-4500-8718-dc9ecf9375b6/SSSIs-amp-rep-C15.pdf>; note that revisions to these criteria are underway at the time of writing.

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	The presence of large populations of any reptile species at any part of the OL is considered low based upon desk study data and habitat types present.	
Breeding Birds	<p>Breeding bird species of conservation importance were recorded in all three breeding bird survey areas, although all the species recorded remain relatively common and widespread and in most cases the numbers recorded were relatively small. No breeding waterbird species, other than mallard, were recorded. None of these populations are considered to be of greater than local importance.</p> <p>One Wildlife and Countryside Act 1981 Schedule 1 species (barn owl) was confirmed to be breeding within the survey area with up to two pairs located. One Wildlife and Countryside Act 1981 Schedule 1 and Birds Directive Annex 1 species (kingfisher) was considered to be possibly breeding within 250 m of the OL. The barn owl population within the survey area is not large enough to be considered of regional or greater importance but may be of county importance. The area within the OL is not considered to be of great importance to kingfisher.</p>	Local to County (barn owl)

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
Wintering Birds	<p>At the landfall, all of the waterbird species were recorded in numbers representing considerably less than 1%<sup>xi</sup> of the respective UK population (see Table 4.1 in Volume 5, Annex 5.2). Sanderling (peak count 47) and turnstone (peak count 46) were the two species for which the peak counts represented the greatest proportion of the UK wintering population (0.2% and 0.1% respectively) and although there are no data for regional or county populations it is reasonable to assume that these counts are important at a county level. For all other species peak counts represent 0.03% of the UK population or less and the counts of these species are considered to be of no more than local importance.</p> <p>At the River Clwyd the peak count for one species, common sandpiper, exceeds 1% of the UK wintering population. However, this species was only recorded during 11% of counts with no more than one bird recorded at any one time and these records are not considered to be of UK, national or even regional importance. Peak counts for all other species (excluding feral geese) represent less than 0.07% of the UK population. For most species the counts within the survey area represent a small but significant proportion of the wider Clwyd Estuary</p>	<p>Landfall – up to County</p> <p>River Clwyd – County</p> <p>Coastal Fields – Less than Local</p>

<sup>xi</sup> It is widely accepted, e.g. within the Guidelines for the Selection of Biological SSSIs (Drewitt, Whitehead & Cohen, 2020), that a site holding >1% of the biogeographic population is important at the relevant level, e.g. a site holding >1% of the national population of a species is nationally important for that species.



IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	<p>population, including regular records of the Birds Directive Annex 1 species little egret. The estuary forms part of the Clwyd Estuary and Adjacent Fields LWS and therefore for many species the wintering waterbird populations within the survey area are considered to be of county importance.</p> <p>Away from the River Clwyd, the coastal fields gulls were by far the most frequently recorded waterbird species with only very occasional records of other waterbird species, in very small numbers. The coastal fields are therefore considered to be of less than local importance for wintering birds.</p>	
Bats	<p>Assessment of importance for roosting and foraging bats is based upon reference to CIEEM (2021) Tables 3.2 and 3.3.</p> <p>All UK bat species are protected through inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 and Schedule 2 of the Conservation of Habitats and Species Regulations 2017.</p>	
Common pipistrelle, soprano pipistrelle and	<ul style="list-style-type: none"> <li>These species are S7 species, but are considered to be abundant and widespread.</li> <li>Presence of maternity and day-roosting common pipistrelle and day-roosting soprano pipistrelle within the potential tree roost resource.</li> </ul>	Local

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
brown long-eared bat	<ul style="list-style-type: none"> <li>Regular presence of commuting and foraging common pipistrelle, soprano pipistrelle and brown long-eared bat throughout the year.</li> </ul>	
Nathusius' pipistrelle	<ul style="list-style-type: none"> <li>This species is a S7 species and considered to be rare, so the precautionary principle has been used that assumes the potential presence of dayroost in the tree roost resource, plus occasional presence of commuting and/or foraging bat(s) at locations (generally) associated with water.</li> </ul>	County
Noctule	<ul style="list-style-type: none"> <li>This species is a S7 species and considered to be "less abundant".</li> <li>The scale of importance is based upon the presence of a single dayroost within the tree roost resource, plus presence of commuting and/or foraging bats throughout the year.</li> </ul>	Local
Lesser horseshoe bat	<ul style="list-style-type: none"> <li>This species is a S7 species that is listed on Habitat Regulations Annex II and is reliant on the hedgerow and woodland network in the survey area for commuting and foraging.</li> <li>Areas south of the A55 are regularly used by commuting and foraging bats in summer, as well as bats which may be en-route to hibernation.</li> <li>Areas east of Rhyl/north east of Rhuddlan are used by commuting/foraging bats in summer.</li> </ul>	County
Greater horseshoe bat	<ul style="list-style-type: none"> <li>This species is a S7 species that is "rare", listed on Habitats Regulations Annex II and depends on ancient semi-natural woodland and pasture for foraging.</li> </ul>	Local

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
	<ul style="list-style-type: none"> <li>▲ A single pass was recorded; this limited evidence of commuting or foraging has been used as a basis of the scale of importance.</li> </ul>	
Myotis species (Daubenton's, whiskered, Brandt's and Natterer's bats)	<ul style="list-style-type: none"> <li>▲ These species are considered "less abundant".</li> <li>▲ The scale of importance is based upon the precautionary principle of a whiskered bat roost in the tree roost resource close to the A55 and/or south of Glascoed Road and the regularly recorded foraging and commuting Myotis species at Pengwern Woodland, Princes Gorse and south of Glascoed Road.</li> </ul>	County
Badger	Protected under the Protection of Badgers Act 1992 for welfare reasons. Five clans are likely to be present in the OL.	Local
Otter	<p>Protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. Otter is also a S7 species.</p> <p>Limited evidence found at the River Clwyd and Glanfyddion Cut. Watercourses within the survey area could occasionally be used by this species for passage; those with sufficient water to support fish or amphibian populations may also be used on occasion, or seasonally, for foraging.</p>	Local

IMPORTANT ECOLOGICAL FEATURE	REASON FOR IMPORTANCE	GEOGRAPHIC SCALE OF IMPORTANCE
Water Vole	<p>Water vole is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981, it is also a S7 species.</p> <p>A population of water vole is considered unlikely to be present within the survey area at the current time. However, it is possible that this species may recolonise the most suitable watercourses within the survey area in the future.</p>	Less than local
Other S7 Mammal Species: hedgehog, brown hare, polecat.	S7 species. Not surveyed but unusually large populations are considered unlikely to be present within the survey area based on the habitats present and desk study data.	Local

- 183 All remaining ecological features within the study area that are likely to be affected by the onshore elements of AyM are assessed as having less than local importance due to being common and widespread at the local and national level.

### 5.7.6 Evolution of the baseline

- 184 Baseline ecological conditions could evolve in the future as a result of land use policy, environmental improvements and development pressures. There may also be some changes to the baseline over time as a result of natural variation and weather events.
- 185 Climate change is also predicted to result in complex changes to biodiversity (NRW, 2021). Of most relevance to the area around the onshore elements of AyM is that coastal plants and wildlife that cannot respond to sea level rise or coastal erosion by moving inland (for example, due to the presence of urban land, or flood defences) and are anticipated to be lost. In addition, the number and range of INNS is likely to increase.
- 186 The above events and trends have the potential to alter the baseline assessment of the EclA over time. However, in the absence of any detailed, quantifiable information it has been assumed that the baseline conditions will remain largely as they are for the purpose of the assessment (with the exception of other developments, where known, which are considered in the assessment of cumulative effects, see Section 5.13).

## 5.8 Key parameters for assessment

- 187 The MDS criteria identified in Table 12 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These criteria have been selected from the details provided in the onshore project description (Volume 3, Chapter 1 (application ref: 6.3.1)). Effects of greater significance are not predicted to arise should any other development scenario, based on details within the project design envelope, to that assessed here be taken forward in the final design scheme. The MDS takes into consideration designed-in mitigation as described in Section 5.9.



Table 12: MDS Key Parameters for EcIA

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
CONSTRUCTION		
Permanent and temporary loss of habitat	<p><b>Onshore ECC</b></p> <p>Trenching and the associated construction corridor will result in temporary habitat loss along the onshore ECC. 10 TCCs will be needed and will also result in temporary habitat loss.</p> <p>HDD crossings, or other suitable trenchless crossing technique (HDD is referred to within this chapter to represent any trenchless crossing technique) are required for the landfall; larger surface watercourses; key roads; and some utility crossings. HDD compounds would be located at each end of the crossing, requiring an associated compound with permeable surfacing. The crossing locations where HDD (trenchless crossing) has been confirmed as the selected technique (i.e. where open trenching is not an option), are as follows:</p> <ul style="list-style-type: none"> <li>▲ A525 crossing;</li> <li>▲ River Clwyd crossing</li> <li>▲ A55 crossing;</li> </ul>	<p>The MDS includes the maximum development footprint (temporary and permanent) and therefore the largest possible area of disturbance to ecological receptors.</p> <p>It also assumes use of the technologies likely to cause most damage where the technology to be used is still uncertain, e.g. trenched crossings of smaller watercourses, and that the most ecologically sensitive habitats would be affected, where there are different routing options.</p>

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
	<ul style="list-style-type: none"> <li>▲ Sarn Lane crossing;</li> <li>▲ Crossing of ancient woodland to north west of Bryn Cwnin Farm; and</li> <li>▲ Crossing of woodland block to north of A55.</li> </ul> <p>Trenched crossing of smaller watercourses (see crossings register provided in Volume 5, Annex 1.2: Crossing Schedule (application ref: 6.5.5.1.1) are assumed for this assessment. Trenching options for smaller watercourse crossings are considered to represent the greatest potential impact to ecological receptors, either directly or indirectly through hydrological changes.</p> <p>The onshore ECC represents an approximate 40-60 m wide corridor that is approximately 12 km in length and within which the cable trenching, HDD, haul road and stockpiling areas associated with cable construction, will be located.</p> <p>This EclA is based upon assessing the full width of corridor.</p> <p>Permanent habitat loss associated with the onshore ECC is limited to the transition joint bays at the landfall and would amount to 1200 m<sup>2</sup>.</p>	

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
	<p>Temporary habitat loss during construction amounts to 84.64 ha as follows:</p> <ul style="list-style-type: none"> <li>▲ Transition Joint Bay (TJB): 1.95 ha</li> <li>▲ Onshore ECC: 46.06 ha</li> <li>▲ TCC: 10 construction compounds: 11.4 ha in total</li> <li>▲ 1 TCC Zone: 4.93 ha in total</li> <li>▲ 15 Trenchless Crossing Compounds: 3.88 ha in total</li> <li>▲ 21 Access or Crossing Locations: 0.34ha in total</li> <li>▲ 22 Construction Access Areas: 13.63 ha in total</li> <li>▲ 14 Major Road Crossing Visibility Splays: 1.28 ha in total</li> <li>▲ 4 Minor Road Crossing Visibility Splays: 1.18 ha in total</li> </ul> <p>HDD exit pits would be located between MHWS and 1000 m seaward of MHWS for the Landfall HDD. It may be necessary to install cofferdams to prevent water intrusion to provide a dry working area. The cofferdams would require a footprint of 1500 m<sup>2</sup> during construction with this area being backfilled after the works are complete.</p> <p>In addition, there could be up to 2.4 ha temporary loss of intertidal habitat (used by waterbirds), if an open trenching construction method is used.</p>	

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
	<p><b>OnSS</b></p> <p>At the OnSS there will be a permanent loss of 5 ha of habitat due to the construction footprint of this element of the project (assuming Air Insulated Switchgear (AIS) is used, which has the larger land take requirement).</p> <p>In addition to the OnSS footprint, there will be a batter slope area around the OnSS to account for the “cut and fill” to create a level area. Temporary habitat loss as a result of the above cut and fill, plus the TCC work area and access are estimated at 10.56 ha in total.</p>	
Impacts upon protected or notable species or upon their resting or breeding sites	<p>The potential exists for protected or notable species to be impacted by construction activities either physically, i.e. via permanent or temporary habitat loss or inadvertent injury or killing, or from disturbance via light, noise and human presence.</p> <p>All UK legally protected and notable species known or considered likely to occur within the study area are included.</p>	<p>The MDS includes the maximum development footprint (temporary and permanent) and therefore the largest possible area of disturbance to ecological receptors.</p> <p>It also assumes use of the technologies likely to cause most damage where the technology to be used is still uncertain, e.g. trenched</p>

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
	<p>The maximum adverse scenario for this effect is based on the temporary and permanent habitat loss areas given above.</p> <p>Construction has been assumed to commence in 2026, the duration has been assumed to be as set out in Volume 3 Chapter 1:</p> <ul style="list-style-type: none"> <li>▲ OnSS construction: 27 months; and</li> <li>▲ Onshore ECC construction including landfalls and HDDs: 18 months (part potentially concurrently with OnSS construction).</li> <li>▲ 24-hour working has been assumed to be required at the landfall and at some major HDD crossing locations; otherwise it has been assumed that works would be limited to 7am to 7pm from Monday to Saturday with no work where noise is audible beyond the OL boundary on Sundays and Bank Holidays.</li> </ul>	<p>crossings of smaller watercourses, and that the most ecologically sensitive habitats would be affected, where there are different routing options.</p>



POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
	<ul style="list-style-type: none"> <li>▲ The requirement for up to three cofferdams has been assumed at the HDD exit pit at the landfall, with associated piling works necessary. This could result in 88 dB(A) percussive piling noise (based upon a stand-off distance from the piling rig of 10m) for 10 days per cofferdam. This has been assumed to be 30 consecutive days noise for the purpose of this assessment.</li> <li>▲ Temporary lighting has been assumed to be necessary during construction hours at the times of year when working hours would otherwise be in darkness (approximately October – April). Additional 24-hour security lighting has been assumed at all temporary construction compounds.</li> <li>▲ Specifically in relation to the assessment of impacts on wintering birds, the following assumptions have been made: <ul style="list-style-type: none"> <li>▪ At the landfall, construction will involve a combination of open trenching (in the intertidal) and HDD.</li> <li>▪ At the River Clwyd the HDD entry/ exit pits will be located in fields adjacent to the river (but on the other side of the existing embankments from the estuary).</li> </ul> </li> </ul>	

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
	<ul style="list-style-type: none"> <li>At both locations works could take place during the winter months.</li> </ul>	
Habitat fragmentation and species isolation	<p>There is potential for permanent habitat fragmentation and species isolation as a result of OnSS construction. Temporary habitat fragmentation and species isolation may also result from construction of the onshore ECC.</p> <p>All UK legally protected and notable species known to occur within the study area are included.</p> <p>The assessment is based upon the habitat loss parameters and construction programme given above.</p> <p>However, in addition, the duration of temporary habitat fragmentation is habitat, location and species specific. For the MDS it is considered to last for a maximum period of 5 years post construction; this being the approximate duration for recovery of a hedgerow to ecological function for use by most species.</p>	<p>The MDS includes the maximum development footprint (temporary and permanent) and therefore the largest possible area of disturbance to ecological receptors.</p> <p>It also assumes use of the technologies likely to cause most damage where the technology to be used is still uncertain, e.g. trenched crossings of smaller watercourses, and that the most ecologically sensitive habitats would be affected, where there are different routing options.</p>

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
Spread of invasive non-native species (INNS)	<p>There is potential for the presence of INNS which could be spread by construction activities, anywhere across an area equal to the maximum habitat loss areas stated above.</p> <p>INNS known to be present within the OL and which are included in this assessment include:</p> <ul style="list-style-type: none"> <li>▲ Rhododendron;</li> <li>▲ Himalayan balsam;</li> <li>▲ Water fern;</li> <li>▲ Hottentot fig;</li> <li>▲ Japanese knotweed;</li> <li>▲ Giant hogweed;</li> <li>▲ Floating pennywort; and</li> <li>▲ Japanese rose.</li> </ul>	<p>The MDS includes the maximum development footprint (temporary and permanent) and therefore the largest possible area of disturbance to ecological receptors.</p> <p>It also assumes use of the technologies likely to cause most damage where the technology to be used is still uncertain, e.g. trenched crossings of smaller watercourses, and that the most ecologically sensitive habitats would be affected, where there are different routing options.</p>
OPERATION		

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
OnSS: Disturbance via maintenance, noise and light.	<p>Planned maintenance at the OnSS is likely to be highly localised with a minimal likelihood of disturbance expected to the adjacent habitats and species. Approximately one visit per week is anticipated typically involving two personnel.</p> <p>For unplanned major maintenance, vehicles similar to those used for construction may also be required (rigid lorries delivering materials, low loaders delivering plant and individual vehicles for personnel). In the event of a transformer replacement or failure, an AIL similar to that used during construction would be required.</p> <p>Lighting at the OnSS would be directional for safety and security. Task-specific lighting could be used externally, if required, on a very infrequent basis.</p> <p>Operational noise levels of the plant associated with the OnSS would be up to 95 dB(A).</p>	Parameters are based on those stated within the Onshore Project Description (Volume 3, Chapter 1 (application ref: 6.3.1)).
Onshore ECC: as for construction but much more limited in	<p>Planned maintenance requires one visit to each cable joint pit per year by a team of two.</p> <p>Unplanned maintenance may involve the repair of onshore cable faults. This is extremely rare (indicatively 1-2</p>	The MDS includes the maximum footprint and therefore the largest possible area of

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
extent and timescale.	<p>events per lifetime). Typically, this involves excavating the two adjacent joint bays (minimum 500 m apart), pulling the cable back through the ducting and pulling a new cable through. Alternatively, the area of the fault may be excavated (with an additional 40 m in both directions) and two new joints installed within this area. Methods for excavation and reburial will be similar to the original installation.</p> <p>The extent or nature of any unplanned corrective maintenance required cannot be predicted at this stage and therefore possible effects in terms of disturbance cannot be assessed. Any unplanned corrective maintenance required would be subject to any necessary consents and consultation with the relevant nature conservation bodies at the time.</p>	<p>disturbance to ecological receptors.</p> <p>It also assumes that the most ecologically sensitive habitats would be affected, where there are different routing options.</p>
DECOMMISSIONING		
Decommissioning impacts: similar in nature to those during construction but would be more	<p>Removal of the OnSS including areas of hardstanding.</p> <p>Buried cables would be de-energized with the ends sealed and left in place to avoid ground disturbance.</p> <p>TJBs to be left in place.</p>	<p>The MDS includes the maximum footprint and therefore the largest possible area of disturbance to ecological receptors.</p>



POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
limited in geographical extent and timescale.		It also assumes that the most ecologically sensitive habitats would be affected, where there are different routing options.
CUMULATIVE EFFECTS		
Effects during construction	<p>Where overlap between the construction phase for AyM and the construction of nearby developments is possible, the MDS assumes that they will overlap.</p> <p>It is assumed that the other developments identified will be built out to their maximum permissible extent but that any proposed mitigation and compensation measures will be implemented.</p>	<p>Overlapping construction phases would be the period of highest risk due to receptors being affected by more than one project.</p> <p>The MDS includes the maximum development footprint for both AyM and the potential cumulative sites (temporary) and therefore the largest possible area of disturbance to ecological receptors.</p> <p>It also assumes use of the technologies likely to cause most damage where the technology to be used is still</p>

POTENTIAL EFFECT	MAXIMUM ADVERSE SCENARIO ASSESSED	JUSTIFICATION
		uncertain, e.g. trenched crossings of smaller watercourses, and that the most ecologically sensitive habitats would be affected, where there are different routing options.
Effects during operation	It is assumed that the other developments identified will be built out to their maximum permissible extent but that any proposed mitigation and compensation measures will be implemented.	The MDS includes the maximum development footprint (permanent) and therefore the largest possible area of disturbance to ecological receptors.

## 5.9 Mitigation measures

188 Mitigation measures that were identified and adopted as part of the evolution of the project design (embedded into the project design) and that are relevant to onshore biodiversity and nature conservation are listed in Table 13. The mitigation includes embedded measures such as design changes and applied mitigation which is subject to further study or approval of details; these include avoidance measures that will be informed by pre-construction surveys, and necessary additional consents where relevant. The composite of embedded and applied mitigation measures apply to all parts of the AyM development works, including pre-construction, construction, O&M and decommissioning

Table 13: Mitigation measures relating to onshore biodiversity and nature conservation

PARAMETER	MITIGATION MEASURES
GENERAL	
Project design	Careful routing of the onshore ECC and design of key crossing points (sea defence structures, main rivers, non-main and ordinary watercourses, roads) to avoid key areas of sensitivity, including sand dunes, saltmarsh, ponds and woodlands, wherever possible (See Volume 1, Chapter 4 for further details on alternatives and site selection). Examples have included avoidance of disturbance to sensitive habitat within Rhyl Golf course through use of HDD and selection of an HDD crossing of the A55 that avoids interaction with woodland at Princes Gorse.
Great Crested Newt (GCN) European Protected Species Licence (EPSL)	<p>An EPSL from NRW will be required for works affecting terrestrial habitat used by GCN at the OnSS (note all ponds will be retained in this area) as well as terrestrial habitat at other areas along the route. The conditions of the EPSL would be specified to ensure that construction and continued presence of the OnSS does not result in significant adverse impacts to the local population. This will include:</p> <ul style="list-style-type: none"> <li>➤ creation of mitigation (and compensation) habitats for use by GCN.</li> <li>➤ Scheduling of certain work to avoid sensitive periods of the GCN and common toad life cycle.</li> </ul>

PARAMETER	MITIGATION MEASURES
	<ul style="list-style-type: none"> <li>➤ Removal of GCN and common toads from areas where there is risk of injury or death in advance, plus other precautionary measures.</li> <li>➤ Monitoring of the GCN population at all water bodies at the OnSS area (existing, new and including those that are SUDS related).</li> </ul> <p>Outline planting mitigation principles have been developed for the proposed OnSS site. These mitigation principles include areas of proposed woodland, lowland meadow, hedgerows and structurally diverse grassland, within which refugia and hibernacula will be sited. The extent of the indicative proposals, as well as other measures that would form part of the EPSL are presented in OLEMP (application ref 8.4).</p>
Bat EPSL	<p>The embedded measures which are pertinent include use of HDD beneath all woodlands (rather than trenching through the woodland), and retention of all trees and hedgerows wherever practicable.</p> <p>An NRW EPSL will be required in advance of work that could affect roosting bats. Since tree roosting bats utilise a range of locations over any given season, the licence will be sought to cover work at all trees with potential roost features (PRF) (i.e. the total roost resource) that may be affected by the project. All work undertaken under the EPSL and which could result in disturbance of bats would be overseen by the Named Ecologist, or his/her Accredited Agent (such as a suitably skilled and experienced Ecological Clerk of Works (ECOW) (see below).</p>



PARAMETER	MITIGATION MEASURES
	<p>The EPSL application will be submitted to NRW once final design details are available and pre-construction surveys for bats have been completed. Key principles that will be followed in order to mitigate and compensate for impacts are described in the OLEMP (application ref 8.4). The over-riding principle is for no net loss of potential roost resource as a result of the scheme</p>
CONSTRUCTION	
Vegetation Clearance and Other Construction Works	<p>All construction work will be undertaken in accordance with a Construction Method Statement (CMS) an outline version of which is provided in The Outline CoCP (application ref: 8.13) sets out the principles to be followed when the final CMS is prepared. The outline CMS (application ref: 8.13.1) and OLEMP (application ref: 8.4) include measures for ecological protection including:</p> <ul style="list-style-type: none"> <li>➤ Pre-construction surveys for protected species whose distribution could have changed since the 2021 baseline surveys will be undertaken to update the baseline and determine potential impacts at the time of construction.</li> <li>➤ Micrositing of project elements will be used to avoid important ecological features, where possible.</li> <li>➤ Protective fencing will be installed around retained habitats of importance and retained trees located directly adjacent to working areas.</li> <li>➤ An ECOW will be employed to oversee construction work and minimize risks to important ecological features.</li> </ul>

PARAMETER	MITIGATION MEASURES
	<ul style="list-style-type: none"> <li>➤ All habitats will be reinstated as soon as possible after construction. Hedgerows along the onshore ECC will be reinstated using a species-rich, locally appropriate native mixture including heavy standard trees at a 3:1 ratio for any lost.</li> <li>➤ Removal of potential nesting bird habitat will either take place outside of the breeding season (considered to be March – August inclusive), or where this is not possible a check for the presence of nesting birds by the ECOW will take place in advance of work. Where active nests are located the relevant areas of vegetation would be retained until such time as young fledge or the nesting attempt has ended. Avoidance of disturbance to barn owls whilst nesting will be achieved through the implementation of disturbance-free buffer zones around active nests.</li> <li>➤ Checks for the presence of badger setts, reptiles, hedgehogs, polecats, hares or other protected or notable species will be carried out by the ECOW prior to vegetation clearance. Additional reasonable avoidance measures for badger, otter and reptiles will be implemented/ mitigation licences applied for as necessary (details are included in the OLEMP (application ref: 8.4)).</li> </ul>
Reinstatement of coastal sand dune habitat at Y Ffrith	The overall aim of the reinstatement will be to enable either the re-establishment of existing dune grassland habitats from turf salvaged from specific areas (guided by results from a pre-construction botanical survey) or the creation of dune grassland via reinstatement of appropriate soils and seeding. If seeding is required, it would be with native, ideally local provenance seed comprising a mixture that includes the dominant and characteristic species of adjacent,

PARAMETER	MITIGATION MEASURES
	retained dune grassland. Further details are included within the OLEMP (application ref: 8.4).
Reinstatement of habitats within Clwyd Estuary and Adjacent Fields LWS	<p>The majority of the Clwyd Estuary and Adjacent Fields LWS supports agricultural grassland or cropland habitat of relatively low conservation value. This will be re-instated to its previous state following construction. This shall include the re-creation of drainlines and hollows which are present in some locations (typically fields immediately adjacent to the River Clwyd).</p> <p>The hedgerow and ditch network shall also be re-instated. Ditches shall be returned to their previous state, hedgerows will be replaced with a locally appropriate mixture of at least seven species, including standard trees (except directly over the Onshore ECC) at a 3:1 ratio for any lost.</p> <p>Further details are included within the OLEMP (application ref: 8.4).</p>
Reinstatement of lowland fen at The Flash	Topography, including hydrological connection, will be reinstated following works to ensure water retention. The area will be allowed to revegetate naturally (considered likely to be swift given the large amount of fen directly adjacent and to minimise risk of introduction of aquatic INNS). Further details are included within the OLEMP (application ref: 8.4).
Measures to reduce impacts to European eels	Trenching work at smaller water courses and ditches will not take place at night and will include measures such that eels cannot become trapped within the work area, such as ramped ends.

PARAMETER	MITIGATION MEASURES
Measures to reduce disturbance to wintering birds at the landfall and River Clwyd crossing	<p>The outline CMS (application ref 8.13.1) includes measures to reduce disturbance to wintering birds including:</p> <ul style="list-style-type: none"> <li>Subject to the final design parameters, piling (if required for the establishment of a temporary cofferdam at the landfall) would either take place outside the winter period (October to March) or utilize less noisy, vibro-piling technology, unless otherwise agreed with DCC through provision of a CMS.</li> <li>If required, depending on the final locations and timing of the works, HDD pits and other working areas at the landfall and River Clwyd crossing would be screened, where possible, to provide an element of visual and acoustic screening of active working areas. The need for screening and details of proposed screening, if required, will be determined during detailed design and will be agreed with DCC and NRW via approval of the final CoCP and CMS (post consent).</li> </ul>
Landscape and Ecological Management Plan (LEMP)	<p>Additional mitigation and compensation measures, beyond those covered in the outline CMS (application ref 8.13.1), including woodland planting, pond creation and hedgerow planting at the OnSS, are identified within the OLEMP (application ref: 8.4). The OLEMP also includes details of proposed biodiversity enhancements. The OLEMP sets out the key landscape and ecology elements that will be secured in the final LEMP which The Applicant will be required to submit to the relevant planning authority for approval as a requirement of the DCO.</p>

PARAMETER	MITIGATION MEASURES
Biosecurity and Invasive Non-Native Species (INNS) Method Statement	All construction work will be undertaken in accordance with an INNS Management Plan, an outline version of which is included as Appendix 11 to the Outline CoCP (application ref: 8.13.11).
Pollution Prevention and Emergency Incident Response Plan	<p>Construction practices will incorporate measures to prevent pollution.</p> <p>All construction work will be undertaken in accordance with a Pollution Prevention and Emergency Incident Response Plan (PPEIRP), an outline version of which is provided as Appendix 6 of the CoCP (application ref: 8.13.6) and sets out the principles to be followed when the final PPEIRP is prepared.</p> <p>The outline PPEIRP sets out the pollution prevention measures, and emergency incident responses, which would be implemented by the Applicant and its contractors during construction.</p>
Best Practice	<p>All construction work will be undertaken in accordance with the outline CMS (application ref 8.13.1), and relevant good practice guidance including, but not limited to:</p> <ul style="list-style-type: none"> <li>➤ Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors CIRIA (C532) (CIRIA 2001);</li> <li>➤ CIRIA – SuDS Manual (C753) (CIRIA, 2015b);</li> <li>➤ No discharge to main river watercourses will occur without permission from NRW (SuDS Manual);</li> </ul>



PARAMETER	MITIGATION MEASURES
	<ul style="list-style-type: none"> <li>▪ Wheel washers, or alternative measures to minimise the transfer of detritus onto the highway, and dust suppression measures (such as those set out in the Air Quality Management Plan (application ref: 8.13.4), to be used as appropriate to prevent the migration of pollutants (SuDS Manual);</li> <li>➤ Regular cleaning of roads of any construction waste and dirt to be carried out (SuDS Manual); and</li> <li>➤ Surface water drainage arrangements to be submitted for approval by DCC as a requirement of the DCO.</li> </ul>
OPERATION	
General	<p>The OnSS would contain potential pollutants which could include cooling oils, lubricants, fuels, greases, etc. The design, maintenance and operation of the facility would follow good practice in line with the prevailing future guidance and legislation with regard to measures such as the storage and management of potentially polluting substances, emergency spill response procedures, clean up and control of any potentially contaminated surface water runoff and routine inspection to prevent or contain leaks of any pollutants.</p> <p>The operation of the OnSS would also follow good practice in line with the prevailing future guidance and legislation with regard to specific measures to avoid potential impacts to protected or notable species or sensitive habitats.</p>

PARAMETER	MITIGATION MEASURES
	Where unplanned operational or maintenance works are required, appropriate mitigation measures would be developed and agreed with relevant consultees prior to works taking place.
DECOMMISSIONING	
General	Decommissioning practices will incorporate measures similar to the construction phase, to prevent impact to ecological receptors.
	Provision of a decommissioning plan in advance of decommissioning works will be a requirement of the DCO, to include protection of ecological features, based on up-to-date survey information and relevant guidance in place at the time of decommissioning.

## 5.10 Environmental assessment: construction phase

- 189 This section addresses the site clearance and construction phase impacts to the important ecological features identified, through reference to the MDS presented in Table 12.
- 190 Construction impacts in relation to air quality, hydrology and noise have been assessed elsewhere within the ES and are summarised below in respect of ecological receptors.
- 191 The air quality chapter (Volume 3, Chapter 11 (application ref: 6.3.11)) considers air quality impacts during construction to sensitive ecological receptors as a result of dust and increased road traffic at Section 11.11. With respect to dust, it concludes that construction dust impacts are considered to be removed or minimized via the implementation of proposed mitigation measures. As such, residual effects are concluded to be not significant in terms of the EIA Regulations.
- 192 With respect to increased road traffic, it concludes that, *“road traffic impacts associated with onshore construction activities on air quality can be considered as having an insignificant/ neutral effect on ecological designations for all proposed scenarios.”*
- 193 The hydrology and flood risk chapter (Volume 3, Chapter 7 (application ref: 6.3.7)) provides a description of the hydrological setting of water courses within the survey area in Section 7.7. It includes embedded mitigation and other mitigation measures to reduce impacts to receiving waters in Sections 7.9 – 7.12. The assessment concludes that *“the likely overall effect of AyM OWF on water quality and flood risk throughout the construction, operation and decommissioning of the Project is not significant in EIA terms.”*
- 194 The assessment of effects on aquatic receptors draws heavily on the proposed mitigation measures and the assessment of effects on water quality presented in the hydrology and flood risk chapter.

### 5.10.1 Permanent and temporary loss of important habitat

195 Table 14 presents the extent of each habitat type that could be subject to temporary loss arising from construction (i.e. excluding the OnSS footprint, OnSS cable entry/exit and OnSS access). This is also illustrated on Figure 10 to Figure 22 which shows the OL and the locations of Important Ecological Features. The areas shown in Table 14 represent the maximum extent of temporary habitat loss that would result during construction.

Table 14: Habitats within the Onshore ECC, including all infrastructure and construction areas but excluding the OnSS footprint and access

UKHAB LEVEL 3 HABITAT	EXTENT (HA)	UKHAB LEVEL 4 HABITAT (IF APPLICABLE AND MAPPED)	EXTENT (HA)	UKHAB LEVEL 5 HABITAT (IF APPLICABLE AND MAPPED)	EXTENT (HA)
Cropland (c1);	28.03	N/A	28.03	N/A	N/A
Fen Marsh and Swamp (f2);	0.28	f2a lowland fen (priority habitat)	0.12	N/A	N/A
		f2e reedbed (priority habitat)	0.05	N/A	N/A
		f2f other swamps	0.08	N/A	N/A
Neutral (g3) and modified (g4) grassland;	59.44 (11 ha of which is coastal and floodplain grazing marsh)	g3c other neutral grassland	7.68	N/A	N/A
Hedgerow (h2);	1.69	h2a hedgerow (priority habitat)	1.69	N/A	N/A



UKHAB LEVEL 3 HABITAT	EXTENT (HA)	UKHAB LEVEL 4 HABITAT (IF APPLICABLE AND MAPPED)	EXTENT (HA)	UKHAB LEVEL 5 HABITAT (IF APPLICABLE AND MAPPED)	EXTENT (HA)
Scrub (h3)	0.09	h3h mixed scrub	0.04	N/A	N/A
Rivers and streams (r2)	0.12	r2a rivers (Priority habitat)	0	N/A	N/A
		r2b other rivers and streams	0.09	N/A	N/A
Supralittoral sediment (s3);	0.27	s3a coastal sand dunes (priority habitat)	0.27	s3a6 shifting dunes with marram (H2120)	0
				s3a7 dune grassland (H2130)	0.02
Urban/man made (u1); and	4.48	u1b5 buildings	0.02	N/A	N/A
Woodland (w1) (of which 0 ha is ASNW or PAWS)	0.20	w1g other woodland; broadleaved	0.14	N/A	N/A
		w1h other woodland; mixed	0.06	N/A	N/A

- 196 In addition to the above, there would be permanent loss of six hedgerows with a total length of c. 540m/extent of c. 0.14 ha and 4.92 ha of modified grassland at the, OnSS footprint and access, based on the MDS assessed.
- 197 As set out in Section 5.8, a precautionary approach has been taken to the assessment, based upon temporary loss of all areas within the onshore ECC. The extent and significance of predicted habitat loss is presented in Table 15 for each of the important habitat features listed in Table 11 for which habitat loss is possible (i.e. if no habitat loss is predicted at an important habitat feature, it is not included in the table – additional clarity is provided below). Table 15 references short-, mid- and long-term timescales. These are assumed to be <5 years, 5-10 years and >10 years respectively. Reinstatement of habitat is considered to be mitigation. Where habitat is permanently lost (at the OnSS footprint), then replacement habitat provided elsewhere is considered to be compensation.
- 198 For clarity, the following features are not included in Table 15 for the reasons stated:
- ▲ there is no anticipated loss of habitat at areas within Y Ffrith LWS, Bryn Cwnin LWS or within any areas of ASNW or PAWS (the track through Y Ffrith LWS uses an existing access route, and Bryn Cwnin LWS, ASNW or PAWS will be avoided by the use of HDD);
  - ▲ loss of coastal saltmarsh, reedbeds and rivers will be avoided by the use of HDD; and
  - ▲ Temporary loss of beach habitat, below MHWS, is covered in the offshore assessment (see Volume 2, Chapter 5 (application ref: 6.2.5) in particular (benthic ecology)).
- 199 These features are therefore not included in Table 15.

Table 15: Assessment of Significance of Important Habitat Loss during the Construction Phase

IMPORTANT HABITAT	EXTENT OF LOSS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
S7 habitat: coastal sand dune, including a small area of Habitats Regulations Annex 1 habitat H2130 dune grassland (Route Section B)	c. 0.1 ha of coastal sand dune habitat including 0.02 ha dune grassland, west of North Wales Bowl Centre at Y Ffrith would be temporarily lost as a result of a TCC and construction access.	<p>The re-establishment of dune grassland habitats from turf salvaged from specific areas (guided by results from pre-construction botanical survey) or the creation of dune grassland via reinstatement of appropriate soils and seeding. If seeding is required, it would be with native, ideally local provenance seed comprising a mixture that includes the dominant and characteristic species of adjacent, retained dune grassland.</p> <p>Further details are included within the OLEMP (application ref: 8.4).</p>	<p><b>Significant, temporary adverse</b> at a local level in the short term until the proposed mitigation is sufficiently mature and becomes established.</p> <p><b>Not significant in mid-term</b> once proposed mitigation has matured and become established.</p>

IMPORTANT HABITAT	EXTENT OF LOSS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
<p>S7 habitat: hedgerows including three “important” hedgerows under the Hedgerow Regulations 1997</p> <p>(Route Sections B-G)</p>	<p>Permanent loss of c. 540m of hedgerow including 8 mature trees at the OnSS footprint, temporary loss of parts of 128 other hedgerows, including an additional c. 33 mature trees which would be crossed by the cable route, or affected by TCCs or vis-plays. This includes three that are “Important” under the Hedgerow Regulations 1997.</p>	<p><b>Onshore ECC</b></p> <p>Replanting/ reinstatement with a species-rich, locally appropriate native mixture including heavy standard trees at a 3:1 ratio for any lost.</p> <p><b>OnSS footprint</b></p> <p>Compensation rather than mitigation required, since there will be permanent loss. Residual effects will be offset via replanting of 770m and including heavy standard trees at a 3:1 ratio for any lost. New hedgerows to be created at historic field boundaries or along new ones, as close as possible to the site of the original.</p>	<p><i>Significant permanent and temporary adverse</i> at a local level in the short term until the proposed mitigation is sufficiently mature and becomes established.</p> <p><b>Not significant in mid-term</b> once proposed mitigation has matured and become established as this allows time for new/ replacement hedgerows to establish.</p> <p><b>Residual effects</b> as a result of hedgerow loss at the OnSS will be offset via compensatory planting of 770m of new hedgerow. Residual effects are therefore not considered to be significant in the long term.</p>

IMPORTANT HABITAT	EXTENT OF LOSS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
		Outline details of the location of compensation habitat in the vicinity of the OnSS are shown in the OLEMP (application ref 8.4).	
S7 habitat: Lowland Fen (Route Section C)	0.12 ha of lowland fen at The Flash would be temporarily lost. The remaining area would be retained and protected from damage.	Topography including hydrological connection reinstated following work to ensure water retention. Area allowed to revegetate naturally (considered to be swift given the large amount of fen directly adjacent, and to minimise risk of introduction of aquatic INNS). Further details are included within the OLEMP (application ref 8.4).	<i>Not significant</i> in short term.
S7 habitat: Coastal and floodplain grazing marsh including part	11 ha of coastal and floodplain grazing marsh (fields and ditches), the	A range of measures relating to vegetation Clearance and Other Construction Works are	<i>Not significant</i> in short term.



IMPORTANT HABITAT	EXTENT OF LOSS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
of the Clwyd Estuary and Adjacent Fields LWS  (Sections D & E)	majority of which is also part of Clwyd Estuary and Adjacent Fields LWS, will be temporarily lost. The entire area is subject to periodic agricultural disturbance via ploughing or reseedling as part of normal farming practice. Vegetation within several ditches will also be subject to temporary loss, however all ditches are likely to be subject to similar disturbance already during regular maintenance. Larger ditches are classed as part of main river (and therefore periodically maintained/desilted as part of flood defence measures). Field boundary	proposed in Section 5.9 with further details provided in the Outline CMS (application ref: 8.13.1) and OLEMP (application ref: 8.4)	

IMPORTANT HABITAT	EXTENT OF LOSS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	ditches are also likely to be maintained, but on a less regular basis.		

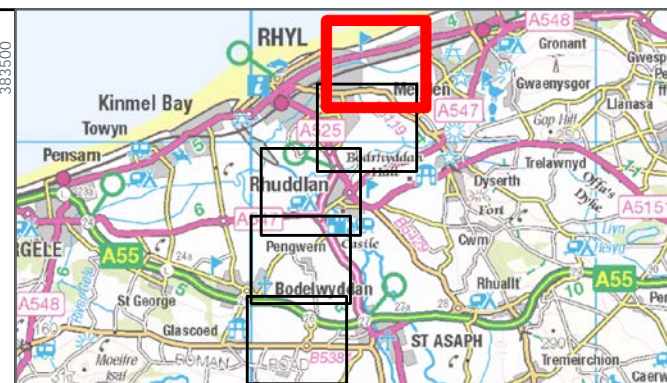
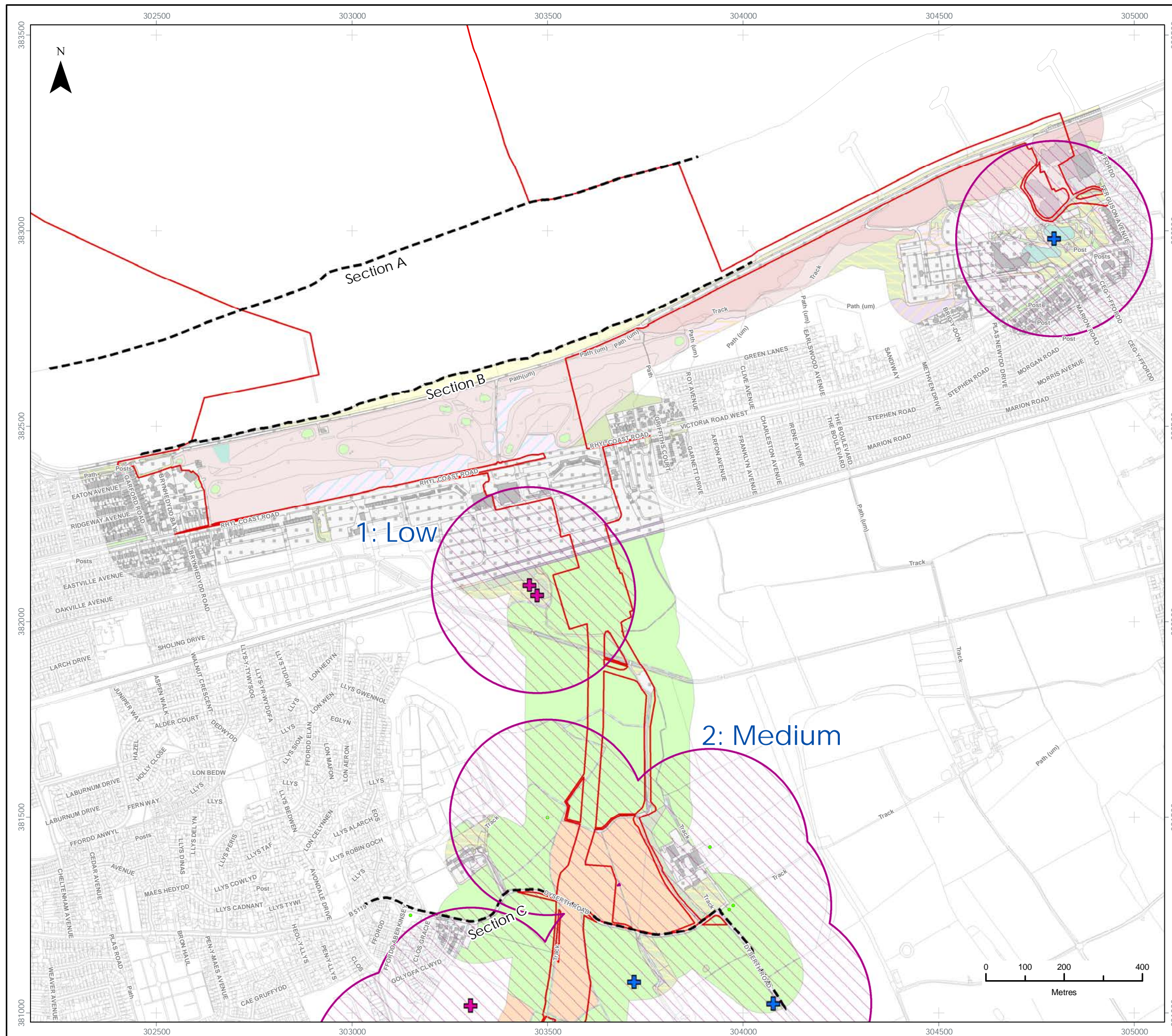
### 5.10.2 Indirect Impacts to Bryn Cwnin Wetland LWS

200 Bryn Cwnin wetland is immediately west of the onshore ECC. Whilst hydrological survey has not been undertaken at the wetland, given its landscape context and lack of inflow water course, it is considered most likely to be sustained by ground water rather than surface water. The ECC is upslope of the wetland and there is considered to be no risk of dewatering. However, there potential for the construction of the ECC to interrupt surface water flows which would otherwise reach the wetland. Since the wetland is not considered to be reliant on surface water, this potential impact is assessed as *not significant*.







### 5.10.3 Impacts upon protected or notable species or upon their resting or breeding sites, including habitat fragmentation and isolation

201 Table 16 provides an assessment of potential impacts based upon field survey and desk study, and sets out details of proposed mitigation measures. Refer also to Figure 23 to Figure 34 which show the OL and the locations of Important Ecological Features





## LEGEND

-  Order Limits
-  Onshore Cable Route Section Breaks
-  Pre-2021 GCN Record (Cofnod Data)
-  GCN Present
-  GCN Absent
-  Ponds 250 m Buffer

Metapopulation Reference and Size Illustrated by Blue Label

GCN Metapopulation 1 - Habitat Impacts

### Permanent Loss

g4 - Modified Grassland (0.060 ha)

Temporary Loss

f2f - Other Swamp, 0.004

g3c - Other Neutral Grassland (0.054 ha)

## h2a - Hedgerow (Priority Habitat)

h3d - Bramble Scrub (0.001 ha)

r2 - Rivers and Streams (0.016 ha)

GCN Metapopulation 2 - Habitat Impacts

### Temporary Loss

c1 - Arable and Horticulture (11.983 ha)

f2f - Other Swamp (0.018 ha)

g3c - Other Neutral Grassland (0.191 ha)

g4 - Modified Grassland (5.142 ha)

## h2a - Hedgerow (Priority Habitat) (0.341 ha)

h3 - Dense Scrub (0.014 ha)

u1 - Built-up Area and Garden (0.435 ha)

w1g - Other Woodland; Broadleaved (0.006 ha)

Note:

Refer to habitat report for full legend of habitats

Data Source:

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PROJECT TITLE:

AWEL Y MÔR OFFSHORE WINDFARM  
GCN SURVEY REPORT

FIGURE TITLE:

## POTENTIAL IMPACTS: GCN

381	VER	DATE	REMARKS	Drawn	Checked
	1	26/02/2022	ES Issue	JRS	MF

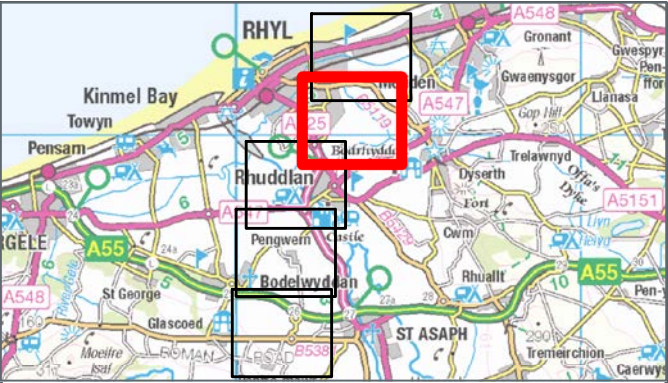
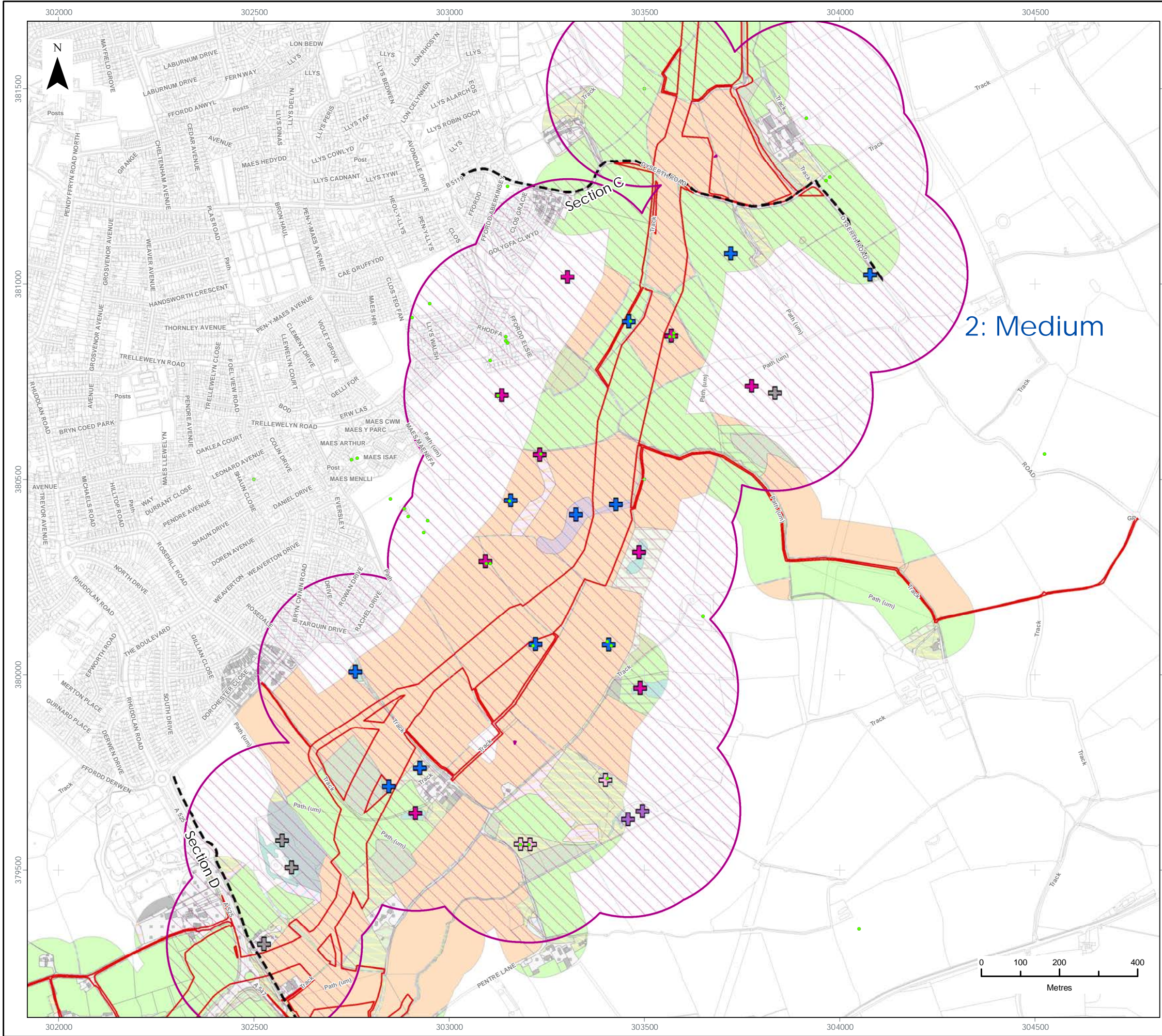
FIGURE NUMBER:

FIGURE 23

SCALE: <b>1:10,000</b>	PLOT SIZE: <b>A3</b>	DATUM: <b>ODN</b>	COORDINATE SYSTEM: <b>British National Grid</b>
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Fferm Wynt Alltraeth  
**AWEL Y MÔR**  
Offshore Wind Farm





- LEGEND**
- Order Limits
  - Onshore Cable Route Section Breaks
  - Pre-2021 GCN Record (Cofnod Data)
  - GCN Present
  - GCN Present (Pre-Existing Data from Cofnod/NRW)
  - GCN Present (Pond within 250m of Another with GCN Present)
  - GCN Absent
  - N/A - Pond Not Surveyed / Pond Not Present at Time of Survey
  - Ponds 250 m Buffer

[Metapopulation Reference and Size Illustrated by Blue Label](#)

**GCN Metapopulation 2 - Habitat Impacts**

**Temporary Loss**

c1 - Arable and Horticulture (11.983 ha)  
f2 - Fen Marsh and Swamp (0.015 ha)  
f2a - Lowland Fen (0.123 ha)  
f2f - Other Swamp (0.018 ha)  
g3c - Other Neutral Grassland (0.191 ha)  
g4 - Modified Grassland (5.142 ha)  
h2a - Hedgerow (Priority Habitat) (0.341 ha)  
h3 - Dense Scrub (0.014 ha)  
u1 - Built-up Area and Garden (0.435 ha)  
w1g - Other Woodland: Broadleaved (0.006 ha)  
w1g6 - Line of Trees (0.031 ha)

Note:  
Refer to habitat report for full legend of habitats  
Data Source:  
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PROJECT TITLE:  
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GCN SURVEY REPORT*

FIGURE TITLE:  
**POTENTIAL IMPACTS: GCN**

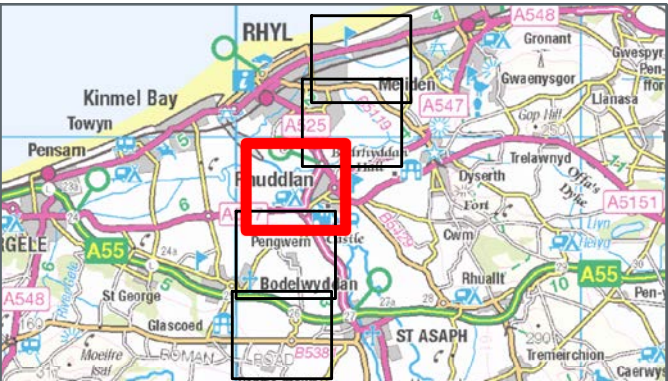
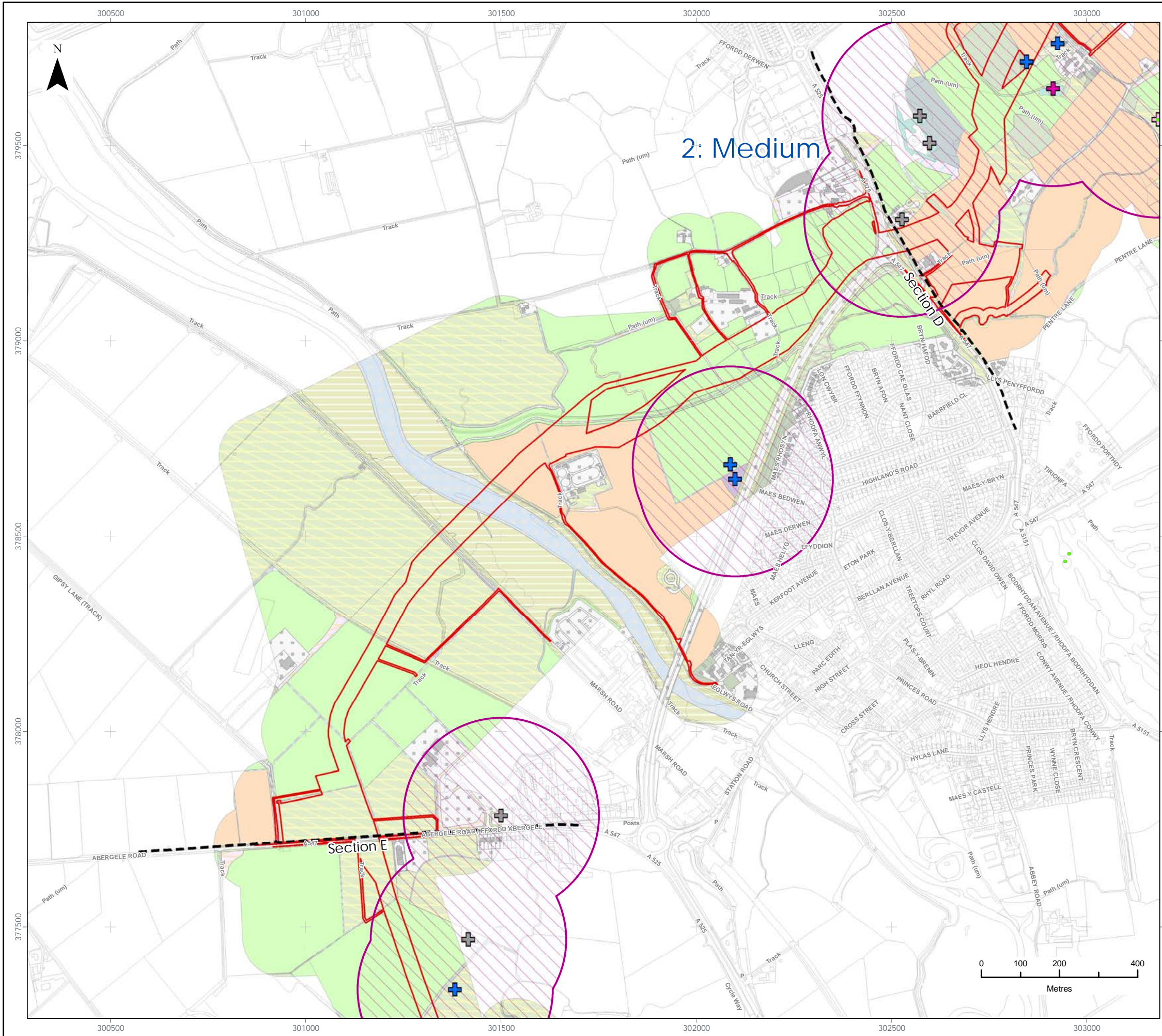
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1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 24**

SCALE:	1:10,000	PLOT SIZE:	A3	DATUM:	ODN	COORDINATE SYSTEM:	British National Grid
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**LEGEND**

- Order Limits
- Onshore Cable Route Section Breaks
- Pre-2021 GCN Record (Cofnod Data)
- GCN Present
- GCN Present (Pre-Existing Data from Cofnod/NRW)
- GCN Absent
- N/A - Pond Not Surveyed / Pond Not Present at Time of Survey
- Ponds 250 m Buffer

[Metapopulation Reference and Size Illustrated by Blue Label](#)

**GCN Metapopulation 2 - Habitat Impacts**

**Temporary Loss**

- c1 - Arable and Horticulture (11.983 ha)
- g3c - Other Neutral Grassland (0.191 ha)
- g4 - Modified Grassland (5.142 ha)
- h2a - Hedgerow (Priority Habitat) (0.341 ha)
- u1 - Built-up Area and Garden (0.435 ha)
- w1g - Other Woodland: Broadleaved (0.006 ha)
- w1g6 - Line of Trees (0.031 ha)

Note:  
Refer to habitat report for full legend of habitats  
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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM  
GCN SURVEY REPORT*

FIGURE TITLE:  
**POTENTIAL IMPACTS: GCN**

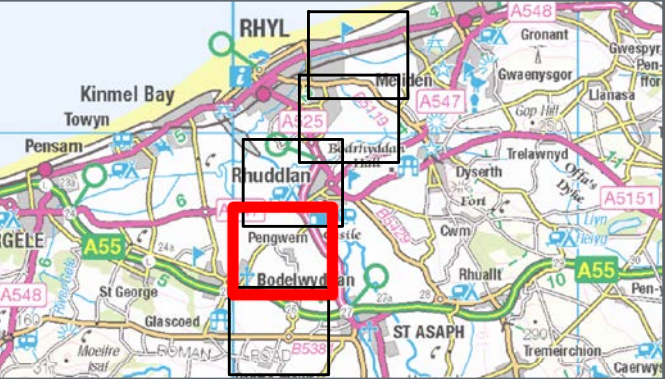
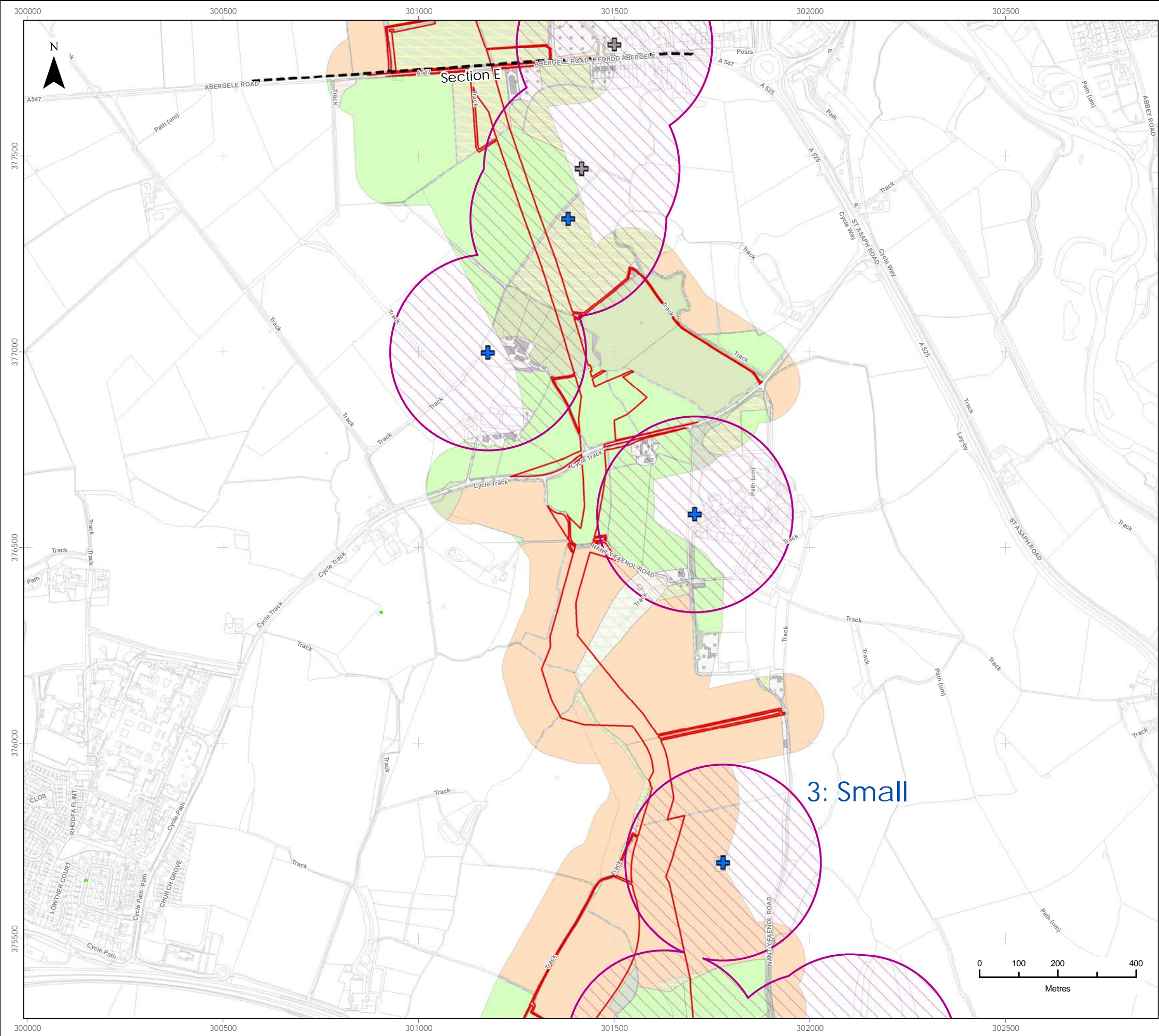
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 25**

SCALE: 1:10,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

- Order Limits
- Onshore Cable Route Section Breaks
- Pre-2021 GCN Record (Cofnod Data)
- GCN Absent
- N/A - Pond Not Surveyed / Pond Not Present at Time of Survey
- Ponds 250 m Buffer

[Metapopulation Reference and Size Illustrated by Blue Label](#)

GCN Metapopulation 3 - Habitat Impacts

Temporary Loss

- c1 - Arable and Horticulture (2.337 ha)
- g3c - Other Neutral Grassland (0.019 ha)
- g4 - Modified Grassland (3.429 ha)
- h2a - Hedgerow (Priority Habitat) (0.049 ha)

Note:  
Refer to habitat report for full legend of habitats  
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PROJECT TITLE:  
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FIGURE TITLE:  
**POTENTIAL IMPACTS: GCN**

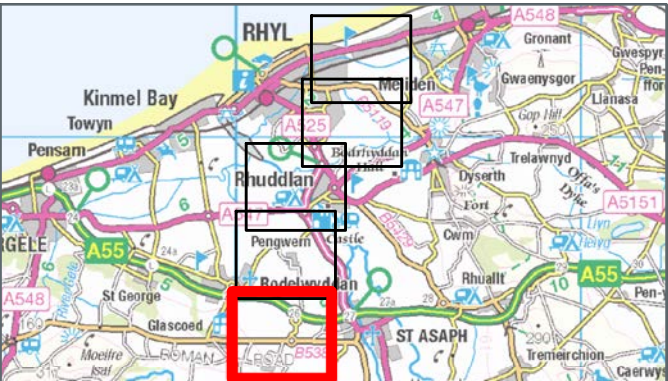
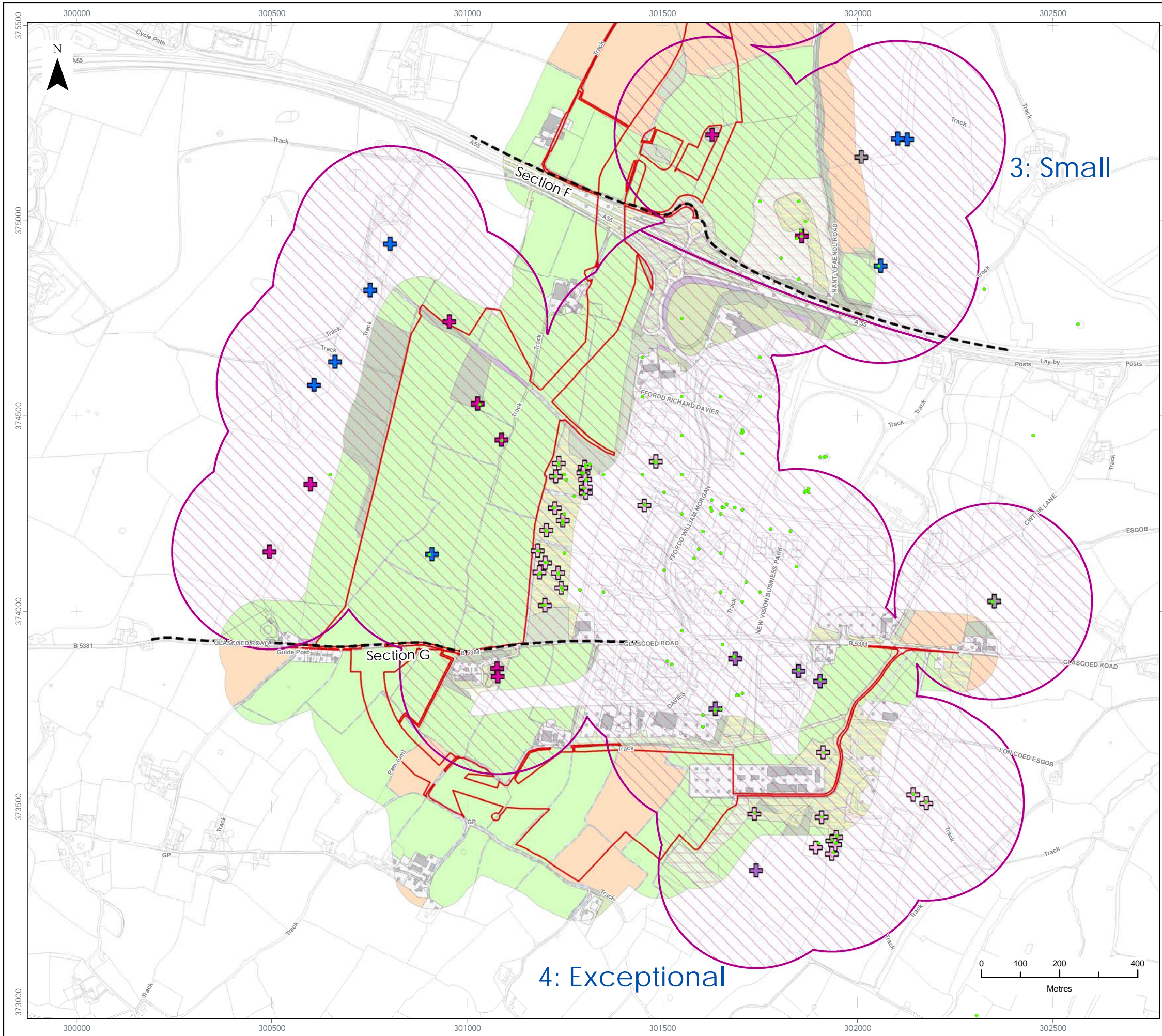
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 26**

SCALE:	1:10,000	PLOT SIZE:	A3	DATUM:	ODN	COORDINATE SYSTEM:	British National Grid
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**LEGEND**

- Order Limits
- Onshore Cable Route Section Breaks
- Pre-2021 GCN Record (Cofnod Data)
- GCN Present
- GCN Present (Pre-Existing Data from Cofnod/NRW)
- GCN Present (Pond within 250m of Another with GCN Present)
- GCN Absent
- N/A - Pond Not Surveyed / Pond Not Present at Time of Survey
- Ponds 250 m Buffer

**Metapopulation Reference and Size Illustrated by Blue Label**

**GCN Metapopulation 3 - Habitat Impacts**

**Temporary Loss**

- c1 - Arable and Horticulture (2.337 ha)
- g3c - Other Neutral Grassland (0.019 ha)
- g4 - Modified Grassland (3.429 ha)
- h2a - Hedgerow (Priority Habitat) (0.049 ha)
- u1 - Built-up Area and Garden (0.088 ha)

**GCN Metapopulation 4 - Habitat Impacts**

**Permanent Loss**

- g4 - Modified Grassland (4.856 ha)
- h2a - Hedgerow (Priority Habitat) (0.144 ha)

**Temporary Loss**

- c1 - Arable and Horticulture (1.056 ha)
- g3 - Neutral Grassland (0.002 ha)
- g3c - Other Neutral Grassland (0.019 ha)
- g4 - Modified Grassland (19.686 ha)
- h2a - Hedgerow (Priority Habitat) (0.474 ha)
- u1 - Built-up Area and Garden (0.426 ha)
- w1 - Broadleaved Mixed and Yew Woodland (0.091 ha)

Note:  
Refer to habitat report for full legend of habitats  
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*AWEL Y MÔR OFFSHORE WINDFARM  
GCN SURVEY REPORT*

**FIGURE TITLE:**  
**POTENTIAL IMPACTS: GCN**

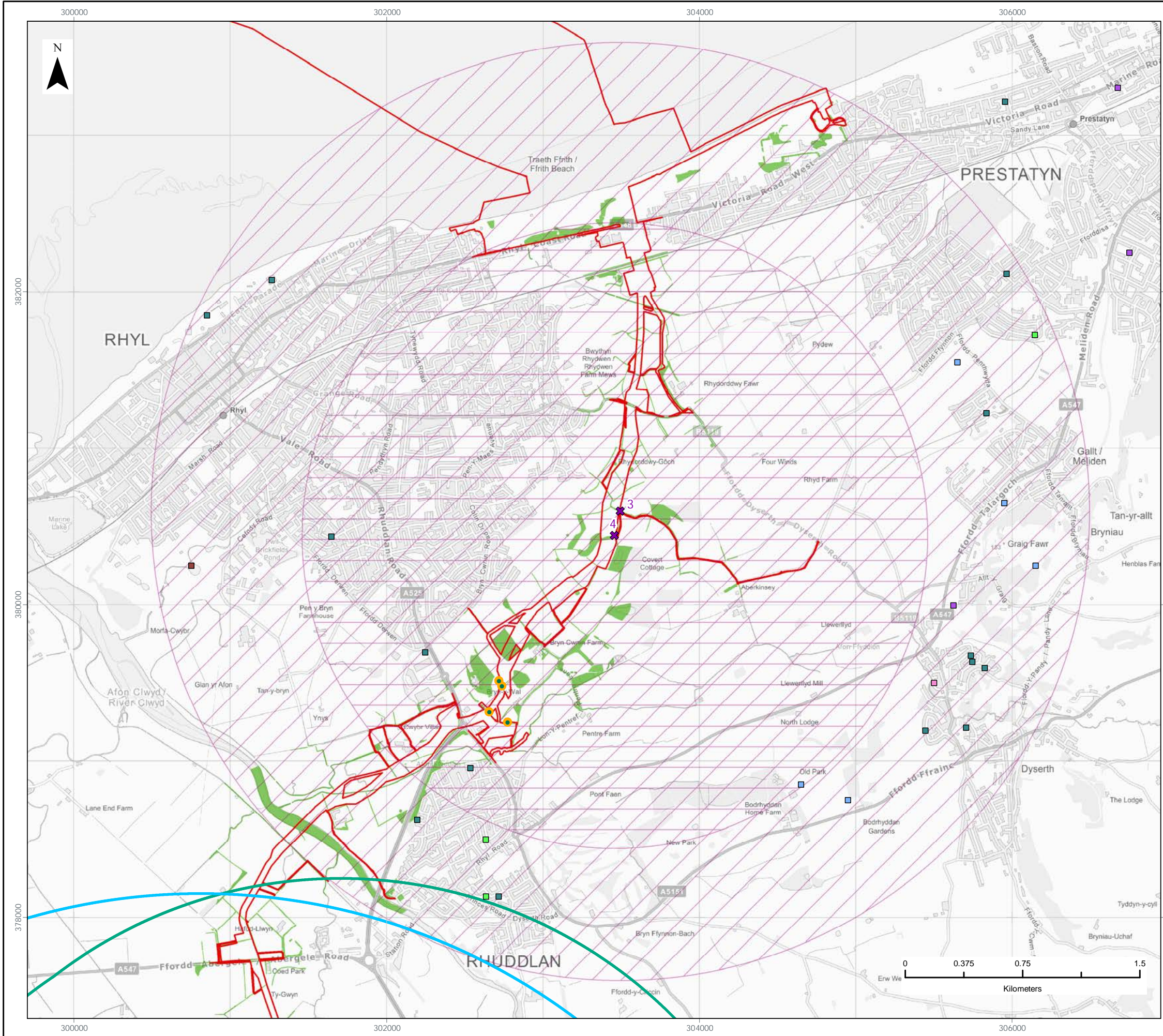
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1	26/02/2022	ES Issue	JRS	MF

**FIGURE NUMBER:**  
**FIGURE 27**

SCALE: 1:10,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

Order Limits

Trees with Bat Roost Potential

- Moderate Potential
- ✕ Static Bat Detector Location

Cofnod Record Bat Roost (Species)

- Common Pipistrelle
- Daubenton's Bat
- Lesser Horseshoe Bat
- Noctule Bat
- Pipistrellus Bat Species
- Unknown Bat

Potential Roost Zones (Species and Distance)

- Lesser Horseshoe Bat: 2 km
- Nathusius Pipistrelle Bat: 3 km

Core Sustenance Zone (Species and Distance)

- Soprano Pipistrelle: 3 km
- Noctule: 4 km

Suitable Commuting and Foraging Habitat (Hedgerows, Woodland, Scrub and Wetland)

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PROJECT TITLE:  
***AWEL Y MÔR OFFSHORE WINDFARM  
BAT SURVEY REPORT***

FIGURE TITLE:  
**POTENTIAL IMPACTS: BATS**

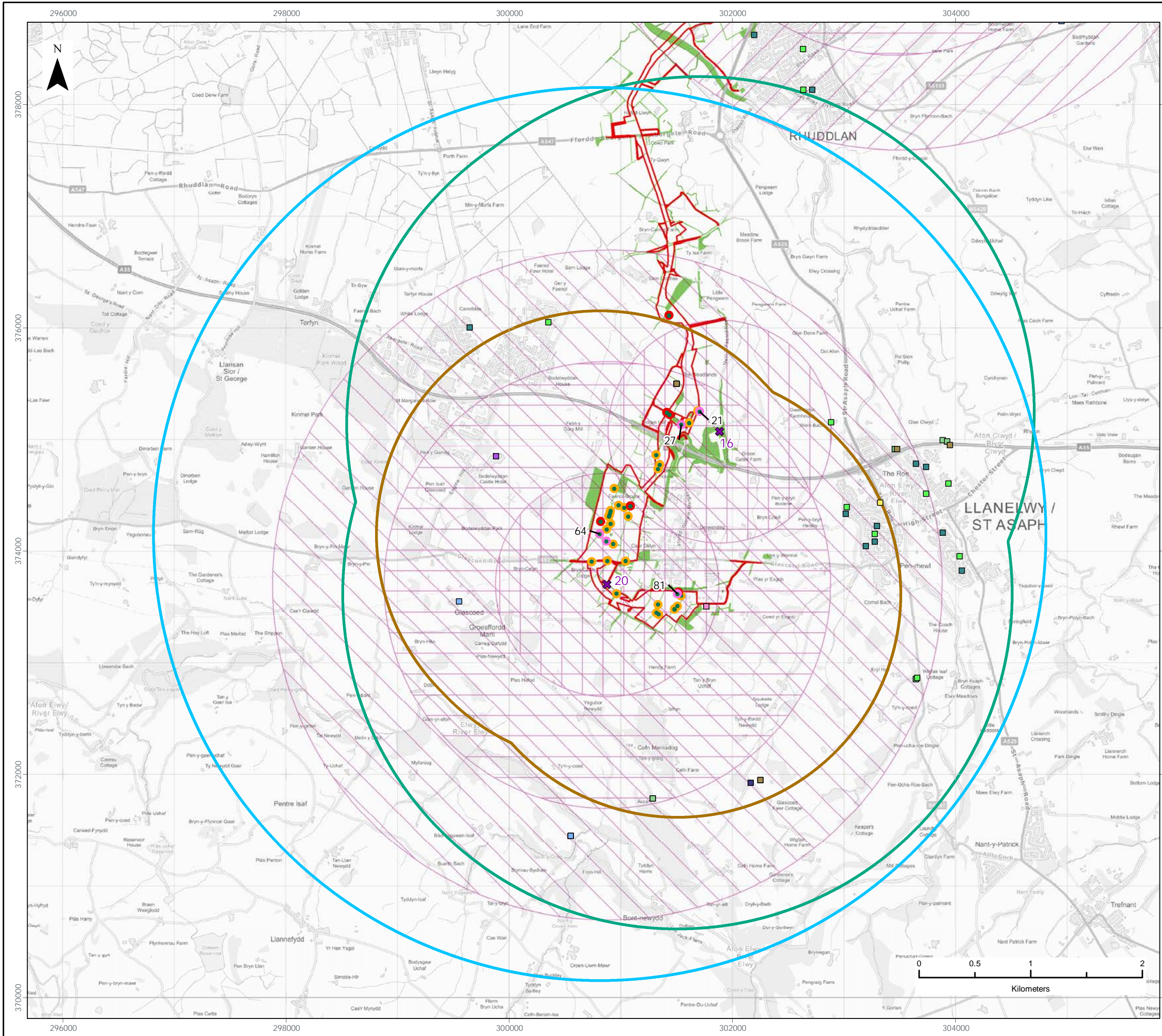
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1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 28**

SCALE: <b>1:25,000</b>	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

- Order Limits
- Confirmed Bat Roost
- Trees with Bat Roost Potential
  - High Potential
  - Moderate Potential
  - Static Bat Detector Location
- Cofnod Record Bat Roost (Species)
  - Brown Long-eared Bat
  - Common Pipistrelle
  - Lesser Horseshoe Bat
  - Myotis Bat Species
  - Natterer's Bat
  - Noctule Bat
  - Pipistrellus Bat Species
  - Soprano Pipistrelle
  - Unknown Bat
  - Whiskered/Brandt's Bat agg.
- Potential Roost Zones (Species and Distance)
  - Whiskered Bat: 1 km
  - Lesser Horseshoe Bat: 2 km
  - Greater Horseshoe Bat: 3 km
  - Nathusius Pipistrelle Bat: 3 km
- Core Sustenance Zone (Species and Distance)
  - Common Pipistrelle: 2 km
  - Soprano Pipistrelle: 3 km
  - Noctule: 4 km
- Suitable Commuting and Foraging Habitat (Hedgerows, Woodland, Scrub and Wetland)

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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM  
BAT SURVEY REPORT*

FIGURE TITLE:  
**POTENTIAL IMPACTS: BATS**

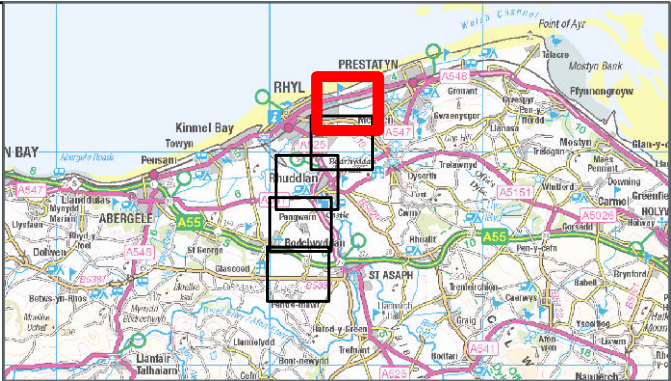
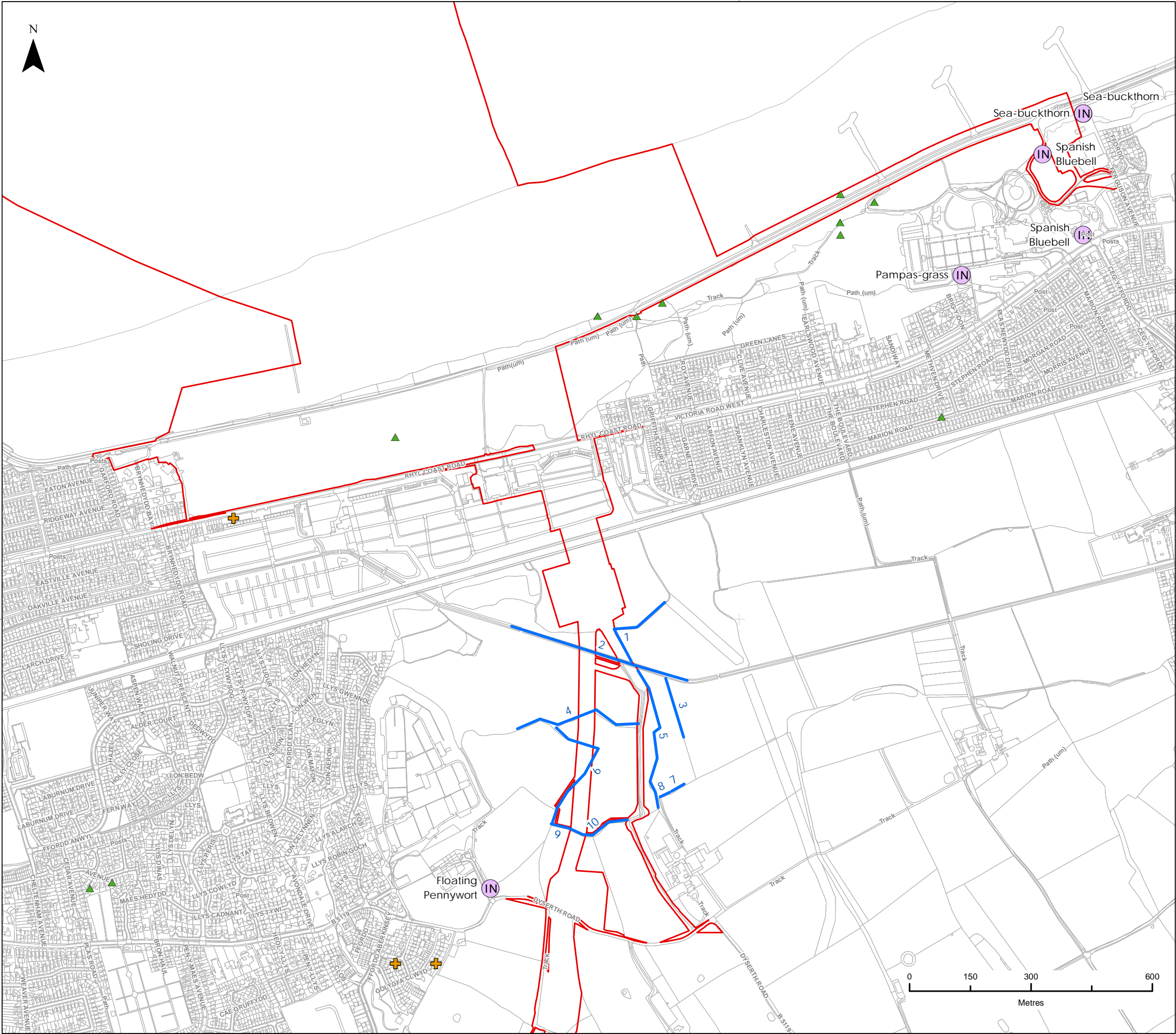
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 29**

SCALE: 1:35,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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- LEGEND**
- Order Limits
  - Invasive and Non-Native Species Record (Derived from Cofnod)
  - Water Vole Record (Derived from Cofnod)
  - Watercourse Subject to Survey - No Evidence Present
  - Common Lizard Record (Derived from Cofnod)

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PROJECT TITLE:  
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BAT SURVEY REPORT*

FIGURE TITLE:  
**POTENTIAL IMPACTS:  
OTHER IMPORTANT ECOLOGICAL FEATURES**

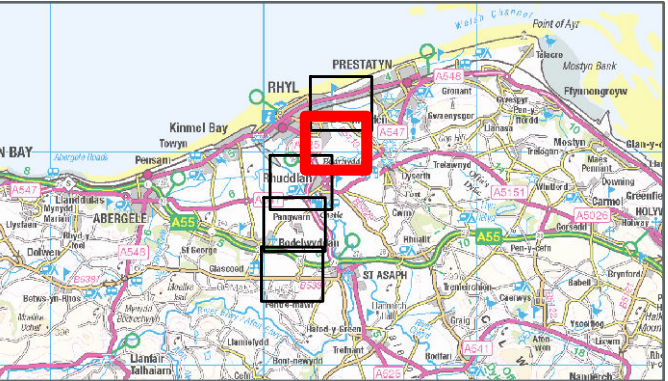
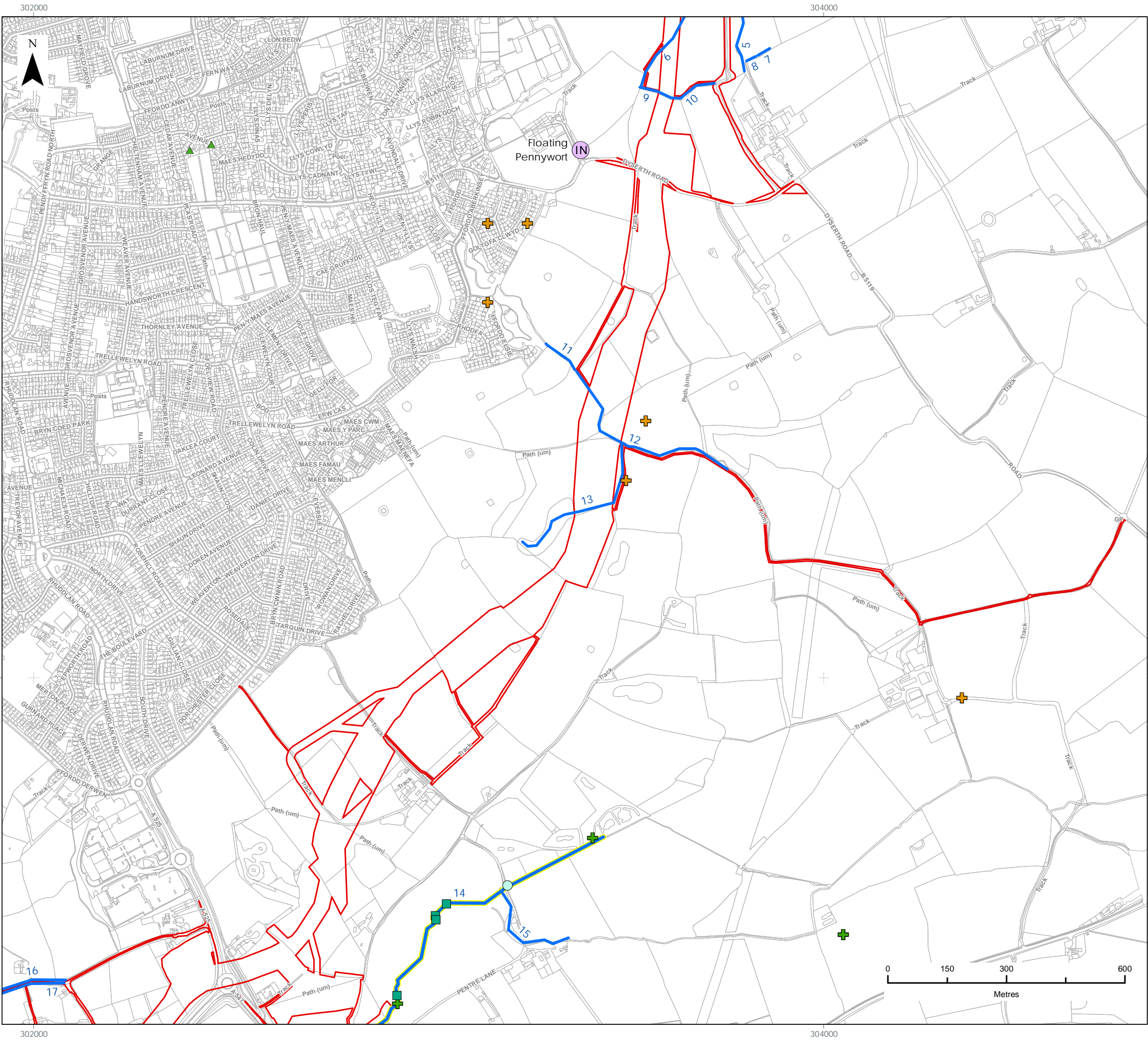
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 30**

SCALE: 1:10,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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Fferm Wynt Alltraeth  
**AWEL Y MÔR**  
Offshore Wind Farm





**LEGEND**

- Order Limits
- Invasive and Non-Native Species Record (Derived from Cofnod)
- Potential Water Vole Burrow - 2021 Survey
- Otter Spraint - 2021 Survey
- Otter Record (Derived from Cofnod)
- Water Vole Record (Derived from Cofnod)
- Watercourse Subject to Survey - Evidence Present
- Watercourse Subject to Survey - No Evidence Present
- Common Lizard Record (Derived from Cofnod)

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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM  
BAT SURVEY REPORT*

FIGURE TITLE:  
**POTENTIAL IMPACTS:  
OTHER IMPORTANT ECOLOGICAL FEATURES**

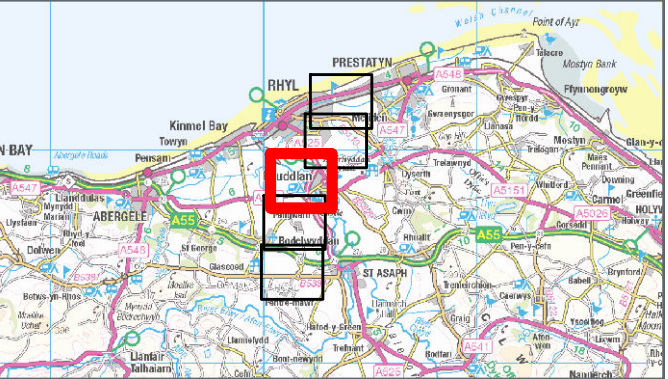
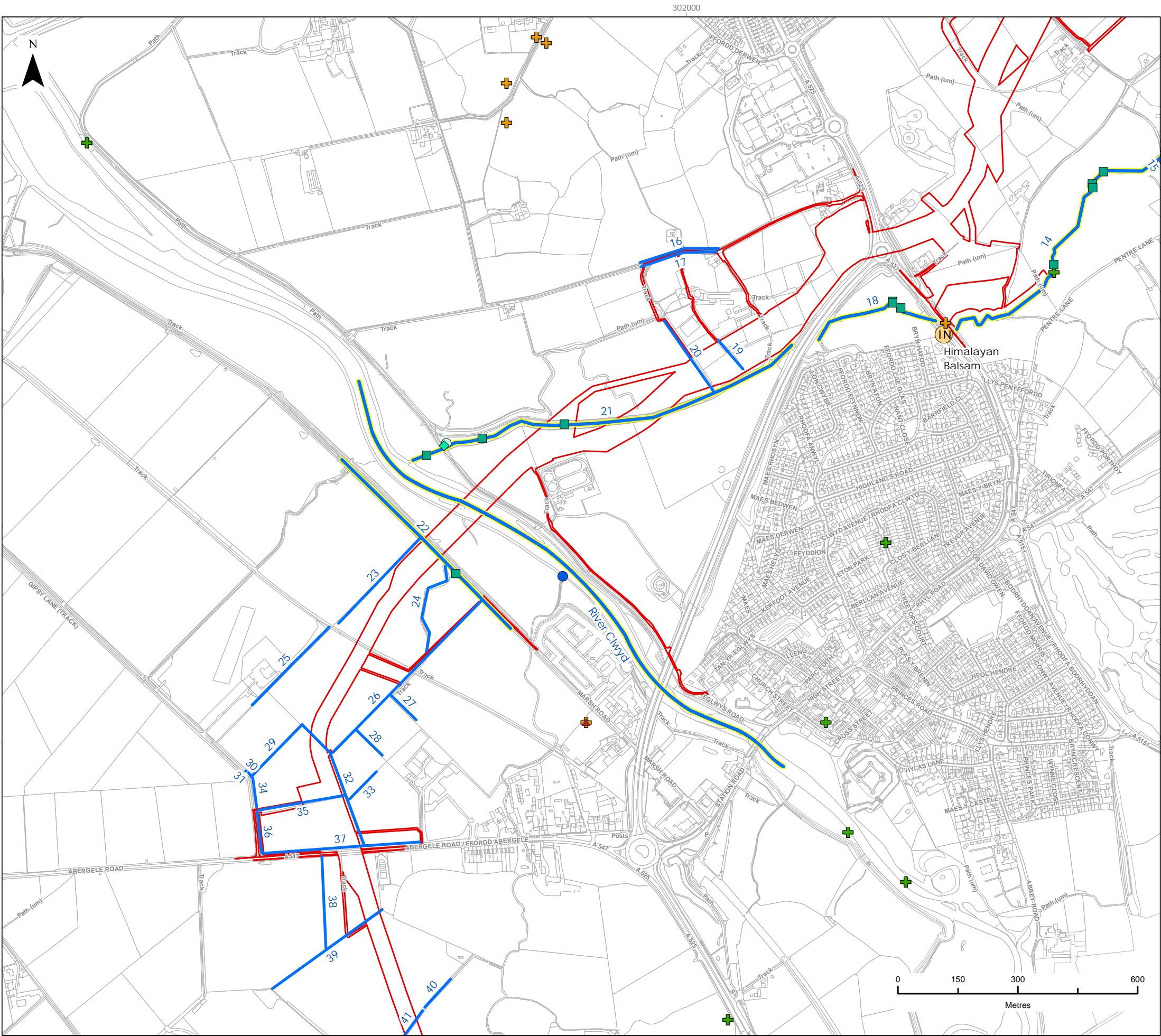
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 31**

SCALE: 1:10,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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**LEGEND**

- Order Limits
- Invasive and Non-Native Species (Field Survey Record)
- Potential Water Vole Burrow - 2021 Survey
- Mink Dropping - 2021 Survey
- Otter Spraint - 2021 Survey
- Otter Spraint - 2020 Survey
- Otter Record (Derived from Cofnod)
- Water Vole Record (Derived from Cofnod)
- Watercourse Subject to Survey - Evidence Present
- Watercourse Subject to Survey - No Evidence Present
- Grass Snake Record (Derived from Cofnod)

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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM  
BAT SURVEY REPORT*

FIGURE TITLE:  
**POTENTIAL IMPACTS:  
OTHER IMPORTANT ECOLOGICAL FEATURES**

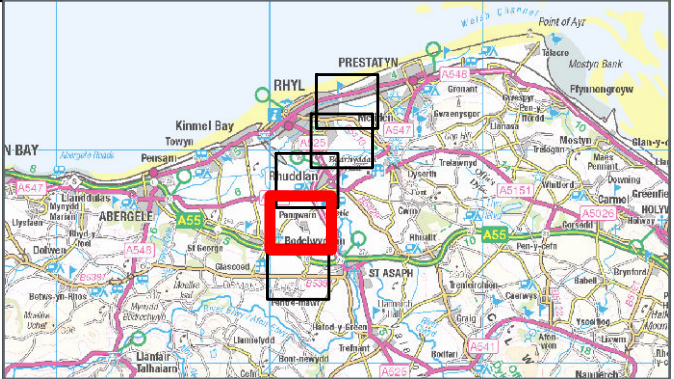
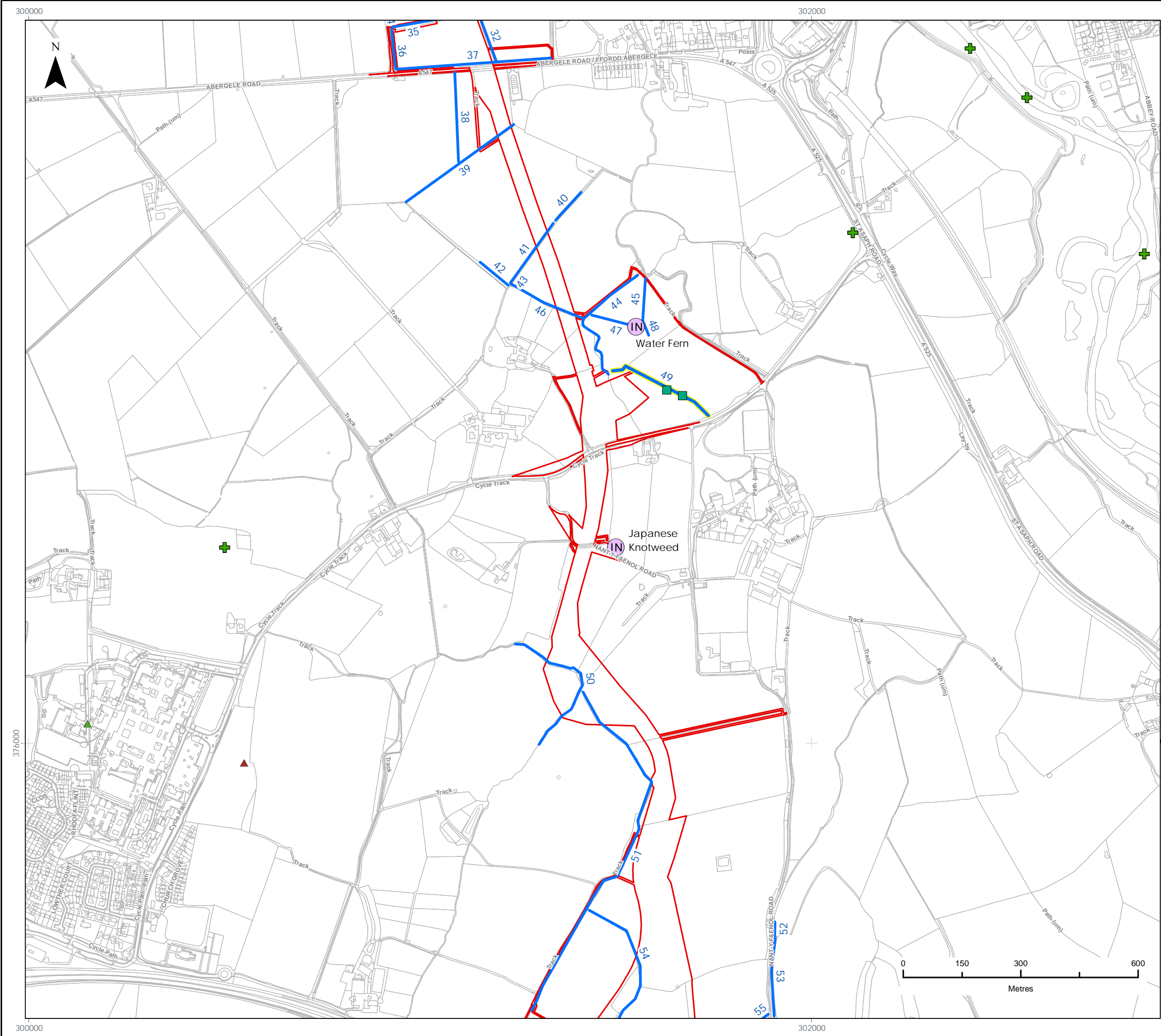
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 32**

SCALE: 1:10,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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- LEGEND**
- Order Limits
  - Invasive and Non-Native Species Record (Derived from Cofnod)
  - Potential Water Vole Burrow - 2021 Survey
  - Otter Record (Derived from Cofnod)
  - Watercourse Subject to Survey - Evidence Present
  - Watercourse Subject to Survey - No Evidence Present
  - Common Lizard Record (Derived from Cofnod)
  - Grass Snake Record (Derived from Cofnod)

Data Source:  
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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM  
BAT SURVEY REPORT*

FIGURE TITLE:  
**POTENTIAL IMPACTS:  
OTHER IMPORTANT ECOLOGICAL FEATURES**

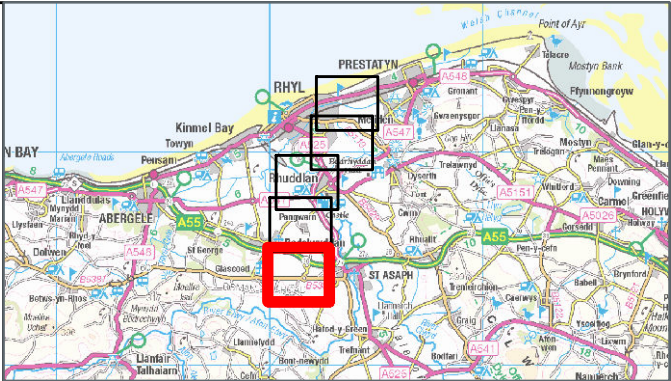
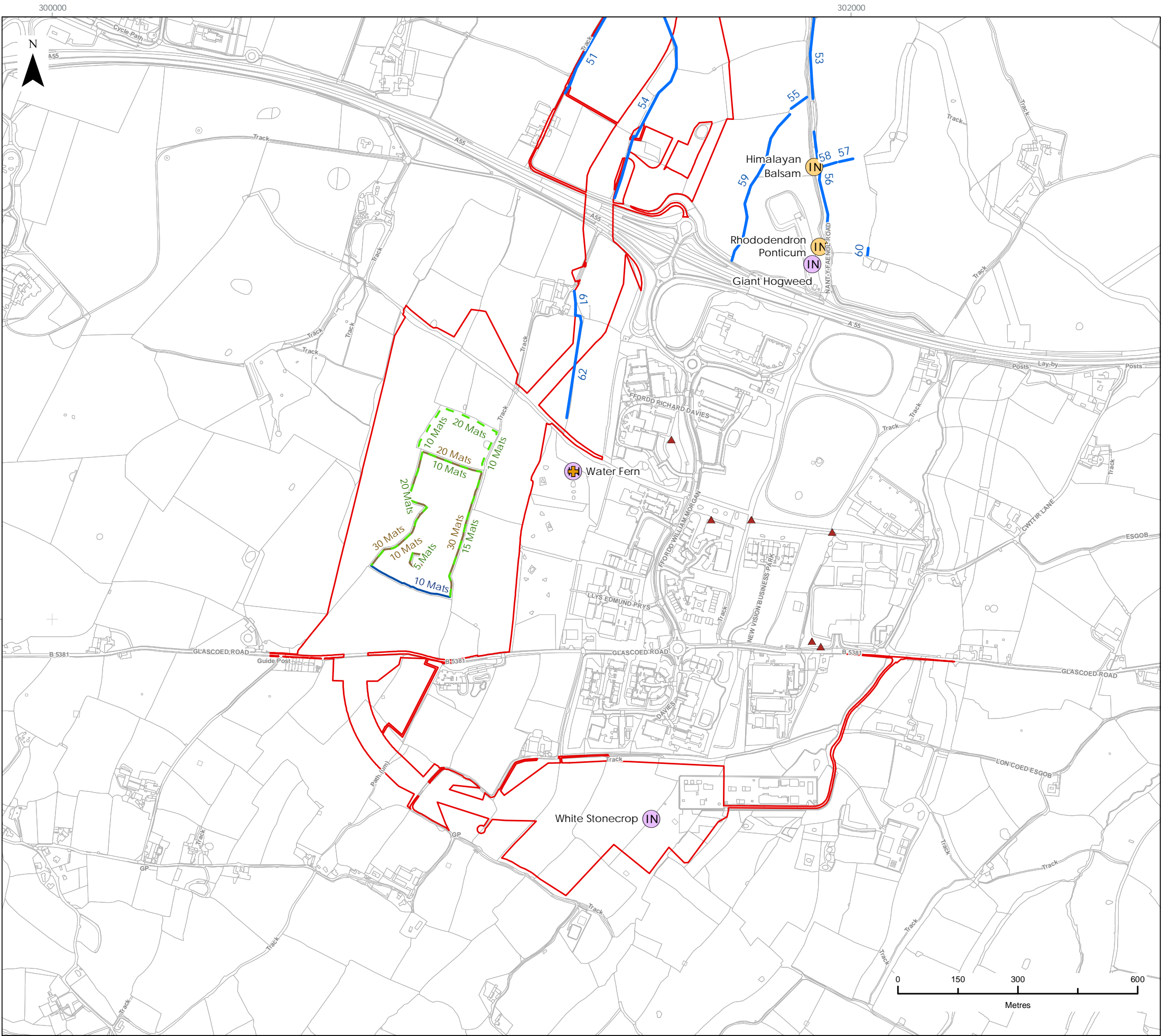
VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 33**

SCALE: 1:10,000	PLOT SIZE: A3	DATUM: ODN	COORDINATE SYSTEM: British National Grid
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Fferm Wynt Alltraeth  
**AWEL Y MÔR**  
Offshore Wind Farm





- LEGEND**
- Order Limits
  - Invasive and Non-Native Species (Field Survey Record)
  - Invasive and Non-Native Species Record (Derived from Cofnod)
  - Water Vole Record (Derived from Cofnod)
  - Watercourse Subject to Survey - No Evidence Present
  - Reptile Refugia Locations Installation Periods (Labels Represents Number of Mats)
  - 12/04/2021 - 21/09/2021
  - 12/04/2021 - 11/08/2021
  - 11/08/2021 - 21/09/2021
  - Grass Snake Record (Derived from Cofnod)

Data Source:  
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PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM  
BAT SURVEY REPORT*

FIGURE TITLE:  
**POTENTIAL IMPACTS:  
OTHER IMPORTANT ECOLOGICAL FEATURES**

VER	DATE	REMARKS	Drawn	Checked
1	26/02/2022	ES Issue	JRS	MF

FIGURE NUMBER:  
**FIGURE 34**

SCALE: **1:10,000** PLOT SIZE: A3 DATUM: ODN COORDINATE SYSTEM: British National Grid

Fferm Wynt Alltraeth  
**AWEL Y MÔR**  
Offshore Wind Farm



Table 16: Assessment of Significance of Effects upon Protected and Notable Species during the Construction Phase

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
Plant species (at coastal dune habitat)	<p>Temporary loss of coastal habitat at Y Ffrith, west of North Wales Bowls Centre, potentially supporting locally important plant species (refer to Habitat report at Annex 5.2 (application ref: 6.5.5.2) for details).</p> <p>Figure 1 to Figure 5 illustrate where the OL intersects with terrestrial habitats that are important ecological features.</p>	As for coastal sand dune habitat in Table 15	<p><i>Potentially significant, temporary adverse</i> at a county level in the short term until the proposed mitigation is sufficiently mature and become established.</p> <p><i>Not significant in mid-term</i> once proposed mitigation has matured and become established.</p>
Fish: Atlantic salmon, brown trout, European eel	Disturbance to European eel that may use water courses, including ditches, that are	Trenching work at smaller water courses and ditches will not take place at night, and will include measures such that	<i>Not significant</i> in the short term.

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>subject to trenching work within the OL.</p> <p>Accidental pollution from diffuse or point sources associated with construction.</p> <p>Noise related impacts to migratory and/or spawning fish from HDD at the River Clwyd are not anticipated to be significant and have been scoped out in agreement with the NRW offshore fish advisory team (application ref: 8.2).</p>	<p>eels cannot become trapped within the work area.</p> <p>Refer to embedded mitigation at Section 5.9 for measures to reduce pollution risks.</p>	
Invertebrates (using coastal dune habitat)	Temporary loss of coastal habitat.	As for coastal sand dune habitat in Table 15	<i>Potentially significant, temporary adverse</i> at a county level in the short term until the proposed mitigation is

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
			sufficiently mature and become established.  <b><i>Not significant in mid-term</i></b> once proposed mitigation has matured and become established.
GCN and common toad	Permanent loss of 5 ha of terrestrial habitat and temporary loss of 10.56 ha of terrestrial habitat directly adjacent to GCN breeding ponds, also used by common	GCN EPSL required from NRW in advance of work within 250m of GCN potential breeding pond.  The EPSL application and Method Statement will include	<b><i>No significant effect</i></b> is likely on the local conservation status <sup>xii</sup> of any of the metapopulations present following the implementation of mitigation measures.

<sup>xii</sup> conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2 of the EC Habitats Directive;

As defined in Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora Article 1(i) The conservation status will be taken as "favourable" when: - population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and - the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and - there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis;

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>toads, at SABP (Route Section F).</p> <p>Temporary loss of terrestrial habitats directly adjacent to GCN breeding ponds also used by common toads at Route Sections B, C, E, F &amp; G.</p> <p>Temporary habitat fragmentation/isolation (Sections C - G), resulting in functional loss of terrestrial habitat and breeding ponds.</p> <p>Refer to Figure 23 to Figure 27 which illustrates where the OL intersects with terrestrial habitats that may be used by GCN.</p> <p>Accidental killing and injury.</p> <p>Accidental pollution to breeding ponds from diffuse or</p>	<p>the measures that will be implemented and will be submitted to NRW once final design details are available and pre-construction surveys for GCN completed. These are summarised in the OLEMP (application ref:8.4), which also includes a figure that identifies areas of compensation for temporary and permanent loss of terrestrial habitat at the OnSS (and that NRW has agreed are adequate).</p> <p>The OLEMP also details areas of enhancement, to include five new ponds and further areas of good quality terrestrial habitat suitable for foraging and shelter.</p>	<p>The current conservation status of the metapopulation at SABP is considered by NRW to be “unfavourable”. The project would help toward restoring the favourable conservation status in the medium- long term, due to the provision of additional aquatic and terrestrial habitats managed for the benefit of the species for the lifetime of the project.</p> <p>Residual effects from permanent loss of habitat at OnSS footprint will be offset via compensatory measures including habitat enhancement described in the OLEMP (application ref: 8.4).</p>



IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	point sources associated with construction.	Refer to embedded mitigation at Section 5.9 for measures to reduce pollution risks.	
Reptiles	<p>Temporary habitat loss at the TCC at Y Ffrith (given its proximity to known common lizard populations), or other locations where habitat is potentially suitable.</p> <p>Refer to Figure 30 to Figure 34 which illustrates the location of known reptile records in relation to the OL.</p> <p>Accidental killing and injury.</p> <p>The project is not predicted to significantly adversely affect the local population due to the relatively poor quality of the majority of habitat affected</p>	<p>Mitigation for GCN will also reduce risks to reptiles.</p> <p>Reasonable avoidance measures would be used at Y Ffrith and elsewhere where necessary, to reduce the risk of committing an offence under the protecting legislation.</p> <p>Refer to the OLEMP (application ref: 8.4) for further details.</p>	<i>No significant effect</i> is likely.

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	and the low population anticipated to be present. However, in view of the species legal protection mitigation measures are proposed.		
Breeding Birds	<p>Potential impacts include:</p> <p>Permanent loss of 5 ha of habitat (modified grassland and hedgerow) at the OnSS used by small numbers of notable passerine species.</p> <p>Temporary loss of habitat for small numbers of notable passerine species along the onshore ECC.</p> <p>Disturbance to a Schedule 1 bird species (barn owl) along the onshore ECC during construction.</p>	<p>A range of measures relating to vegetation Clearance and Other Construction Works are proposed in Section 5.9, including measures to avoid damage to active nests and avoid disturbance to nesting barn owl.</p> <p>Proposed habitat creation and management at the OnSS will provide suitable habitat for a range of notable passerine species.</p> <p>Further details of proposed measures are provided in the</p>	<p><b>No significant effect</b> on the local conservation status is likely following the implementation of mitigation measures</p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	Inadvertent destruction or damage to active nests (all wild bird species).	Outline CMS (application ref:8.13.1) and OLEMP (application ref: 8.4)	
Non-Breeding Birds (Landfall and River Clwyd, including birds forming part of the Clwyd Estuary and Adjacent Fields LWS population)	<p><b>Landfall</b></p> <p>Temporary loss of up to 2.4 ha of intertidal habitat at Y Ffrith (see Figure 10). The intertidal areas affected represent a very small proportion of the habitat used by local waterbird populations and would last for a maximum of one season. The temporary loss is therefore not considered significant.</p> <p>Disturbance, both from noise and visual sources could displace waterbirds using areas within 250 m of construction works, for a maximum of one season. There are no major</p>	<p>Subject to the final design parameters, piling (if required for the establishment of a temporary cofferdam at the landfall) would either take place outside the winter period (October to March) or utilize less noisy, vibro-piling technology, unless otherwise agreed with DCC through provision of a CMS.</p> <p>If required, depending on the final locations and timing of the works, HDD pits and other working areas at the landfall and River Clwyd crossing would be screened, where possible,</p>	Landfall – <i>not significant</i>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>high tide roosts within the wintering bird survey area and foraging birds are already habituated to a relatively high level of visual disturbance, with survey results showing that most species use the full length of the beach for foraging. If required, depending on the location of the HDD pits and the timing of the works, screening would be used to reduce visual disturbance and any birds that are displaced are likely to move to alternative habitat further along the beach, as they do now. As such, significant visual disturbance is considered unlikely. The results of modelling of airborne noise at the</p>	<p>to provide an element of visual and acoustic screening of active working areas. The need for screening and details of proposed screening, if required, will be determined during detailed design and will be agreed with DCC and NRW via approval of the final CoCP and CMS (post consent).</p>	



IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>landfall, both including and excluding driven piling, are provided in Volume 5, Annex 5.11: Noise Modelling for Important Ornithological Features (Onshore) (application ref: 6.5.5.11). Applying the criteria for irregular noise presented by Cutts <i>et al.</i> (2013), noise levels would equate to a moderate to high disturbance effect on waterbirds over an area of approximately 500 m either side of the landfall if driven piling was undertaken during the winter period. However, this would reduce to a low to moderate disturbance effect over the vast majority of this area following the</p>		

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	implementation of proposed mitigation measures in respect of piling. As such, taking the embedded mitigation into account and given that most species use the full length of the beach for foraging, significant noise disturbance is considered unlikely.		
	<p><b>River Clwyd</b></p> <p>Temporary loss of arable and neutral grassland habitat will occur adjacent to the river (direct impacts on intertidal habitats will be avoided by the use of HDD). The extent of temporary loss will be dependent on the final alignment of the route and the location of HDD entry/ exit pits.</p>	As above	River Clwyd – <i>not significant</i>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>Most waterbird species, including the only Annex 1 species recorded, were only present within the estuary itself and will not be affected. The numbers of birds potentially affected, i.e. birds recorded using the arable fields to the northeast of the river, are relatively small, the areas affected represent a very small proportion of similar habitat in the local area and the period for which they will be affected is limited to a maximum of one season. As such temporary habitat loss is not considered significant.</p> <p>Disturbance, both from noise and visual sources could displace waterbirds using areas</p>		

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>within 250 m of the HDD entry/ exit pits, for a maximum of one season. Birds using the estuary are already habituated to a relatively high level of visual disturbance from people on the embankment. The HDD entry/ exit pits will also be screened from birds using the estuary, by the existing embankments. If required, depending on the final locations and timing of the works, the proposed screening will provide additional screening from the relatively small numbers of birds which may use the arable fields northeast of the estuary. Significant visual disturbance is therefore unlikely. The results of</p>		



IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>modelling of airborne noise at the River Clwyd crossing, both including and excluding mitigation (acoustic barrier fencing), are provided in Volume 5, Annex 5.11: Noise Modelling for Important Ornithological Features (Onshore) (application ref: 6.5.5.11). Applying the criteria presented by Cutts <i>et al.</i> (2013), noise levels would equate to a low to moderate disturbance effect on waterbirds using the River Clwyd and adjacent fields both with and without mitigation. Including mitigation, if required, the predicted noise levels are towards the lower end of the low to moderate category.</p>		

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	Following the implementation of the embedded mitigation, if required and given the regular nature of the likely noise and the tolerance of relatively high levels of existing disturbance at this location significant noise disturbance is considered unlikely.		
Bats	<p>Loss of up to 41 trees that have potential roost features.</p> <p>Permanent loss of flight lines and foraging habitat at the OnSS area.</p> <p>Temporary fragmentation of hedgerow flight lines and loss of foraging habitat elsewhere along the onshore ECC.</p>	An NRW EPSL will be required in advance of work that could affect roosting bats. Since tree roosting bats utilise a range of locations over any given season, the Licence will be sought to cover work at all trees with potential roost features (PRF) (i.e. the total roost resource) that may be affected by the project.	<p><b>No significant effect</b> is likely on the local conservation status of bat populations as a result of temporary habitat loss following the implementation of mitigation measures.</p> <p><b>Residual effects</b> as a result of permanent loss of roost trees (at the OnSS and along the Onshore ECC) and permanent loss of hedgerow at the OnSS</p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	Refer to Figure 28 and Figure 29 which illustrates where the OL intersects with trees and hedgerows that may be used by bats.	<p>All work undertaken under the EPSL, which could result in disturbance of bats would be overseen by the Named Ecologist, or his/her Accredited Agent (such as a suitably skilled and experienced ECOW).</p> <p>The EPSL application will be submitted to NRW once final design details are available and pre-construction surveys for bats have been completed. Key principles that will be followed to mitigate and compensate for impacts are described in the OLEMP (application ref: 8.4).</p> <p>One of the key principles is that there will be no net loss of bat roosting habitat as a result of</p>	will be offset via compensatory measures at the OnSS, detailed in the OLEMP (application ref: 8.4).

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
		<p>the scheme; compensation will be installed for every moderate or high potential roost feature prior to loss.</p> <p>Measures to mitigate for temporary loss/fragmentation of flight lines and foraging habitat include reinstatement of hedgerows and use of "dead hedges" at discrete locations during construction and until replaced hedgerows have established (refer to OLEMP (application ref: 8.4) for details).</p>	
Badger	<p>No known setts will be directly affected, either via disturbance or damage.</p> <p>Temporary loss of foraging habitat along the onshore ECC,</p>	<p>Pre-construction surveys and reasonable avoidance measures would be used to reduce the risk of committing</p>	<i>No significant effect</i> is likely.



IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>permanent loss of c. 5 ha of foraging habitat at the OnSS.</p> <p>Accidental killing and injury.</p> <p>The project is not predicted to significantly adversely affect the local population due to the abundance of adjacent unaffected agricultural grassland. However, in view of the species' legal protection mitigation measures are proposed.</p>	<p>an offence under the protecting legislation.</p> <p>These may include micro-siting certain elements and/or installing protective fencing to minimize disturbance to retained setts, ensuring excavations remain closed overnight or contain ramps such that badgers cannot become trapped and ensuring stockpiled soil is fenced or regularly disturbed so as to deter badger sett creation within it.</p>	
Otter	No known holt sites will be affected, either via disturbance or damage.	Pre-construction surveys and reasonable avoidance measures would be used to reduce the risk of committing	<b>No significant effect</b> on the local conservation status is likely following the implementation of mitigation measures

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>Temporary fragmentation of foraging areas/routes.</p> <p>Accidental killing and injury.</p> <p>Refer to Figure 30 to Figure 34 which illustrate otter records in relations to the OL.</p>	<p>an offence under the protecting legislation.</p> <p>These would be broadly similar to those described for badger (above).</p> <p>If pre-construction survey identifies new holts or resting places then a licence may be necessary from NRW depending on the nature of any impact.</p> <p>Further details are included in the OLEMP (application ref: 8.4).</p>	
Water Vole	<p>Based on current survey data there will be no impacts on water vole. If it is later confirmed to be present, then impacts could include</p>	<p>If pre-construction survey identifies active burrows, then mitigation would include:</p> <p>temporary relaxation of bankside cutting/grazing</p>	<p><b>No significant effect</b> on the local conservation status is likely following the implementation of mitigation measures, if required.</p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>Temporary loss of foraging and sheltering habitat.</p> <p>Temporary fragmentation of foraging areas/routes.</p> <p>Accidental killing and injury.</p>	<p>regimes or alterations to main river maintenance schedules.</p> <p>Scheduling of work to avoid sensitive periods of the water vole life cycle.</p> <p>Deterrence, or if necessary removal of water vole from areas where there is risk of injury or death in advance.</p> <p>Reinstatement of bankside habitats immediately after work, to include sowing with species rich locally appropriate sward and fencing to prevent stock access.</p> <p>Further details are included in the OLEMP (application ref: 8.4).</p>	

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE OF RESIDUAL EFFECT
Other S7 Mammal Species: hedgehog, brown hare, polecat.	<p>Temporary loss of foraging and sheltering habitat, permanent loss if present at the substation area.</p> <p>Temporary fragmentation of foraging areas/routes.</p> <p>Accidental killing and injury.</p>	<p>Reasonable avoidance measures would be used to minimize impacts.</p> <p>Refer to embedded mitigation at Section 5.9 and the OLEMP (application ref: 8.4).</p>	<i>Not significant</i>



202 As requested by NRW during the ETG process, separate consideration of the project specifically on the favourable conservation status of the GCN population has been undertaken and is provided for additional clarity in Table 17.

Table 17: Consideration of GCN favourable conservation status

ELEMENT OF FCS	EFFECT OF PROJECT AFTER MITIGATION, COMPENSATION, AND ENHANCEMENT MEASURES ARE IMPLEMENTED
<p>Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats</p>	<p>Monitoring data confirms that the metapopulations east of Rhyl, north of the A55 and at SABP are maintaining themselves. There is no monitoring data for the northernmost metapopulation at the railway, but it is considered to be more at risk of population reduction or loss due to its isolation from the extensive pond network further south.</p> <p>The project is considered to have a neutral effect on this element of FCS for the metapopulations identified.</p>
<p>The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future</p>	<p>The project will affect the potential movement of GCN of all four of the metapopulations identified in the short term, but in the medium and long term (once reinstated and created habitats are established) will represent no impediment to the range of GCN.</p> <p>The creation of new ponds at the OnSS may assist with range expansion westward and southwards.</p> <p>The project is considered to have a neutral or slightly positive effect on this element.</p>

ELEMENT OF FCS	EFFECT OF PROJECT AFTER MITIGATION, COMPENSATION, AND ENHANCEMENT MEASURES ARE IMPLEMENTED
<p>There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis</p>	<p>Temporary habitat loss as a result of construction is being mitigated and compensated for via reinstatement, as described in the OLEMP (application ref 8:40).</p> <p>Permanent habitat loss at the OnSS is being mitigated and compensated for as described in the OLEMP (application ref 8:4).</p> <p>Creation of new ponds as habitat enhancement will assist towards restoration of the metapopulation to favourable FCS (NRW has stated that it believes the metapopulation to be at unfavourable conservation status at present and that the presence of 60-70 ponds is a target for assessing when FCS is reached).</p> <p>NRW has agreed that it could be satisfied in principle that an EPSL could be granted based upon the compensation and enhancement described in the OLEMP (application ref 8.4) and that the extent of land included in the OLEMP is adequate.</p> <p>The project is considered to have a positive effect on this element on FCS.</p>

#### 5.10.4 Spread of invasive non-native species (INNS)

203 Refer to Figure 30 to Figure 34 which illustrates INNS records in relations to the OL. The primary ways the project could increase the spread of INNS is via;

- ▲ disturbance to existing INNS populations within the construction footprint;
- ▲ inadvertently importing INNS from elsewhere, primarily on vehicles, but also other equipment or personnel; and
- ▲ via seeds, planting stock or planting substrate.

204 Mitigation measures beyond those listed in Table 13 i.e. the production and implementation of an INNS Management Plan as part of the CoCP (Volume 8, Document 8.3), are not considered necessary. Provided the mitigation measures are implemented as proposed, no significant impacts are predicted over any timescale.

#### 5.10.5 Accidental pollution

205 Measures to minimise the risk of a pollution event will be contained within the PPEIRP, an outline version of which is provided as Appendix 6 (application ref: 8.13.6) within the Outline CoCP (application ref: 8.13). Further detail in this respect is also provided within Volume 3, Chapter 7, Hydrology, Hydrogeology and Flood Risk (application ref 6.3.7) at Section 7.10. To summarise, it concludes that with embedded mitigation measures in place, the impact to water quality as a result of direct spills would be small, minor adverse and therefore **not significant** in EIA terms.

206 The risk of a pollution incident overwhelming the mitigation and large enough to significantly impact any of the important ecological receptors identified in Table 11 is considered so remote as to be disregarded for the purpose of assessment.

## 5.11 Environmental assessment: operational phase

### 5.11.1 OnSS

#### Disturbance or damage to important ecological features via maintenance, noise and light

- 207 Once operational, maintenance activities will be limited to weekly inspections plus regular maintenance over a two-week period, once per year. This would be highly localised within the OnSS, with a minimal likelihood of disturbance expected to the adjacent habitats and species. Any such maintenance would follow good practice in line with the prevailing future guidance and legislation (as mentioned in Table 13), which would include specific measures to avoid potential impacts to protected/ notable species or sensitive habitats and minimise the risk of a pollution event. Through the adoption of good practice no significant adverse effects are anticipated at any important ecological feature as a result of regular maintenance at the OnSS.
- 208 Details in respect of sound levels generated by the operation of the OnSS are included in the noise assessment within Volume 3, Chapter 10 (application ref 6.3.10). With reference to nearby residential receptors, all of which are located within 500 m of the OnSS, predicted increases in comparison to background noise levels are all relatively small and the mitigated impacts of operational noise has been assessed as minor adverse. There are no statutory designated sites within this area and based upon field survey and desk study data it is considered unlikely that operational noise will have significant impacts on important ecological features.
- 209 The lighting scheme for the OnSS has not yet been decided but will be directional for safety and security only. The OnSS will not be manned, and lighting will only be required during O&M activities. It is anticipated that there would be no light spill beyond the OnSS site boundary and the lighting scheme will follow current guidance to minimise impacts to bat species, e.g. Bat Conservation Trust (2018). As such, **no significant effects** are likely due to operational lighting.



### 5.11.2 Onshore ECC

#### Disturbance or damage to important ecological features via maintenance

- 210 Planned maintenance of the cable route would involve an annual visit to each cable joint pit by a team of two. Any such maintenance would follow good practice in line with the prevailing future guidance and legislation (as mentioned in Table 13), which would include specific measures to avoid potential impacts to protected/ notable species or sensitive habitats and minimise the risk of a pollution event.. Through the adoption of good practice, **no significant adverse effects** are anticipated for any important ecological feature as a result of regular maintenance. -
- 211 Unplanned major maintenance within the lifetime of AyM in the event of a cable fault may result in up to two areas requiring excavation (80 m x 40 m each) for repair purposes. Depending on the fault locations, this could have similar, temporary adverse impacts to those described at the construction stage.
- 212 The extent or nature of any unplanned corrective maintenance required cannot be predicted at this stage and therefore possible effects in terms of disturbance cannot be assessed. However, any effect would be of a scale and duration that is no greater than that for the construction phase and similar mitigation measures would be implemented (as required), so any resulting effects would be the same or lower than the effects predicted for the construction phase. Any unplanned corrective maintenance required would be subject to any necessary consents and consultation with the relevant nature conservation bodies prior to work taking place.

## 5.12 Environmental assessment: decommissioning phase

- 213 Details surrounding the decommissioning phase are yet to be fully clarified. In addition, it is also recognised that policy, legislation and local sensitivities constantly evolve, which limits the relevance of undertaking an assessment at this stage. Nevertheless, decommissioning activities are not anticipated to exceed the construction phase worst case criteria assessed; further to this in most cases impact magnitude will be much lower than during construction.

## 5.13 Environmental assessment: cumulative effects

- 214 A comprehensive list of projects that have the potential to contribute to cumulative impacts of the proposed OnSS, onshore ECC and Landfall has been compiled and this list and the approach to compiling this list is described in Volume 1, Annex 3.1 (application ref 6.1.3.1).
- 215 For most important ecological features, the geographical extent of sites with the potential for cumulative effects is considered to be limited to the relevant onshore biodiversity and nature conservation study areas (no impact pathways have been identified that would extend beyond these study areas).
- 216 For the important ecological features and potential effects set out in Table 11 and Section 5.8, the following types of other development have the potential to result in cumulative effects:
- Other developments that could result in loss or change (permanent and/ or temporary) to important habitats, which could potentially also be affected by AyM;
  - Other developments that could result in loss or change (permanent and/ or temporary) to habitats used by important and/or protected faunal species populations, which could potentially also be affected by AyM; and
  - Other developments that could result in disturbance to important and/or protected faunal species populations, which could potentially also be affected by AyM.
- 217 On the basis of the above, the other projects which are included in the cumulative effects assessment for onshore biodiversity and nature conservation are presented in Table 18.

Table 18: Projects considered within the onshore biodiversity and nature conservation cumulative effects assessment

DEVELOPMENT TYPE	PROJECT	STATUS	DATA CONFIDENCE ASSESSMENT/ PHASE	TIER
Energy	<p>40/2018/1036 - Construction of a 5 MW flexible gas fired power plant.</p> <p>This development is located to the northeast of the SABP, approximately 150 m south of the A55, approximately 1 km from the proposed onshore OnSS and 0.25 km from the proposed onshore ECC. It is separated from both by the intervening presence of the A55 and SABP.</p>	Consented	High	1
Energy	<p>DNS application (PINS Ref: DNS/3247619). Elwy Solar Energy Farm</p> <p>Located approximately 275 m from the Onshore ECC and OL. It is separated from the OnSS by the presence of the A55 and SABP.</p>	In examination	High	

DEVELOPMENT TYPE	PROJECT	STATUS	DATA CONFIDENCE ASSESSMENT/ PHASE	TIER
Coastal Protection Works	<p>45/2021/1248 Development of 5 Ha of land to form Coastal Defence scheme comprising of the formation of flood embankments ramps outfall structures and rock armour including landscaping habitat enhancements works.</p> <p>Located at Rhyl Golf Course and adjacent land, within the OL but 0.45km from the Onshore ECC.</p>	Pending decision	High	



- 218 All other developments included in the shortlist of other developments (Volume 1, Annex 3.1) have been scoped out of the cumulative assessment for onshore biodiversity. The primary reason for scoping out other developments is their distance from the OL (generally more than 500m) or small scale. Further details are provided below:
- Important habitats. Other developments with the potential to have cumulative effects on important habitats would generally have to be located within very close proximity to the relevant habitats.
  - Birds: for wintering birds, for which disturbance is possible within 250 m, the distance at which other developments could potentially give rise to cumulative effects on important species should not exceed 500 m. Cumulative effects are therefore only possible with other projects located within 500 m of areas which are important for wintering birds (i.e. the landfall and River Clwyd crossing).
  - Important faunal species (other than birds): The distances at which other developments could potentially give rise to cumulative effects on important faunal species will vary by species. Most faunal species are not likely to be affected by AyM beyond 500 m from the OL with many species only likely to be affected at much smaller distances. Other developments with the potential to have cumulative effects on important faunal species would therefore have to be located within 500 m of the relevant receptors.
- 219 Table 19 presents the scenarios whereby AyM and the other projects listed in Table 18 could potentially result in cumulative effects for onshore biodiversity and nature conservation.

Table 19: Cumulative MDS

POTENTIAL EFFECT	SCENARIO	JUSTIFICATION
Permanent and temporary habitat loss	Cumulative effects are possible in respect to the coastal protection work during construction.	<p>Neither the solar farm or gas fired power plant will result in loss or change to important habitats potentially affected by AyM.</p> <p>Coastal protection work may impact upon coastal dune grassland that is contiguous with that affected by the TCC west of North Wales Bowls Centre.</p> <p>It is anticipated that other projects of significance would be constructed in accordance with a CoCP, LEMP and/or specific mitigation and compensation measures in respect of ecological receptors. Therefore, no significant cumulative habitat loss effects arising during the construction phase of proposed new developments are likely.</p>
Impacts upon protected or notable species or upon their resting or breeding sites	Cumulative effects are possible in respect of the coastal protection work, gas fired power plant and solar farm during construction and decommissioning.	<p>The coastal protection work, gas fired power plant and solar farm include areas used by important faunal species, which could potentially be affected by disturbance during construction and decommissioning. These developments are close enough to AyM that the same populations could be affected, if works take place simultaneously.</p> <p>It is anticipated that other projects would be constructed in accordance with a CoCP, LEMP and/or specific mitigation</p>

POTENTIAL EFFECT	SCENARIO	JUSTIFICATION
		and compensation measures in respect of ecological receptors. Therefore, no significant cumulative effects arising during the construction phase of proposed new developments upon protected or notable species are likely.
Habitat fragmentation and species isolation	<p>Cumulative effects are possible in respect of the solar farm and coastal protection work during construction and decommissioning.</p> <p>Cumulative effects are not likely in respect of the gas fired power plant.</p>	<p>The solar farm and coastal protection work includes habitats that are used by important faunal species, which could potentially be affected during construction and decommissioning. Effects are considered unlikely to be significant assuming the proposals are implemented under a CoCP, LEMP and/or specific mitigation and compensation measures in respect of ecological receptors, as would usually be anticipated for a scheme of this size.</p> <p>The gas fired power plant is considered sufficiently distant and separated hydrologically from AyM that fragmentation and isolation effects from it are unlikely to result in cumulative adverse effects.</p>
Spread of INNS	Cumulative effects are possible in respect of the solar farm and coastal protection	INNS have been recorded on the water course that separates AyM and the solar farm, and within the coastal dune habitat affected by the coastal protection work.

POTENTIAL EFFECT	SCENARIO	JUSTIFICATION
	<p>work during construction and decommissioning.</p> <p>Cumulative effects are not likely in respect of the gas fired power plant.</p>	<p>Simultaneous activities during construction or decommissioning could result in cumulative adverse effect.</p> <p>It is anticipated that the other projects of significance would be constructed in accordance with a CoCP, LEMP and/or specific mitigation measures in respect of ecological receptors. Therefore, no significant cumulative effects arising during the construction phase of proposed new developments upon INNS are likely</p> <p>The gas fired power plant is considered sufficiently distant and separated hydrologically from AyM that effects from it are unlikely to result in cumulative adverse effects.</p>
Accidental pollution	<p>Cumulative effects are possible in respect of the solar farm during construction and decommissioning.</p> <p>Cumulative effects are not likely in respect of the gas fired power plant.</p>	<p>The solar farm is located adjacent to AyM onshore ECC, with a watercourse lying between the two, and simultaneous pollution events therefore could potentially affect the same habitats and species populations.</p> <p>The gas fired power plant is considered sufficiently distant and separated hydrologically from AyM that effects from it are unlikely to affect the same habitats and species populations.</p>



POTENTIAL EFFECT	SCENARIO	JUSTIFICATION
		It is anticipated that other projects of significance would be constructed in accordance with a CoCP. Given the requirements to control potential detrimental effects of this development on flood risk or water quality, appropriate mitigation would be in place for these schemes to secure approval. Therefore, no significant cumulative hydrology, hydrogeology and flood risk effects arising during the construction phase of proposed new developments are likely.

## 5.14 Inter-relationships

220 Table 20 sets out the inter-relationships between this chapter and others within the ES.

Table 20: Inter-relationships between the EcIA and other chapters within the ES

TOPIC / CHAPTER	DETAILS
LVIA (Volume 3, Chapter 2 (application ref: 6.3.2))	Both chapters consider the potential effects of hedgerow and tree removals, the LVIA considering the impact on hedgerows and trees as landscape elements, and the Onshore Biodiversity and Nature Conservation assessment considering the impact on hedgerows and trees as important ecological features. Both chapters consider the mitigation of hedgerow and tree loss in respect of planting proposed within the OLEMP (application ref: 8.4).
Air Quality (Volume 3, Chapter 11 (application ref: 6.3.11))	The air quality chapter considers air quality impact during construction to sensitive ecological receptors as a result of dust and increased road traffic in Section 11.11, concluding that residual effects are not significant in terms of the EIA Regulations.
Hydrology and Flood Risk (Volume 3, Chapter 7 (application ref: 6.3.7))	The Hydrology and Flood Risk chapter provides a description of the hydrological setting of water courses within the survey area and assesses impacts upon them. It concludes that there are no significant residual effects on water quality and flood as a result of AyM. The assessment of effects on aquatic receptors in this chapter draws heavily on the proposed mitigation measures and the assessment of effects on water quality presented in the Hydrology and Flood Risk chapter.

## 5.15 Transboundary effects

- 221 There are no national or international transboundary effects with regard to onshore biodiversity and nature conservation.

## 5.16 Summary of effects

- 222 This assessment has considered the potential biodiversity and nature conservation effects arising from onshore activities associated with the proposed AyM. Consideration has been given to potential worst-case effects arising from onshore construction, operational and decommissioning activities to provide as robust an assessment as possible.
- 223 The approach undertaken was based upon the PINS Scoping Opinion (PINS, 2020), Section 42 responses and discussions with the Onshore Ecology ETG.
- 224 A summary of effects on important ecological features is presented in Table 21. Note that Table 21 only includes important ecological features which are likely to be affected by the onshore elements of AyM. Important Ecological Features excluded from Table 21 are not likely to be affected.

Table 21: Summary of effects

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
<b>Construction</b>			
S7 habitat: coastal sand dune (Route Section B)	c. 0.1 ha of coastal sand dune habitat, west of North Wales Bowl Centre at Y Ffrith would be temporarily lost.	The re-establishment of dune grassland habitats from turf salvaged from specific areas or the creation of dune grassland via reinstatement of appropriate soils and seeding.  Further details are included within the OLEMP (application ref: 8.4).	<i>Significant, temporary adverse</i> at a local level in the short term.  <i>Not significant in mid-term</i> once proposed mitigation has matured and become established.
S7 habitat: Hedgerows (Route Sections B-G)	Permanent loss of c. 540m of hedgerow including 8 mature trees at the OnSS footprint, temporary loss of parts of 128 other hedgerows, including c. 41 mature trees. This includes three	<b>Onshore ECC</b>  Replanting/ reinstatement with a species-rich, locally appropriate native mixture including heavy standard	<i>Significant permanent and temporary adverse</i> at a local level in the short term until the proposed mitigation is sufficiently



IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
	that are “Important” under the Hedgerow Regulations.	<p>trees at a 3:1 ratio for any lost.</p> <p><b>OnSS footprint</b></p> <p>Residual effects will be offset via replanting of 770m and including heavy standard trees at a 3:1 ratio for any lost.</p> <p>Further details are included within the OLEMP (application ref: 8.4).</p>	<p>mature and becomes established.</p> <p><b>Not significant in mid-term</b> once proposed mitigation has matured and become established as this allows time for new/ replacement hedgerows to establish.</p> <p><b>Residual effects</b> as a result of hedgerow loss at the OnSS will be offset via compensatory planting of 770m of new hedgerow.</p>
S7 habitat: Lowland Fen (Route Section C)	0.12 ha of lowland fen at The Flash would be temporarily lost.	<p>Topography including hydrological connection reinstated following work to ensure water retention. Area allowed to revegetate naturally.</p>	<p><b>Not significant</b> in short term.</p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
		Further details are included within the OLEMP (application ref 8.4).	
S7 habitat: Coastal and floodplain grazing marsh including part of the Clwyd Estuary and Adjacent Fields LWS (Sections D & E)	11 ha of coastal and floodplain grazing marsh (fields and ditches), the majority of which is also part of Clwyd Estuary and Adjacent Fields LWS, will be temporarily lost.	A range of measures relating to vegetation clearance and other construction works are proposed in Section 5.9 with further details provided in the Outline CMS (application ref: 8.13.1) and OLEMP (application ref: 8.4)	<b>Not significant</b> in short term.
Plant species (at coastal dune habitat)	Temporary loss of coastal habitat at Y Ffrith, west of North Wales Bowls Centre, potentially supporting locally important plant species (refer to Habitat report at Annex 5.2 (application ref: 6.5.5.2) for details).	As for coastal sand dune habitat in Table 15	<b>Potentially significant, temporary adverse</b> at a county level in the short term until the proposed mitigation is sufficiently mature and become established.

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
			<i>Not significant in mid-term</i> once proposed mitigation has matured and become established.
Fish: Atlantic salmon, brown trout, European eel	<p>Disturbance to European eel that may use water courses, including ditches, that are subject to trenching work within the OL.</p> <p>Accidental pollution from diffuse or point sources associated with construction.</p>	<p>Trenching work at smaller water courses and ditches will not take place at night, and will include measures such that eels cannot become trapped within the work area.</p> <p>Refer to embedded mitigation at Section 5.9 for measures to reduce pollution risks.</p>	<i>Not significant</i> in the short term.
Invertebrates (using coastal dune habitat)	Temporary loss of coastal habitat.	As for coastal sand dune habitat in Table 15	<i>Potentially significant, temporary adverse</i> at a county level in the short term until the proposed

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
			mitigation is sufficiently mature and become established.  <b><i>Not significant in mid-term</i></b> once proposed mitigation has matured and become established.
GCN and common toad	Permanent loss of 5 ha of terrestrial habitat and temporary loss of 10.56 ha of terrestrial habitat directly adjacent to GCN breeding ponds, also used	GCN EPSL required from NRW in advance of work within 250m of GCN potential breeding pond.  The EPSL application and Method Statement will	<b><i>No significant effect</i></b> is likely on the local conservation status <sup>xiii</sup> of any of the metapopulations present following the

<sup>xiii</sup> conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2 of the EC Habitats Directive;

As defined in Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora Article 1(i) The conservation status will be taken as "favourable" when: - population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and - the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and - there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis;

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>by common toads, at SABP (Route Section F).</p> <p>Temporary loss of terrestrial habitats directly adjacent to GCN breeding ponds also used by common toads along the route.</p> <p>Temporary habitat fragmentation/isolation resulting in functional loss of terrestrial habitat and breeding ponds.</p> <p>Accidental killing and injury.</p> <p>Accidental pollution to breeding ponds from diffuse or point sources associated with construction.</p>	<p>include the measures that will be implemented.</p> <p>Refer to embedded mitigation at Section 5.9 for measures to reduce pollution risks.</p> <p>Further details are included within the OLEMP (application ref: 8.4).</p>	<p>implementation of mitigation measures.</p> <p>The project would help toward restoring the favourable conservation status in the medium- long term, due to the provision of additional aquatic and terrestrial habitats managed for the benefit of the species for the lifetime of the project.</p>
Reptiles	Temporary habitat loss at the TCC at Y Ffrith or other locations	Mitigation for GCN will also reduce risks to reptiles.	<b><i>No significant effect</i></b> is likely.



IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>where habitat is potentially suitable.</p> <p>Accidental killing and injury.</p>	<p>Reasonable avoidance measures would be used at Y Ffrith and elsewhere where necessary, to reduce the risk of committing an offence under the protecting legislation.</p> <p>Refer to the OLEMP (application ref: 8.4) for further details.</p>	
Breeding Birds	<p>Permanent loss of 5 ha of habitat at the OnSS used by small numbers of notable passerine species.</p> <p>Temporary loss of habitat for small numbers of notable passerine species along the onshore ECC.</p>	<p>A range of measures relating to vegetation clearance and other construction works are proposed in Section 5.9.</p> <p>Proposed habitat creation and management at the OnSS will provide suitable habitat for a range of notable passerine species.</p>	<p><b>No significant effect</b> on the local conservation status is likely following the implementation of mitigation measures</p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
	<p>Disturbance to a Schedule 1 bird species (barn owl) along the onshore ECC during construction.</p> <p>Inadvertent destruction or damage to active nests (all wild bird species).</p>	<p>Further details of proposed measures are provided in the Outline CMS (application ref: 8.13.1) and OLEMP (application ref: 8.4)</p>	
<p>Non-Breeding Birds (Landfall and River Clwyd, including birds forming part of the Clwyd Estuary and Adjacent Fields LWS population)</p>	<p><b>Landfall</b></p> <p>Temporary loss of up to 2.4 ha of intertidal habitat Y Ffrith. Disturbance, both from noise and visual sources could displace waterbirds.</p>	<p>Subject to the final design parameters, piling (if required at the landfall) would either take place outside the winter period (October to March) or utilize less noisy, vibro-piling technology, unless otherwise agreed. If required, depending on the final locations and timing of the works, HDD pits and other working areas at the landfall and River Clwyd crossing</p>	<p>Landfall – <i>not significant</i></p> <p>River Clwyd – <i>not significant</i></p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
		would be screened, where possible.	
Bats	<p>Loss of up to 41 trees that have potential roost features.</p> <p>Permanent loss of flight lines and foraging habitat at the OnSS area.</p> <p>Temporary fragmentation of hedgerow flight lines and loss of foraging habitat elsewhere along the onshore ECC.</p>	<p>An NRW EPSL will be required in advance of work that could affect roosting bats.</p> <p>Key principles that will be followed to mitigate and compensate for impacts are described in the OLEMP (application ref: 8.4).</p> <p>One of the key principles is that there will be no net loss of bat roosting habitat.</p> <p>Measures to mitigate for temporary loss/fragmentation of flight lines and foraging habitat include reinstatement of hedgerows and use of “dead hedges” at discrete locations during construction</p>	<p><b>No significant effect</b> is likely on the local conservation status of bat populations as a result of temporary habitat loss following the implementation of mitigation measures.</p> <p><b>Residual effects</b> as a result of permanent loss of roost trees (at the OnSS and along the Onshore ECC) and permanent loss of hedgerow at the OnSS will be offset via compensatory measures at the OnSS, detailed in the OLEMP (application ref: 8.4).</p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
		(refer to OLEMP (application ref: 8.4)for details).	
Badger	<p>No known setts will be directly affected, either via disturbance or damage.</p> <p>Temporary loss of foraging habitat along the onshore ECC, permanent loss of c. 5 ha of foraging habitat at the OnSS.</p> <p>Accidental killing and injury.</p> <p>The project is not predicted to significantly adversely affect the local population due to the abundance of adjacent unaffected agricultural grassland. However, in view of the species' legal protection mitigation measures are proposed.</p>	<p>Pre-construction surveys and reasonable avoidance measures would be used to reduce the risk of committing an offence under the protecting legislation.</p>	<p><b><i>No significant effect</i></b> is likely.</p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
Otter	<p>No known holt sites will be affected, either via disturbance or damage.</p> <p>Temporary fragmentation of foraging areas/routes.</p> <p>Accidental killing and injury.</p>	<p>Pre-construction surveys and reasonable avoidance measures would be used to reduce the risk of committing an offence under the protecting legislation.</p> <p>These would be broadly similar to those described for badger (above).</p> <p>If pre-construction survey identifies new holts or resting places then a licence may be necessary from NRW depending on the nature of any impact.</p> <p>Further details are included in the OLEMP (application ref: 8.4).</p>	<p><b>No significant effect</b> on the local conservation status is likely following the implementation of mitigation measures</p>




IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
Water Vole	<p>Based on current survey data there will be no impacts on water vole. If it is later confirmed to be present, then impacts could include</p> <p>Temporary loss of foraging and sheltering habitat.</p> <p>Temporary fragmentation of foraging areas/routes.</p> <p>Accidental killing and injury.</p>	<p>Pre-construction surveys and reasonable avoidance measures would be used to reduce the risk of committing an offence under the protecting legislation</p> <p>If pre-construction survey identifies active burrows, then mitigation would include scheduling of work to avoid sensitive periods of the water vole life cycle and deterrence or, if necessary, removal of water vole from areas where there is risk of injury or death in advance.</p> <p>Further details are included in the OLEMP (application ref: 8.4).</p>	<p><b>No significant effect</b> on the local conservation status is likely following the implementation of mitigation measures, if required.</p>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
Other S7 Mammal Species: hedgehog, brown hare, polecat.	Temporary loss of foraging and sheltering habitat, permanent loss if present at the substation area. Temporary fragmentation of foraging areas/routes. Accidental killing and injury.	Reasonable avoidance measures would be used to minimize impacts. Refer to embedded mitigation at Section 5.9 and the OLEMP (application ref: 8.4).	<i>Not significant</i>
<b>Operation</b>			
All important ecological features	Disturbance or damage to features due to planned maintenance at the OnSS and along the ECC. Disturbance or damage to features due to operational noise and lighting at the OnSS. Disturbance or damage to features due to unplanned maintenance on the ECC.	Through the adoption of good practice, which would include adoption of specific measures to avoid potential impacts to protected/ notable species or sensitive habitats. Unplanned maintenance would be subject to any necessary consents and	<i>Not significant</i>

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PROPOSED MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
		consultation with the relevant nature conservation bodies prior to work taking place.	
<b>Decommissioning</b>			
All important ecological features	Similar to construction, but in most cases impact magnitude will be much lower than during construction.	Similar to construction, where necessary.	<i>Not likely to be significant</i>
<b>Cumulative Effects</b>			
All important ecological features	Impacts upon protected or notable species or upon their resting or breeding sites. Habitat fragmentation and species isolation. Spread of INNS. Accidental pollution.	n/a	<i>Not significant</i>

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