DOGGER BANK D
WIND FARM

Preliminary Environmental Information Report

Volume 1
Chapter 24 Onshore Archaeology and Cultural Heritage

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Prepared By: **Royal HaskoningDHV**	Prepared For: **Dogger Bank D Offshore Wind Farm**

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Glossary

Term	Definition
Additional Mitigation	Measures identified through the EIA process that are required as further action to avoid, prevent, reduce or, if possible, offset likely significant adverse effects to acceptable levels (also known as secondary (foreseeable) mitigation). All additional mitigation measures adopted by the Project are provided in the Commitments Register.
Birkhill Wood Substation	The onshore grid connection point for DBD identified through the Holistic Network Design process. Birkhill Wood Substation which is being developed by National Grid Electricity Transmission and does not form part of the Project.
Commitment	Refers to any embedded mitigation and additional mitigation, enhancement or monitoring measures identified through the EIA process and those identified outside the EIA process such as through stakeholder engagement and design evolution. All commitments adopted by the Project are provided in the Commitments Register.
Design	All of the decisions that shape a development throughout its design and pre-construction, construction / commissioning, operation and, where relevant, decommissioning phases.
Development Consent Order (DCO)	A consent required under Section 37 of the Planning Act 2008 to authorise the development of a Nationally Significant Infrastructure Project, which is granted by the relevant Secretary of State following an application to the Planning Inspectorate.
Effect	An effect is the consequence of an impact when considered in combination with the receptor's sensitivity / value / importance, defined in terms of significance.
Embedded Mitigation	Embedded mitigation includes: • Measures that form an inherent part of the project design evolution such as modifications to the location or design of the development made during the pre-application phase (also known as primary (inherent) mitigation); and • Measures that will occur regardless of the EIA process as they are imposed by other existing legislative requirements or are considered as standard or best practice to manage commonly occurring environmental impacts (also known as tertiary (inexorable) mitigation). All embedded mitigation measures adopted by the Project are provided in the Commitments Register.
Energy Storage and Balancing Infrastructure (ESBI)	A range of technologies such as battery banks to be co-located with the Onshore Converter Station, which provide valuable services to the electrical grid such as storing energy to meet periods of peak demand and improving overall reliability.

Term	Definition
Enhancement	Measures committed to by the Project to create or enhance positive benefits to the environment or communities, as a result of the Project. All enhancement measures adopted by the Project are provided in the Commitments Register.
Environmental Impact Assessment (EIA)	A process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information and includes the publication of an Environmental Statement.
Environmental Statement (ES)	A document reporting the findings of the EIA which describes the measures proposed to mitigate any likely significant effects.
Evidence Plan Process (EPP)	A voluntary consultation process with technical stakeholders which includes a Steering Group and Expert Topic Group (ETG) meetings to encourage upfront agreement on the nature, volume and range of supporting evidence required to inform the EIA and HRA process.
Expert Topic Group (ETG)	A forum for targeted technical engagement with relevant stakeholders through the EPP.
Grid Connection	The offshore and onshore electricity transmission network connection to Birkhill Wood Substation.
Haul Roads	Temporary tracks set aside to facilitate transport access during onshore construction works.
Impact	A change resulting from an activity associated with the Project, defined in terms of magnitude.
Jointing Bays	Underground structures constructed at regular intervals along the onshore export cable corridor to facilitate the joining of discrete lengths of the installation of cables.
Landfall	The area on the coastline, south-east of Skipsea, at which the offshore export cables are brought ashore, connecting to the onshore export cables at the transition joint bay above Mean High Water Springs.
Link Boxes	Structures housing electrical equipment located alongside the jointing bays in the onshore export cable corridor and the transition joint bay at the landfall, which could be located above or below ground.
Mere	A mere is a shallow lake, pond or wetland created by glacial activity and filling with water in a post-glacial landscape.

Term	Definition
Mitigation	Any action or process designed to avoid, prevent, reduce or, if possible, offset potentially significant adverse effects of a development. All mitigation measures adopted by the Project are provided in the Commitments Register.
Mitigation Hierarchy	A systematic approach to guide decision-making and prioritise mitigation design. The hierarchy comprises four stages in order of preference and effectiveness: avoid, prevent, reduce and offset.
Monitoring	Measures to ensure the systematic and ongoing collection, analysis and evaluation of data related to the implementation and performance of a development. Monitoring can be undertaken to monitor conditions in the future to verify any environmental effects identified by the EIA, the effectiveness of mitigation or enhancement measures or ensure remedial action are taken should adverse effects above a set threshold occur. All monitoring measures adopted by the Project are provided in the Commitments Register.
Onshore Converter Station (OCS)	A compound containing electrical equipment required to stabilise and convert electricity generated by the wind turbines and transmitted by the export cables into a more suitable voltage for grid connection into Birkhill Wood Substation.
Onshore Converter Station (OCS) Zone	The area within which the Onshore Converter Station and Energy Storage and Balancing Infrastructure will be located in vicinity of Birkhill Wood Substation.
Onshore Development Area	The area in which all onshore infrastructure associated with the Project will be located, including any temporary works area required during construction and permanent land required for mitigation and enhancement areas, which extends landward of Mean Low Water Springs. There is an overlap with the Offshore Development Area in the intertidal zone.
Onshore Export Cable Corridor (ECC)	The area within which the onshore export cables will be located, extending from the landfall to the Onshore Converter Station zone and onwards to Birkhill Wood Substation.
Onshore Export Cables	Cables which bring electricity from the transition joint bay at landfall to the Onshore Converter Station zone (HVDC cables) and from the Onshore Converter Station zone onwards to Birkhill Wood Substation (HVAC cables).
Preliminary Environmental Information Report (PEIR)	The PEIR provides a draft environmental assessment and information to support and inform the statutory consultation process in the pre-application phase. The PEIR will be updated to produce the Project's ES that will accompany the DCO application.
Project Design Envelope	A range of design parameters defined where appropriate to enable the identification and assessment of likely significant effects arising from a project's worst-case scenario. The Project Design Envelope incorporates flexibility and addresses uncertainty in the DCO application and will be further refined during the EIA process.

Term	Definition
Palaeoenvironmental analysis	The study of sediments and the organic remains of plants and animals to reconstruct the environment of a past geological age.
Prehistoric period	Broad term encompassing the Palaeolithic, Mesolithic, Neolithic, Bronze Age and Iron Age.
Scoping Opinion	A written opinion issued by the Planning Inspectorate on behalf of the Secretary of State regarding the scope and level of detail of the information to be provided in the Applicant's Environmental Statement. The Scoping Opinion for the Project was adopted by the Secretary of State on 02 August 2024.
Scoping Report	A request by the Applicant made to the Planning Inspectorate for a Scoping Opinion on behalf of the Secretary of State. The Scoping Report for the Project was submitted to the Secretary of State on 24 June 2024.
Setting	The National Planning Policy Framework (NPPF) identifies setting as that which encompasses an asset's surroundings in which it is experienced. The extent of setting is not fixed and can contribute both positively and negatively to the heritage significance of an asset.
Study Areas	A geographical area and / or temporal limit defined for each EIA topic to identify sensitive receptors and assess the relevant likely significant effects.
Temporary Construction Compounds	Areas set aside to facilitate the construction works for the onshore infrastructure, which include the landfall construction compound, main and intermediate construction compounds for onshore export cable works and OCS and ESBI construction compounds.
The Applicant	SSE Renewables and Equinor acting through 'Doggerbank Offshore Wind Farm Project 4 Projco Limited'.
The Project	Dogger Bank D (DBD) Offshore Wind Farm Project, also referred to as DBD in this PEIR.
Transition Joint Bay (TJB)	An underground structure at the landfall that houses the joints between the offshore and onshore export cables.
Trenching	Open cut method for cable or duct installation.
Trenchless Techniques	Trenchless cable or duct installation methods used to bring offshore export cables ashore at landfall, facilitate crossing major onshore obstacles such as roads, railways and watercourses and where trenching may not be suitable. Trenchless techniques included in the Project Design Envelope include Horizontal Directional Drilling (HDD), auger boring, micro-tunnelling, pipe jacking / ramming and Direct Pipe.

24 Onshore Archaeology and Cultural Heritage

24.1 Introduction

1. This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary results of the Environmental Impact Assessment (EIA) of the Dogger Bank D (DBD) Offshore Wind Farm Project (hereafter "the Project" or "DBD") on onshore archaeology and cultural heritage.

2. **Chapter 4 Project Description** provides a description of the key infrastructure components which form part of the Project and the associated construction, operation and maintenance (O&M) and decommissioning activities.

3. The primary purpose of the PEIR is to support the statutory consultation activities required for a Development Consent Order (DCO) application under the Planning Act 2008. The information presented in this PEIR chapter is based on the baseline characterisation and assessment work undertaken to date. The feedback from the statutory consultation will be used to inform the design where appropriate for consents and presented in an Environmental Statement (ES), which will be submitted with the DCO application.

4. This PEIR chapter:

- Describes the baseline environment relating to onshore archaeology and cultural heritage;
- Presents an assessment of the likely significant effects on onshore archaeology and cultural heritage during the construction, O&M and decommissioning phases of the Project;
- Identifies any assumptions and limitations encountered in compiling the environmental information; and
- Sets out proposed mitigation measures to avoid, prevent reduce or, if possible, offset potential significant adverse environmental effects identified during the EIA process and, where relevant, monitoring measures or enhancement measures to create or enhance positive effects.

5. Onshore archaeology and cultural heritage aspects considered within this chapter for the Project include:

- **Designated heritage assets:** including Scheduled Monuments, Listed Buildings, Registered Parks and Gardens, and Conservation Areas; and
- **Non-designated heritage assets:** including archaeological, historic landscape character (HLC) and historic building information, and information from archaeological surveys and investigations (known at the time of writing).

6. This chapter should be read in conjunction with the following related chapters. Inter-relationships are discussed further in **Section 24.9.1**:

- **Chapter 17 Offshore Archaeology**;
- **Chapter 20 Air Quality and Dust**;
- **Chapter 21 Water Resources and Flood Risk**;
- **Chapter 25 Noise and Vibration**;
- **Chapter 26 Traffic and Transport**; and
- **Chapter 27 Landscape and Visual Assessment**.

7. Additional information to support the onshore archaeology and cultural heritage assessment includes:

- **Volume 2, Appendix 24.1 Consultation Responses for Onshore Archaeology and Cultural Heritage**;
- **Volume 2, Appendix 24.2 Onshore Archaeological Desk-Based Assessment**;
- **Volume 2, Appendix 24.3 Assessment of Airbourne and Satellite Remote Sensing Data Report**;
- **Volume 2, Appendix 24.4 Onshore Heritage Walkover Report**;
- **Volume 2, Appendix 24.5 Onshore Heritage Setting Assessment**;
- **Volume 2, Appendix 24.6 Onshore Geoarchaeological Desk-Based Assessment**; and
- **Volume 2, Appendix 24.7 Onshore Archaeological Geophysical Survey Report**.

24.2 Policy and Legislation

24.2.1 National Policy Statements

8. Planning policy on energy National Significant Infrastructure Projects (NSIP) is set out in the National Policy Statements (NPS). The following National Policy Statements are relevant to the onshore archaeology and cultural heritage assessment:

   - Overarching National Policy Statement for Energy (EN-1) (Department for Energy Security and Net Zero (DESNZ), 2023a);
   - National Policy Statement for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b); and
   - National Policy Statement for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023c).

9. The onshore archaeology and cultural heritage chapter has been prepared with reference to specific requirements in the above National Policy Statement. The relevant parts of the National Policy Statements are summarised in **Table 24-1**, along with how and where they have been considered in this PEIR chapter.

Table 24-1 Summary of Relevant National Policy Statement Requirements for Onshore Archaeology and Cultural Heritage

National Policy Statement Reference and Requirement	How and Where Considered in the PEIR
NPS for Energy (EN-1)	
Paragraph 5.9.10: "As part of the Environmental Statement (ES) the applicants should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset."	The likely significant heritage impacts have been considered in this chapter and are detailed in **Section 24.7**. An assessment of cumulative impacts is detailed in **Section 24.8**.
Paragraph 5.9.11: "Where a site on which development is proposed includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicants should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation. Where proposed development will affect the setting of a heritage asset, accurate representative visualisations may be necessary to explain the impact."	The assessment of effects (**Section 24.7**) has been informed by a number of desk-based and non-intrusive survey reports (**Volume 2 Appendices 24.2 to 24.7**). Where relevant, visualisations are included in **Volume 2, Appendix 27.2 Landscape and Visual Impact Assessment Visualisations**.
Paragraph 5.9.12: "The applicants should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents."	This chapter provides an account of the potential impact of the Project upon heritage assets and their significance in **Section 24.7**.
Paragraph 5.9.13: "The applicants are encouraged, where opportunities exist, to prepare proposals which can make a positive contribution to the historic environment, and to consider how their scheme takes account of the significance of heritage assets affected. This can include, where possible: • enhancing, through a range of measures such as sensitive design, the significance of heritage assets or setting affected. • considering measures that address those heritage assets which are at risk or which may become at risk, as a result of the Scheme. • considering how visual or noise impacts can affect heritage assets, and whether there may be opportunities to enhance access to, or interpretation, understanding and appreciation of, the heritage assets affected by the scheme."	This chapter provides an assessment of potential impacts in **Section 24.7**. Embedded mitigation and opportunities for enhancement as part of the Project are outlined in **Section 24.4.3** and **Section 24.7**.
Paragraph 5.9.14: "Careful consideration in preparing the scheme will be required on whether the impacts on the historic environment will be direct or indirect, temporary, or permanent."	This chapter provides an assessment of potential impacts in **Section 24.7.**
NPS for Renewable Energy Infrastructure (EN-3)	
Paragraph 3.10.104: "Consultation with the relevant statutory consultees should be undertaken by the applicants at an early stage of the development."	Regular consultation has been undertaken with the relevant statutory consultees, and through the application of the Evidence Plan Process (EPP), as outlined in **Chapter 7 Consultation**. Consultation will be ongoing throughout the EIA process.

National Policy Statement Reference and Requirement	How and Where Considered in the PEIR
Paragraph 3.10.102: "Assessment should be undertaken as set out in section 5.9 of EN-1. Desk-based studies should take into account any geotechnical or geophysical surveys that have been undertaken to aid the wind farm design."	The chapter has been undertaken in accordance with Section 5.9 of EN-1, as detailed above. This chapter has been informed by available geophysical survey information (**Volume 2, Appendix 24.7 Phase 1 Onshore Archaeological Geophysical Survey Report**).
NPS for Electricity Networks Infrastructure (EN-5)	
Paragraph 2.2.10: "…developers will be influenced by Schedule 9 to the Electricity Act 1989, which places a duty on all transmission and distribution licence holders, in formulating proposals for new electricity networks infrastructure, to "have regard to the desirability… of protecting sites, buildings and objects of architectural, historic or archaeological interest; and… do what [they] reasonably can to mitigate any effect which the proposals would have on the… sites, buildings or objects."	Potential impacts upon sites and objects of archaeological interest onshore are set out in **Section 24.7** along with a proposed approach to mitigation.

24.2.2 Other Policy and Legislation

10. Other policy and legislation relevant to the onshore archaeology and cultural heritage assessment is summarised in the following sections.

24.2.2.1 Legislation

11. Works affecting Listed Buildings and Conservation Areas are subject to the Planning (Listed Buildings and Conservation Areas) Act 1990, while those affecting Scheduled Monuments and Archaeological Areas of Importance must consider the Ancient Monuments and Archaeological Areas Act 1979 (as amended).

12. In the context of Listed Buildings, Regulation 3 of the Infrastructure Planning (Decisions) Regulations 2010 (the 'Decisions Regulations') sets out that it is necessary for the Secretary of State to *"have regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses"*. This provision extends to the full range of terrestrial heritage assets, rather than section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990, which relates only to Listed Buildings and requires the decision maker to have *"...special regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses"*. The Decisions Regulations have been taken into account in the preparation of this chapter.

13. Additionally, certain hedgerows may be deemed to be historically important under the criteria set out in the Hedgerow Regulations 1997, as amended.

24.2.2.2 National Policy

14. This assessment has been undertaken in a manner consistent with the National Planning Policy Framework (NPPF), updated in December 2024 by Ministry of Housing, Communities and Local Government (MHCLG). This replaces the original policy from March 2012. Provision for the historic environment is principally given in section 16: 'Conserving an enhancing the historic environment' of the NPPF, which directs local authorities to set out "*a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats*" (para. 203). Local authorities should recognise that heritage assets are "*an irreplaceable resource and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations*" (para. 202) (MHCLG, 2024).

15. The aim of NPPF section 16 is to ensure that local authorities, developers and owners of heritage assets adopt a consistent and holistic approach to their conservation and to reduce complexity in planning policy relating to proposals that affect them.

16. To summarise, the above guidance provides a framework which:

- Recognises that heritage assets are an irreplaceable resource;
- Requires applicants to provide a level of detail that is proportionate to the asset's importance and no more than is sufficient to understand the potential impact of the proposal on their significance;
- Takes into account the desirability of sustaining and enhancing the significance of heritage assets, including any contribution made by their setting, and putting them to viable uses consistent with their conservation;
- Places weight on the conservation of designated heritage assets (which include world heritage sites, scheduled monuments, listed buildings, protected wreck sites, registered parks and gardens, registered battlefields or conservation areas), with any anticipated substantial harm weighed against the public benefits of the proposal;
- Requires applicants to include a consideration of the effect of an application on the significance of non-designated heritage assets, giving regard to the scale of any harm or loss and the significance of the heritage asset;
- Regards proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) favourably; and
- Requires developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and impact, and to make this evidence (and any archive generated) publicly accessible.

17. The NPPF's associated Planning Practice Guidance (PPG) 'Conserving and enhancing the historic environment' (MHCLG, 2019), published in 2014 and updated in 2019, includes further information and guidance on how national planning policy is to be interpreted and applied locally. Although the PPG is an important and relevant consideration with respect to the Project, EN-1 (the Overarching NPS for Energy) is the key decision-making document.

24.2.2.3 Local Policy

18. This chapter also accounts for local policy relevant to the Study Areas (see **Section 24.4.1**) and the Project. The East Riding Local Plan Update 2025 – 2039, adopted 2025 (East Riding of Yorkshire Council (ERYC), 2025) details the direction that ERYC wish to take their planning decisions, up to 2039.

19. Policy ENV3 'Valuing our heritage' describes how local planning policy decisions will consider the historic environment and protect, preserve and enhance it in accordance with national planning policy. It provides clear policy guidance on the various elements of the historic environment, and sets out the framework for considering the implications for archaeology resulting from new development.

24.3 Consultation

20. Topic-specific consultation in relation to onshore archaeology and cultural heritage has been undertaken in line with the process set out in **Chapter 7 Consultation**. A Scoping Opinion from the Planning Inspectorate was received on 2nd August 2024, which has informed the scope of the assessment presented within this chapter (as outlined in **Section 24.4.2**).

21. Feedback received through the ongoing EPP in relation to Expert Topic Group (ETG) meetings and wider technical consultation meetings with relevant stakeholders has also been considered in the preparation of this chapter. Details of technical consultation undertaken to date on onshore archaeology and cultural heritage are provided in **Table 24-2**.

Table 24-2 Technical Consultation Undertaken to Date on Onshore Archaeology and Cultural Heritage

Meeting	Stakeholder(s)	Date(s) of Meeting / Frequency	Purpose of Meeting
ETG Meetings			
ETG7 (Onshore Archaeology) Meeting 02	Historic England Humber Archaeology Partnership (on behalf of ERYC)	28th August 2024	To discuss the Scoping Opinion and scope of the EIA assessment and surveys for onshore archaeology.
ETG9 (Landscape and Visual Impact) Meeting 01	Historic England ERYC Hull City Council	10th September 2024	To discuss the cultural heritage viewpoints to be used to inform the setting assessment at PEIR.
ETG7 (Onshore Archaeology) Meeting 03	Historic England Humber Archaeology Partnership (on behalf of ERYC)	10th March 2025	To provide an update on progress and results of onshore archeological assessments and surveys to date. To discuss and agree initial research themes. To provide an update on programme of planned surveys and investigations.

22. **Volume 2, Appendix 24.1 Consultation Responses for Onshore Archaeology and Cultural Heritage** summarises how consultation responses received to date are addressed in this chapter.

23. This chapter will be updated based on refinements made to the Project Design Envelope and to consider, where appropriate, stakeholder feedback on the PEIR. The updated chapter will form part of the ES to be submitted with the DCO application.

24.4 Basis of the Assessment

24. The following sections establish the basis of the assessment of likely significant effects, which is defined by the Study Areas, assessment scope, realistic worst-case scenarios and development scenarios.

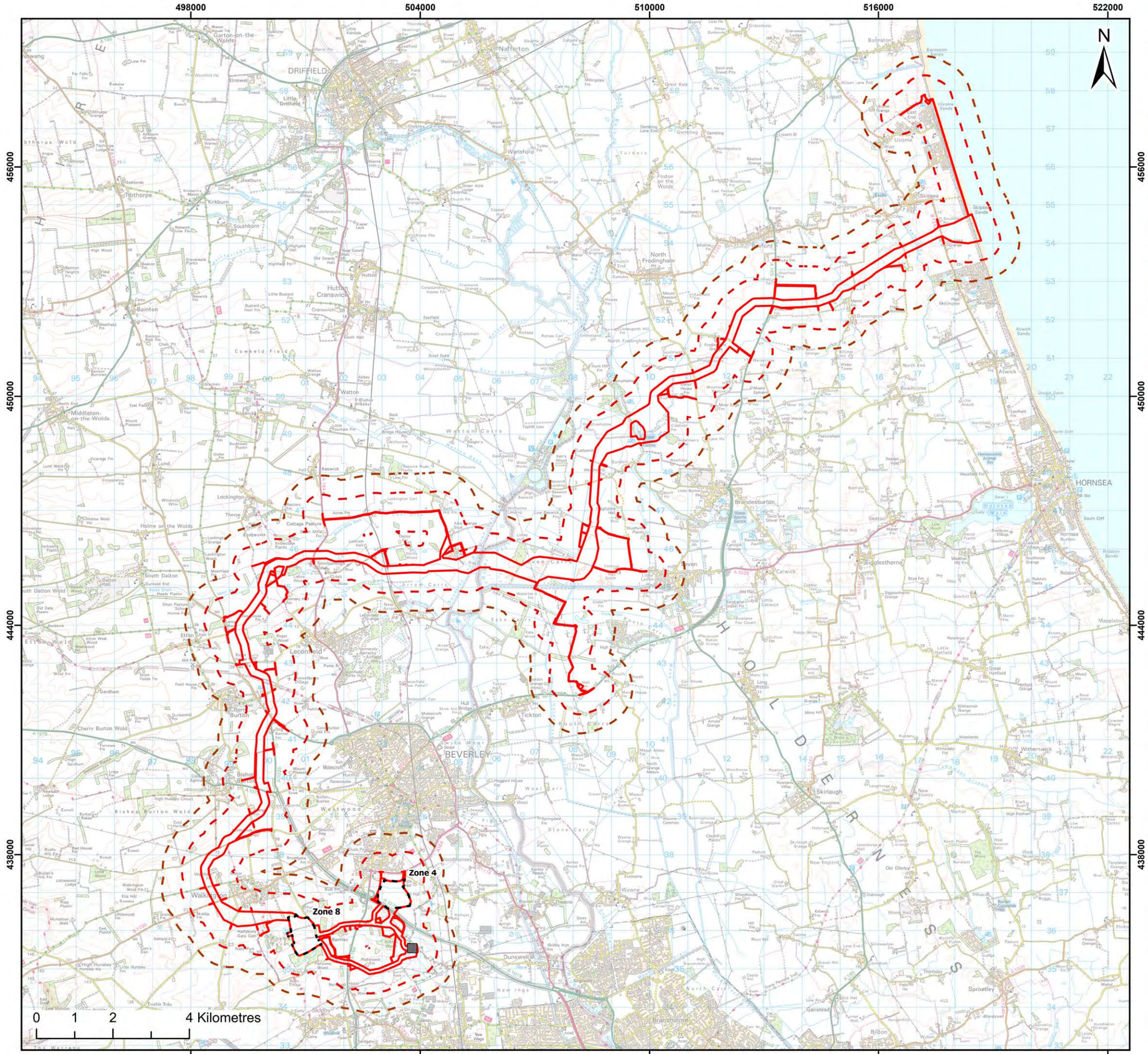
25. This section should be read in conjunction with **Volume 2, Appendix 1.2 Guide to PEIR**, **Volume 2, Appendix 6.2 Impacts Register** and **Volume 2, Appendix 6.3 Commitments Register**.

24.4.1 Study Area

26. Two Study Areas (**Figure 24-1**) have been agreed with stakeholders at the second ETG7 meeting held on the 28th August 2024 (see **Volume 2, Appendix 24.1 Consultation Responses for Onshore Archaeology and Cultural Heritage**) on the basis of:

- Non-Designated Heritage Assets Study Area – known non-designated heritage assets, potential buried archaeological remains and previously unrecorded above ground heritage assets within 500m of the Onshore Development Area; and
- Designated Heritage Assets Study Area – designated heritage assets within 1km of the onshore Export Cable Corridor (ECC) and 5km of the OCS zones, to inform a setting assessment of heritage assets identified as potentially being affected by the development through a change in their setting.

27. All heritage assets which fall below Mean High Water Springs (MHWS) are assessed in **Chapter 17 Offshore Archaeology and Cultural Heritage**.



Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Non-Designated Heritage Asset Study Area (500m buffer)
- Designated Heritage Asset Study Area (1km buffer)
- Indicative Birkhill Wood Substation Location

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Onshore Archaeology and Cultural Heritage Study Areas

Figure: 24-1

Drawing No: PC6250-RHD-XX-ON-DR-GS-0321

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
02	19/03/2025	JH	HM	A3	1:100,000
01	06/12/2024	FC	HM	A3	1:100,000

Co-ordinate system: British National Grid

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24.4.2 Scope of the Assessment

28. No impacts have been scoped out of the onshore archaeology and cultural heritage assessment. All impacts have been scoped into the assessment, as outlined in **Table 24-3** and discussed further in **Section 24.7**.

29. A full list of impacts scoped into the onshore archaeology and cultural heritage assessment is summarised in **Volume 2, Appendix 6.2 Impacts Register**. A description of how the Impacts Register should be used alongside the PEIR chapter is provided in **Volume 2, Appendix 1.2 Guide to PEIR** and Chapter **6 Environmental Impact Assessment Methodology**.

Table 24-3 Onshore Archaeology and Cultural Heritage – Impacts Scoped into the Assessment

Impact ID	Impact and Project Activity	Rationale
Construction		
ONA-C-01	Physical impacts to designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	Construction works have the potential to physically impact designated and non-designated heritage assets where they are present within the Onshore Development Area.
ONA-C-02	Physical impacts to known and unknown non-designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	
ONA-C-03	Changes to the setting of designated heritage assets, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	Construction works have the potential to temporarily change the setting of designated and non-designated heritage assets and historic landscapes.
ONA-C-04	Changes to the setting of non-designated heritage assets, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	
ONA-C-05	Changes to the setting of historic landscapes, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	
Operation and Maintenance		
ONA-O-1	Physical impacts to designated heritage assets - arising through changes to drainage or heating	There may be the potential for impacts arising from changes to drainage or heating of electrical infrastructure to physically impact designated and non-designated heritage assets where they are present within the Onshore Development Area.
ONA-O-02	Physical impacts to known and unknown non-designated heritage assets - arising through changes to drainage or heating	
ONA-O-03	Changes to the setting of designated heritage assets, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility	The operation of the above-ground onshore infrastructure has the potential to permanently change the setting of designated and non-designated heritage assets and historic landscapes.
ONA-O-4	Changes to the setting of non-designated heritage assets, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility	
ONA-O-05	Changes to the setting of historic landscapes, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility	

Impact ID	Impact and Project Activity	Rationale
Decommissioning		
ONA-D-01	Physical impacts to designated heritage assets – decommissioning activities not yet defined	Decommissioning impacts are scoped in; however, details of onshore decommissioning activities are not known at this stage. As discussed in **Section 24.7.3**, decommissioning impacts will be assessed in detail through the Onshore Decommissioning Plan (see **Table 24-4**, Commitment ID CO56) where relevant, which will be developed prior to the commencement of onshore decommissioning works. In this assessment, it is assumed that most decommissioning activities would be the reverse of their construction counterparts, and that their impacts would be of similar nature to, and no worse than, those identified during the construction phase.
ONA-D-02	Physical impacts to known and unknown non-designated heritage assets – decommissioning activities not yet defined	
ONA-D-03	Changes to the setting of designated heritage assets, which could affect their heritage significance – decommissioning activities not yet defined	
ONA-D-04	Changes to the setting of non-designated heritage assets, which could affect their heritage significance – decommissioning activities not yet defined	
ONA-D-05	Changes to the setting of historic landscapes, which could affect their heritage significance– decommissioning activities not yet defined	

24.4.3 Embedded Mitigation Measures

30. The Project has made several commitments to avoid, prevent, reduce or, if possible, offset potential adverse environmental effects through mitigation measures embedded into the evolution of the Project Design Envelope. These embedded mitigation measures include actions that will be undertaken to meet other existing legislative requirements and those considered to be standard or best practice to manage commonly occurring environmental effects.

31. The assessment of likely significant effects has therefore been undertaken on the assumption that these measures are adopted during the construction, O&M and decommissioning phases.

32. **Table 24-4** identifies proposed embedded mitigation measures that are relevant to the onshore archaeology and cultural heritage assessment.

Table 24-4 Embedded Mitigation Measures Relevant to Onshore Archaeology and Cultural Heritage

Commitment ID	Proposed Embedded Mitigation	How the Embedded Mitigation Will be Secured	Relevance to Onshore Archaeology and Cultural Heritage Assessment	Relevance to Impact ID
CO39	A Code of Construction Practice (CoCP) will be provided in accordance with the Outline CoCP. The CoCP will enable effective planning, monitoring and management of onshore construction works to mitigate potential impacts on the environment and communities and ensure compliance with the latest relevant regulatory requirements and best practice.	DCO Requirement - Code of Construction Practice	Limits the potential changes to the setting of heritage assets	ONA-C-03 ONA-C-04 ONA-C-05
CO56	An Onshore Decommissioning Plan will be developed prior to commencement of onshore decommissioning works based on the relevant available guidance and legislative requirements. The scope and methodology of onshore decommissioning works and appropriate mitigation measures will be detailed in the plan.	DCO Requirement - Onshore Decommissioning Plan	Limits the potential physical impacts to heritage assets and changes to their setting as a result of decommissioning activities.	ONA-D-01 ONA-D-02 ONA-D-03 ONA-D-04 ONA-D-05
CO60	All onshore export cables will be buried underground for the entire length of the cable corridor. No overhead pylons will be installed as part of the construction works.	DCO Works	Limits the potential changes to the setting of heritage assets.	ONA-O-03 ONA-O-04 ONA-O-05
CO61	Jointing bays along the onshore export cable corridor and the transition joint bay (TJB) at landfall will be buried underground, with the land above reinstated, except where access will be required to underground link boxes via manhole cover at ground level and where link boxes in proximity to jointing bays are installed above-ground.	DCO Requirement - Detailed Design (Onshore)	Limits the potential changes to the setting of heritage assets.	ONA-O-03 ONA-O-04 ONA-O-05
CO62	An Onshore Written Scheme of Investigation (WSI) will be developed in accordance with the Outline Onshore WSI and will be agreed with the relevant authorities prior to the commencement of any ground intrusive works of the relevant stage of construction. The Onshore WSI will outline the strategy to undertake programmes of survey and evaluation post-consent and include likely archaeological mitigation measures to be utilised in advance of and during construction.	DCO Requirement - Onshore Written Scheme of Investigation	Sets out potential mitigation measures that will reduce the impact to heritage assets and their setting.	ONA-C-01 ONA-C-02 ONA-C-03 ONA-C-04 ONA-C-05
CO63	Detailed design of infrastructure in the Onshore Converter Station (OCS) zone will be developed in accordance with the Design Vision. The Design Vision submitted as part of the application for development consent will set out design principles to ensure good design with respect to aesthetic, functionality and sustainability considerations.	DCO Requirement – Detailed Design (Onshore)	Limits the potential changes to the setting of heritage assets.	ONA-O-03 ONA-O-04 ONA-O-05
CO64	The Onshore Converter Station (OCS) and Energy Storage and Balancing Infrastructure (ESBI) will be designed to minimise the overall height and massing of associated structures and buildings and integrate them into the surrounding landscape as far as reasonably practicable. The footprint of the permanent above-ground infrastructure will be minimised as far as reasonably practicable whilst ensuring safe and effective operations.	DCO Requirement – Detailed Design (Onshore)	Limits the potential changes to the setting of heritage assets.	ONA-O-03 ONA-O-04 ONA-O-05

Commitment ID	Proposed Embedded Mitigation	How the Embedded Mitigation Will be Secured	Relevance to Onshore Archaeology and Cultural Heritage Assessment	Relevance to Impact ID
CO65	A Landscape Management Plan (LMP) will be developed in accordance with the Outline LMP. The LMP will detail: • The reinstatement strategy for areas temporarily disturbed and mitigation planting for landscape elements removed during construction. • Measures to provide screening to facilitate the integration of built infrastructure in the Onshore Converter Station (OCS) zone into the existing landscape. Landscape mitigation planting will be established as early as reasonably practicable during the construction phase. • Requirement for aftercare of mitigation and replacement planting which will be undertaken during the establishment period (five years) in which all planting will be monitored and maintained to ensure good establishment of trees, hedgerows and other planting. • Activities, timeframes and roles and responsibilities during the establishment period.	DCO Requirement - Landscape Management Plan	Limits the potential changes to the setting of heritage assets.	ONA-C-02 ONA-C-03 ONA-C-04 ONA-C-05 ONA-O-03 ONA-O-04 ONA-O-05
CO73	A Construction Traffic Management Plan (CTMP) will be developed in accordance with the Outline CTMP. The CTMP will include: • Measures to control, monitor and enforce the numbers and routeing of Heavy Goods Vehicle (HGV) movement during construction and include localised road improvements that are necessary to ensure the safe passage of HGV traffic via the public highway network; • Details on the location and design of construction and operational accesses, such as the frontage, general layout and visibility; • Detail on how construction employee traffic will be managed and measures to encourage sustainable alternative modes of travel including but not limited to single occupancy car trips during construction; • Measures to manage peak construction traffic flows and reduce the associated construction traffic noise and vehicle emissions; • Measures to ensure early and ongoing information provision to road users and emergency and healthcare services with regard to any temporary road or lane closures and diversions; and • Details on any site-specific additional mitigation measures required to avoid significant effects identified due to construction traffic.	DCO Requirement - Construction Traffic Management Plan	Limits the potential changes to the setting of heritage assets.	ONA-C-03 ONA-C-04 ONA-C-05
CO100	All areas of land temporarily disturbed during construction in the Onshore Development Area, including any temporary construction compounds and haul roads, will be reinstated to pre-existing conditions as far as reasonably practicable. Reinstatement will commence as soon as practicable following completion of the relevant works in the area. In areas of agricultural cropland where temporary loss or disturbance is required, soils will be reinstated within no more than 24 months, wherever practicable and unless otherwise requested by the relevant landowners.	DCO Requirement - Landscape Management Plan DCO Requirement - Ecological Management Plan DCO Requirement - Code of Construction Practice	Limits the potential changes to the setting of heritage assets.	ONA-C-02 ONA-C-03 ONA-C-04 ONA-C-05 ONA-O-03 ONA-O-04 ONA-O-05

Commitment ID	Proposed Embedded Mitigation	How the Embedded Mitigation Will be Secured	Relevance to Onshore Archaeology and Cultural Heritage Assessment	Relevance to Impact ID
CO101	Reinstatement of cable trenches, haul roads and other land temporarily disturbed within the onshore export cable corridor will commence as soon as reasonably practicable following the completion of duct installation works in each section. Where access is required to be retained for cable pull-in, jointing and commissioning works, land will be reinstated following the completion of all onshore export cable construction activities.	DCO Requirement - Landscape Management Plan DCO Requirement - Ecological Management Plan DCO Requirement - Code of Construction Practice	Limits the potential changes to the setting of heritage assets.	ONA-C-02 ONA-C-03 ONA-C-04 ONA-C-05 ONA-O-03 ONA-O-04 ONA-O-05

33. An Outline Onshore Written Scheme of Investigation (WSI) (**see Table 24-4**, Commitment ID CO62) will be developed at ES stage and submitted with the DCO application, which will detail measures relevant to onshore archaeology. Indicative embedded mitigation measures which are proposed to be included in the Outline Onshore WSI are set out in **Table 24-5**.

Table 24-5 Indicative Embedded Mitigation Measures to be Included in the Outline Onshore Written Scheme of Investigation

Outline Onshore WSI: Embedded Mitigation Measures for Onshore Archaeology and Cultural Heritage (to be developed at ES stage)
The Outline Onshore WSI will include provision for completing the programme of survey and evaluation, including: • Onshore geophysical survey; • Trial trench evaluation; and • Geoarchaeological assessment.
Where the survey and evaluation work identifies the presence of previously unknown archaeology, or further verifies previously known / anticipated buried remains, the receptor will be appropriately addressed by mitigating any impacts by a combination of the following standard approaches: • Further advance and enacting of preservation *in situ* options and requirements (e.g. avoidance through micro-siting, use of trenchless installation techniques, etc., where possible); • Archaeological excavation, including subsequent post-excavation assessment, and analysis, publication and archiving; • Archaeological monitoring / watching brief, including subsequent post-excavation assessment, and analysis, publication and archiving; and • Earthwork condition surveys, including subsequent recording and archiving (followed by backfilling and reinstatement, where required on a case-by-case basis).
The Outline Onshore WSI will include provision for returning historic field boundaries / areas / hedgerows to their pre-construction condition and character post-construction, as part of a sensitive programme of backfilling and reinstatement / landscaping as far as practicable.
The Outline Onshore WSI will include a formal Protocol for Archaeological Discoveries (PAD) to account for unexpected discoveries of archaeological material made during construction. If archaeological material is encountered during this phase of the Project, they would be reported through the protocol based on the Offshore Renewables Protocol for Archaeological Discoveries (ORPAD) (The Crown Estate, 2014). This will establish whether the objects are of archaeological interest and allow for appropriate mitigation measures to be recommended where necessary.
The Outline Onshore WSI will include provision for the establishment of an approach to realising public benefit of data sharing, and to the creation of joined-up objectives for post-consent investigation and mitigation, including consideration of academic and industry wide research initiatives. This will be established post-consent in consultation with key stakeholders, including Humber Archaeology Partnership and Historic England.

24.4.4 Realistic Worst-Case Scenarios

34. To provide a precautionary, but robust, assessment at this stage of the Project's development process, a realistic worst-case scenario has been defined in **Table 24-6** for each impact scoped into the assessment (as outlined in **Section 24.4.2**). The realistic worst-case scenarios are derived from the range of parameters included in the Project Design Envelope. They ensure that the assessment of likely significant effects is based on the maximum potential impact on the environment. Should an alternative development scenario be taken forward in the final design of the Project, the resulting effects would not be greater in effect significance. Further details on the Project Design Envelope are provided in **Chapter 6 Environmental Impact Assessment Methodology**.

35. The realistic worst-case scenarios used to assess impacts on onshore archaeology and cultural heritage are defined in **Table 24-6**. Following the PEIR publication, further design refinements will be made based on ongoing engineering studies and considerations of the EIA and stakeholder feedback. Therefore, the realistic worst-case scenarios presented in the PEIR may be updated in the ES. The Project Design Envelope will be refined where possible to retain design flexibility only where it is needed.

24.4.5 Development Scenarios

36. Consideration is also given to the different development scenarios with respect to the OCS zones. At this stage, two OCS zone options remain in the Project Design Envelope (see **Chapter 4 Project Description** for further details) noting that only one option will be developed. The two development scenarios are:

- Infrastructure located in OCS Zone 4; or
- Infrastructure located in OCS Zone 8.

37. With respect to the onshore archaeology and cultural heritage assessment, it is noted that the assessment of likely physical significant effects is not materially affected by the two development scenarios, as the same broad receptors, realistic worst-case scenarios and potential effects are applicable to both OCS zone options. Therefore, the assessment outcomes presented in **Section 24.7** remain the same for both development scenarios.

38. However, with respect to impacts resulting from a change in setting and associated heritage significance to designated and non-designated heritage assets and historic landscapes during the O&M phase, there is potential for the assessment of likely significant effects for the OCS zone infrastructure to differ between the two development scenarios. Where relevant, the assessment outcomes presented in **Section 24.7** are reported separately. Where realistic worst-case scenarios are likely to differ, these have also been set out separately in **Table 24-6.**

Table 24-6 Realistic Worst-Case Scenarios for Impacts on Onshore Archaeology and Cultural Heritage

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
Construction			
ONA-C-01	Physical impacts to designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	**Landfall** • Maximum number of TJB at landfall: 1 • Maximum number of underground link box at landfall: 1 • Maximum TJB and underground link box burial depth: 3m • Maximum number of landfall cable ducts: 3 (including 1 spare) • Indicative temporary landfall construction compound area: 12,500m^2 (including construction footprint of TJB and underground link box) • Maximum number of landfall construction compound: 1 • Maximum horizonal length of trenchless installation: 2,000m • Indicative minimum depth of trenchless installation at cliff: 5m • Indicative haul road width at landfall: 7m **Onshore ECC** • Maximum length of High Voltage Direct Current (HVDC) ECC: 50km • Maximum length of High Voltage Alternating Current (HVAC) ECC: 5km • Maximum number of trenches of HVDC onshore export cables: 2 • Maximum number of trenches of HVAC onshore export cables: 4 • Indicative width of cable trench at surface: 3m • Target minimum cable burial depth using open cut trenching: 1.2m • Target minimum cable burial depth using trenchless installation techniques: 3.5m • Target maximum cable burial depth using trenchless installation techniques: 20m • Indicative temporary construction corridor width for HVDC onshore export cables: 32m (50m at trenchless crossing locations) • Indicative temporary construction corridor width for HVAC onshore export cables: 55m (60m at trenchless crossing locations) • Indicative number of jointing bay locations along onshore ECC: 62 • Indicative number of link box locations along onshore ECC: 56 (for the purposes of the PEIR assessment, it is assumed that at approximately 20 link box locations for the HVDC export cables and all link box locations for the HVAC export cables will involve the use of above-ground link boxes) • Maximum jointing bay burial depth: 2.5m • Maximum underground link box burial depth / above-ground link box height: 2m • Maximum jointing bay and link box temporary construction area for HVDC export cables: 660m^2 (per location)	The worst-case scenario represents the maximum footprint and ground disturbance within the Onshore Development Area in which potential physical disturbance to designated and non-designated heritage assets could occur.
ONA-C-02	Physical impacts to known and unknown non-designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement		

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
		• Maximum jointing bay and link box temporary construction area for HVAC export cables: 1,040m^2 (per location) • Indicative number of main construction compounds for onshore export cable works: 4 • Indicative number of intermediate construction compounds for onshore export cable works: 8 • Indicative number of trenchless crossing locations: 70 • Indicative main construction compound area: 20,000m^2 (per compound) • Indicative intermediate construction compound area: 5,625m^2 (per compound) • Indicative trenchless installation compound area for HVDC export cables: 300m^2 (5,625m^2 for non-horizontal direct drilling (HDD) techniques) (per compound) • Indicative trenchless installation compound dimensions for HVAC export cables: 800m^2 (5,625m^2 for non-HDD techniques) (per compound) • Trenchless installation techniques under consideration include HDD, auger boring, micro-tunnelling, pipe jacking / ramming and Direct Pipe • Maximum land area temporarily disturbed during construction: 1,700,000m^2 **OCS Zone (OCS and ESBI)** • Indicative quantity of topsoil excavated within OCS zone: 100,000m^3 (assumed 50% of topsoil to be removed off-site – 50,000m^3) • Indicative access road width (including site access road from the public highway and internal tracks within the site): 7.3m • Maximum developable area for OCS and ESBI: 25 hectares (ha) (including but not limited to platform footprint, landscaping, access, drainage and attenuation but exclude areas for ecological mitigation / enhancement) • Total permanent area: 20.5ha (including but not limited to platform footprint, landscaping, access, drainage and attenuation but exclude areas for ecological mitigation / enhancement) • Total temporary area: 4.5ha (including 2 temporary construction compounds for the OCS and ESBI)	

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
ONA-C-03	Changes to the setting of designated heritage assets, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	• Anticipated duration of landfall construction works: approximately three years (including one year of trenchless installation works) • Anticipated duration of onshore export cable construction works: approximately four years • Anticipated duration of OCS and ESBI construction works: approximately five years	The worst-case scenario represents the anticipated maximum duration in which temporary change to the setting of designated and non-designated heritage assets could occur.
ONA-C-04	Changes to the setting of non-designated heritage assets, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement		
ONA-C-05	Changes to the setting of historic landscapes, which could affect their heritage significance -construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement		

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
Operation and Maintenance			
ONA-O-1	Physical impacts to designated heritage assets -arising through changes to drainage or heating	Anticipated duration of O&M phase: approximately 35 years **Landfall** • Maximum permanent underground link box area: 10m^2 • Underground link box will be installed with a manhole cover for O&M access at ground level and typically marked / protected by bollards, fences or similar of approximately 1.2 to 2m in height (where required and agreed with the relevant landowners). • Maximum permanent TJB area: 30m^2 • Maximum TJB and underground link box burial depth: 3m **Onshore ECC** • Indicative width of operational easement for HVDC export cables: 20m • Indicative width of operational easement for HVAC export cables: 25m • Maximum number of trenches of HVDC onshore export cables: 2 • Maximum number of trenches of HVAC onshore export cables: 4 • Target minimum cable burial depth using open cut trenching: 1.2m • Target minimum cable burial depth using trenchless installation techniques: 3.5m • Target maximum cable burial depth using trenchless installation techniques: 20m • Indicative number of jointing bay locations along onshore ECC: 62 • Indicative number of link box locations along onshore ECC: 56 (for the purposes of the PEIR assessment, it is assumed that at approximately 20 link box locations for the HVDC export cables and all link box locations for the HVAC export cables will involve the use of above-ground link boxes) • Maximum jointing bay burial depth: 2.5m • Maximum underground link box burial depth / above-ground link box height: 2m • Maximum permanent jointing bay area: 30m^2 (per jointing bay) • Maximum permanent underground link box area: 4m^2 (per link box)	The worst-case scenario represents the maximum footprint and ground disturbance within the Onshore Development Area in which potential physical disturbance to designated and non-designated heritage assets during construction could continue into operation.
ONA-O-02	Physical impacts to known and unknown non-designated heritage assets arising through changes to drainage or heating		
ONA-O-03	Changes to the setting of designated heritage assets, which could affect their heritage significance – presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility		The worst-case scenario represents the maximum intrusive effect of the permanent above ground structures (i.e. maximum height and massing) in which a permanent change to the setting of designated and non-designated heritage assets could occur.

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
ONA-O-4	Changes to the setting of non-designated heritage assets, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility	• Maximum permanent above-ground link box area: 3m^2 (per link box) • Underground link boxes will be installed with a manhole cover for O&M access at ground level. Above-ground link boxes will be installed as kiosks on concrete pads. Link boxes are typically marked / protected by bollards, fences or similar of approximately 1.2m to 2m in height (where required and agreed with the relevant landowners). • Small marker posts of approximately 1m to 1.2m height will be installed along the operational easement to demark the location of the installed onshore export cables. Marker posts will, at a minimum, be required at field boundaries, on either side of obstacle crossings such as roads and watercourses and where there are significant directional changes in the cable route. **OCS Zone (OCS and ESBI)** • Maximum developable area for OCS and ESBI: 25ha (including but not limited to platform footprint, landscaping, access, drainage and attenuation but exclude areas for ecological mitigation / enhancement) • Total permanent area: 20.5ha (including but not limited to platform footprint, landscaping, access, drainage and attenuation but exclude areas for ecological mitigation / enhancement) • Maximum number of OCS: 1 • Indicative number of OCS buildings: 3 (excluding smaller shed structures) • Maximum OCS building height: 25m • Maximum OCS outdoor electrical equipment height: 30m • Indicative number of battery block and composition for ESBI: 50 (each block with up to 24 battery units and 2 power conversion system (PCS) units) • Indicative battery unit dimensions (length-width-height): 20m x 5m x 4m • Indicative PCS unit dimensions (length-width-height): 6.1m x 2.5m x 4m • Indicative number of ESBI buildings: 6 (excluding smaller shed structures) • Maximum ESBI building height: 20m • Maximum ESBI outdoor electrical equipment height: 25m	
ONA-O-05	Changes to the setting of historic landscapes, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility		

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
Decommissioning			
ONA-D-01	Physical impacts to designated heritage assets – decommissioning activities not yet defined	The final decommissioning strategy of the Project's onshore infrastructure has not yet been decided. For a description of potential onshore decommissioning works, refer to **Chapter 4 Project Description**. It is recognised that regulatory requirements and industry best practice change over time. Therefore, the details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning. Specific arrangements will be detailed in an Onshore Decommissioning Plan (see **Table 24-4**, Commitment ID CO56), which will be submitted and agreed with the relevant authorities prior to the commencement of onshore decommissioning works. For this assessment, it is assumed that decommissioning is likely to operate within the parameters identified for construction (i.e. any activities are likely to occur within the temporary construction working areas and require no greater amount or duration of activity than assessed for construction). The decommissioning sequence will generally be the reverse of the construction sequence. It is therefore assumed that decommissioning impacts would likely be of similar nature to, and no worse than, those identified during the construction phase.	
ONA-D-02	Physical impacts to known and unknown non-designated heritage assets – decommissioning activities not yet defined		
ONA-D-03	Changes to the setting of designated heritage assets, which could affect their heritage significance – decommissioning activities not yet defined		
ONA-D-04	Changes to the setting of non-designated heritage assets, which could affect their heritage significance – decommissioning activities not yet defined		
ONA-D-05	Changes to the setting of historic landscapes, which could affect their heritage significance– decommissioning activities not yet defined		

24.5 Assessment Methodology

24.5.1 Guidance Documents

39. The following guidance documents have been used to inform the baseline characterisation, assessment methodology and mitigation design for onshore archaeology and cultural heritage:

- The Historic Environment in Local Plans: Historic Environment Good Practice Advice in Planning 1 (Historic England, 2015a);
- Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning 2 (Historic England, 2015b);
- The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning 3 (Historic England, 2017a);
- Standard and guidance for historic environment desk-based assessment (Chartered Institute for Archaeologists (CIfA), 2020);
- CIfA's Code of Conduct (2022);
- Principals of Cultural Heritage Impact Assessment in the UK (Institute of Environmental Management and Assessment (IEMA), Institute of Historic Building Conservation (IHBC) and CIfA, 2021);
- Commercial Renewable Energy Development and the Historic Environment. Historic England Advice Note 15 (Historic England, 2021);
- Preserving Archaeological Remains. Decision-taking for Sites under Development (Historic England, 2016); and
- Piling and Archaeology. Guidance and Good Practice (Historic England, 2019).

24.5.2 Data and Information Sources

24.5.2.1 Desk Study

40. A desk study has been undertaken to compile baseline information in the previously defined Study Areas (see **Section 24.4.1**) using the sources of information set out in **Table 24-7**.

Table 24-7 Desk-Based Sources for Onshore Archaeology and Cultural Heritage Data

Data Source	Spatial Coverage	Year(s)	Summary of Data Contents
National Heritage List for England (NHLE)	England	2024	Data on all designated heritage assets within England, maintained by Historic England. GIS data for all Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and Registered Battlefields.
Humber Historic Environment Record (HER)	East Riding of Yorkshire	2024	Contains data on all recorded non-designated heritage assets. The data includes archaeological, historic landscape character and historic building information. Information on previous events (archaeological surveys and investigations) will also be obtained.
Conservation Areas	East Riding of Yorkshire	2024	ERYC holds information on Conservation Areas including locally listed buildings.
Cartographic sources (the East Riding Archive and National Mapping Project (NMP))	East Riding of Yorkshire	2024	Historic mapping for the Study Area including 19th century Enclosure and Tithe maps, and 1st, 2nd and later edition Ordnance Survey (OS) maps. Some cartographic data is fragmentary for the Study Area.
Aerial Photographic Data (Historic England Archive and the Humber HER, and ortho-rectified mosaics of vertical aerial photographs at Google Earth)	East Riding of Yorkshire	2024	Aerial photographic data for the Study Area.
Light Detection and Ranging (LiDAR) survey data	East Riding of Yorkshire	2024	Available LiDAR data for the Study Area.
British Geological Survey (BGS) data (surface geology)	UK	2024	Historic borehole logs and wider geological background for the Study Area.
Portable Antiquities Scheme (PAS)	England and Wales	2024	Database holding records of archaeological finds made by the general public.
Coastal and Intertidal Zone Archaeological Network (CITiZAN) dataset	Humberside	2024	The CITiZAN dataset holds records for foreshore and intertidal sites across England's coast.

Data Source	Spatial Coverage	Year(s)	Summary of Data Contents
Rapid Coastal Zone Assessment Surveys (RCZAS): Yorkshire and Lincolnshire (including RCZAS Lincolnshire and Yorkshire Phase 2 and 3 assessments).	Yorkshire and Lincolnshire	2009	An assessment of the condition of heritage assets along the Yorkshire and Lincolnshire coast from rising sea level and consequential coastal erosion.
Intertidal and Coastal Peat Database	England	2024	Database of records of peat deposits along the coastline providing information on past landscapes and human activity.
Relevant Regional, Local and Period Archaeological Studies and Journals	UK	Various	Historic and archaeological data consulted to inform the wider baseline context. The studies / journals consulted do not constitute an exhaustive account of all historical / archaeological data identified within the Study Area.
The Archaeology Data Service (ADS)	UK	Various	A non-exhaustive directory of archaeological research consulted to inform the wider baseline context and previous archaeological investigations in the Study Area.
Skipsea Landscape Project	Landfall	2015 onwards	University of York led project assessing an area of ancient lakes at Skipsea to understand how this environment was utilised by the people who inhabited it from early prehistory through to the medieval period.
Zone of Theoretical Visibility (ZTV)	OCS Zone 5km Study Areas	2024	ZTVs for the permanent above ground infrastructure required by the Project to inform the initial setting assessment.

24.5.2.2 Site-Specific Surveys

41. In addition to desk-based sources, site-specific surveys were undertaken to provide detailed baseline information on onshore archaeology and cultural heritage. **Table 24-8** summarises surveys that have been completed or are planned to be undertaken to inform the ES which are relevant to the onshore archaeology and cultural heritage baseline characterisation.

Table 24-8 Site-Specific Survey Data for Onshore Archaeology and Cultural Heritage

Survey	Spatial Coverage	Year(s)	Summary of Survey Data
Completed			
Heritage Walkover Survey	Onshore Development Area	2024	Survey to establish presence / absence and condition of extant above ground heritage assets.
Setting Assessment site visits	Onshore Development Area	2024	Visit to selected heritage assets to inform the initial setting assessment.
Archaeological Geophysical Survey	Landfall, sections of the onshore ECC and OCS Zone 4	2022-2024	Non-intrusive survey to record buried archaeological and geological features within selected areas of the Onshore Development Area and geophysical survey and interpretation data obtained through a data sharing agreement and coordination between the Applicant and Dogger Bank South (DBS) Offshore Wind Farms.
Ongoing			
Archaeological Geophysical Survey	Remaining areas of the Onshore Development Area	2025 onwards	Ongoing non-intrusive survey to record buried archaeological and geological features within the remaining areas of the Onshore Development Area not surveyed in 2024.
Trial Trench Evaluation	Onshore Development Area	2025 onwards	Intrusive investigation to establish presence / absence and significance of buried archaeological remains.

42. The approach to collecting site-specific survey data was agreed in consultation with stakeholders at the second ETG7 meeting held on 28th August 2024 (see **Volume 2, Appendix 24.1 Consultation Responses for Onshore Archaeology and Cultural Heritage**).

43. The heritage walkover survey was undertaken at targeted locations within the Onshore Development Area to inform the historic environment baseline and to confirm the presence / absence of heritage assets identified on the Humber HER. It consisted of a condition survey to record the extent and level of survival of the structures, earthworks and cropmarks recorded in the Humber HER (**Volume 2, Appendix 24.4 Onshore Heritage Walkover Report**).

44. Site visits to heritage assets identified as requiring further consideration and assessment of potential changes to setting and associated heritage significance as a result of the OCS being located within either Zone 4 or Zone 8, were undertaken to inform the Onshore Heritage Setting Assessment presented in **Volume 2, Appendix 24.5 Onshore Heritage Setting Assessment** and the assessment presented in **Section 24.7**.

45. The archaeological geophysical survey initially targeted areas of potentially high archaeological sensitivity, areas of permanent above ground infrastructure and engineering 'pinch-points' followed by survey across as much of the Onshore Development Area as possible. The results of survey completed up to 30th January 2025 are presented within **Volume 2, Appendix 24.7 Onshore Archaeological Geophysical Survey Report** and have informed the assessment presented in **Section 24.7**. The results from the remaining survey areas will be presented at ES, depending on land access and ground conditions.

46. In addition, geophysical data was acquired through coordination with the DBS project which partially overlaps with the Onshore Development Area. The relevant existing information presented in **Volume 2, Appendix 24.7 Onshore Archaeological Geophysical Survey Report** has been incorporated into the PEIR assessment and is described further in **Section 24.7**.

24.5.3 Impact Assessment Methodology

47. The impact assessment methodology adopted for onshore archaeology and cultural heritage will define heritage assets and their settings, likely to be impacted by the Project and will assess the level of any resulting benefit, harm, or loss to their significance.

48. The assessment is not limited to physical impacts, but also assesses changes to the setting of heritage assets, whether visually, or in the form of noise, dust and vibration, spatial associations and a consideration of historic relationships between places which may impact their significance.

49. **Chapter 6 Environmental Impact Assessment Methodology** provides a summary of the general impact assessment methodology applied. The following sections describe the specific methods used to assess the likely significant effects on onshore archaeology and cultural heritage.

24.5.3.1 Impact Assessment Criteria

50. As set out in Principles of Cultural Heritage Impact Assessment in the UK (IEMA, IHBC and CIfA, 2021), Cultural Heritage Impact Assessment (CHIA) is concerned with "understanding the consequences of change to cultural significance". The principles of assessment are:

    A. understanding cultural heritage assets; and

    B. evaluating the consequences of change.

51. Understanding cultural heritage assets distinguishes between:

- Describing the asset (what it is and what is known about it);
- Ascribing cultural significance (a description of what is valued about it); and
- Attributing importance (a scaled measure of the degree to which the cultural significance of that asset should be protected).

52. Evaluating the consequences of change additionally distinguishes between three separate analytical stages:

- Understanding change (a factual statement of how a proposal would change a cultural heritage asset or its setting, including how it is experienced);
- Assessing impact (a scaled measure of the degree to which any change would impact on cultural significance); and
- Weighting the effect (the measure that brings together the magnitude of the impact and the cultural heritage asset's importance).

53. The three stages of 'understanding cultural heritage assets' (a description of the assets and their cultural significance, including the contribution of setting to that significance, and attributing importance) are described in **Section 24.6**. An evaluation of the consequences of change is presented in **Section 24.7** as set out below.

54. **Chapter 6 Environmental Impact Assessment Methodology** sets out the following steps in assessing significant effects:

- Identify the source of potential impacts and establishing if a pathway exists between the source of the impact and the identified receptors;
- Identify the sensitivity (importance) of each receptor to the relevant impacts;
- Identify the magnitude of the impact predicted; and
- Consider the receptor sensitivity (importance) and likely impact magnitude, in order to assess the likely significance of effect for the potential impact.

55. The relationship between the CHIA stages and the general impact assessment methodology, as set out in **Chapter 6 Environmental Impact Assessment Methodology**, is as follows:

56. In CHIA, *identifying the source of potential impacts* is represented by a factual statement of how a proposal would change a cultural heritage asset or its setting (understanding change). It is important to note that change may or may not lead to an impact on cultural significance. If there is a pathway for an impact on cultural significance, this will be articulated for each impact.

24.5.3.1.1 Receptor Sensitivity

57. *Identify the sensitivity* of a receptor equates to the measure of importance ascribed to an asset (or group of assets).

58. The sensitivity of a receptor is a function of its capacity to accommodate change and reflects its ability to recover if it is affected. However, while impacts to a heritage asset's setting or character can be temporary, impacts which result in damage or destruction of the assets themselves, or their relationship with their wider environment and context, are permanent. Once destroyed an asset cannot recover. On this basis, it is the importance of a heritage asset (as a scaled measure of the degree to which we seek to protect and preserve the cultural significance of that asset through, for example, legislation and planning policy) rather than the sensitivity which forms the basis for assessment.

59. For the purposes of this EIA, the criteria for determining the heritage importance of any relevant heritage assets are described in **Table 24-9**.

Table 24-9 Definition of Importance for Cultural Heritage Assets

Importance	Definition
High	Assets perceived of being of international / national importance including: • World Heritage Sites; • Scheduled Monuments; • Grade I and II* Listed Buildings or structures; • Designated historic landscapes of outstanding interest; • Conservation Areas containing buildings or structures with high heritage importance, or high concentrations of listed buildings; • Non-designated assets of acknowledged international / national importance; • Assets that can contribute significantly to acknowledged international / national research objectives; and • Assets where the importance / existence / level of survival of the asset has not been ascertained (or fully ascertained / understood) from available evidence and is considered of high importance as a precautionary measure.
Medium	Assets perceived of being of regional / national importance including: • Grade II Listed Buildings or structures; • Designated special historic landscapes; • Other types and character of Conservation Areas (i.e. not containing buildings or structures with high heritage importance, or high concentrations of listed buildings); • Assets that contribute to regional research objectives; and • Assets with regional value, educational interest, or cultural appreciation.
Low	Assets perceived of being of local importance including: • 'Locally Listed' buildings or structures; • Assets that contribute to local research objectives; • Assets with local value, educational interest, or cultural appreciation; and • Assets compromised by poor preservation and / or poor contextual associations.
Negligible	Assets with no significant value or archaeological / historical interest

24.5.3.1.2 Impact Magnitude

60. *Identify the magnitude* of the impact equates to the degree to which cultural significance is positively or negatively changed by the proposal.

61. The magnitude of adverse impact with respect to onshore archaeology and cultural heritage directly relates to the extent of harm to, or loss of, key elements of the asset's cultural significance, which may include its setting.

62. The magnitude of beneficial impact directly relates to the level of public benefit associated with an individual impact. Benefits may correspond directly to the project itself where a project will enhance the historic environment (e.g. through measures which will improve the setting of a heritage asset or public access to it). Alternatively, benefits may occur based on data gathering exercises undertaken for the purpose of a project which will enhance public understanding by adding to the archaeological record (e.g. through the accumulation of publicly available information and data).

63. The criteria used for assessing the magnitude of impact regarding onshore archaeology and cultural heritage are presented in **Table 24-10**.

Table 24-10 Definition of Magnitude of Impact to Heritage Assets

Magnitude	Definition
High Adverse	Key elements of the asset's fabric and / or setting are lost or fundamentally altered, such that the asset's cultural significance is lost or severely compromised.
Medium Adverse	Elements of the asset's fabric and / or setting which contribute to its significance are affected, but to a more limited extent, resulting in an appreciable but partial loss of the asset's cultural significance.
Low Adverse	Elements of the asset's fabric and / or setting which contribute to its cultural significance are affected, resulting in a slight loss of cultural significance.
Negligible	The asset's fabric and / or setting is changed in ways which do not materially affect its cultural significance.
Low Beneficial	Elements of the asset's physical fabric which would otherwise be lost, leading to a slight loss of cultural significance, are preserved in situ; or Elements of the asset's setting are improved, slightly enhancing its cultural significance; or Research and recording leads to a slight enhancement to the archaeological or historical interest of the asset. This only applies in situations where the asset would not be otherwise harmed i.e. it is not recording in advance of loss.
Medium Beneficial	Elements of the asset's physical fabric which would otherwise be lost, leading to an appreciable but partial loss of cultural significance, are preserved in situ; or Elements of the asset's setting are considerably improved, appreciably enhancing its cultural significance; or Research and recording leads to a considerable enhancement to the archaeological or historical interest of the asset. This only applies in situations where the asset would not be otherwise harmed i.e. it is not recording in advance of loss.
High Beneficial	Elements of the asset's physical fabric which would otherwise be lost, severely compromising its cultural significance, are preserved in situ; or Elements of the asset's setting, which were previously lost or unintelligible, are restored, greatly enhancing its cultural significance
No Impact	No change to the asset's fabric or setting which affects its cultural significance.

24.5.3.1.3 Significance of Effect

64. The significance of effect is the measure that bring together the magnitude of the impact and the cultural heritage asset's importance to assess the degree to which any change would impact on cultural significance. This measure is indicative of the weight that should be given to the matter in influencing the design of the proposal or, ultimately, in influencing whether the proposal will be acceptable and permitted.

65. The determination of significance is guided by the use of an impact significance matrix presented in **Table 24-11**. Definitions for this weighted measure of significance of effect (in EIA terms) are provided in **Table 24-11**. For the purposes of this assessment, any effect that is of major or moderate significance is considered to be significant in EIA terms, whether this be adverse or beneficial. Any effect that has a significance of minor or negligible is not significant.

Table 24-11 Onshore Archaeology and Cultural Heritage Significance of Effect Matrix

		Adverse Magnitude				Beneficial Magnitude			
		High	**Medium**	**Low**	**Negligible**	**Negligible**	**Low**	**Medium**	**High**
Receptor Importance	**High**	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Negligible	Negligible	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

Table 24-12 Definition of Effect Significance

Significance	Definition
Major	Changes in cultural significance, either adverse or beneficial, which are likely to be important considerations at a national or regional level because they contribute to achieving national or regional objectives. Effective / acceptable mitigation options may still be possible, to offset and / or reduce residual impacts to satisfactory levels.
Moderate	Changes in cultural significance, either adverse or beneficial, which are likely to be important considerations at a local level. Effective / acceptable mitigation options may still be possible, to offset and / or reduce residual impacts to satisfactory levels.
Minor	Changes in cultural significance, either adverse or beneficial, which may be raised as local issues but are unlikely to be material considerations in the decision-making process. Industry standard mitigation measures may still apply.
Negligible	No material change to cultural significance.
No Change	No impact, therefore, no change to cultural significance.

24.5.4 Historic Landscape Character

66. The approach to the assessment of HLC differs to that outlined above for heritage assets.

67. The historic character of the landscape is described in terms of ability to accommodate change. For this reason, an approach is required which recognises the dynamic nature of landscape and how all aspects of the landscape, no matter how modern or fragmentary, can form part of the character of that landscape.

68. It is not meaningful, therefore, to assign a level of importance to these aspects of landscape character. Individual elements which contribute towards the HLC of an area (e.g. hedgerows, field boundaries) may, however, be assigned a heritage importance based on the criteria outlined in **Table 24-11** (where relevant).

69. As the HLC is described in terms of ability to accommodate change, it is also not meaningful to assign a measure of magnitude in order to understand the nature of the potential changes. Rather, this change is expressed as a narrative description of the landscape character and how it might be affected by the Project.

70. Regarding the HLC, in terms of assessing the effect, it is the alteration arising from the Project to the baseline HLC as assessed in this chapter (see **Section 24.6.1.12** and Volume 2, **Appendix 24.2 Onshore Archaeological Desk-Based Assessment**) that is the key focus and is expressed in terms of the ability of the HLC to accommodate any change arising from the Project.

71. In this respect, while damage to, or destruction of, a heritage asset is considered permanent and irreversible, effects to HLC are dynamic, and may be temporary and reversible. Certain elements / features that may be considered to contribute to the HLC of an area (e.g. hedgerows, field / parish boundaries) may nonetheless be considered in relation to the process outlined above, as and where relevant.

24.5.5 Cumulative Effects Assessment Methodology

72. The cumulative effects assessment (CEA) considers other plans and projects that may act collectively with the Project to give rise to cumulative effects on onshore archaeology and cultural heritage receptors. The general approach to the CEA for onshore archaeology and cultural heritage involves screening for potential cumulative effects, identifying a short list of plans and projects for consideration and evaluating the significance of cumulative effects. **Chapter 6 Environmental Impact Assessment Methodology** provides further details on the general framework and approach to the CEA.

73. The final assessment of cumulative effects will be undertaken during the later stages of the EIA, once further information is available. However, for the purposes of the PEIR, it is possible to identify a number of projects and plans (Dogger Bank A and B, Hornsea Project Four, and Peartree Hill Solar Farm) which are likely to feature in that assessment and consider the extent to which cumulative effects might arise.

74. **Section 24.8** presents the following preliminary information regarding cumulative effects:

- Screening for cumulative effects; and
- A preliminary short list of plans and projects considered for CEA, including a brief description as to how projects have been screened in and the initial tier level they have been assigned.

24.5.6 Assumptions and Limitations

75. This chapter provides a preliminary assessment of the likely significant effects of the Project in relation to onshore archaeology and cultural heritage using information available at the time of drafting as described in **Chapter 6 Environmental Impact Assessment Methodology**. This assessment will be refined where relevant and presented in the ES to be submitted with the DCO application.

76. Data used to compile this PEIR chapter primarily consist of secondary information derived from a variety of sources. The assumption is made that the secondary data, as well as those derived from other secondary sources, are reasonably accurate.

77. The records held by the sources used in this assessment are not a record of all surviving heritage assets, rather a record of the discovery of a range of archaeological and historical components of the historic environment for the Study Areas. The information held within these sources is not complete and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.

78. At this stage, the archaeological geophysical surveys and heritage setting assessment are ongoing and are reported only in part in this chapter. The full details of the findings from these ongoing surveys and assessments will be presented within the ES chapter submitted with the DCO application.

24.6 Baseline Environment

24.6.1 Existing Baseline

79. This section provides a summary of the known and potential onshore archaeological and cultural heritage resource within the defined Study Areas.

80. The baseline environment as presented within this section has been, to date, informed by the baseline data and information gathering exercise and assessment undertaken as part of the Archaeological Desk-Based Assessment (ADBA) (**Volume 2, Appendix 24.2 Onshore Archaeological Desk-Based Assessment**) and the Aerial Photographic, LiDAR and Map Regression Analysis (**Volume 2, Appendix 24.3 Assessment of Airbourne and Satellite Remote Sensing Data Report**).

81. Site visits have been undertaken to inform the initial heritage setting assessment exercise and establish the condition of extant historic earthworks and structures (**Volume 2, Appendix 24.4 Onshore Heritage Walkover Report** and **Appendix 24.5 Onshore Heritage Setting Assessment**). In addition, a Geoarchaeological DBA (**Volume 2, Appendix 24.6 Onshore Geoarchaeological Desk-Based Assessment**) and the results of the Geophysical Survey (**Volume 2, Appendix 24.7 Onshore Archaeological Geophysical Survey Report**) also inform this baseline section.

82. The archaeological periods referred to within this chapter are broadly defined by the following date ranges:

- Palaeolithic: 960,000 BP – 8,500 Before Christ (BC);
- Mesolithic: 8,500 – 4,000 BC;
- Neolithic: 4,000 – 2,200 BC;
- Bronze Age: 2,200 – 700 BC;
- Iron Age: 700BC – Anno Domini (AD) 43;
- Prehistoric: 960,000 BP – AD 43;
- Romano-British: AD 43 – 410;
- Early medieval: AD 410 – 1066;
- Medieval: AD 1066 – 1499;
- Post-Medieval: AD 1500 – 1799;
- 19th Century: AD 1800 – 1899; and
- Modern: AD 1900 – present day.

24.6.1.1 Designated Heritage Assets

83. There are 114 designated heritage assets within the 1km Study Area (shown on **Figure 24-2):**

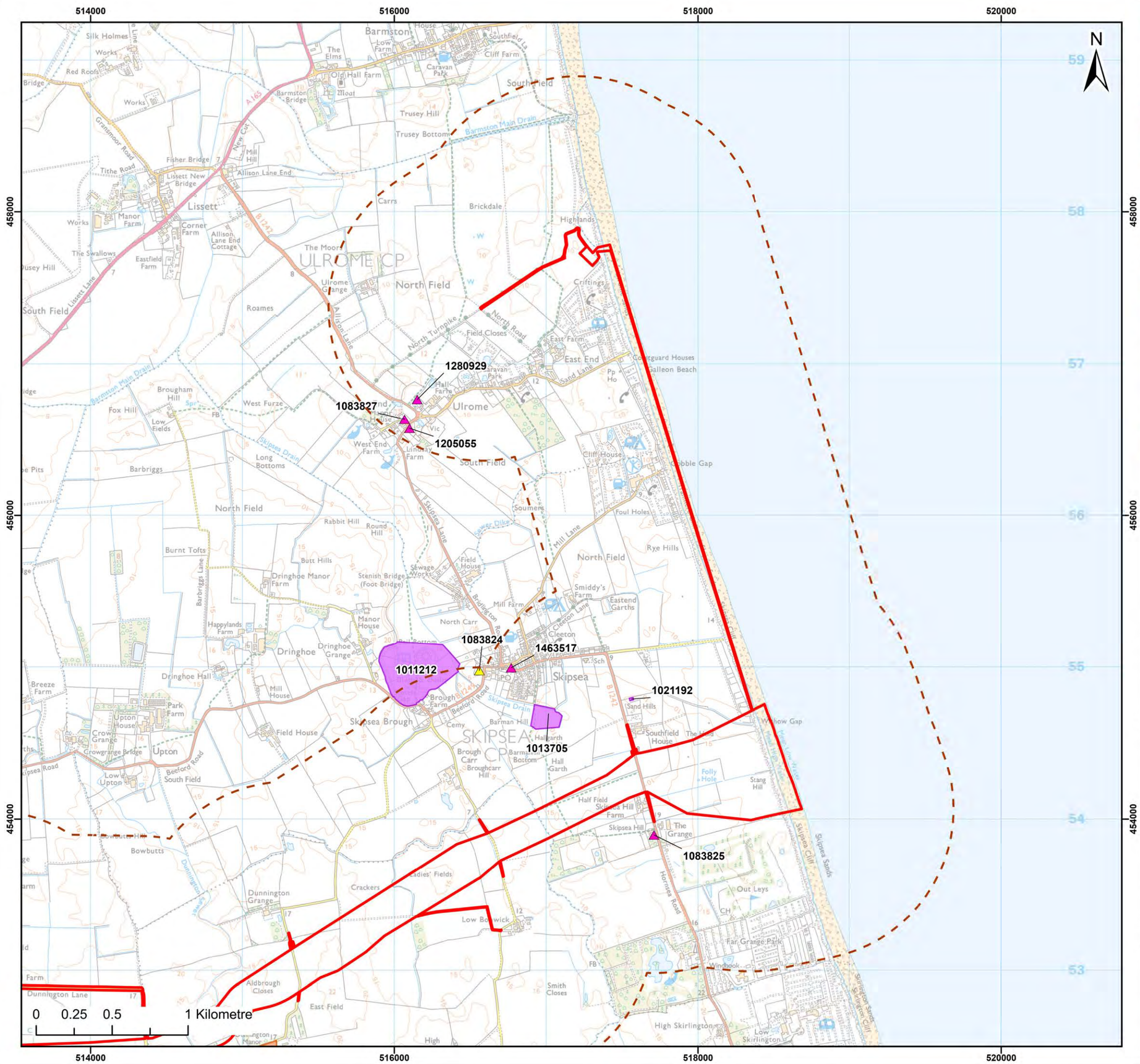
- 22 Scheduled Monuments;
- 73 Listed Buildings;
- One Registered Park and Garden;
- Eight Conservation Areas; and
- 10 Areas of Ancient Woodland.

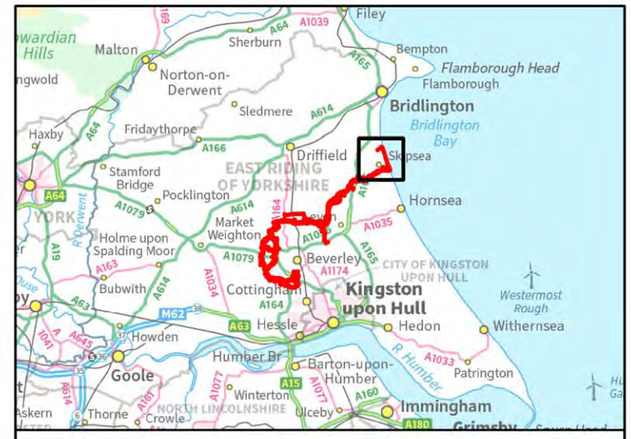
84. All designated heritage assets have been compiled into a gazetteer (**Volume 2, Appendix 24.2 Onshore Archaeological Desk-Based Assessment, Annex 24.2.1**) and are presented on **Figures 24-2-2** of **Volume 2, Appendix 24.2 Onshore Archaeological Desk-Based Assessment**.

85. There are no designated heritage assets situated within the Onshore Development Area.

24.6.1.1.1 Heritage Importance

86. Based on the criteria within **Table 24-9**, the designated heritage assets outlined in **Section 24.7** are considered to be assets of medium or high heritage importance with perceived regional or national importance (**Volume 2, Appendix 24.2 Onshore Archaeological Desk-Based Assessment, Annex 24.2.1**).





Legend:

- Onshore Development Area
- Designated Heritage Asset Study Area (1km buffer)

Listed Building Grades

- I
- II
- Scheduled Monuments
- Conservation Areas

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Designated Heritage Assets
Within the Study Area - Sheet 1 of 7

Figure: 24-2

Drawing No: PC6250-RHD-XX-ON-DR-GS-0322

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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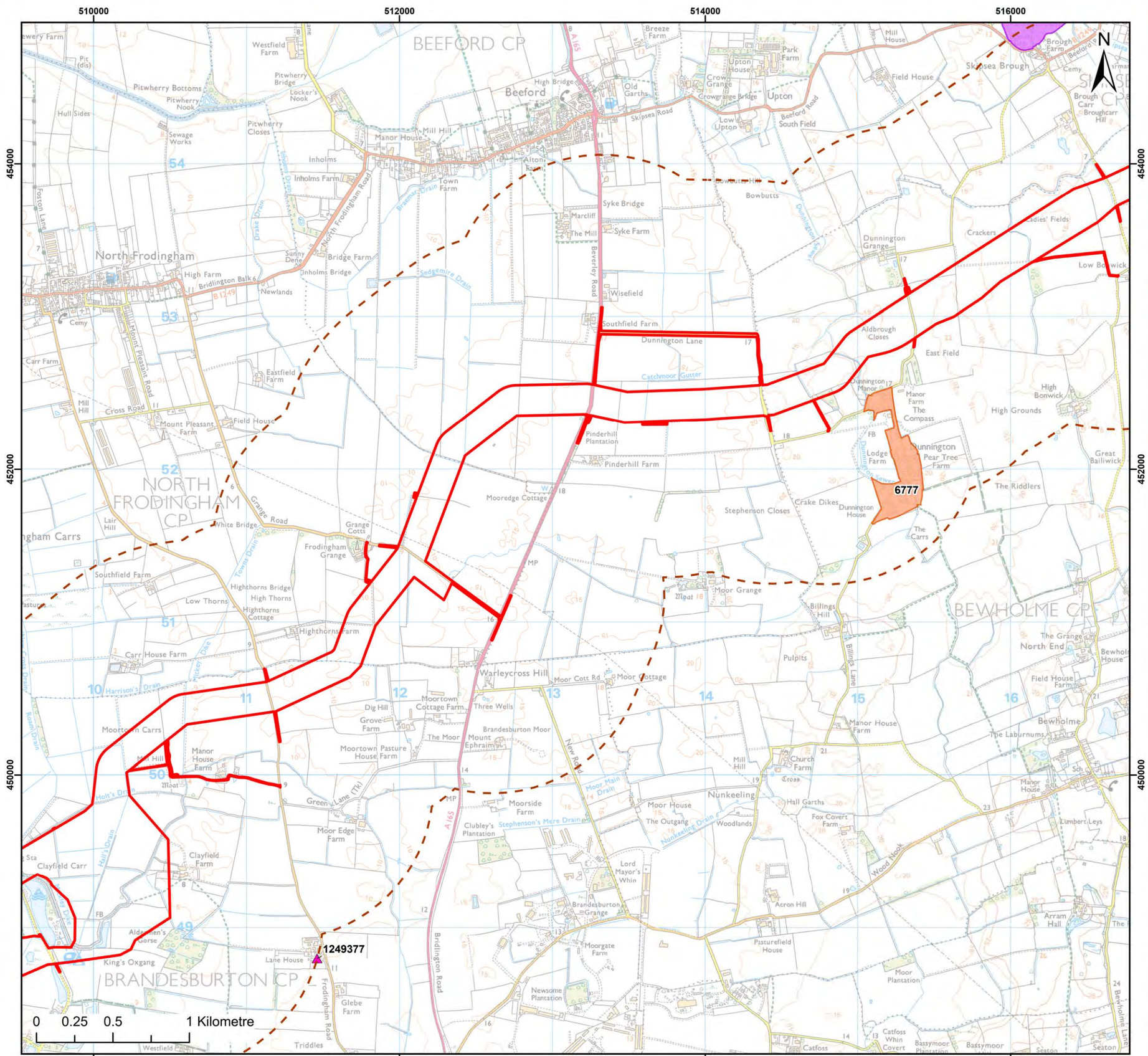

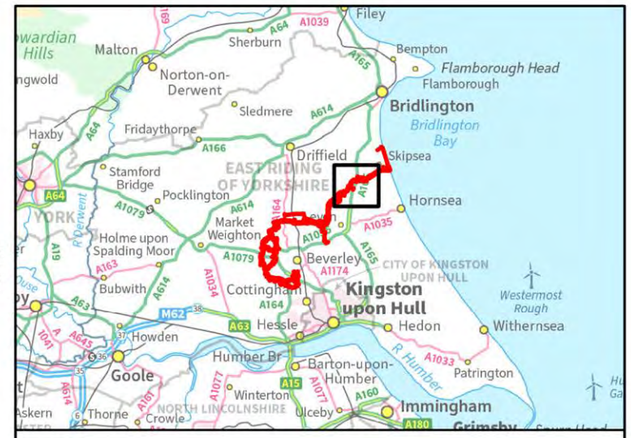

Legend:

- Onshore Development Area
- Designated Heritage Asset Study Area (1km buffer)

Listed Building Grades

- II
- Scheduled Monuments
- Conservation Areas

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Designated Heritage Assets
Within the Study Area - Sheet 2 of 7

Figure: 24-2

Drawing No: PC6250-RHD-XX-ON-DR-GS-0322

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Co-ordinate system: British National Grid

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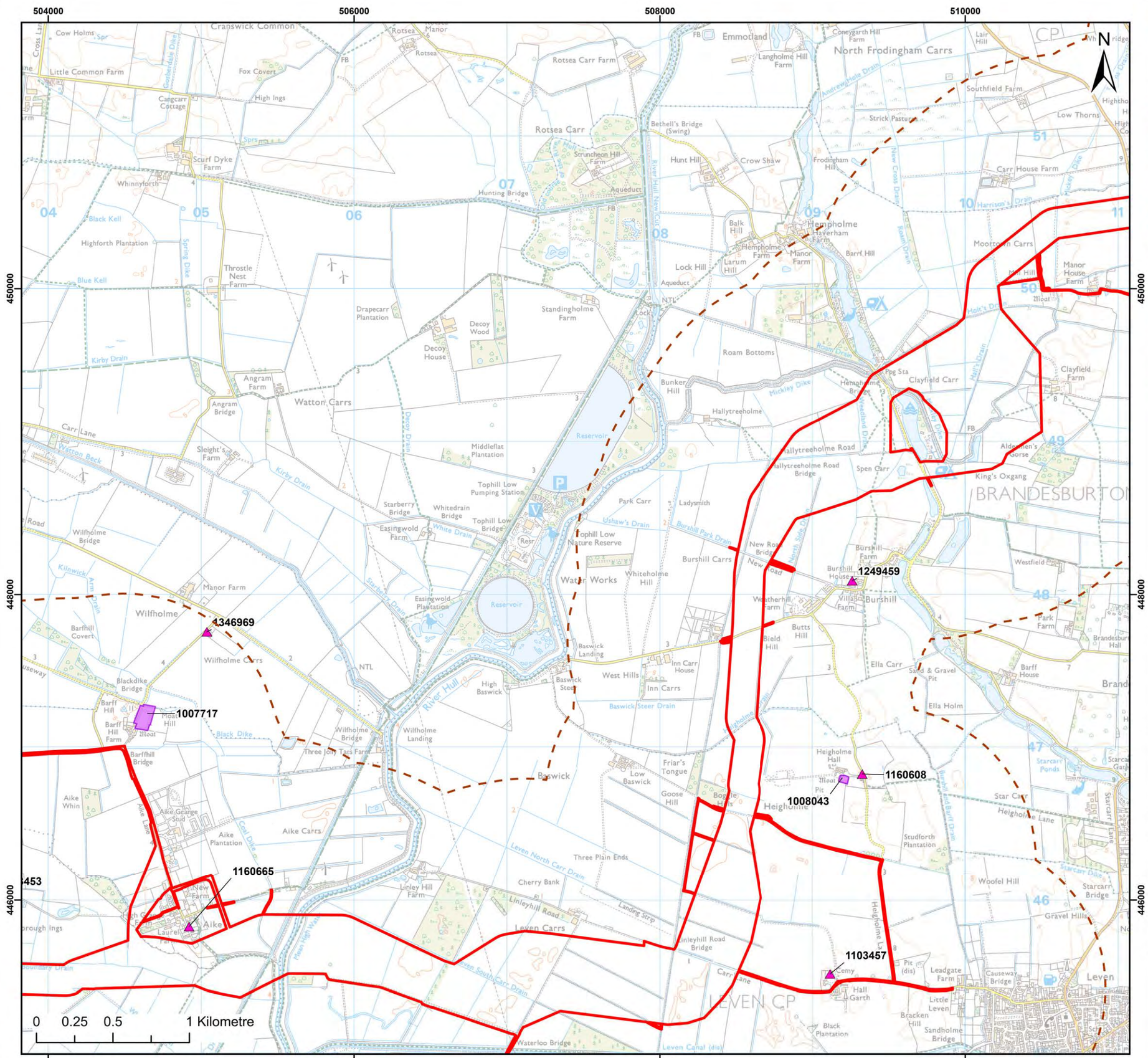

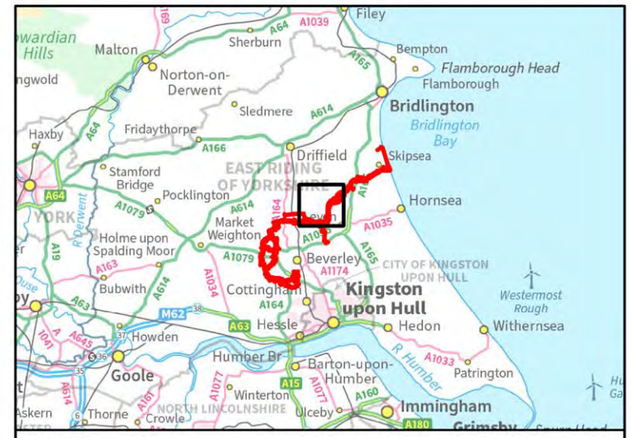

Legend:

- Onshore Development Area
- Designated Heritage Asset Study Area (1km buffer)

Listed Building Grades

- II
- Scheduled Monuments

Project: Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title: Location of Designated Heritage Assets Within the Study Area - Sheet 3 of 7

Figure: 24-2

Drawing No: PC6250-RHD-XX-ON-DR-GS-0322

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Co-ordinate system: British National Grid

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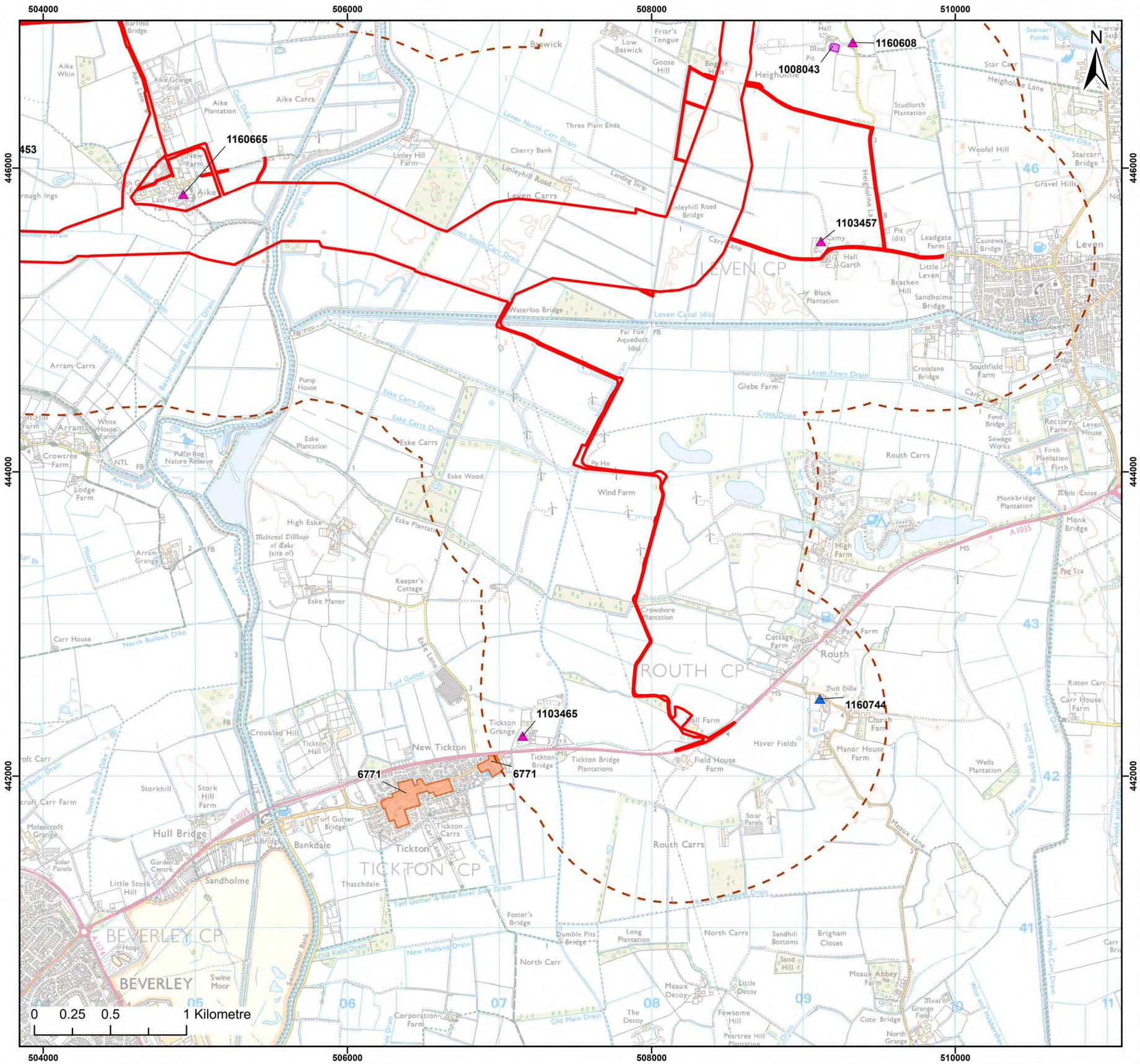

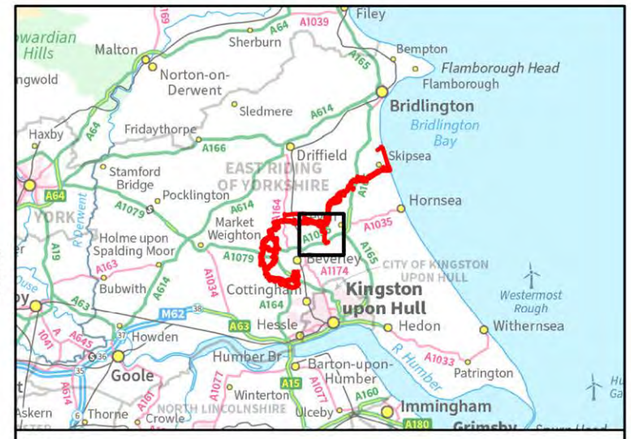

Legend:

- Onshore Development Area
- Designated Heritage Asset Study Area (1km buffer)

Listed Building Grades

- II*
- II
- Scheduled Monuments
- Conservation Areas

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Designated Heritage Assets
Within the Study Area - Sheet 4 of 7

Figure:	Drawing No:				
24-2	PC6250-RHD-XX-ON-DR-GS-0322				
Revision:	**Date:**	**Drawn:**	**Checked:**	**Size:**	**Scale:**
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Co-ordinate system: British National Grid

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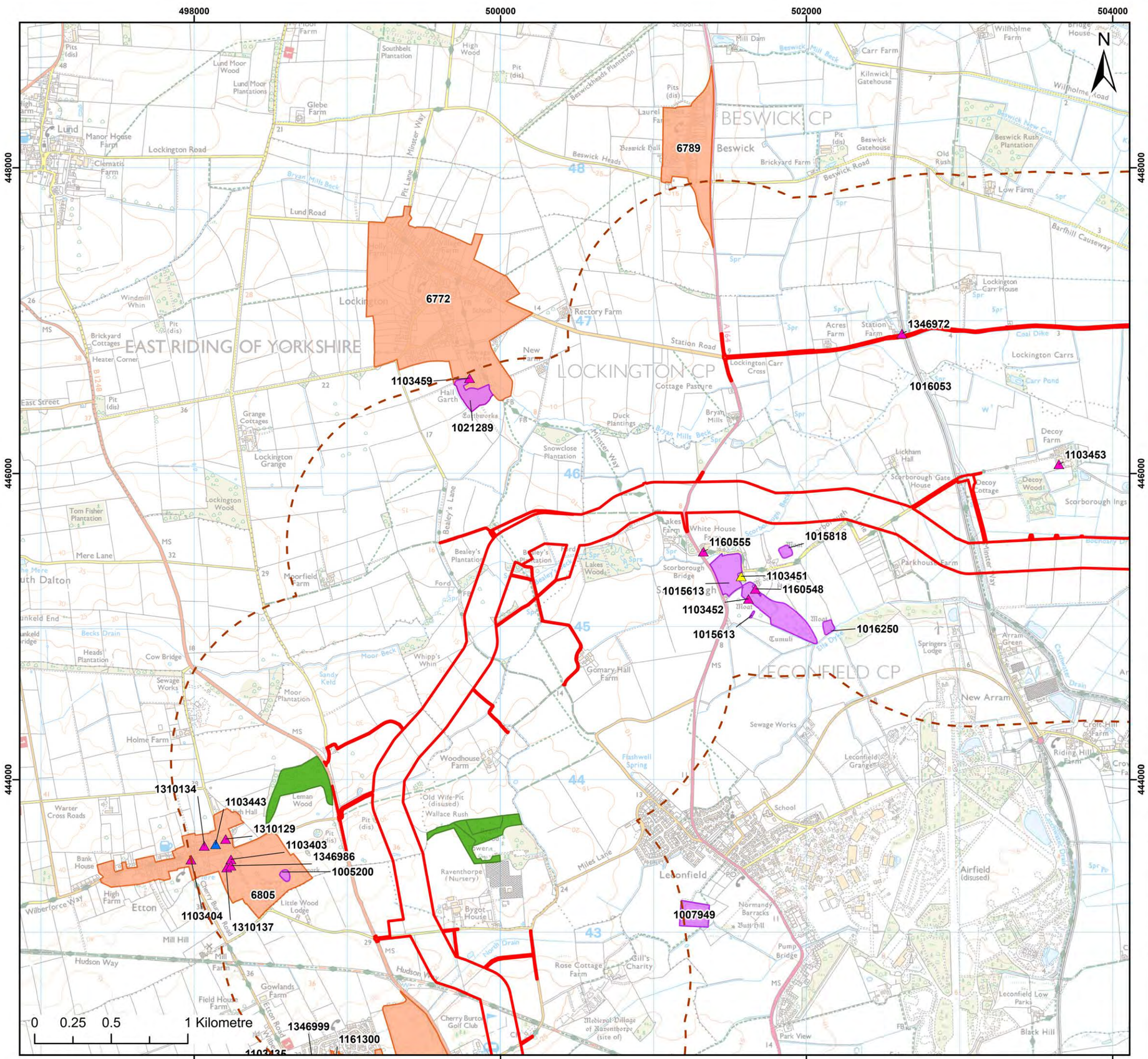

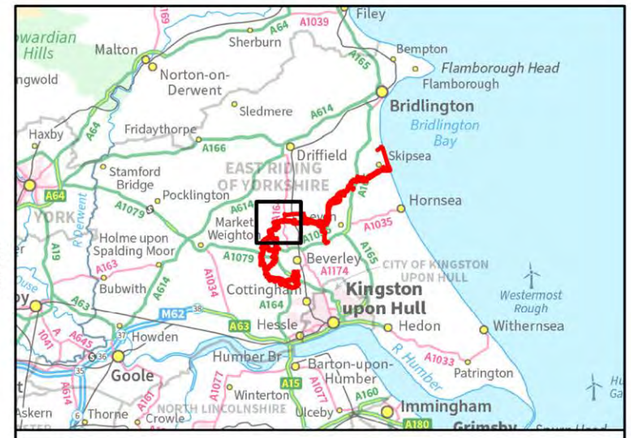

Legend:

- Onshore Development Area
- Designated Heritage Asset Study Area (1km buffer)

Listed Building Grades

- I
- II*
- II

- Scheduled Monuments
- Conservation Areas
- Ancient Woodland

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Designated Heritage Assets
Within the Study Area - Sheet 5 of 7

Figure: 24-2

Drawing No: PC6250-RHD-XX-ON-DR-GS-0322

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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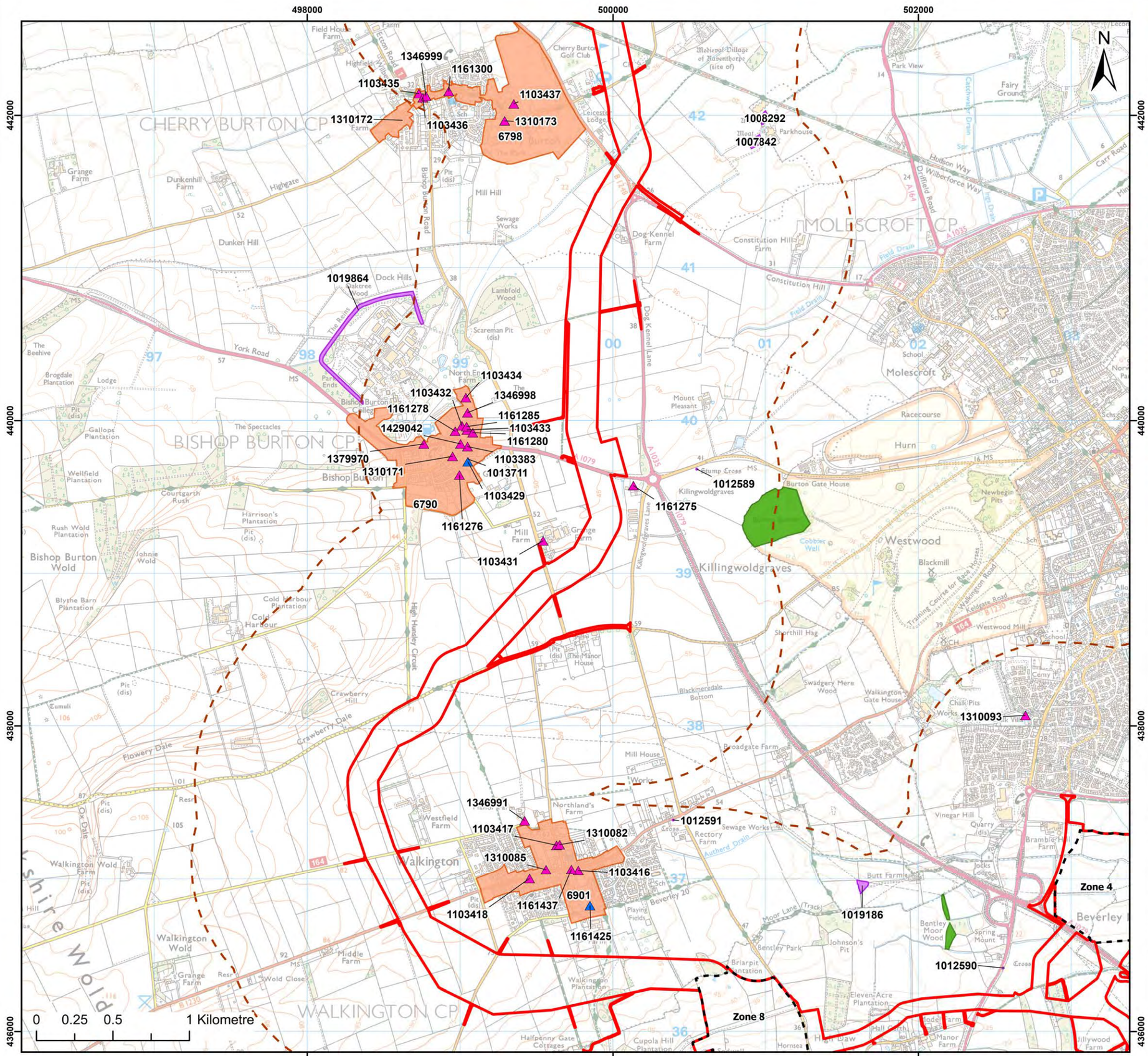

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Designated Heritage Asset Study Area (1km buffer)

Listed Building Grades

- II*
- II
- Scheduled Monuments
- Conservation Areas
- Ancient Woodland

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Designated Heritage Assets
Within the Study Area - Sheet 6 of 7

Figure: 24-2

Drawing No: PC6250-RHD-XX-ON-DR-GS-0322

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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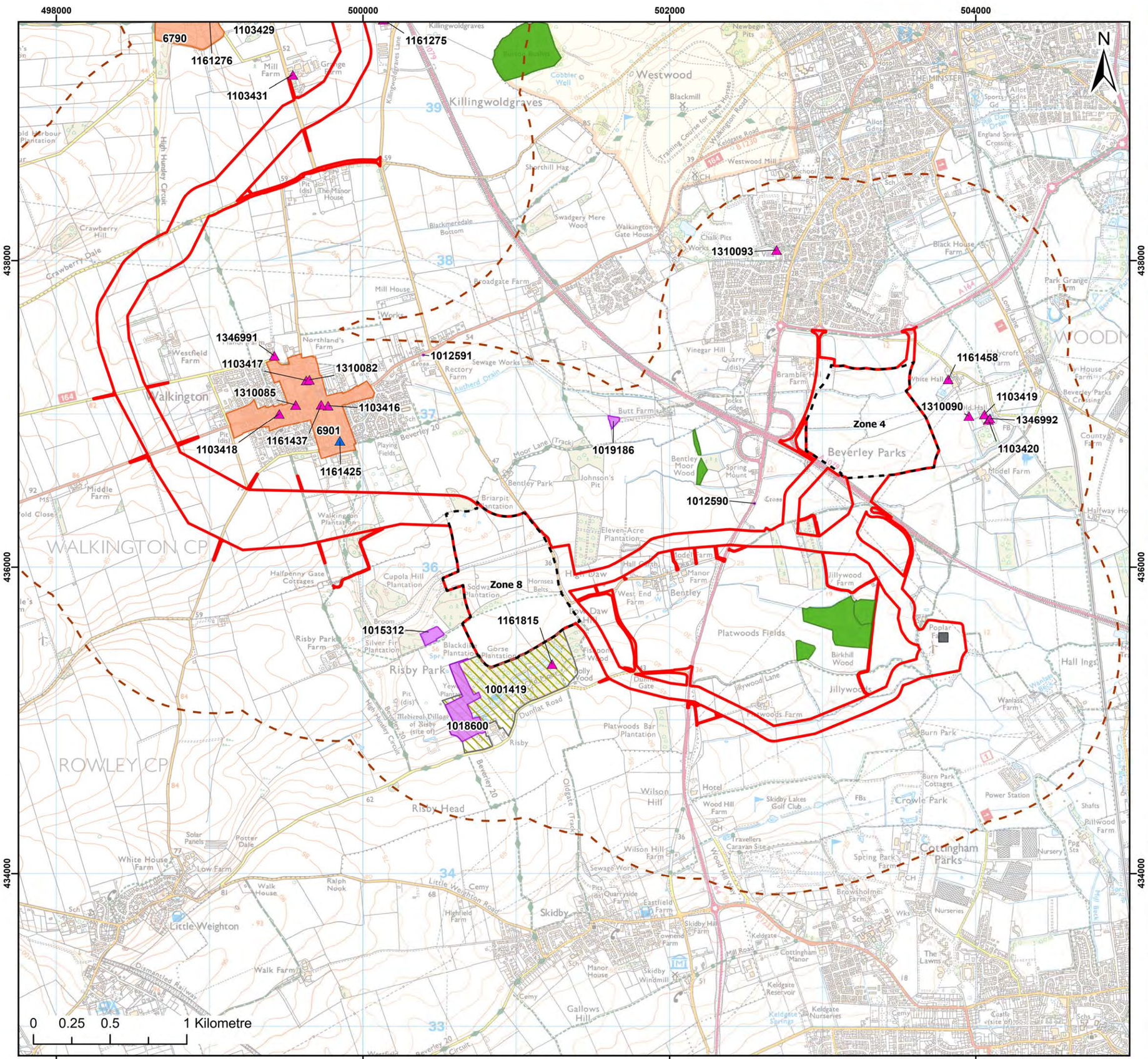

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Designated Heritage Asset Study Area (1km buffer)
- Indicative Birkhill Wood Substation Location

Listed Building Grades

- II*
- II
- Scheduled Monuments
- Registered Parks and Gardens
- Conservation Areas
- Ancient Woodland

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Designated Heritage Assets
Within the Study Area - Sheet 7 of 7

Figure: 24-2

Drawing No: PC6250-RHD-XX-ON-DR-GS-0322

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Co-ordinate system: British National Grid

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24.6.1.2 Non-Designated Heritage Assets

87. The details of the historic environment baseline for the Project have been summarised below from the ADBA (**Volume 2, Appendix 24.2 Onshore Archaeological Desk-Based Assessment**).

88. All Humber HER data has been compiled into a gazetteer (**Volume 2, Appendix 24.2 Onshore Archaeological Desk-Based Assessment, Annex 24.2.2**). The sub-sections within this section identify the known remains most relevant to the Study Area based on the Onshore Development Area with additional information provided where available. This comes from archaeological reports, HER event record data, data held on the Archaeology Data Service (ADS) and the National Mapping Programme.

89. A review was undertaken of the CITiZAN at landfall and the associated access road. This did not, however, identify any additional records not already included within the Humber HER.

90. A search of data held by the PAS within the 1km Study Area was also conducted. PAS records are mapped across the Onshore Development Area with concentrations within a section of the onshore ECC to the east of Bishop Burton. Within OCS Zone 4 there are 186 Romano-British findspots mapped with 179 of these corresponding to coinage as well as seven brooches and a spearhead. Within OCS Zone 8, there is one medieval findspot recorded.

91. There are 494 records within the Humber HER situated within the 500m Study Area (shown on **Figure 24-3**). These are summarised as:

- Five Palaeolithic;
- Seven Mesolithic;
- 11 Neolithic;
- 31 Bronze Age;
- 36 Iron Age;
- 23 Prehistoric;
- 28 Romano-British;
- Two Early medieval;
- 68 Medieval;
- 47 Post-medieval;
- 144 19th Century;
- 83 Modern; and
- 71 Undated

92. Of these records, 79 are present within the Onshore Development Area. Non-designated heritage assets potentially subject to physical impacts are confined to the Onshore Development Area. These may comprise potential subsurface archaeological remains and above ground heritage assets (e.g. earthworks or structures).

93. Non-designated heritage assets which may be subject to an impact through a change in setting and associated heritage significance as a result of the Project may be either within or beyond the parameters of the Onshore Development Area.

24.6.1.2.1 Palaeolithic

94. Within the 500m Study Area there are five records dating to the Palaeolithic, two of which are mapped within the Onshore Development Area, with one of these records also falling within the Offshore Development Area.

95. Record MHU6588 corresponds to a series of enclosures and ditches visible on aerial photography broadly dated from the Palaeolithic to the medieval periods and most likely represents the upper end of this broad date range.

24.6.1.2.2 Mesolithic

96. There are seven Mesolithic-dated records within the 500m Study Area as recorded in the Humber HER.

97. Recorded at landfall is Withow Mere (MHU3862) where Mesolithic dated implements have been recorded including a harpoon, a flint blade and a scraper tool (MHU8835). The mere has been largely eroded by the sea during the Post-Medieval period, except for the west end and part of the lake bed. Also attributed to Withow Mere is the recovery of Elk antlers dating to the Mesolithic (MHU8834). Withow Mere is also designated as a Site of Special Scientific Interest (SSSI), named Withow Gap.

24.6.1.2.3 Neolithic

98. Within the 500m Study Area there are eleven records noted in the Humber HER dating to the Neolithic period. Three records dating to the Neolithic period are recorded within the Onshore Development Area.

99. At the site of the Mesolithic-dated Withow Mere is record MHU9001 which corresponds to a series of carved wooden rods and stakes of early Neolithic age thought to represent wooden trackways or platforms.

100. Record MHU3346 corresponds to ditches and a possible enclosure site present within the onshore ECC to the east of Cherry Burton. These are dated between the Neolithic and Bronze Age. A findspot of a Neolithic axe head is also mapped within the Onshore Development Area (MHU20109).

24.6.1.2.4 Bronze Age

101. Within the 500m Study Area there are 31 records dating to the Bronze Age. Four of these records are located within the Onshore Development Area.

102. The site of two round barrows is noted within record MHU1381 situated within the southern section of the onshore ECC to the southeast of OCS Zone 4.

103. Record MHU6590 corresponds to a possible round barrow identified on aerial photography recorded to the west of the A164 within the onshore ECC.

104. An additional round barrow is recorded within the onshore ECC to the northwest of Warley Cross (MHU1689).

24.6.1.2.5 Iron Age

105. Of the 36 Iron Age records present within the 500m Study Area, there are two mapped within the Onshore Development Area.

106. These records comprise a cropmark complex (MHU6605) and a findspot of three gold coins (MHU20855) both recorded to the northeast of Walkington.

107. The majority of records within the Study Area correspond to cropmarks indicating the sites of barrows, enclosures and field boundaries.

24.6.1.2.6 Prehistoric

108. There are 23 records that broadly date to the Prehistoric period within the 500m Study Area. Within the Onshore Development Area there are five records that date to the Prehistoric period; these all correspond to flint findspots recovered at landfall.

109. Record MHU21213 corresponds to a flint core and two flakes, MHU21214 comprises three flint chunks, MHU21216 corresponds to a flint scraper and MHU21217 denotes a flint chunk and flake. Record MHU21212 also corresponds to findspots of flint including a flint core and scraper, though this record also comprises pottery predating the Romano-British period as well as medieval-dated pottery.

24.6.1.2.7 Romano-British

110. There are 28 Romano-British records present within the 500m Study Area. One record, though also attributed to the Iron Age, dates to the Romano-British period.

111. Several Romano-British records are present near the onshore ECC at landfall. These include the former Romano-British settlement site MHU3759. Though the site is now presumed to have eroded due to its coastal positioning, the Humber HER records the site c. 1m from the access route at landfall. A linear ditch with Romano-British pottery is also recorded north of the access route at landfall (MHU6668).

112. Archaeological investigations in proximity to the onshore ECC at landfall have also recorded the presence of Romano-British activity.

113. Within the onshore ECC, east of Etton, record MHU22141 corresponds to the site of an enclosure and linear ditches.

24.6.1.2.8 Early Medieval

114. There are two records within the 500m Study Area recorded within the Humber HER that date to the early medieval period, neither of which are present within the Onshore Development Area.

24.6.1.2.9 Medieval

115. There are 68 records dating to the medieval period recorded in the Humber HER, situated within the 500m Study Area. Four of these records are situated within the Onshore Development Area.

116. At landfall, record MHU8838 corresponds to the deserted settlement of Withow Hamlet, however it has potentially been lost due to coastal erosion.

117. To the northwest of Bentley within the onshore ECC east of OCS Zone 8, is the ‘Site of Manor House, Bentley’ (MHU9750).

118. Two of the records refer to findspots with record MHU21869 comprising a medieval gold finger ring recovered within the onshore ECC east of Cherry Burton. Record MHU21212 situated at landfall, as referred to in **Section 24.6.1.2.6**, also incorporates pottery dating to the medieval period.

119. The records within the wider Study Area dating to the medieval period correspond to moated sites, settlements, as well as fishponds.

24.6.1.2.10 Post-medieval

120. There are 151 post-medieval dated records within the 500m Study Area, with 104 of the records also dating to the 19th century. Two of the 151 records are present within the Onshore Development Area including MHU3726, the site of Winthorpe Hall and MHU9480, the Aike Beck Lockington Navigation.

24.6.1.2.11 19th Century

121. There are 40 records noted within the Humber HER that date solely to the 19th century within the 500m Study Area, of these there are 18 located within the Onshore Development Area.

122. Within OCS Zone 8 lies MHU12378, a record corresponding to a post-medieval dated barn shown but not named on the 1855 first edition OS map.

123. The following 17 records are mapped along the onshore ECC:

- Milestone on the A164 (MHU12377);
- Site of Dunflat Gate (MHU12805);
- Site of Bentley Cottages (MHU12993);
- Buildings at Mouse Hill (MHU12996);
- Dog Kennel Farm (MHU13020);
- Milestone B1248 (MHU13033);
- New Road Bridge (MHU13113);
- Barfhill Bridge (MHU13146);
- Saltings on the East Side of The River Hull (MHU13151);
- Saltings on the East Side of The River Hull (MHU13171);
- Aqueduct Aike Beck (MHU13172);
- Waterloo Swing Bridge (MHU13180);
- Linleyhill Road Bridge (MHU13183);
- Sluice, Linleyhill Road Bridge (MHU13246);
- Linleyhill Road Bridge Leven Carrs (MHU13250);
- Site of Aike Swing Bridge (MHU13260); and
- Site of Weedland (MHU15238).

24.6.1.2.12 Modern

124. There are 66 records dating to the Modern period within the 500m Study Area of which three records are mapped within the Onshore Development Area.

125. All the Modern-dated assets within the Onshore Development Area correspond to military records dating to either the First or Second World War and are positioned at landfall. These records include the sites of two pillboxes MHU21240 and MHU18422 as well as an area of military coastal defences (MHU21215).

24.6.1.2.13 Undated

126. There are 71 records that are undated within the 500m Study Area. Twelve of these records are present within the Onshore Development Area, the majority of which correspond to ditches and enclosures.

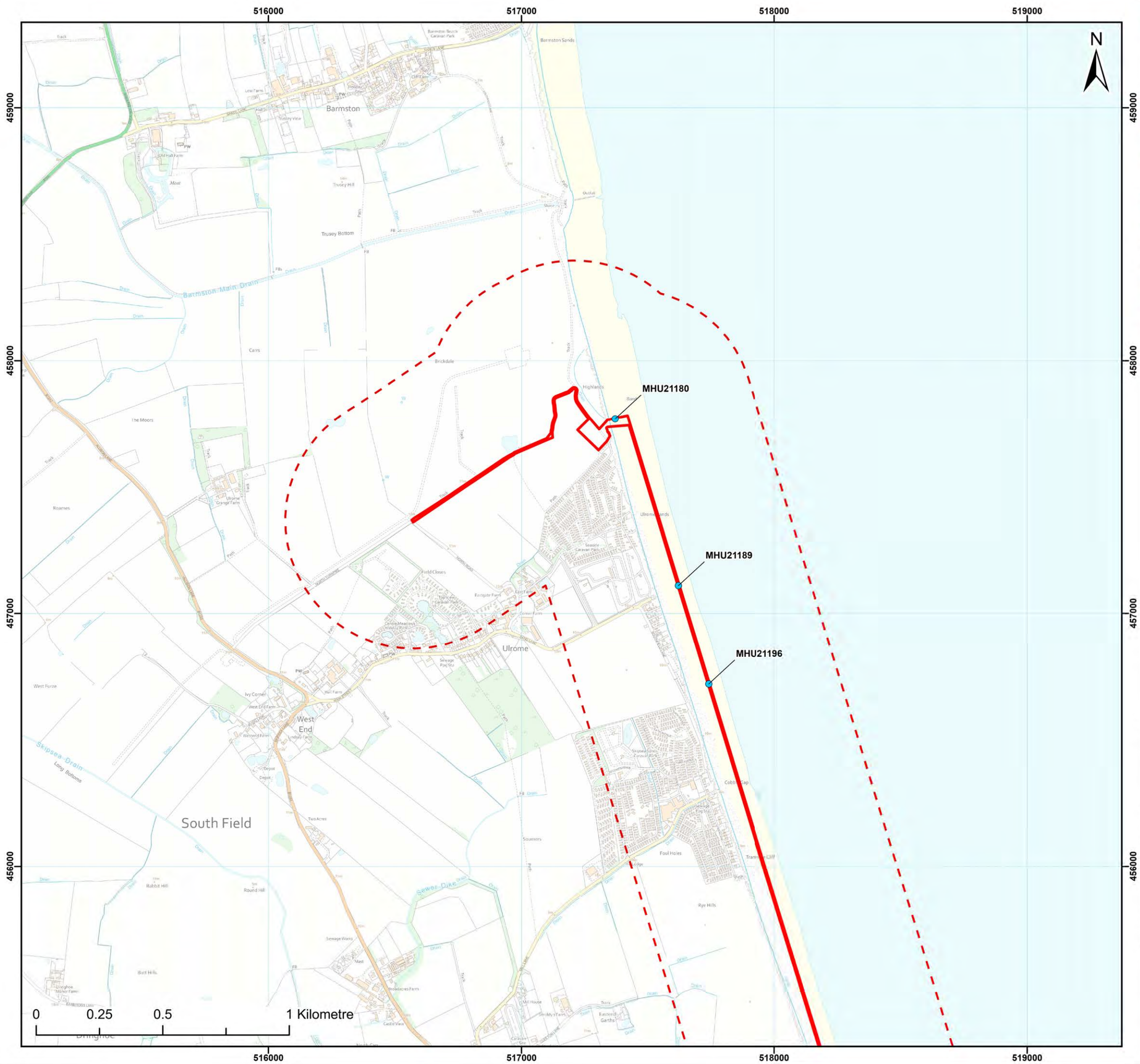
127. Within OCS Zone 8 there is one undated record (MHU9751) corresponding to an unnamed and undated findspot.

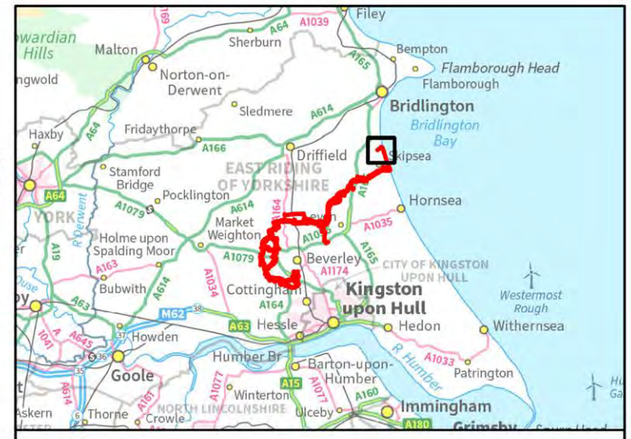
128. Two further undated records are mapped within OCS Zone 8 including 'Ponds, South of Briarpit Plantation' (MHU12977) and the 'Site of [an] old chalk pit' (MHU12981).

129. Records MHU11031, MHU19339, MHU21236, MHU3010, MHU3062, MHU3409, and MHU23983 are all situated within the Onshore Development Area comprising enclosures and ditches.

130. There are two further sites of pits within the Onshore Development Area comprising MHU21232 and MHU13030.

131. Though printed and shown on the 1893 OS map, Walkington Park (MHU12968) is not attributed to a specific period.





Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Monument

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets Within the Study Area - Sheet 1 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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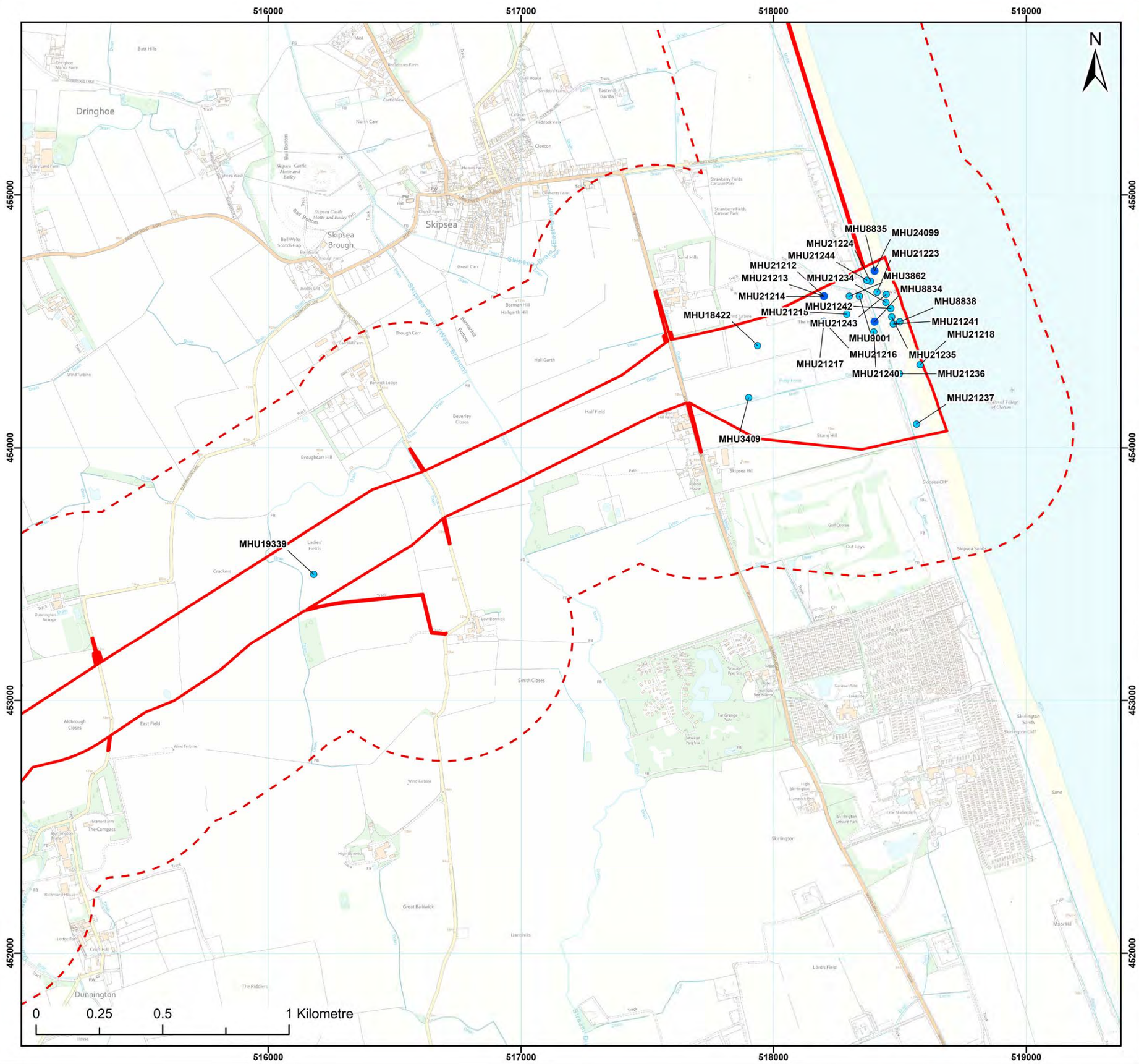
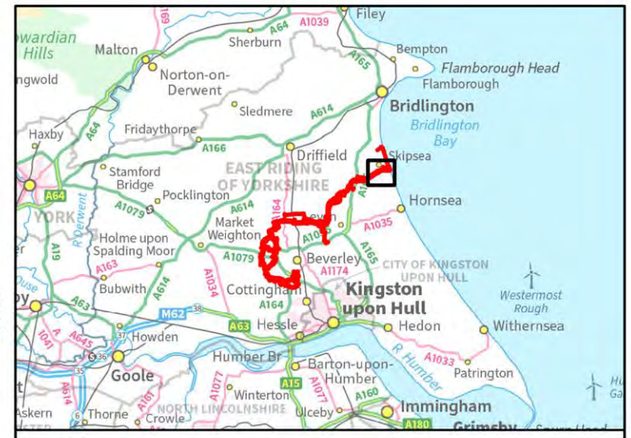
01	06/12/2024	FC	HM	A3	1:15,000

Co-ordinate system: British National Grid

sse Renewables equinor





Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Findspot
- Monument

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets Within the Study Area - Sheet 2 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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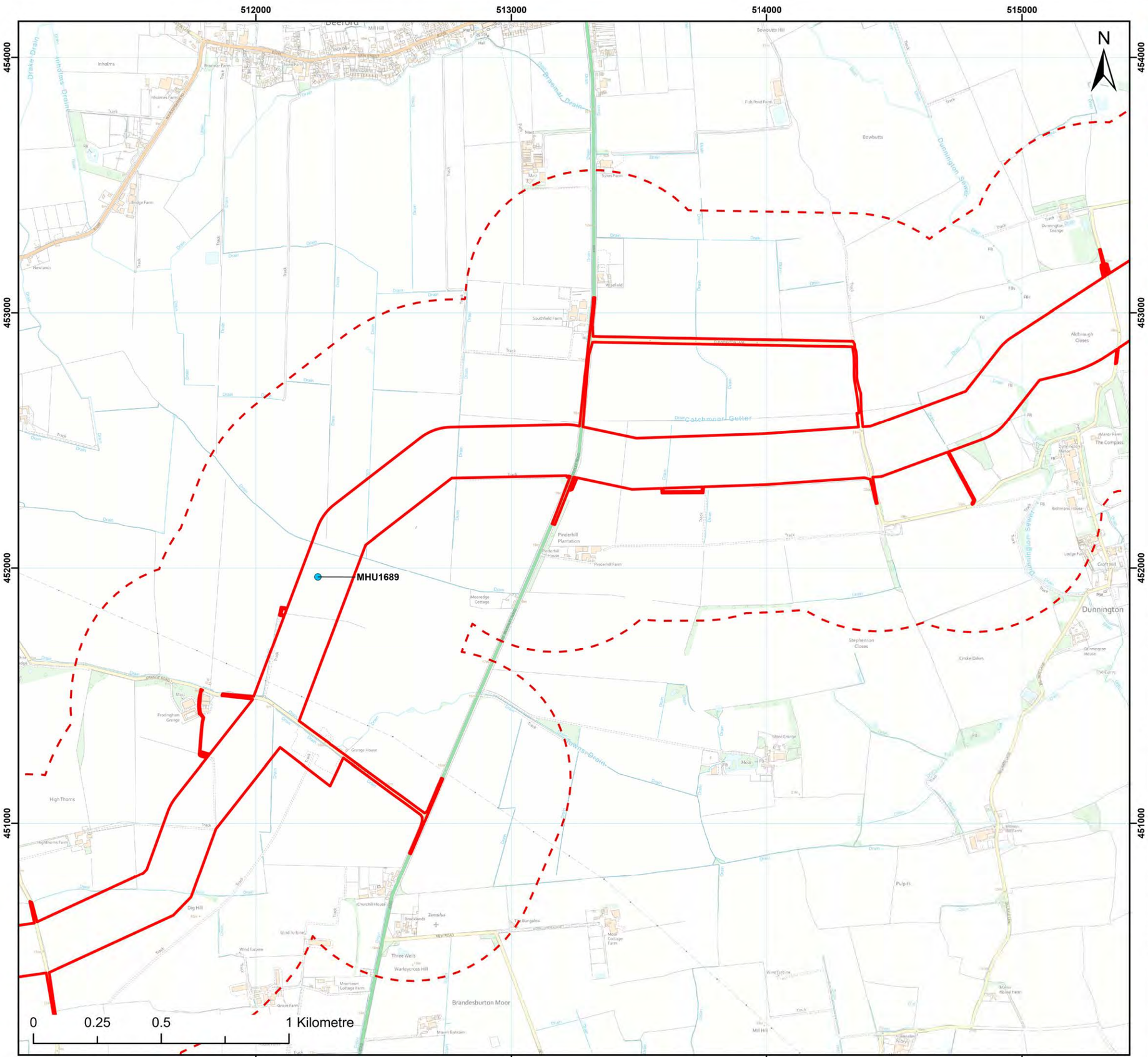

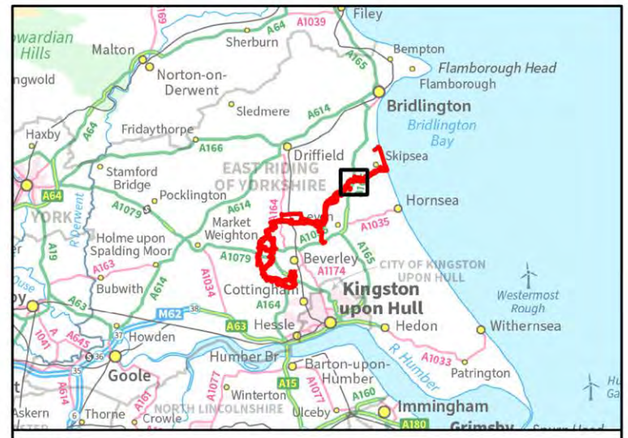

Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Monument

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets
Within the Study Area - Sheet 3 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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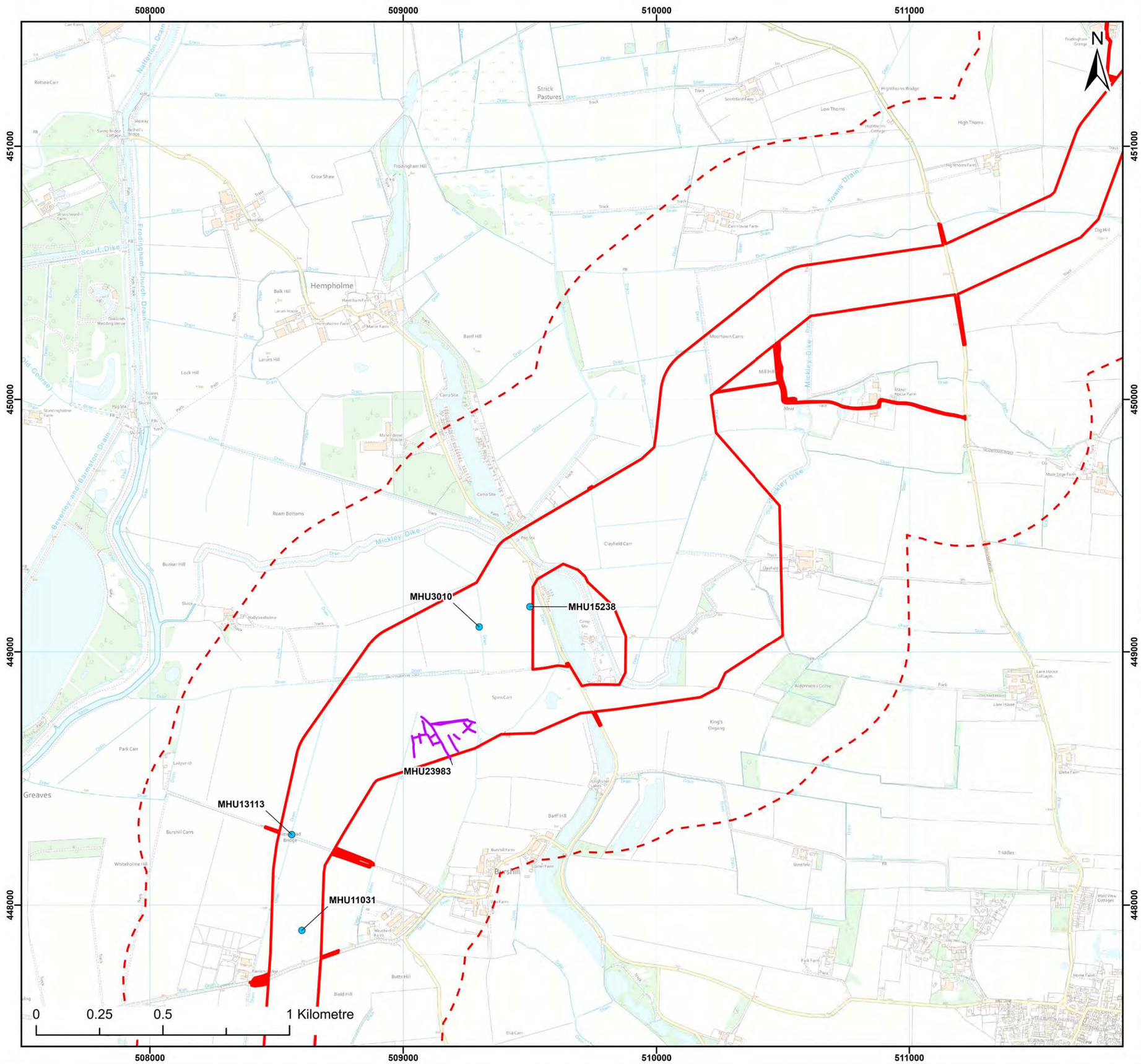

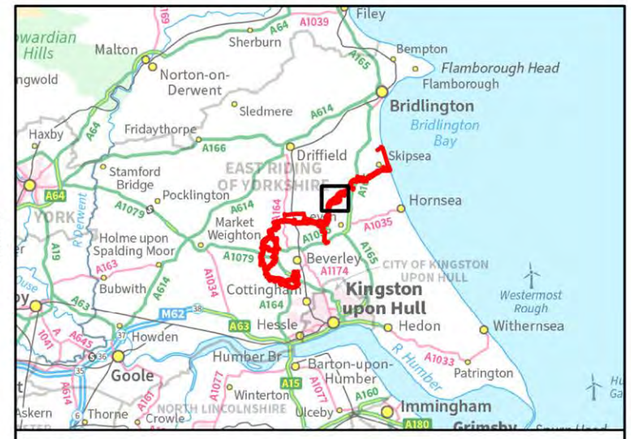

Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Monument
- Monument

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets Within the Study Area - Sheet 4 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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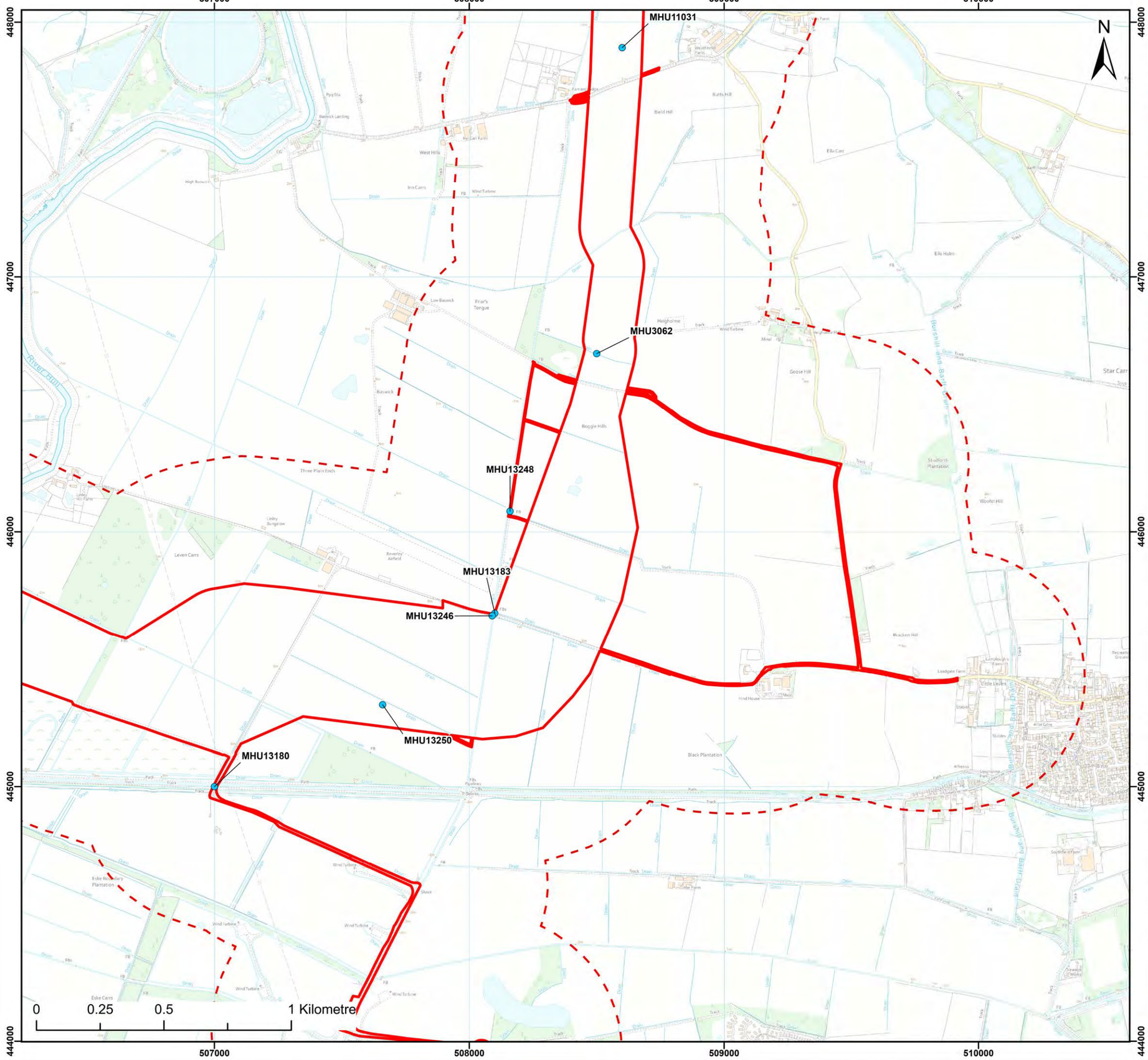

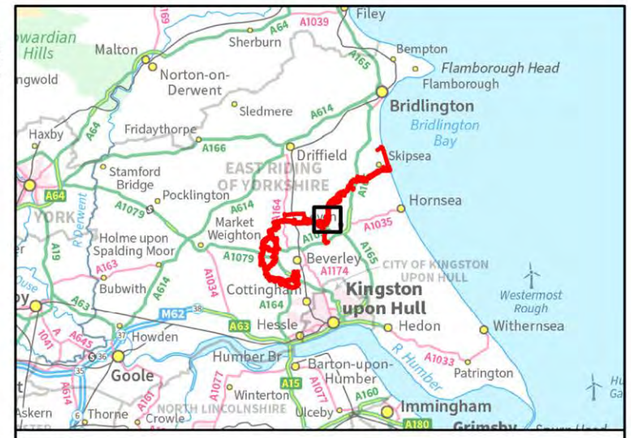

Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Monument

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets
Within the Study Area - Sheet 5 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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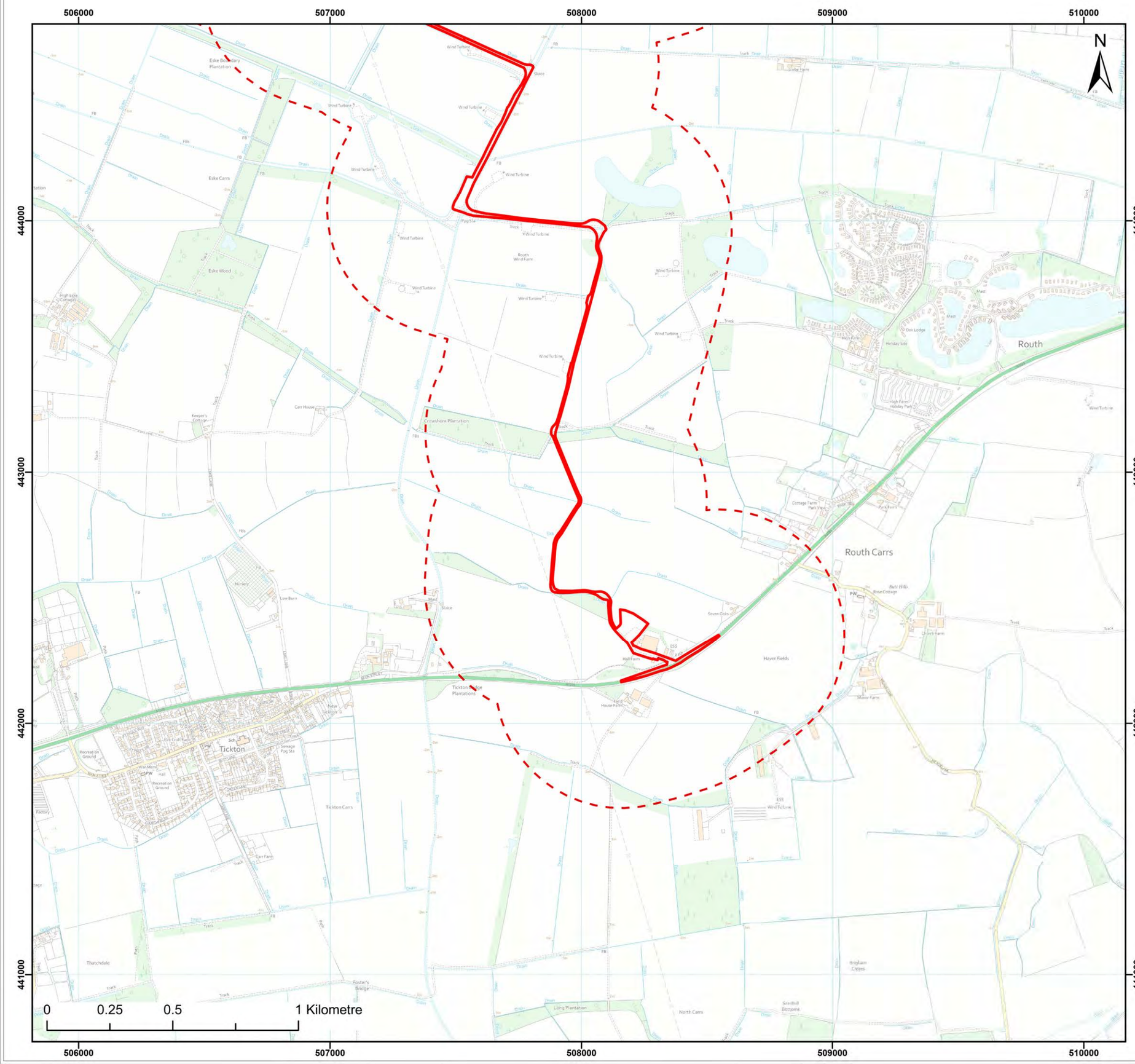

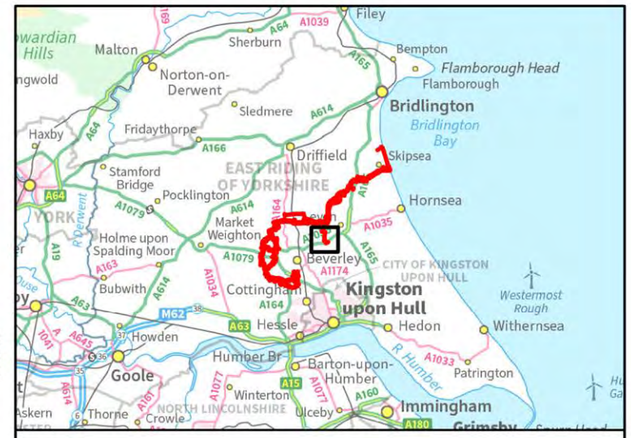

Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets Within the Study Area - Sheet 6 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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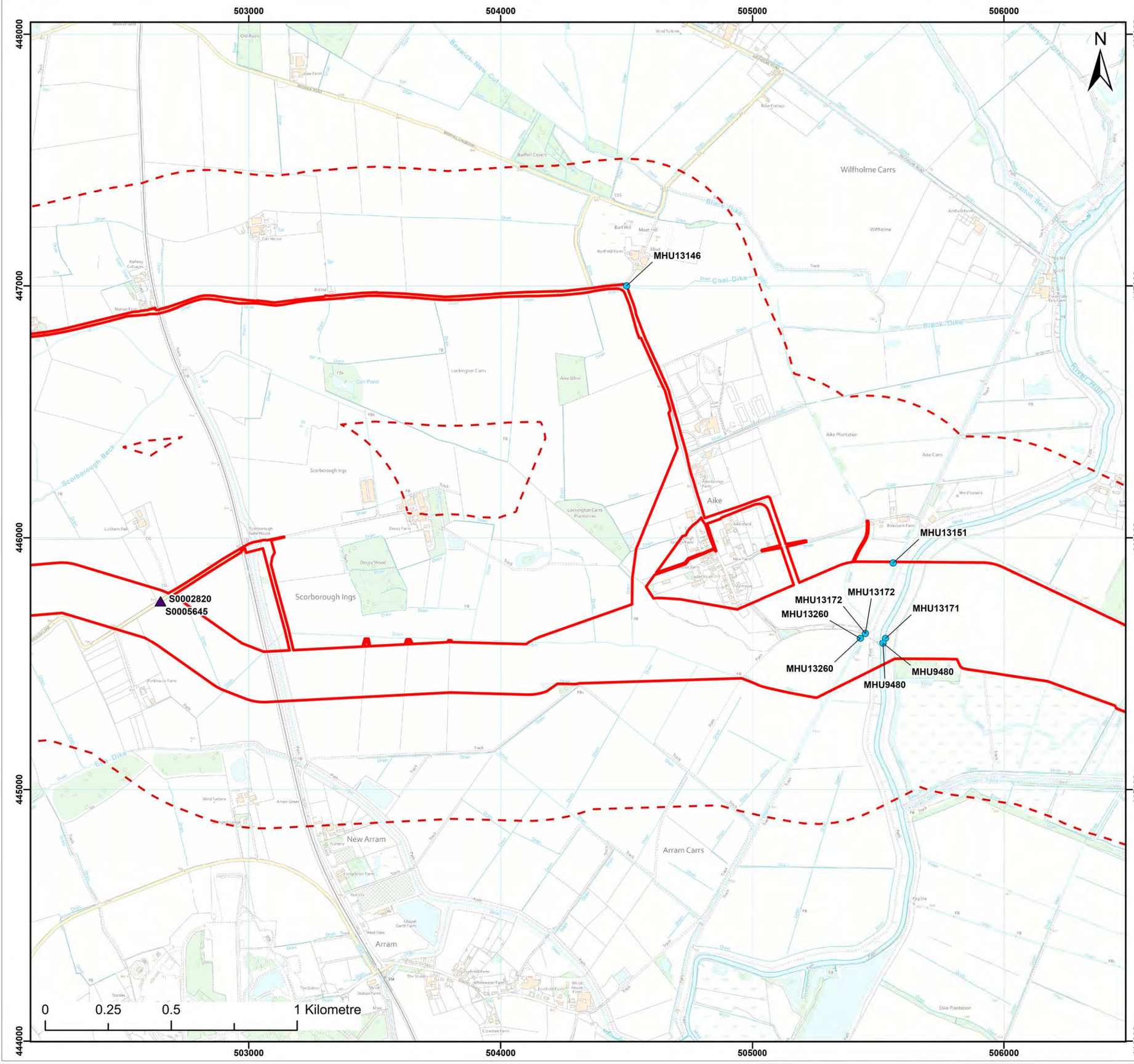

Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Monument
- Defence of Britain

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets
Within the Study Area - Sheet 7 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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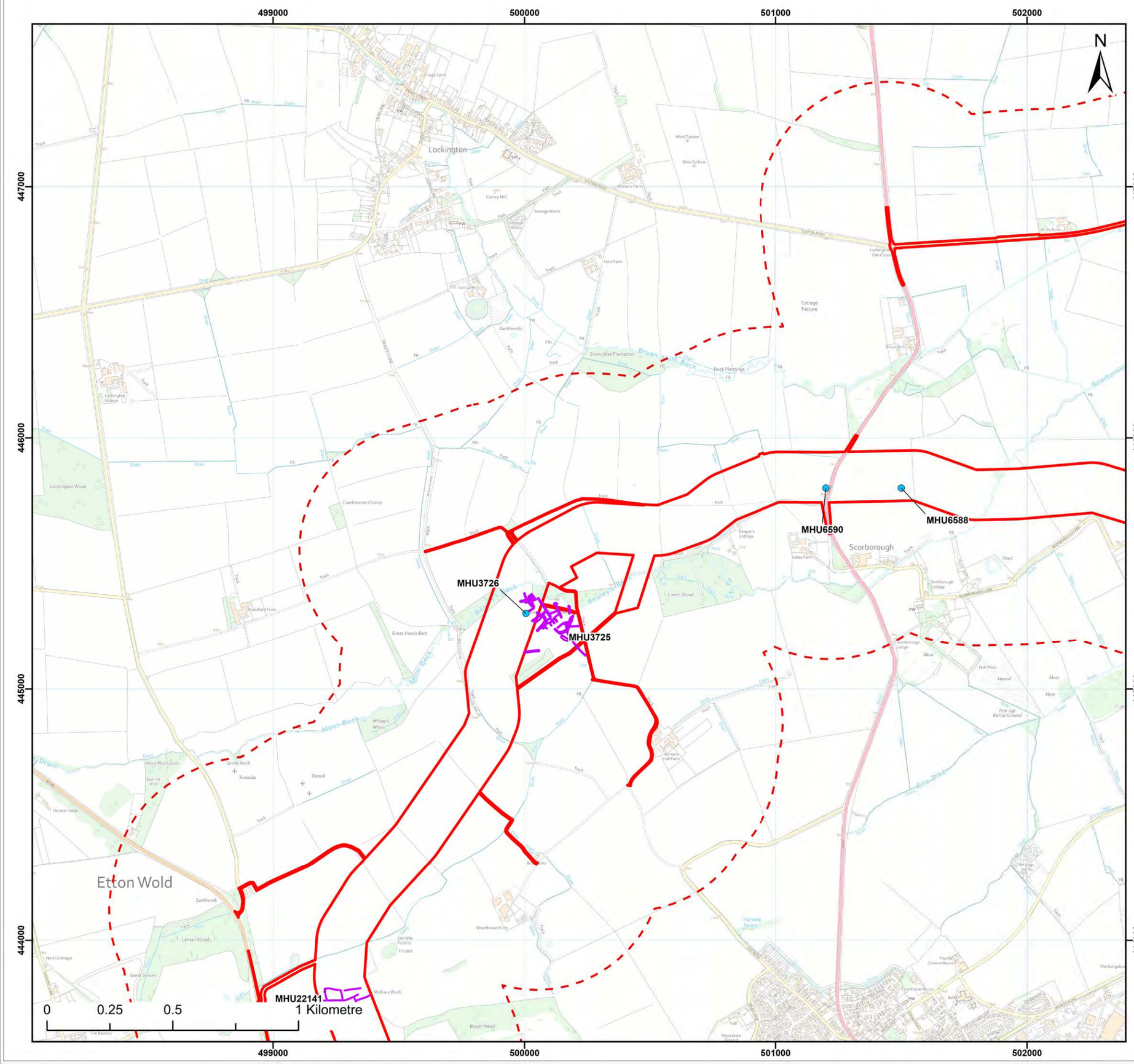

Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Monument
- Monument

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets Within the Study Area - Sheet 8 of 12

Figure:	Drawing No:
24-3	PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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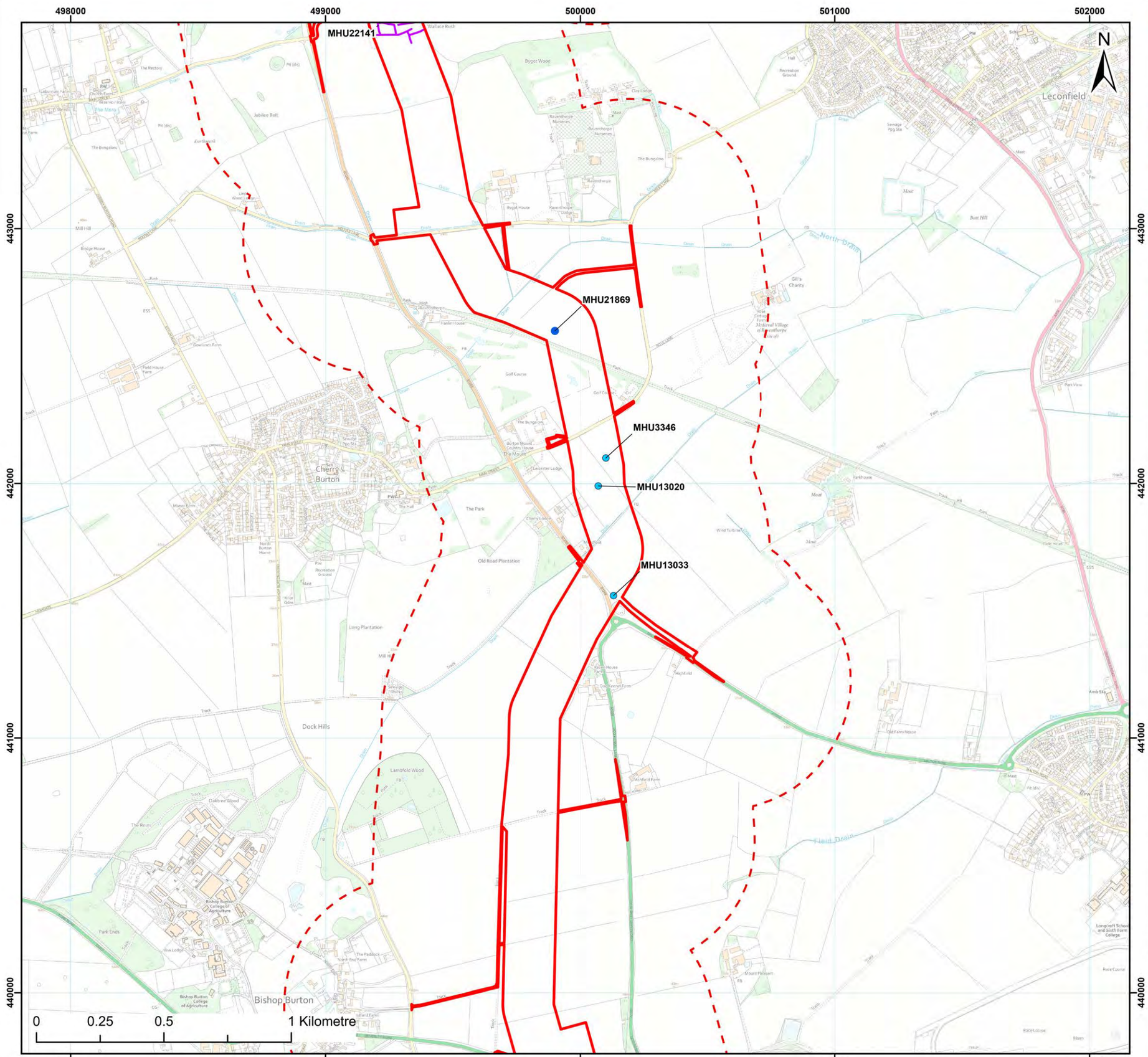

Legend:

- Onshore Development Area
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Findspot
- Monument
- Monument

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets
Within the Study Area - Sheet 9 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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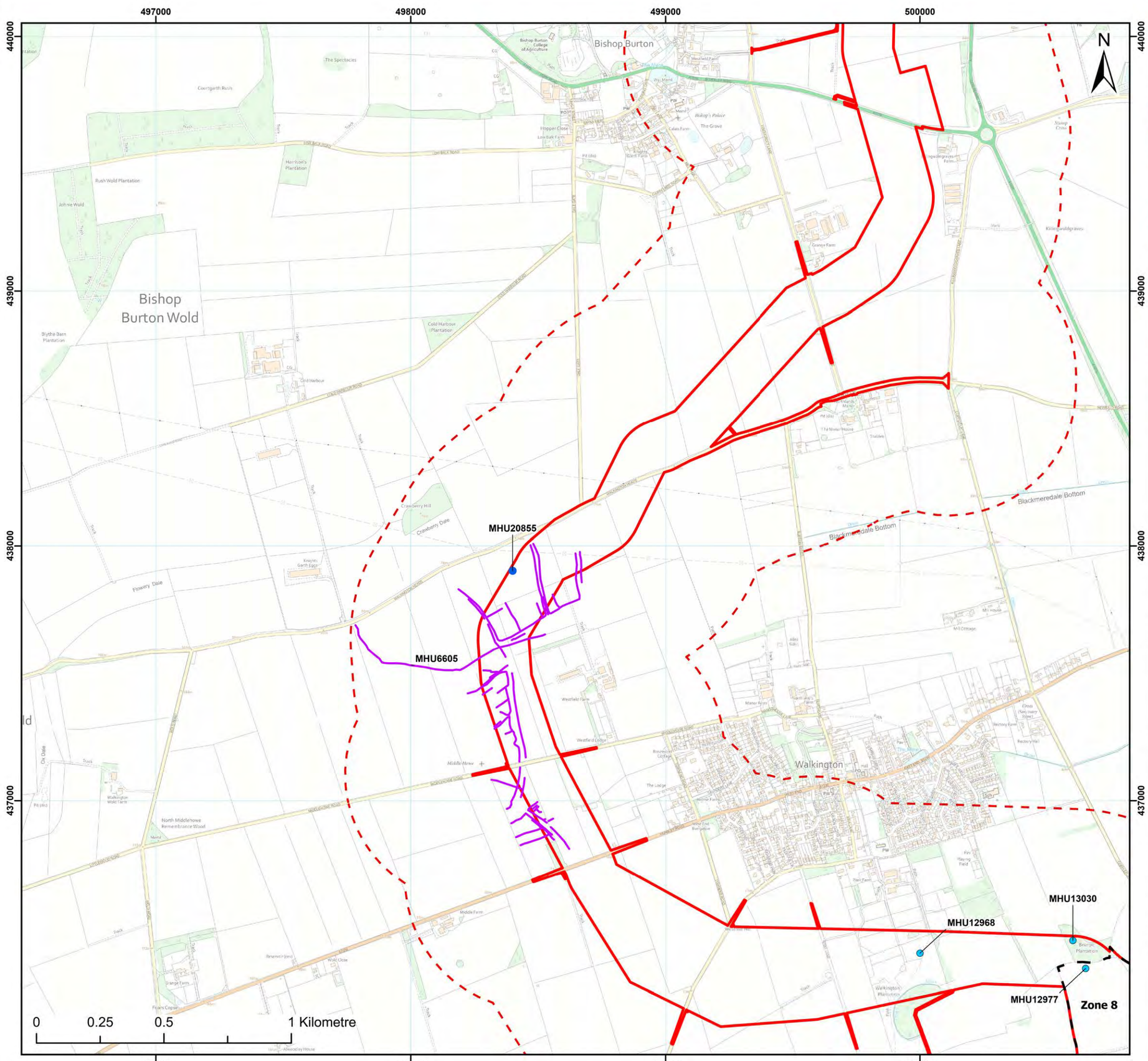

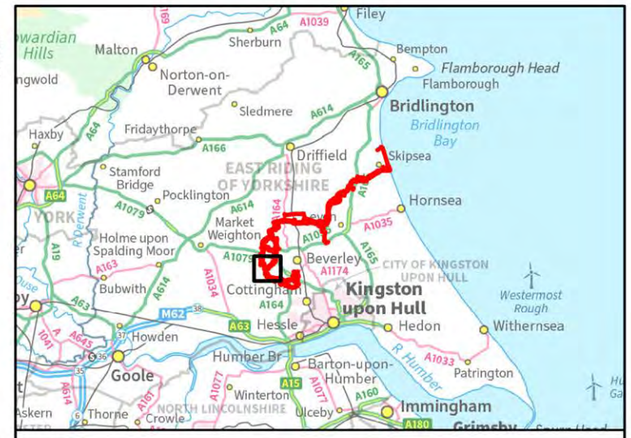

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Findspot
- Monument
- Monument

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets
Within the Study Area - Sheet 10 of 12

Figure:	Drawing No:
24-3	PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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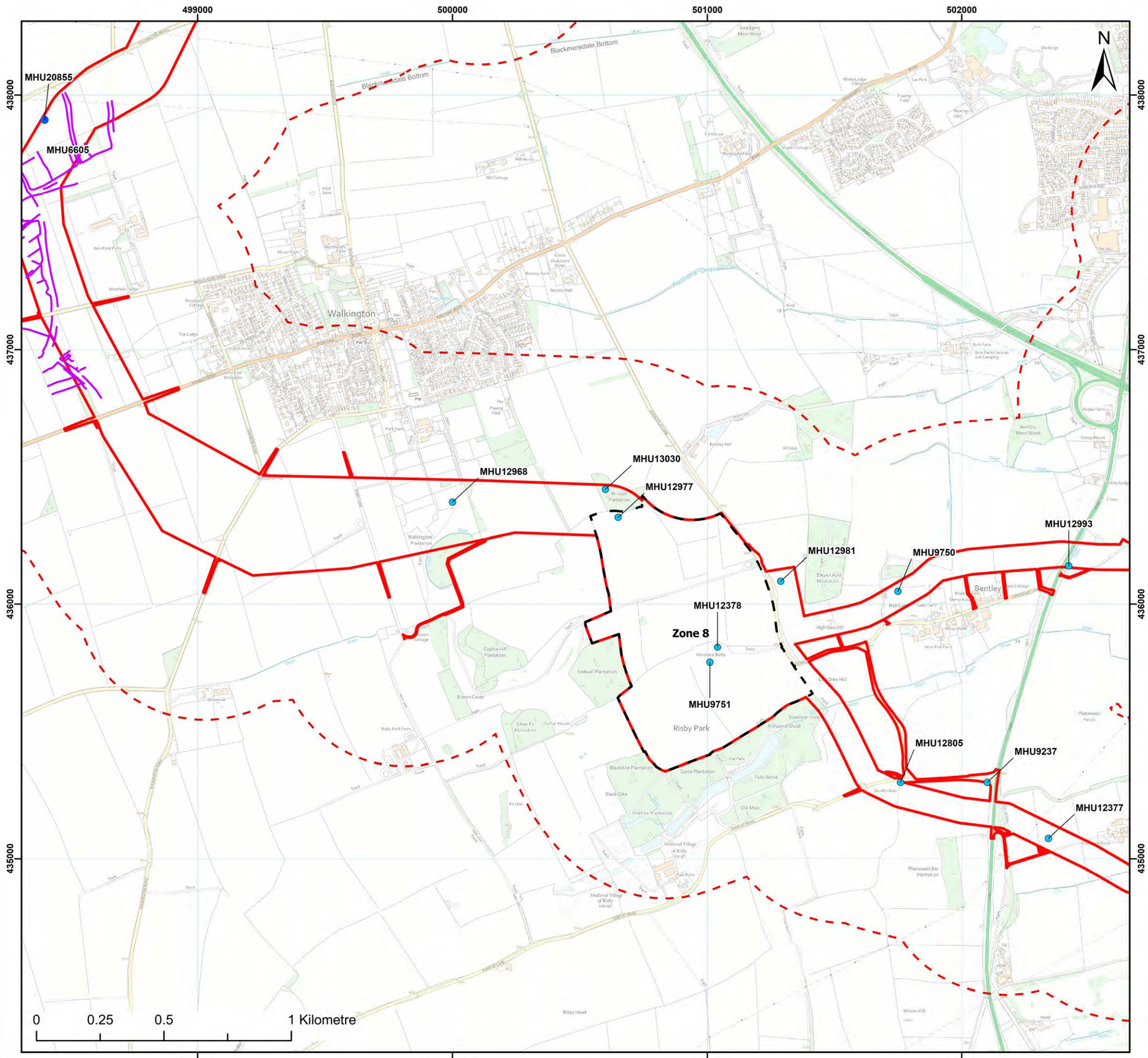

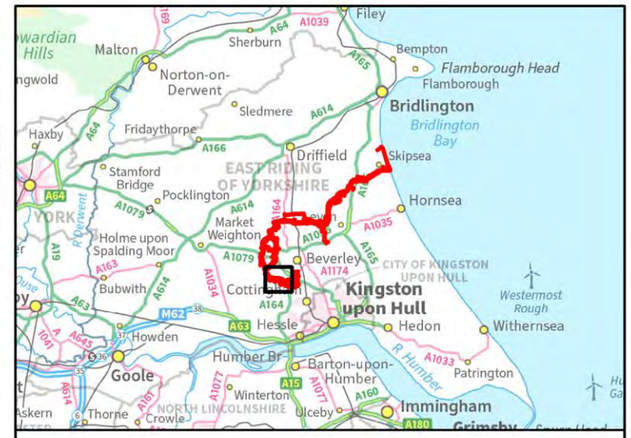

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Non-Designated Asset Study Area (500m buffer)

Non-Designated Heritage Assets Point/Line

- Findspot
- Monument
- Monument

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets
Within the Study Area - Sheet 11 of 12

Figure:	Drawing No:
24-3	PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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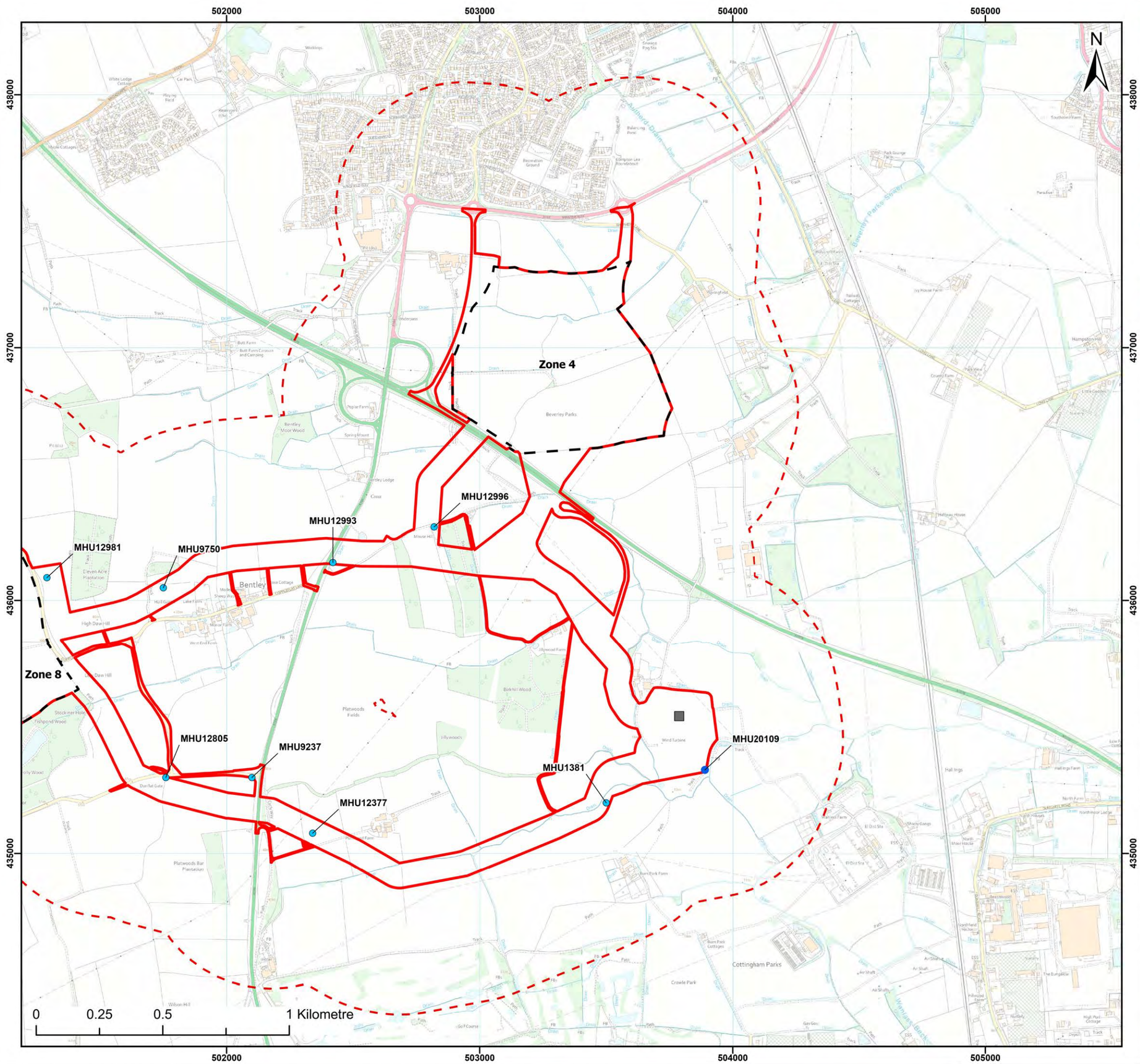

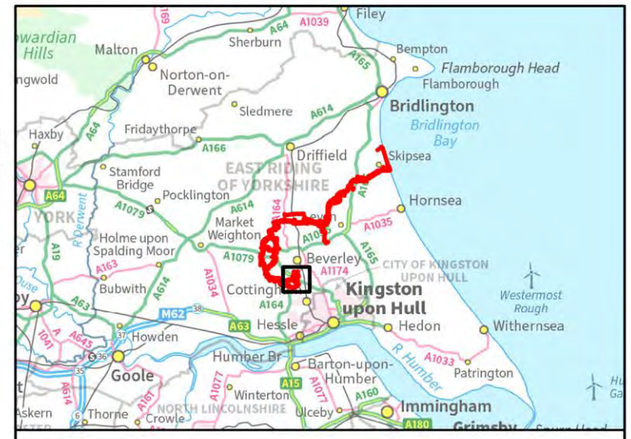

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Non-Designated Asset Study Area (500m buffer)
- Indicative Birkhill Wood Substation Location

Non-Designated Heritage Assets Point/Line

- Findspot
- Monument

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Location of Non-Designated Heritage Assets Within the Study Area - Sheet 12 of 12

Figure: 24-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0323

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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24.6.1.3 Previous Archaeological Investigations

132. Geophysical survey has been completed for DBS which partly overlaps with the Project. Following a collaborative data sharing agreement, the results relevant to the Project are summarised in **Section 24.6.1.6**.

133. Geophysical survey has also been undertaken at Jocks Lodge which incorporates the western boundary of OCS Zone 4 as well as the surrounding onshore ECC at Bentley (EHU3986). This survey was undertaken as part of the A164 widening scheme to inform the road expansion scheme. The area covered 40 fields across the landscape noted to be archaeologically sensitive due to the potential for Iron Age and Romano-British heritage assets. The geophysical survey identified anomalies of archaeological potential in the form of rectangular enclosures and possible trackways close to the Skidby roundabout, south of the Onshore Development Area.

134. A Natural England funded project undertaken between 2010 and 2012 recorded the historic landscape at Park Farm using documentary evidence and a detailed survey of earthworks. The survey identified four notable features of the historic landscape including the site of a Tudor deer park at Cellar Heads (East Yorkshire Local History Society, 2018). The eastern boundary of this historic deer park falls within OCS Zone 8.

24.6.1.4 APS Assessment of Aerial Imagery

135. The assessment of aerial imagery undertaken by Air Photo Services (APS) has identified 247 areas of archaeological interest within the Onshore Development Area. Below is a summary of the assessment which identifies the extent of cropmark features identified from aerial imagery. Full details of the assessment and descriptions of the findings are provided in **Volume 2, Appendix 24.3 Assessment of Airbourne and Satellite Remote Sensing Data Report**.

136. The aim of the assessment was to provide information on the location and nature of buried and upstanding archaeological features. Historic aerial photographs, modern aerial and satellite imagery and visualised Airborne Laser Scanning (ALS), also known as LiDAR, was used to assess the topographic and microtopographic features within the Onshore Development Area, alongside historic map regression analysis.

137. The assessment records 230 individual sites or areas within the study area, many of which are recorded previously by the Historic England NMP and AIMP.

138. The majority of the arable areas are heavily ploughed and the cropmarked indications over pre-modern features do not generally display any significant microtopography. This is evidenced by examination of the visualised LiDAR data. There is however obvious potential for the discovery of further sub-surface features and deposits in and around the visible foci of cropmarked enclosures, tracks, boundaries and ditches if subject to intrusive investigation or construction procedures.

139. Relict post-enclosure field systems are evident where their variably hedged, ditched and embanked boundaries were removed in the 20th century to facilitate modern agriculture. These more recent features show as very slightly upstanding microtopography via visualised LiDAR data or as cropmarks on aerial photographs.

140. Several sites within the study area contained evidence for buried and eroded prehistoric funerary, settlement, access and farming sites which reflect a pre-modern landscape now overlain by Medieval, post-Medieval and modern fields, settlements and roads. These sites exist in the form of cropmarks of ditched enclosures, ring-ditches and ditched trackways, which are likely to represent Bronze Age funerary sites and Iron Age / Roman settlements.

141. The visible Medieval landscape largely comprises the eroded remains of Medieval and post-Medieval ridge and furrow, which are often visible as marks in crops or as eroded earthworks. Moated sites, manors and granges are also a part of this landscape, where earthworks are not often eroded and visible as cropmarks, grass marks or microtopography.

142. Medieval deserted and shrunken settlements are also present, such as the earthworks and microtopography via visualised LiDAR data at Risby Park, which includes the remains of Jacobean gardens, earlier moats, fishponds and a deer park.

143. As the coastal area between Ulrome and Skipsea formed an essential first-line defence in World War II (WWII), a series of concrete structures such as gun batteries and pillboxes were augmented by temporary barbed wire and concrete obstructions. Such structures were captured by the Royal Air Force (RAF) in the 1940s and recorded in detail by the Historic England NMP in their original condition. Though many of the defensive features at the coast have been greatly reduced by marine erosion, some of the concrete structures are still in place.

144. It is likely that the below-ground archaeological deposits which cause the marks in crops and grass in this area are more extensive, both horizontally and vertically, than shown via the aerial imagery. Absence of cropmark evidence does not necessarily indicate an absence of archaeological deposits in apparently blank areas.

24.6.1.5 Heritage Walkover Survey

145. The heritage assets visited as part of the walkover surveys included areas of potential earthworks and structures within the Onshore Development Area.

146. The heritage walkover survey confirmed the presence of extant military remains at landfall including a pillbox dating to WWII, complete with blast wall (MHU18422), and a square pillbox dating to World War I (WWI) (MHU21240), which survive in good condition.

147. Also confirmed by the heritage walkover survey, in addition to those noted within the Humber HER, is the survival of a WWII-dated pillbox recorded as part of the Defence of Britain Project. Record S0005645 is present within the onshore ECC along Scorborough Lane.

148. Area of potential earthworks were noted as undulations in the landscape and were not particularly definitive as archaeological features.

24.6.1.6 Archaeological Geophysical Survey

149. The geophysical survey for the Project is ongoing, with the results from the completed survey areas (collected up to 30th January 2025) presented in **Volume 2, Appendix 24.7 Onshore Archaeological Geophysical Survey Report**. This report also includes the results of the geophysical survey undertaken across areas of the Project which overlap with areas previously surveyed as part of DBS optionality. Below and on **Figure 24-4** is a summary of the archaeological and geological anomalies recorded so far from landfall to the OCS zones, which includes full or partial coverage of 11 Priority Areas (PA) and *c.* 84 ha of non-Priority Areas (where there may be limited or no Humber HER records).

150. At the landfall, the DBS data recorded several features of definite / probable archaeology including a series of trends forming two rectilinear enclosures which contain several internal features, forming a large complex of enclosed features and potential structures. These anomalies extend southwards forming a substantial complex of enclosures which are assumed to be associated with the known banks and possible ditches (MHU3409). Further well-defined anomalies have been detected to the west of the enclosure which may form a trackway suggesting a series of connected enclosures.

151. A continuation of known archaeology which was detected in Field D10 as part of the DBS optionality survey extends into Priority Area 10 to the south but not to the west.

152. The geophysics in Priority Area 9 is dominated by agricultural responses. The Humber HER records the site of a round barrow (MHU1689) within this PA, in addition to an Iron Age to Romano-British field system (MHU22161), and undated oval enclosures (MHU19376).

153. Within the eastern section of Priority Area 8, a series of enclosures and possible associated trackways have been detected. These anomalies may be part of the recorded late prehistoric to Roman enclosures and ring-ditch recorded to the southwest (MHU23982). Linear and curvilinear trends have also been detected of an uncertain origin.

154. Priority Area 7 lies to the west of a scheduled moated site (NHLE1008043) and Medieval and post-Medieval cropmarks and enclosures (MHU3062). A series of well-defined linear anomalies have been detected in the northern section of this PA which have been interpreted as of possible archaeological origin based on the form and nature of the responses and their proximity to cropmarks of Iron Age and Romano-British enclosures, ring ditch and ditches (MHU22439) and cropmarks of Medieval and post-Medieval field boundaries and enclosure (MHU22438) in the vicinity.

155. A well-defined linear anomaly has been detected crossing the centre of Priority Area 6. This has been interpreted as the possible continuation of a feature visible on aerial photographs that is associated with Winthorpe Manor House (MHU3725). However other features associated with the Manor House are not clearly defined.

156. A series of well-defined linear trends have been detected in Priority Area 5, which show good correlation with a known Iron Age to Romano-British cropmark complex (MHU22141). The result of the survey suggests that the complex is more extensive than the cropmarks suggest and may be multiphase.

157. Within the centre of Priority Area 4, an L-shaped anomaly has been detected which suggests part of a possible enclosure and could be associated with MHU3346. Approximately 30 m to the north-west of the postulated enclosure a well-defined circular anomaly has been detected, which is suggestive of a possible ring-ditch 10 m in diameter. There was no evidence of a Roman Road or possible villa as suggested within this PA in the Humber HER (MHU3031, MHU19304).

158. Priority Area 3 contains extensive cropmarks (MHU6605) which correlate with a series of strong linear trends in the form of rectilinear enclosures and trackways detected in the geophysical survey. Additional, less well-defined linear trends have also been detected which are likely to be a part of the same enclosure system.

159. Within the southern half of Priority Area 2, a series of well-defined linear anomalies have been detected around the location of a former barn (MHU12378), which may represent the continuation of a trackway and associated enclosures which have been detected in D173 to the east.

160. Across OCS Zone 4, the results from the geophysical survey undertaken for DBS illustrate possible archaeology in the form of enhanced linear anomalies. This is particularly evident towards the east and south-east of OCS Zone 4 where cropmarks are present. A ring-ditch feature has been detected within a double ditched enclosure identified through aerial imagery sources (APS_222) interpreted as probable archaeology. Within the southern aspect of OCS Zone 4, linear and discrete features appearing to form enclosures and a possible continuation of an Iron Age / Romano-British trackway to the east have been detected.

Legend:

Onshore Development Area

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data -
Sheet 1 of 18

Figure:	Drawing No:
24-4	PC6250-RHD-XX-ON-DR-GS-0324

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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01	06/12/2024	FC	HM	A3	1:10,000

Co-ordinate system: British National Grid

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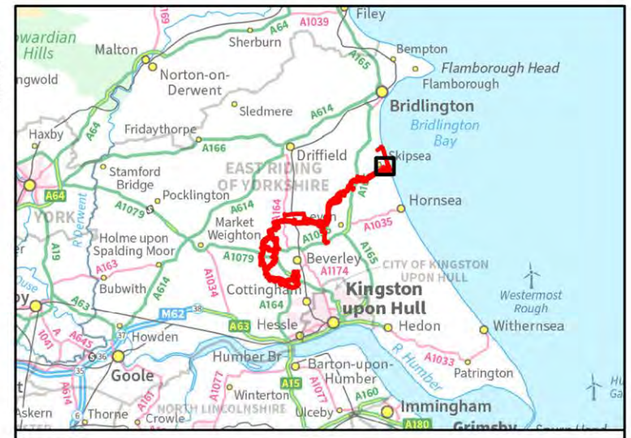

Legend:

Onshore Development Area

Geophysical Survey Interpretation Line

- Linear Trend (Probable Archaeology)
- Linear Trend (Possible Archaeology)
- Linear Trend (Historic Feature)
- Linear Trend (Unclear Origin)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Drainage)
- Linear Trend (Geology/ Natural)

Geophysical Survey Interpretation Polygon

- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Spread (Historic Feature)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Anomaly (Agricultural)
- Spread (Geology/Natural)
- Spread (Magnetic Disturbance)
- Anomaly (Ferrous/Iron Spike)
- Spread (Ferrous/Iron Spike)

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 2 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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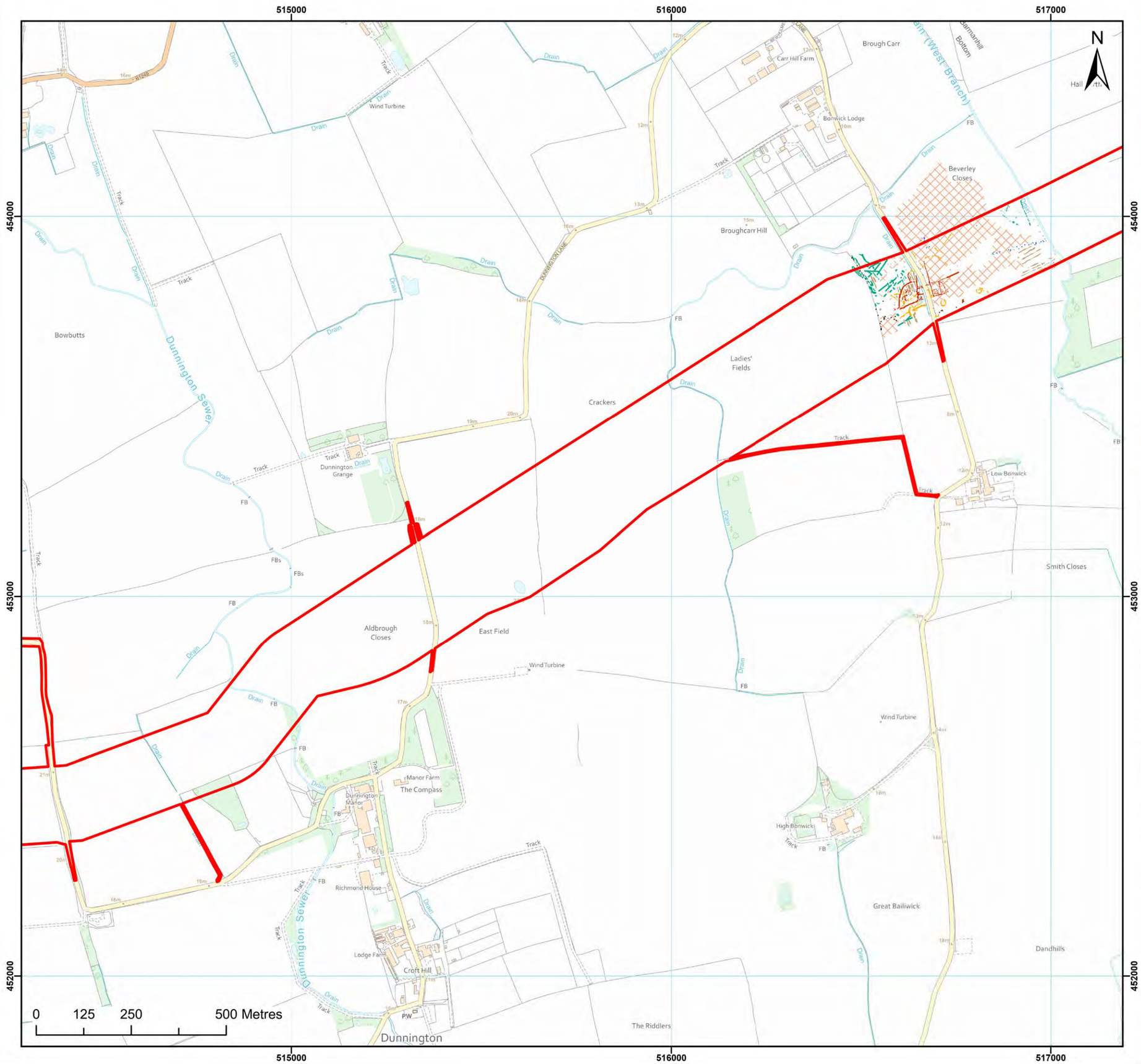

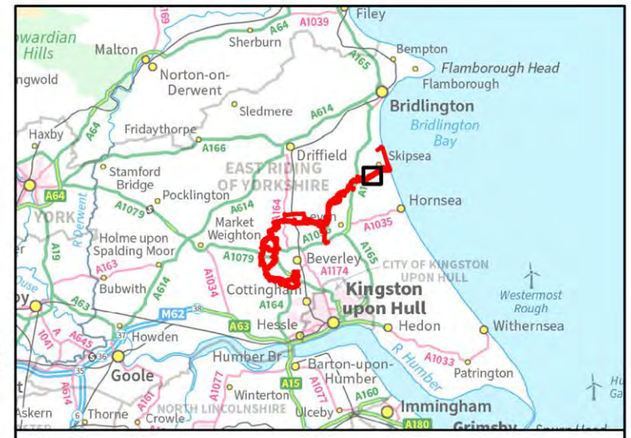

Legend:

- Onshore Development Area

Geophysical Survey Interpretation Line

- Linear Trend (Probable Archaeology)
- Linear Trend (Unclear Origin)

Geophysical Survey Interpretation Polygon

- Anomaly (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Historic Feature)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Anomaly (Agricultural)
- Spread (Geology/Natural)
- Spread (Magnetic Disturbance)
- Anomaly (Ferrous/Iron Spike)
- Spread (Ferrous/Iron Spike)

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 3 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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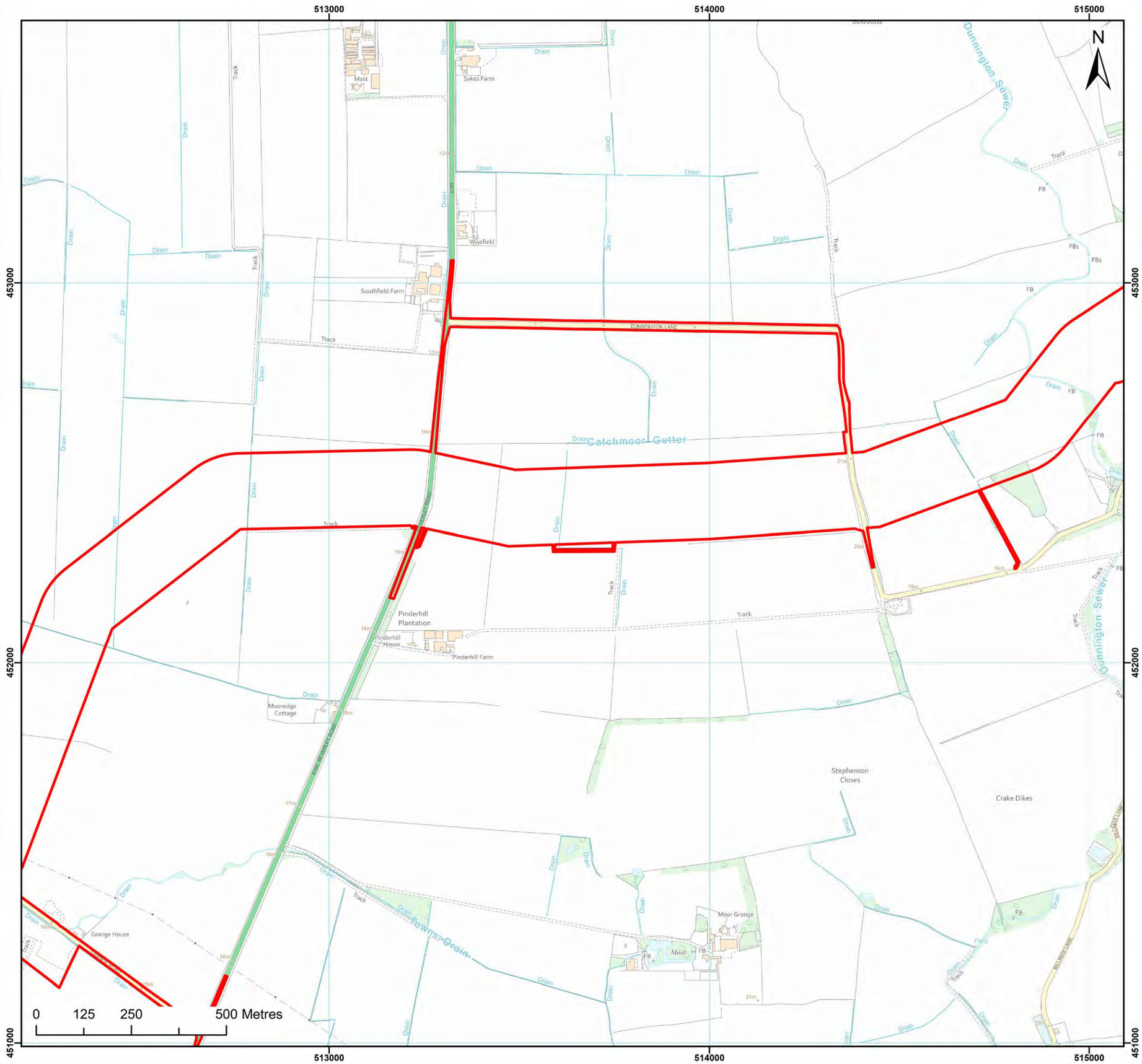

Legend:

Onshore Development Area

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 4 of 18

Figure:	Drawing No:
24-4	PC6250-RHD-XX-ON-DR-GS-0324

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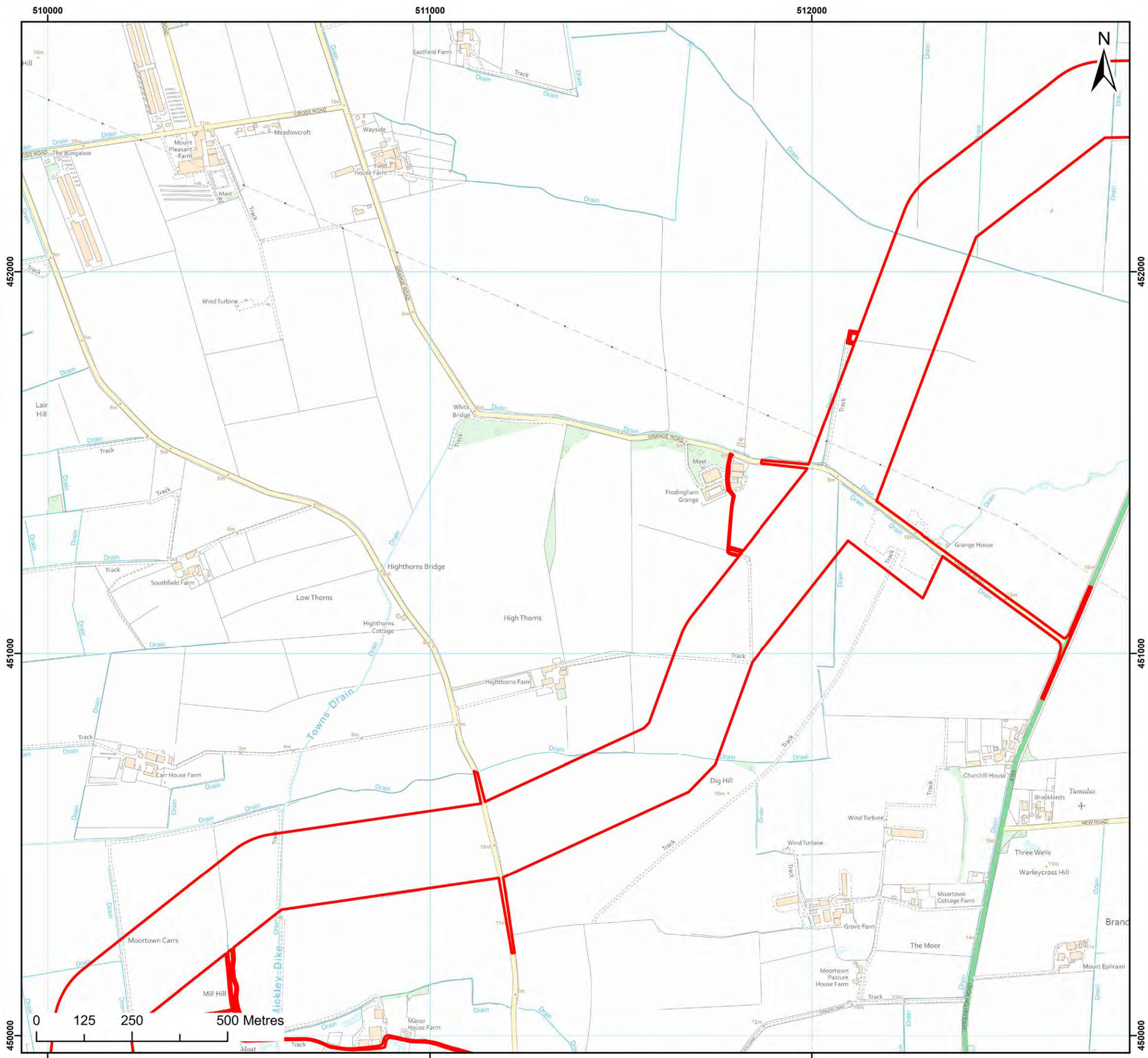

Legend:

Onshore Development Area

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 5 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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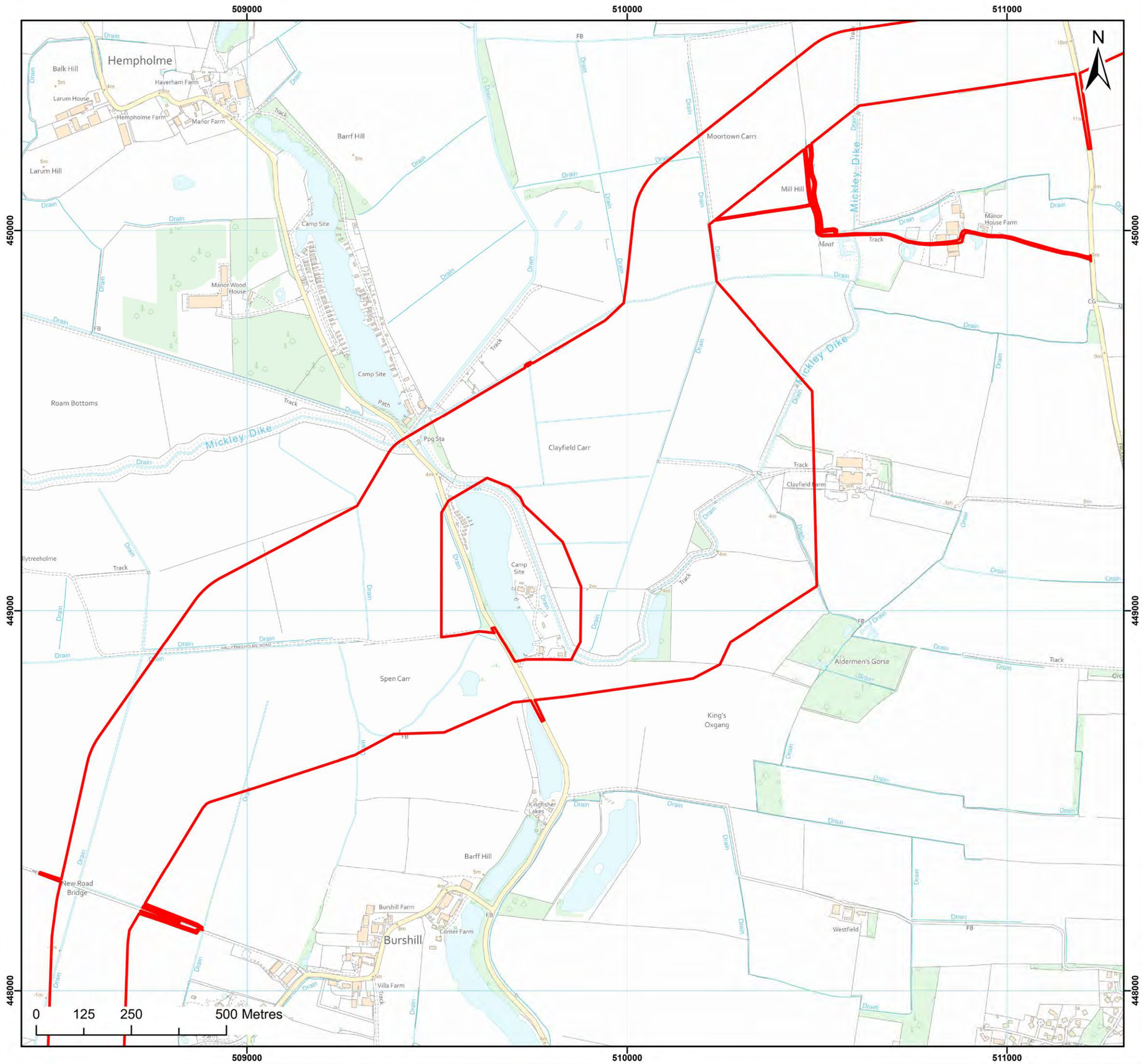

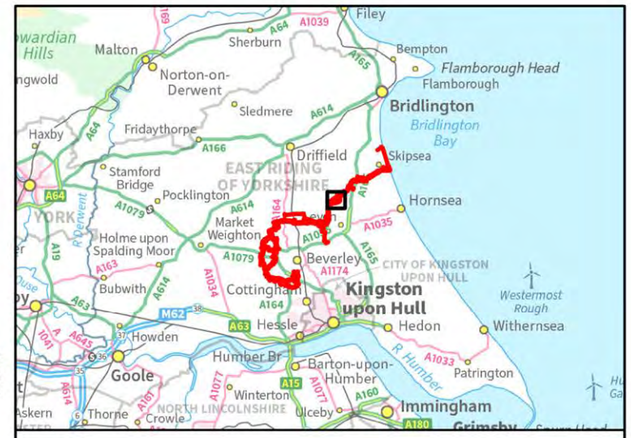

Legend:

Onshore Development Area

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 6 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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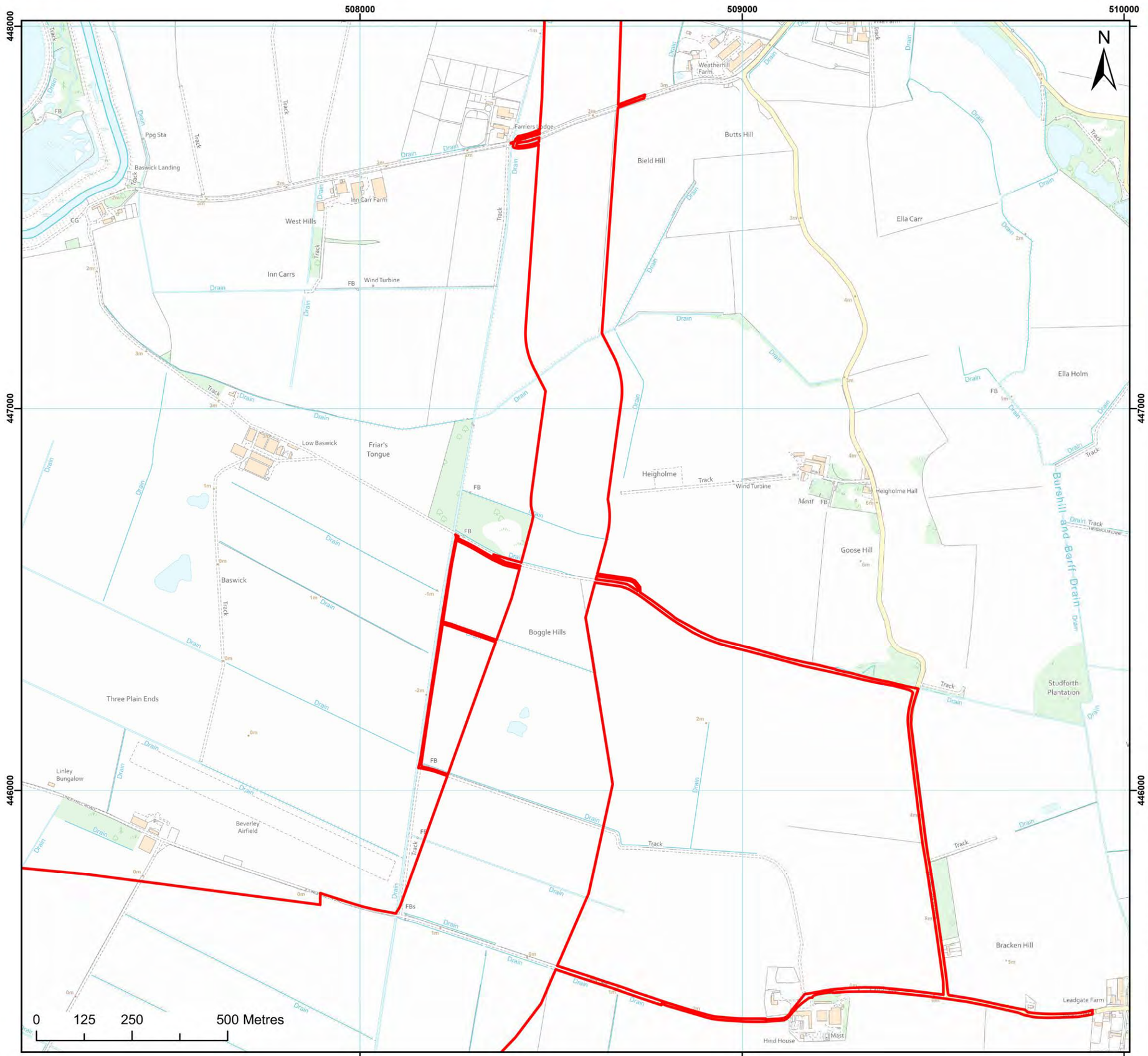

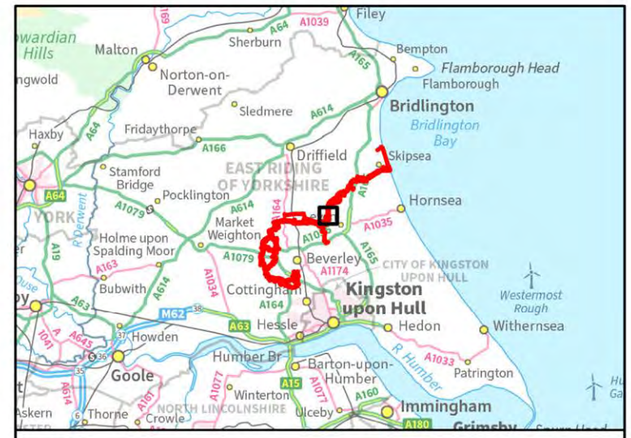

Legend:

Onshore Development Area

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 7 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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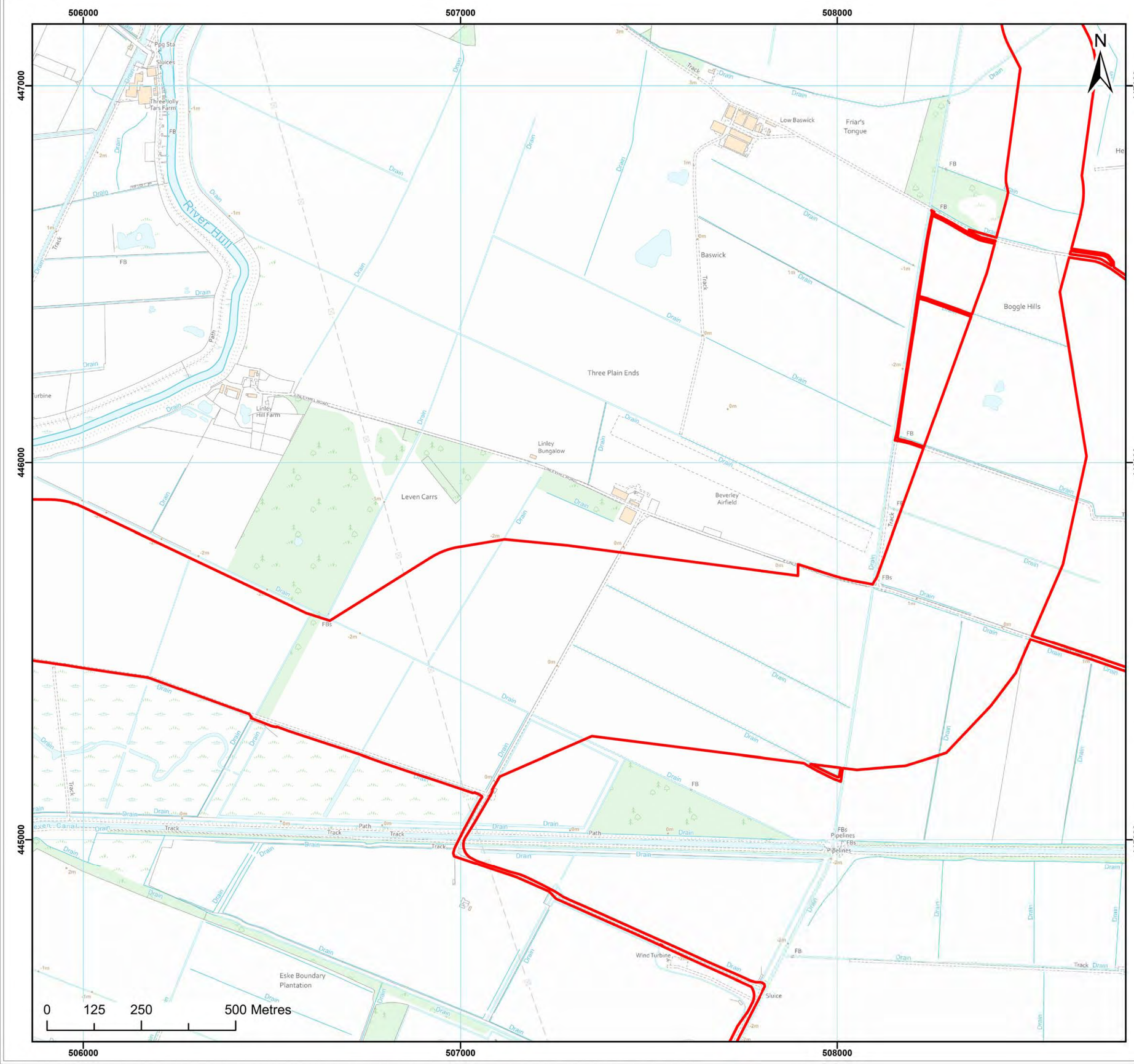

Legend:

Onshore Development Area

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data -
Sheet 8 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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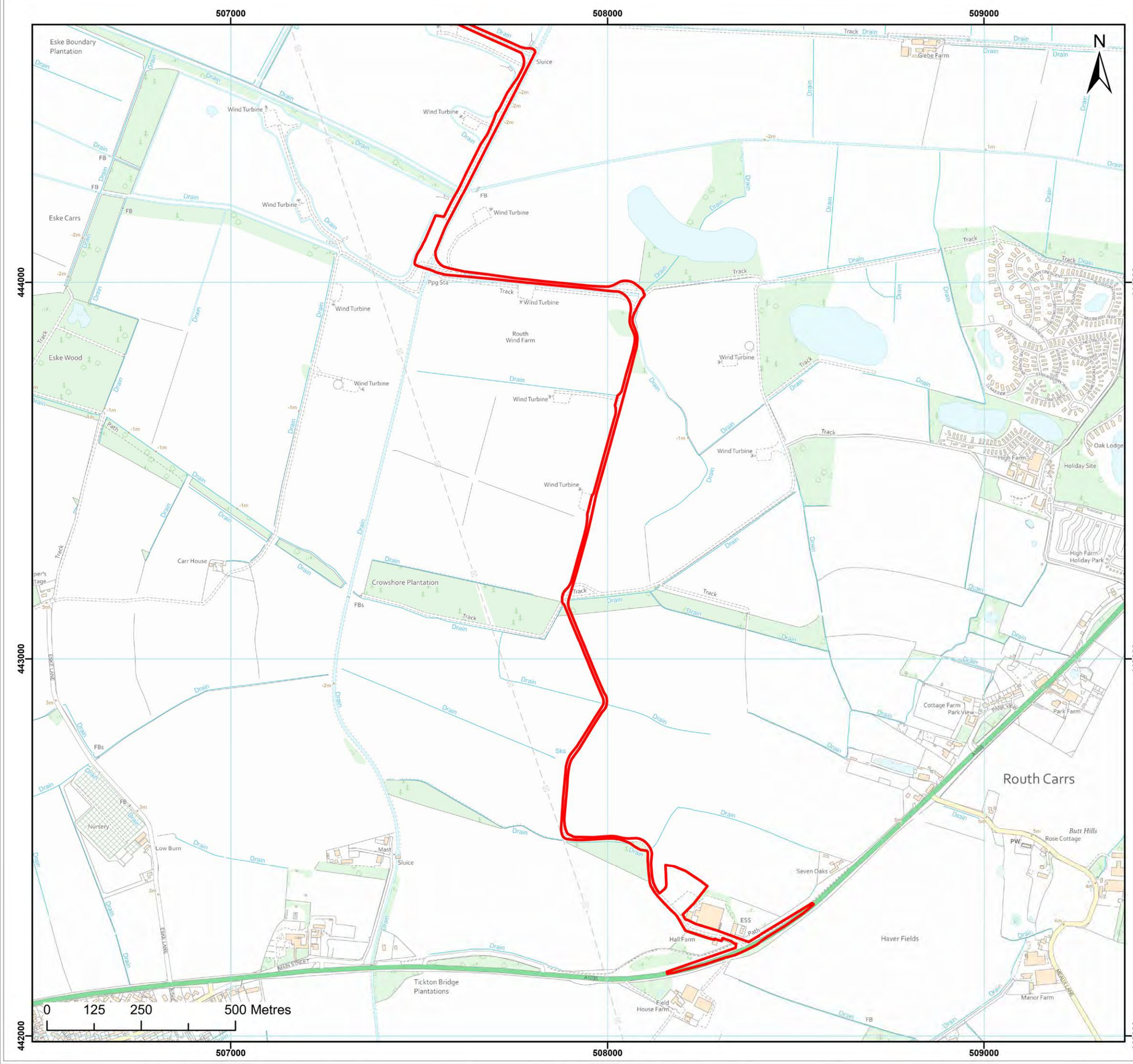

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Onshore Development Area

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 9 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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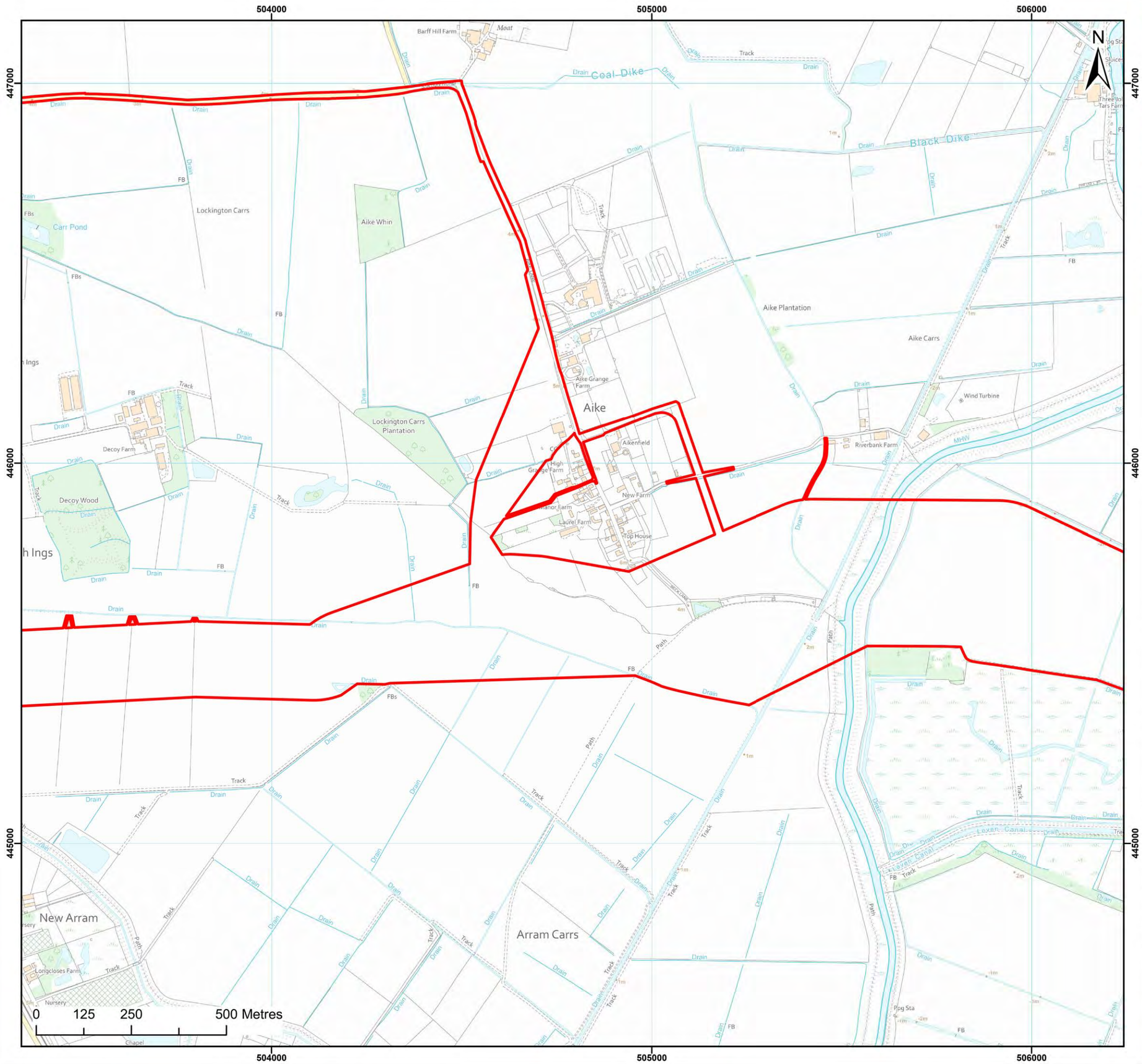

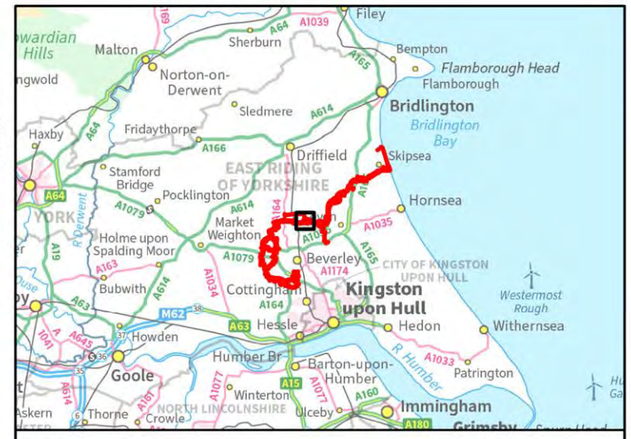

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Onshore Development Area

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 10 of 18

Figure:	Drawing No:
24-4	PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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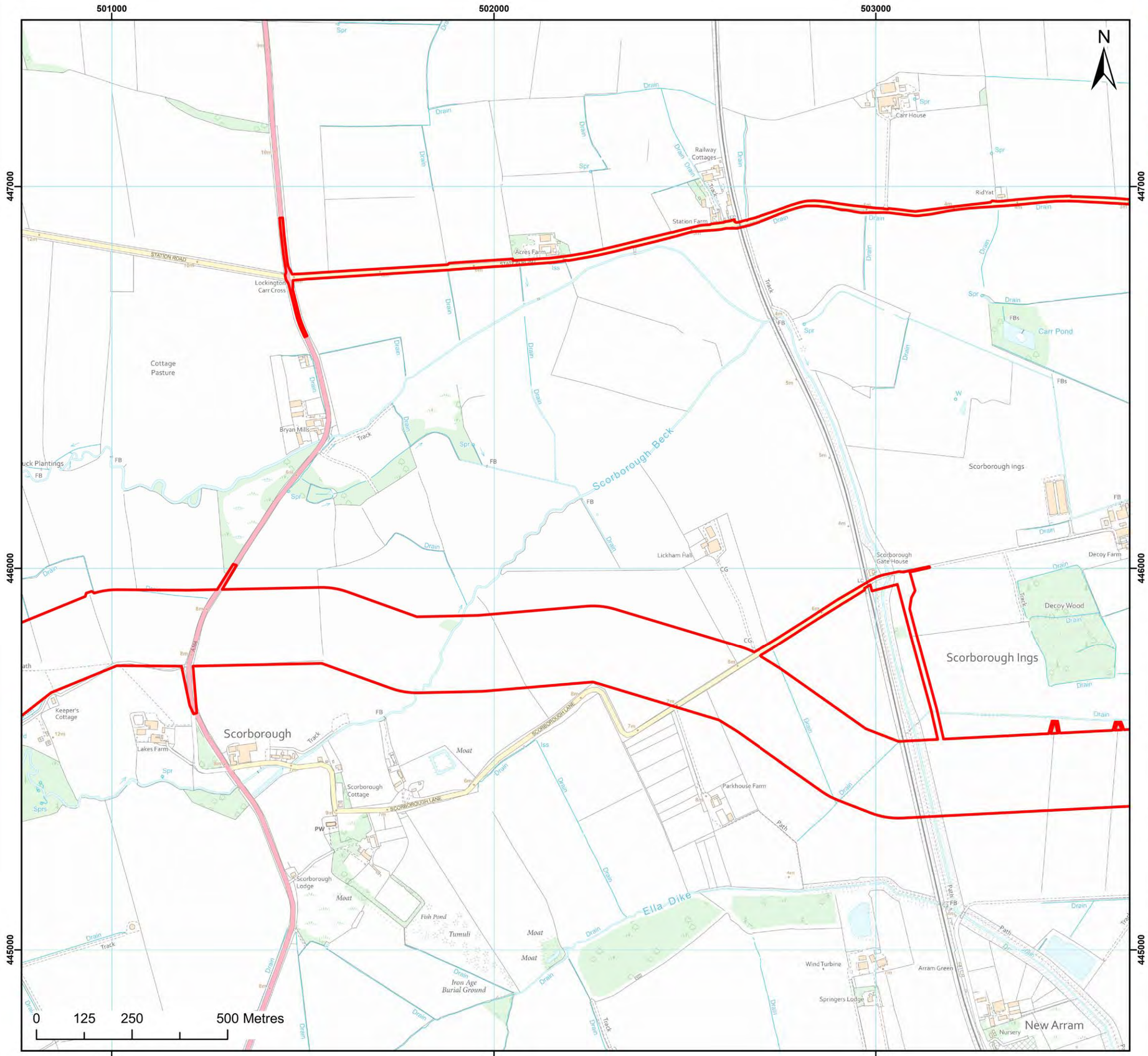

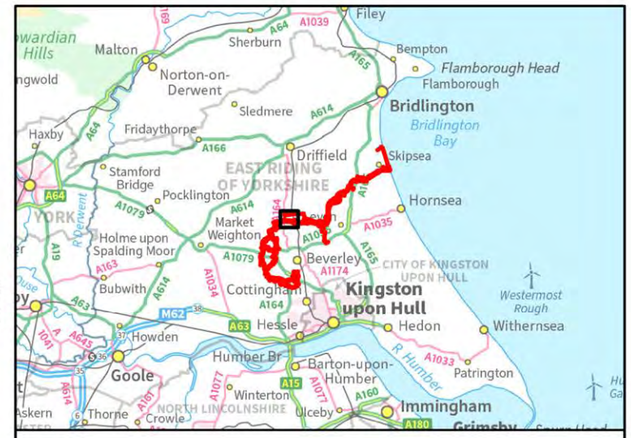

Legend:

Onshore Development Area

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 11 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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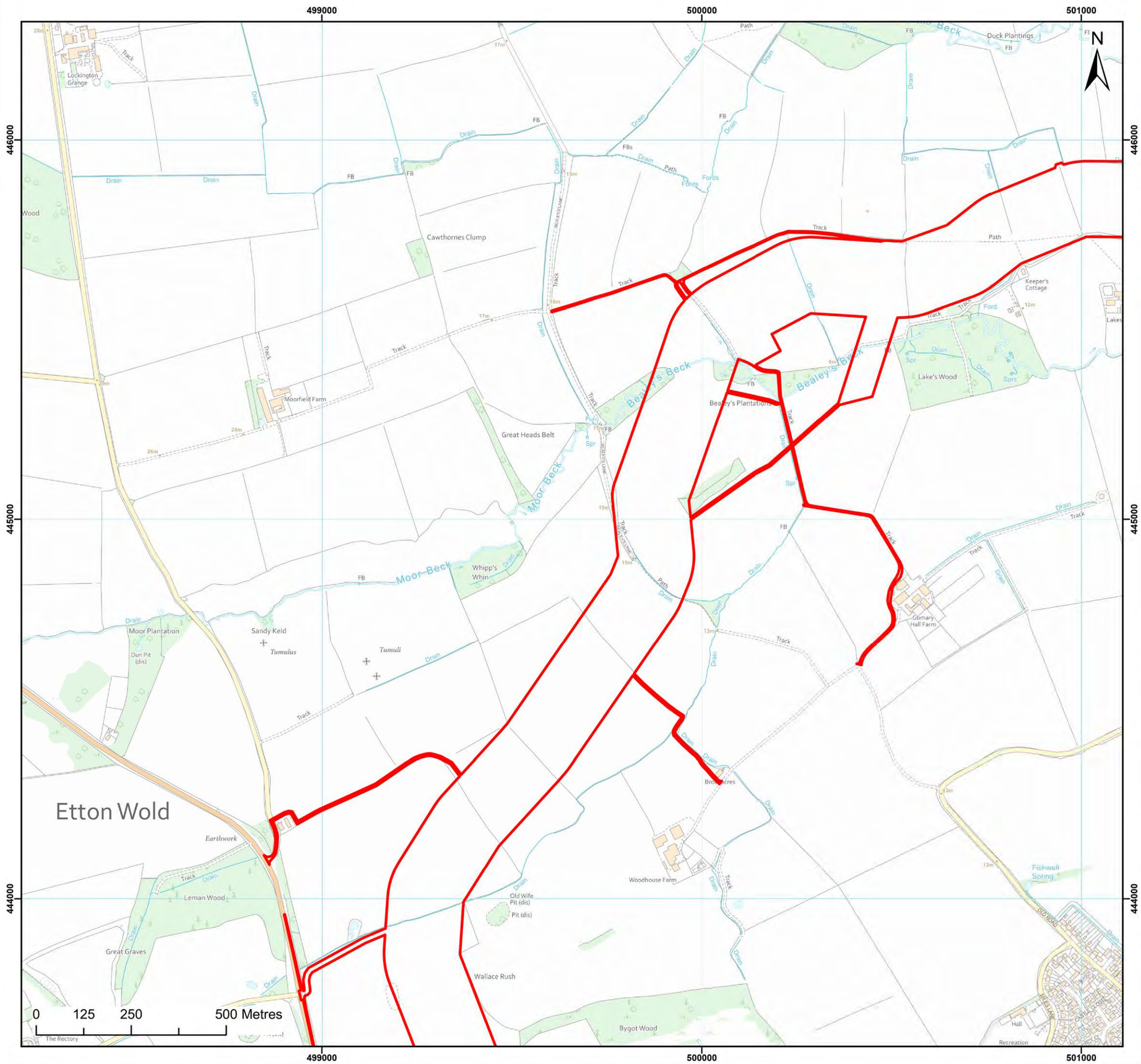

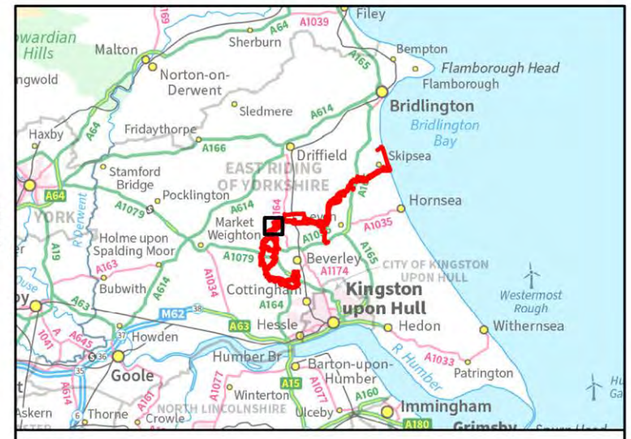

Legend:

Onshore Development Area

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data -
Sheet 12 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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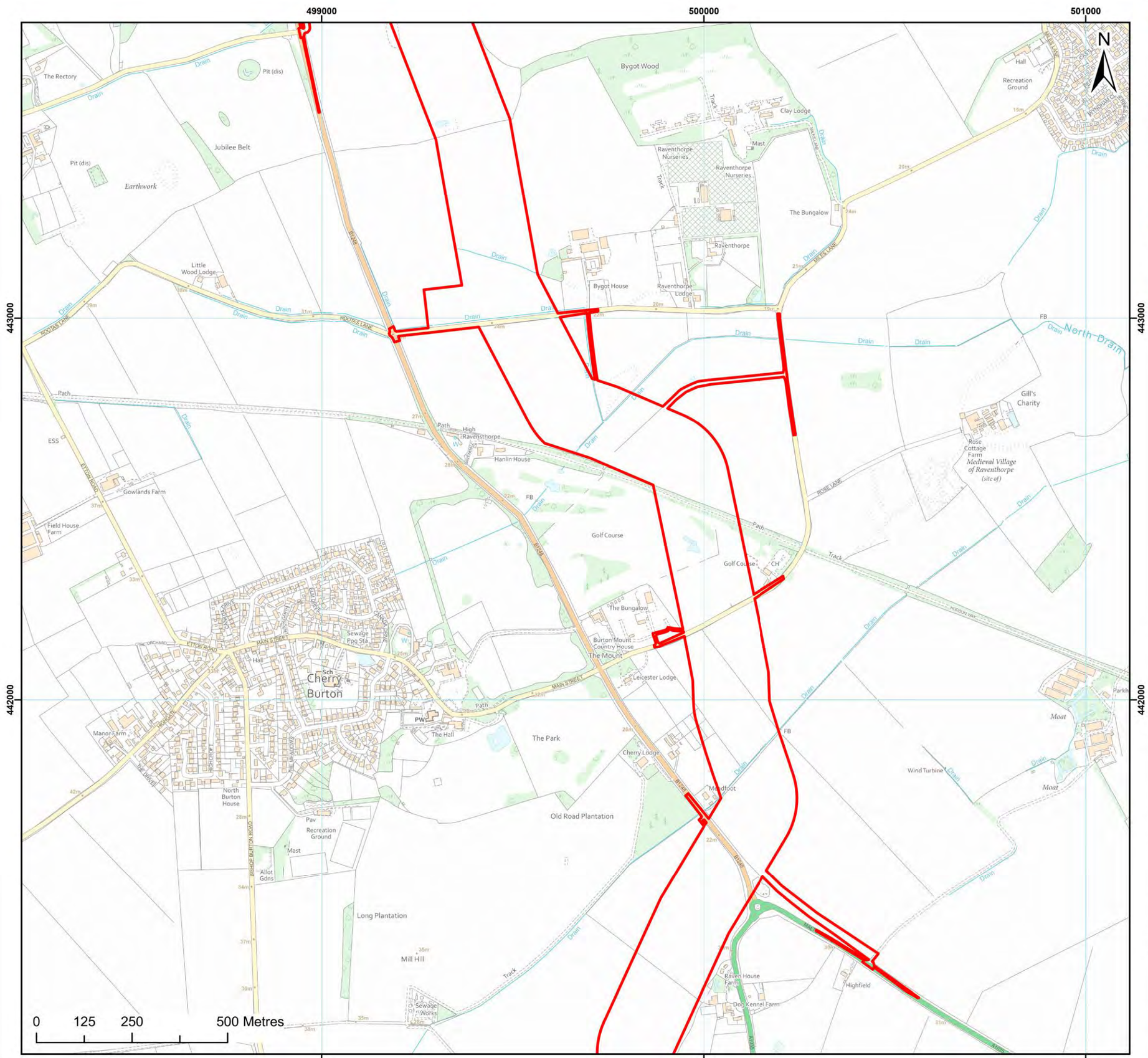

Legend:

Onshore Development Area

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 13 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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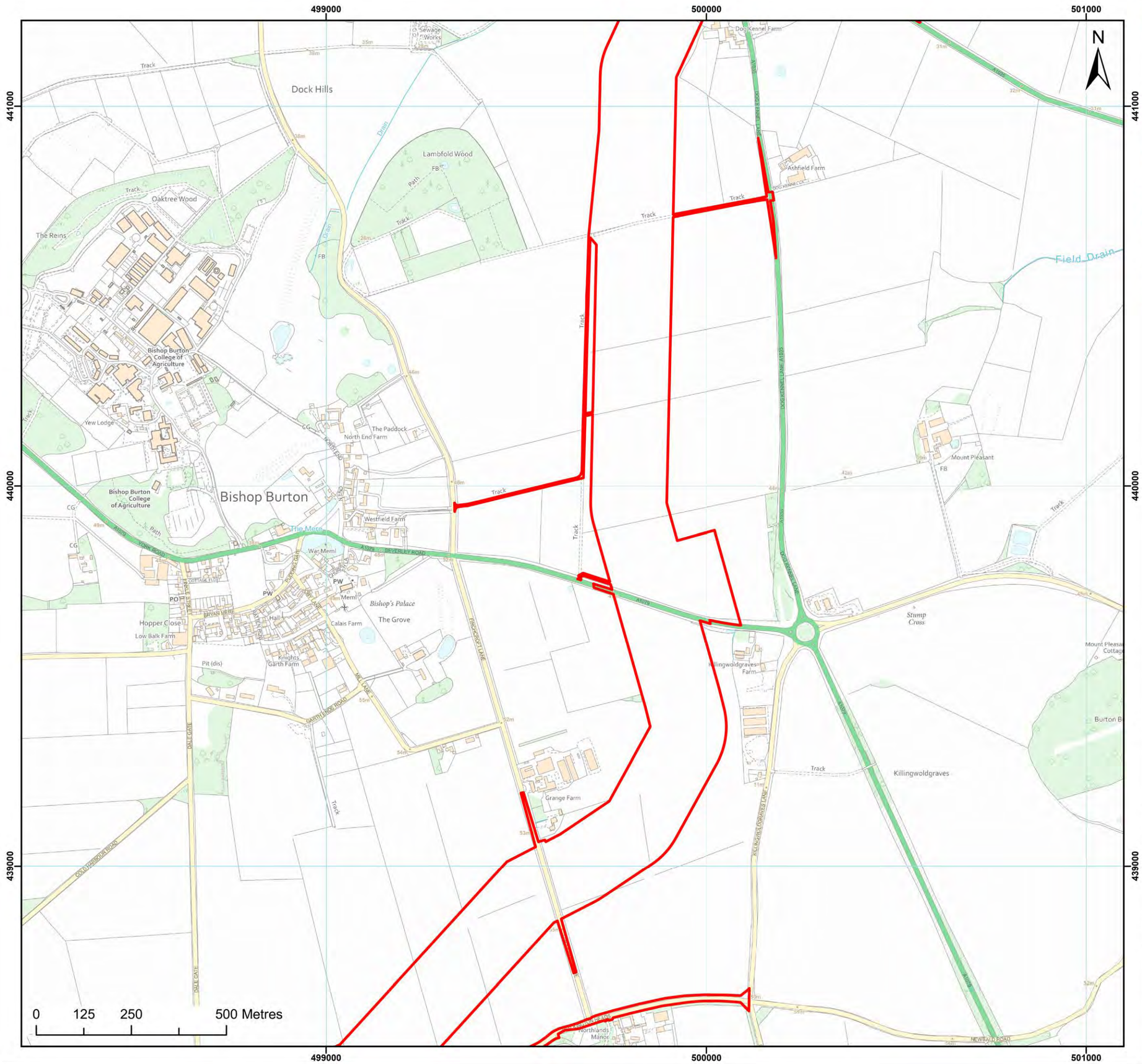

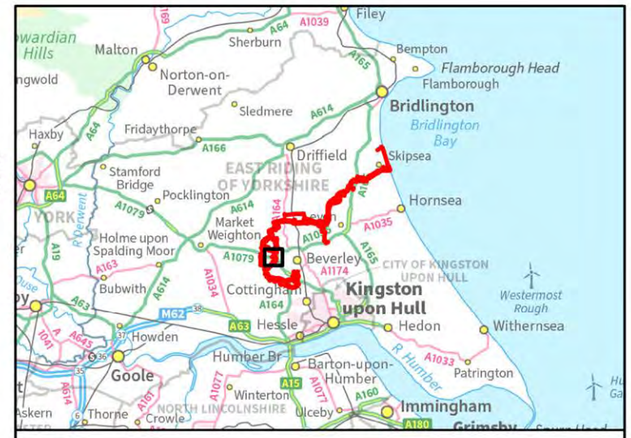

Legend:

Onshore Development Area

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data -
Sheet 14 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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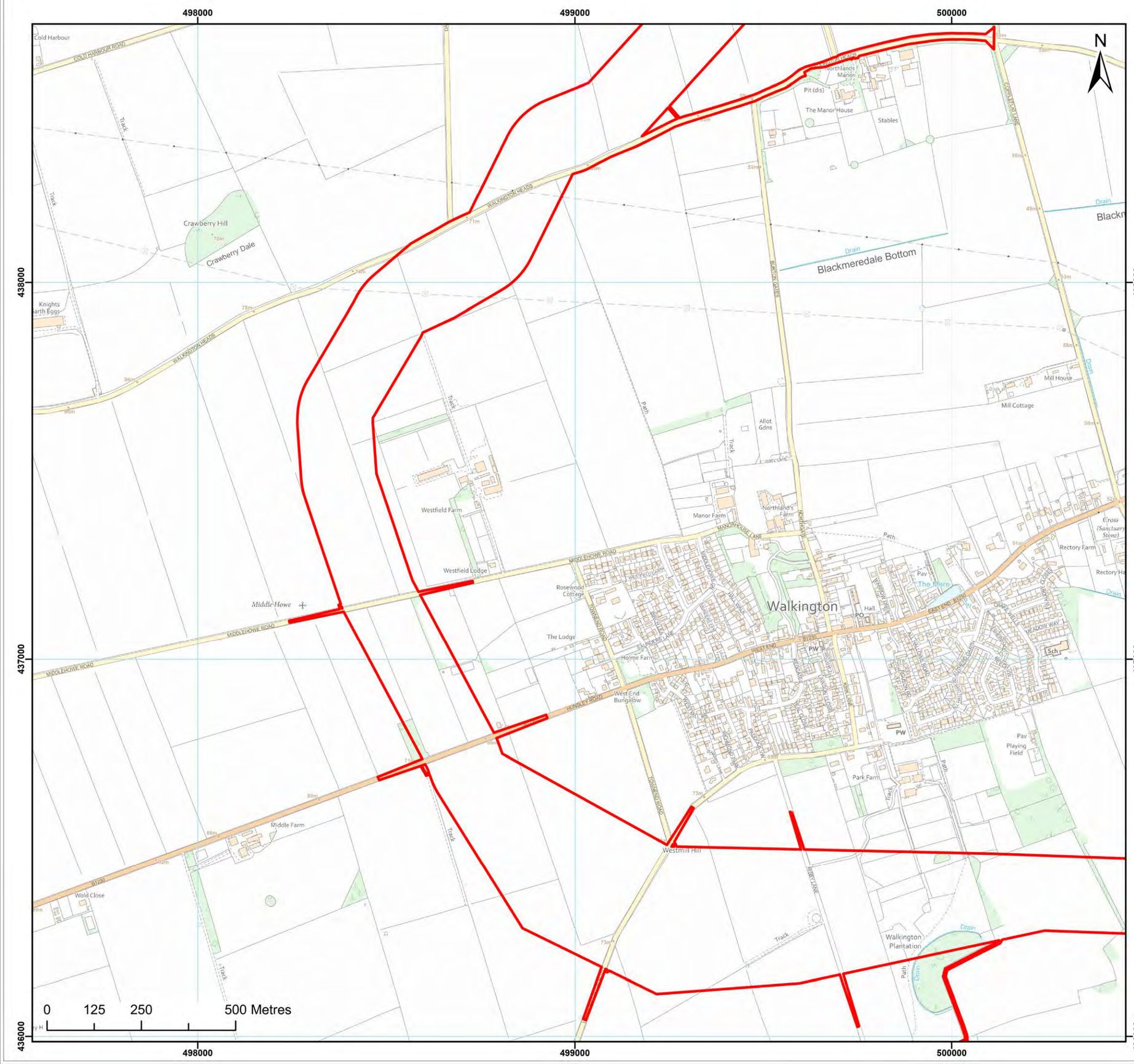

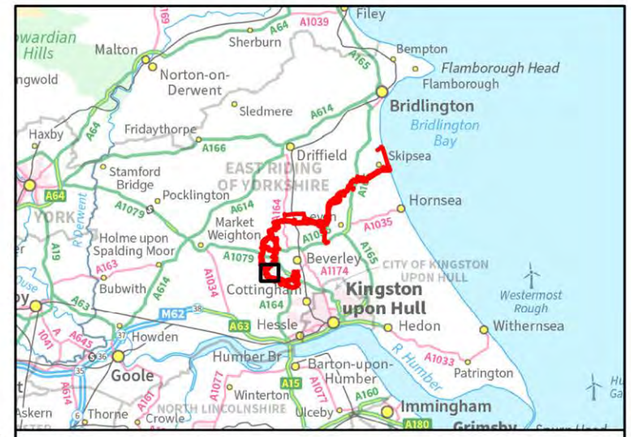

Legend:

Onshore Development Area

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data -
Sheet 15 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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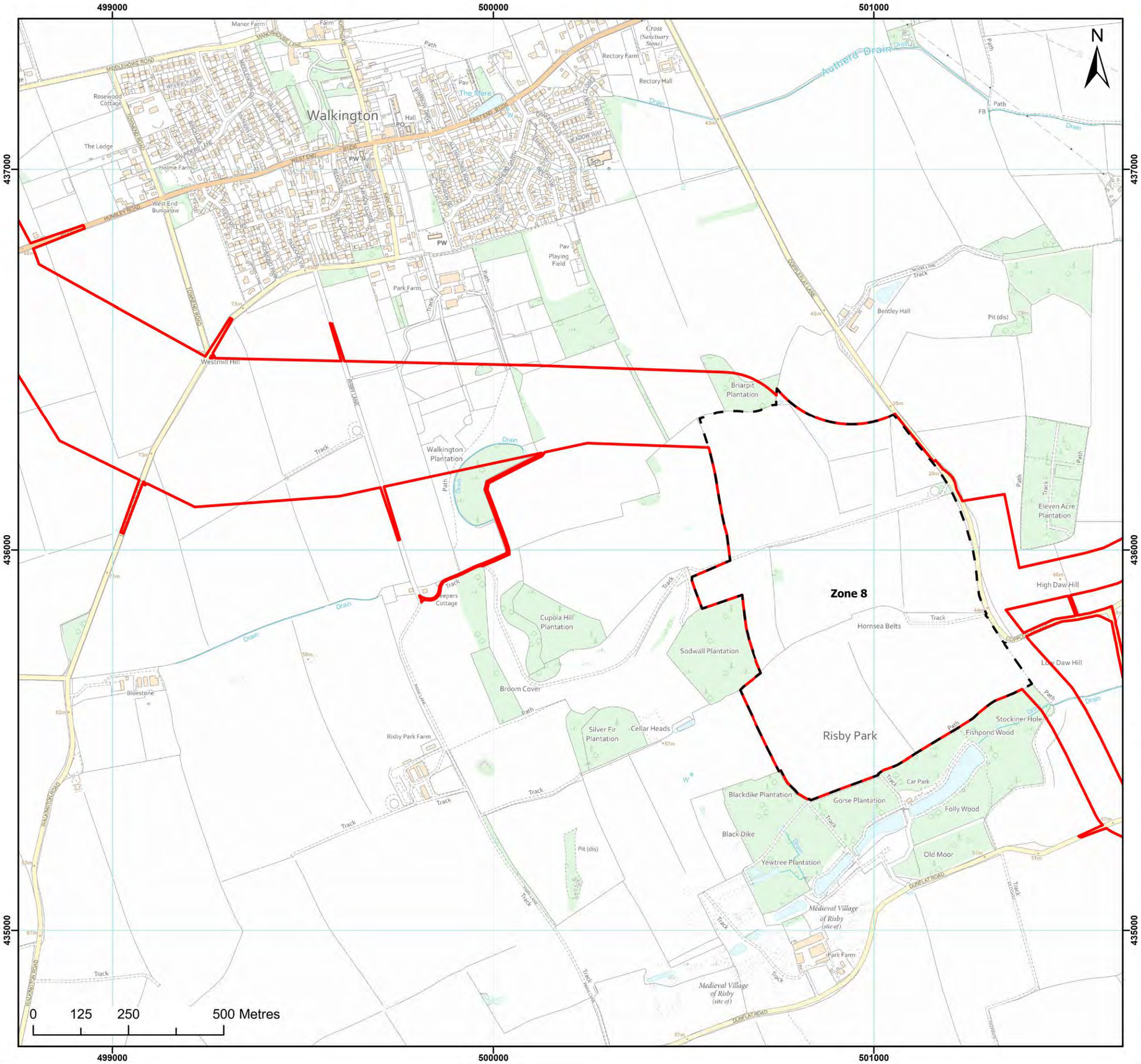

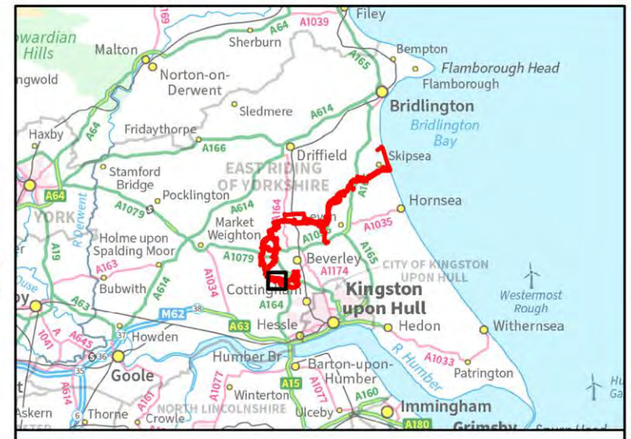

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options

Project: Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title: Summary of Geophysical Survey Data - Sheet 16 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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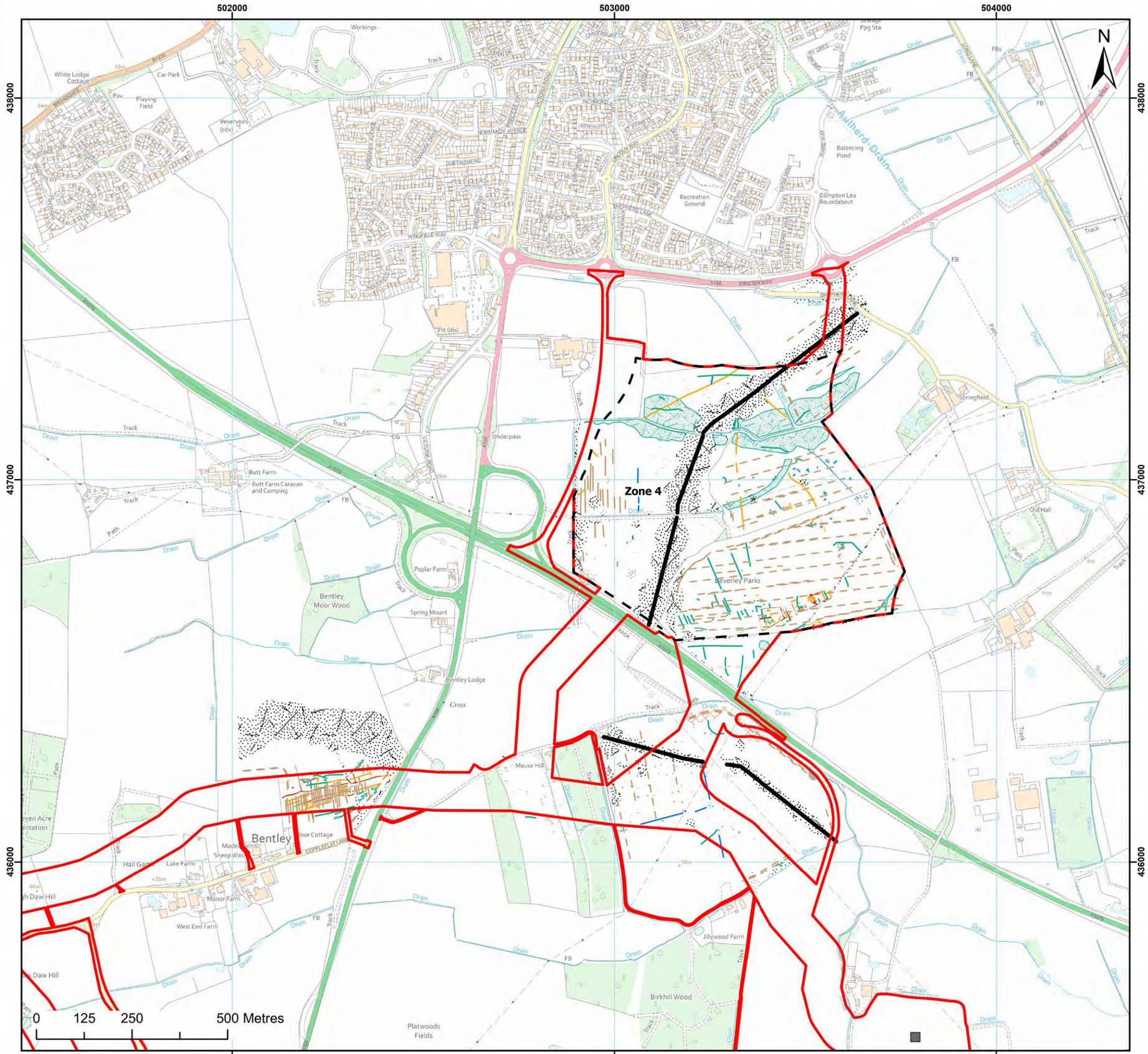

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Indicative Birkhill Wood Substation Location

Geophysical Survey Interpretation Line

- Linear Trend (Probable Archaeology)
- Linear Trend (Possible Archaeology)
- Linear Trend (Historic Feature)
- Linear Trend (Unclear Origin)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)

Geophysical Survey Interpretation Polygon

- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Historic Feature)
- Spread (Historic Feature)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Spread (Geology/Natural)
- Spread (Magnetic Disturbance)
- Anomaly (Ferrous/Iron Spike)
- Spread (Ferrous/Iron Spike)

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Summary of Geophysical Survey Data - Sheet 17 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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Co-ordinate system: British National Grid

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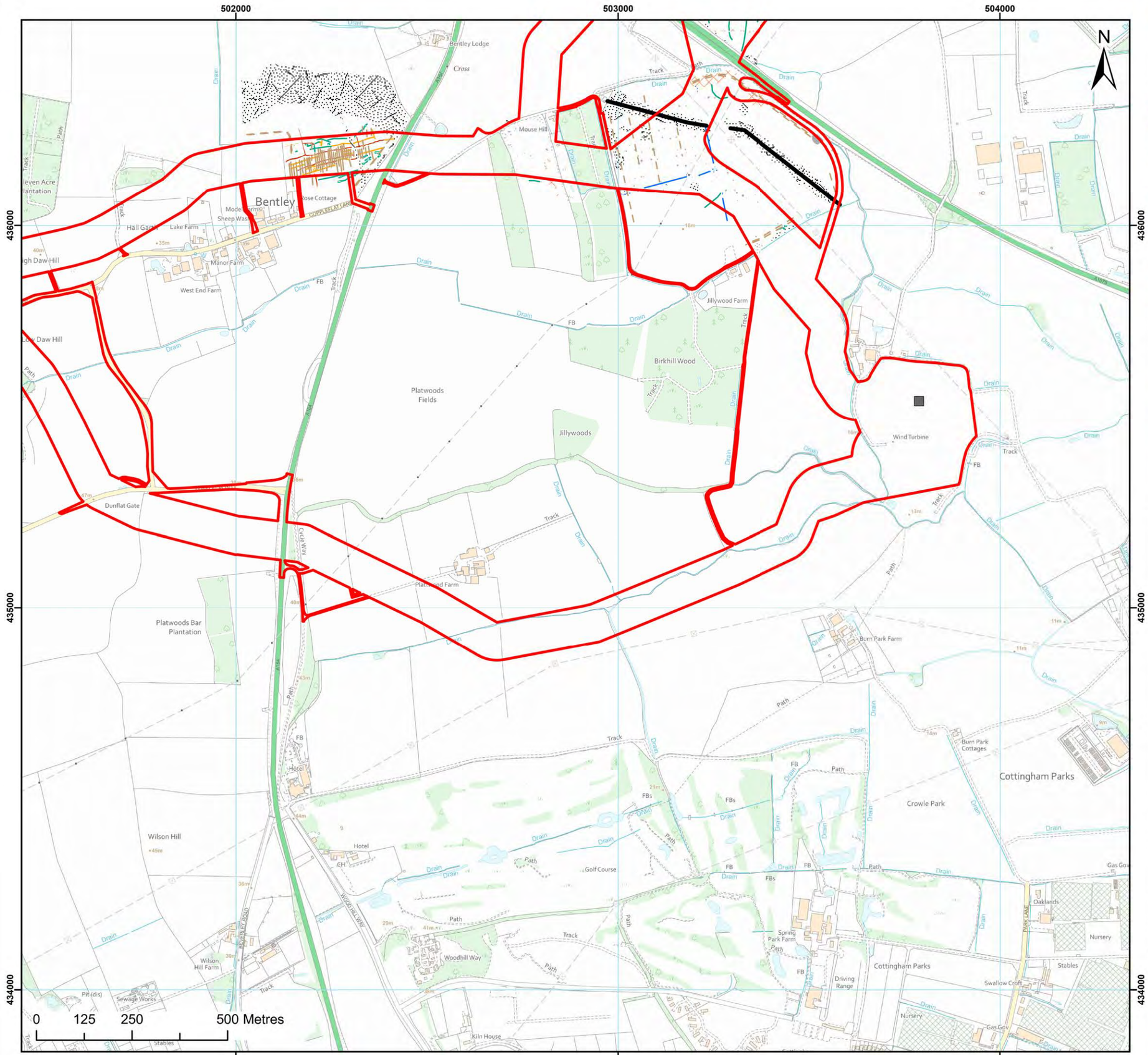

Legend:

- Onshore Development Area
- Indicative Birkhill Wood Substation Location

Geophysical Survey Interpretation Line

- Linear Trend (Possible Archaeology)
- Linear Trend (Historic Feature)
- Linear Trend (Unclear Origin)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)

Geophysical Survey Interpretation Polygon

- Anomaly (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Spread (Historic Feature)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Spread (Geology/Natural)
- Spread (Magnetic Disturbance)
- Anomaly (Ferrous/Iron Spike)
- Spread (Ferrous/Iron Spike)

Project:
Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:
Summary of Geophysical Survey Data - Sheet 18 of 18

Figure: 24-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0324

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sse Renewables equinor

24.6.1.7 Potential Sub-Surface Archaeological Remains

161. Heritage assets located within or partly within the Onshore Development Area that are considered to potentially represent surviving below ground archaeological remains have not yet been fully evaluated through non-intrusive and intrusive (e.g. geophysical survey and trial trenching) evaluation approaches.

162. A summary of the sub-surface archaeological remains identified within the Onshore Development Area from desk-based and non-intrusive surveys (completed as of December 2024) is present in **Table 24-13**.

Table 24-13 Summary of Potential Archaeological Remains Identified to Date

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
Landfall				
N / A	APS_001	N / A	WWII anti glider ditches, barbed wire fences and weapons pits. All features removed and built over.	Negligible as no longer extant
N / A	APS_002	N / A	Semi-circular wire defence was added in 1941 removed in 1946.	Negligible as no longer extant
MHU3862	N / A	N / A	Site of mere containing finds of Mesolithic and later date.	Medium to High
MHU9001	N / A	N / A	Carved wooden rods and stakes of early Neolithic age found in carr peats exposed at Withow Mere.	Medium to High
MHU8838	N / A	N / A	Site of a deserted medieval settlement.	Low to Medium
MHU21236	N / A	N / A	Possible double ditch exposed at an oblique angle in the cliff face.	Low
MHU21232	N / A	N / A	Possible large pit in cliff section. Fill cut by modern field drain.	Negligible as no longer extant.
N / A	APS_014	Highlighted within D4	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
N / A	APS_015	N / A	WWII airfield bombing decoy visible as structures on early aerial imagery sources. Slowly removed from 1946, hexagonal structure was all that remained in 1977. This area is now redeveloped as a golf course.	Low
MHU3409	APS_012	D4A, D4B and D4C extending into D5	A prominent bank, possibly flanked by shallow ditches, approx. 135m long, running east to west, and parallel to field boundaries to the north and south. A series of linear trends forming two rectilinear enclosures [D4A] and [D4B] containing several probable features [D4C] within them, forming a large complex of enclosed features and potential structures. These are assumed to be associated with the known banks and possible ditches (MHU3409) A positively enhanced linear trend [D4E] have been detected to the north of [D4B]. Although discontinuous, it might be continuation of the complex. A zone of negatively enhanced response [D4F], that appears to overlie both [D4A] and [D4B]. This anomaly is on a comparable alignment to the known former bank and possible ditches known from aerial photograph. Overall, the data suggest different phases of activity. A weakly enhanced positive linear trend [D4G] has been detected starting from the western corner of [D4A] and continuing northwest, again suggesting an extensive network of related ditches and enclosures.	Low
MHU21212	N / A	N / A	Flint core and scraper, pre Romano-British and medieval pottery	Negligible
MHU21213	N / A	N / A	Flint core and two flakes	Negligible
MHU21214	N / A	N / A	Three flint chunks	Negligible
MHU21215	N / A	N / A	Aerial Photographs show WWII military coastal defences.	Low
N / A	APS_009	N / A	Anti-Tank Defences	Negligible as no longer extant

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU18422	APS_010, APS_011	D2A	WWII pillbox visible on APs. The pillbox appears to be surrounded by a barbed wire perimeter. Lozenge-shaped pillbox with rear blast wall still visible in field in 2009. In good condition. An area of strong magnetic response [D2A] which coincides with the extant WWII Pillbox.	Low to Medium
MHU21216	N / A	N / A	Flint scraper	Negligible
MHU21217	N / A	N / A	Flint chunk and flake	Negligible
MHU8834	N / A	N / A	Find of Mesolithic Elk antlers, Withow hole	Negligible
N / A	APS_004	N / A	A large area of eroded Medieval / Post Medieval ridge and furrow.	Low
N / A	N / A	D2B and D2C	Linear trends [D2B and D2C] in the west of the survey area may form part of an enclosure complex known to exist to the north of the survey area, but they are less well-defined hence their classification as possible archaeology.	Low to high
N / A	N / A	D6A to D6C	A fragmentary circular anomaly [D6A] measuring 14m in diameter appearing to be enclosed by a rectangular enclosure [D6B] measuring approximately 35m by 45m. While their form and nature suggest these features may be prehistoric in age, the possibility that they could be associated with WWII structures cannot be dismissed. No entries are recorded on the Humber HER in this area. Several less well-defined linear trends [D6C] have been detected. They are noted as possible archaeology in origin as their form is less coherent, but they are associated with anomalies [D6A] and [D6B].	Low to high
N / A	APS_008	D3A, D3B	Identified as possible archaeology in the west of the survey area is a fragmentary circular response [D3A] and a possibly associated curvilinear trend [D3B]. The form of the responses suggests a possible archaeological origin, but they could be due to natural variations or be associated with WWII activity (APS_008).	Low
N / A	N / A	D5A, D5B, D5C, D5D	Several well-defined linear anomalies [D5A] have been detected in the western half of this survey area which are a continuation of the enclosure complex detected in D4 to the north. Two negative linear anomalies on a north-south alignment possibly part of a trackway [D5B] These may continue northward into Field D4 to the north and connect to a series of enclosure features. A series of discrete positively enhanced responses [D5C] are present in the vicinity of [D5A] and [D5B], which have a similar magnetic response. These are fragmentary but may be related to these features and may represent a less well-defined ditch between these features. To the northeast of [D5C] is an area of enhanced disturbance [D5D]. It has been disrupted by the ridge and furrow patterning; however, the spread still retains some shapes that may be considered possibly archaeological in origin.	Low
Onshore ECC				
N / A	APS_018	N / A	Modern footpath visible as cropmark on aerial imagery sources.	Low
N / A	APS_019, APS_021	D9A, D10A, D10B	A series of linear trends [D9A] detected in the south-west of the survey area. The responses suggest two, potentially overlapping, enclosures with possible internal features. These responses extend westwards into D10 [D10A] suggesting a complex of enclosures and potential settlement features. A series of weaker or less well-defined anomalies [D10B]. These have a less definitive shape or bear a less obvious relationship to [D10A]. Nonetheless, many of these anomalies bear similar magnetic signatures to [D10A].	Low to Medium
MHU19339	N / A	N / A	Undated rectangular enclosure.	Low to Medium
N / A	APS_022	N / A	An area of Medieval / Post Medieval ridge and furrow is visible as an earthwork on aerial imagery sources.	Low
N / A	APS_025	N / A	An area of eroded Medieval / Post Medieval ridge and furrow is visible as a cropmark on aerial imagery sources.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N / A	APS_026	N / A	Field Boundary visible as cropmark on aerial imagery sources.	Low
N / A	APS_024	N / A	Field Boundary visible as cropmark on aerial imagery sources.	Low
N / A	APS_028	N / A	An area of eroded Medieval / Post Medieval ridge and furrow which is no longer visible as an earthwork on aerial imagery sources.	Low
N / A	APS_030	N / A	An area of Medieval / Post Medieval ridge and furrow was visible as an earthwork on aerial imagery sources and is now eroded.	Low
N / A	APS_034	N / A	Area of geological disturbance visible on aerial imagery sources.	Low
MHU22161	APS_035	N / A	Prehistoric enclosure visible as cropmarks on aerial imagery sources.	Low to Medium
N / A	APS_033	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources.	Low
N / A	APS_031	N / A	The line of a modern service trench which has been identified through aerial imagery sources.	Negligible
N / A	APS_016	N / A	The line of a modern service trench visible on aerial imagery.	Negligible
N / A	APS_048	N / A	Disused and waterfilled gravel pits at Barf Hill. Indicated as individual small pits on 1st ed OS 1852-55.	Low
N / A	APS_051	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources	Low
MHU1689	APS_037	N / A	Site of a round barrow shown on aerial photography with 1854 OS map also showing tumulus. Site of a round barrow indicated as a Tumulus antiquity on 1st Ed OS map. Not seen on any airborne remote sensing, satellite or NMP mapping data sources, no detailed mapping possible. Recorded by c19th century OS.	Medium to High
MHU1708	APS_038	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources.	Low
N / A	N / A	D33A	A curving trend [D33A] in the west of the area surveyed to date appears archaeological in origin. However, the limited survey makes interpretation cautious; this interpretation may be amended following completion of the area.	Low
N / A	N / A	D37A	A poorly defined linear trend [D37A] aligned NW-SE has been noted in the south of the survey area. Although interpretation is confused by the elevated level of background response due to natural variations, the data suggests a possible enclosure of unknown date which extends into D46 to the south. However, it may have a modern agricultural origin.	Low
N / A	N / A	D38A	In the south of the survey area, several well defined areas of increased response [D38A] have been detected. It is likely these have a natural origin, although they could indicate past extraction or other anthropogenic activity, hence their categorisation as having a possible archaeological origin.	Low
N / A	N / A	D46A	A poorly defined linear trend [D46A] aligned NE-SW has been noted in the north of the survey area. This appears to be associated with [D37A] to the north, suggesting a possible enclosure. However, it may have a modern agricultural origin.	Low
N / A	N / A	D45A	Two linear trends [D45A] have been detected in the centre of the survey area. These have been noted as having a possible archaeological origin, although they may be associated with the historic field boundary and adjacent wood.	Low
N / A	APS_049	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources	Low
N / A	APS_044	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources	Low
N / A	N / A	D50A	Two curving linear trends [D50A] have been detected in the northeast of the survey area. It is likely that these have a natural origin, although an archaeological origin cannot be excluded.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU15238	APS_047	D52H	A single building marked as 'Weedland' is mapped on the 1854 and 1892 OS maps. Aerial imagery highlights eroded ridge and furrow within this area.	Low
MHU3010	APS_047	D52A, D52B, D52C	Possible enclosures and ditch systems of unknown date. Aerial imagery highlights eroded ridge and furrow within this area.	Low to Medium
N / A	APS_047	D52E	Throughout the survey area slightly sinuous linear trends [D52E], generally aligned east-west, are apparent in the data. These have been noted as having a possible archaeological origin based on their form and nature. However, while they may indicate field systems, they may have a natural origin associated with the underlaying Flamborough Chalk, and superficial glacial till deposits. Aerial imagery highlights eroded ridge and furrow within this area.	Low
N / A	APS_050	D53A, D53B, D53C	An undated cropmark complex is visible on aerial imagery sources. Geophysical survey in the north-west of the survey area detected a series of enclosures and possible associated trackways which are a continuation of the complex detected in D52 to the north. These anomalies may be part of the recorded late prehistoric to Roman enclosures and ring ditch recorded to the south-west (MHU23982). A relatively well-defined rectangular enclosure [D53A] measuring approximately 34m by 30m has been detected. A series of linear and curvilinear anomalies [D53B] suggesting enclosures have been detected which are very likely to be part of the same complex as [D53A] but are not as well defined. A relatively well-defined circular response [D53C] has also been noted. This is 13m diameter and is suggestive of a ring ditch and comparable in size and form to the ring ditch recorded to the south-west (MHU23982).	Low to Medium
MHU3010, MHU8220	APS_045	N / A	Prehistoric enclosure visible as cropmarks on aerial imagery sources	Low to Medium

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N / A	APS_052	D60B, D60C, D60D	To the north of this linear response several circular anomalies indicative of ring ditches has been detected [D60B]. These range from 8m to 12m in diameter and form a cluster covering an area of approximately 90m by 75m. There are suggestions of possible internal features. Additional, associated, subcircular and rectilinear anomalies [D60C] have also been detected. Eroded and buried field systems, ditches, tracks, possible round barrow (ring ditch) and banked field mapped by NMP. Extensive area of multi period cropmarked features. Field and Old bank mapped on OS 1st Ed OS. Comparable linear and curvilinear responses [D60D] have been noted as having possible archaeology origins as they are not as coherent as those categorised as probable archaeology. Eroded and buried field systems, ditches, tracks, possible round barrow (ring ditch) and banked biield mapped by NMP. Extensive area of multi period cropmarked features. Biield and Old bank mapped on OS 1st Ed OS.	Low
MHU22439, MHU22438	APS_052	D61A	A series of well-defined linear trends [D61A] have been classified as having a possible archaeological origin based on the form and nature of the responses and their proximity to cropmarks of Iron Age and Romano-British enclosure, ring ditch and ditches (MHU22439) and cropmarks of medieval and post-medieval field boundaries and enclosure (MHU22438) (both records outside of the Development Area). However, it is likely that they are natural rather than anthropogenic in origin. Eroded and buried field systems, ditches, tracks, possible round barrow (ring ditch) and banked biield mapped by NMP. Extensive area of multi period cropmarked features. Biield and Old bank mapped on OS 1st Ed OS.	Low
N / A	APS_052	D61B, D61C	In the north of the survey area several negative linear trends [D61B] have been detected. These may have an archaeological origin; they may indicate an unmapped field system but could be due to drains.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
			Eroded and buried field systems, ditches, tracks, possible round barrow (ring ditch) and banked bield mapped by NMP. Extensive area of multi period cropmarked features. Bield and Old bank mapped on OS 1st Ed OS. A curving negative response [D61C] has been tentatively noted as having a possible archaeological origin. While the nature of the response is similar to the natural responses in the area, the shape of the response suggests a possible anthropogenic origin, although a natural origin is still likely. Eroded and buried field systems, ditches, tracks, possible round barrow (ring ditch) and banked bield mapped by NMP. Extensive area of multi period cropmarked features. Bield and Old bank mapped on OS 1st Ed OS.	
MHU23983	N / A	D57A	Undated field boundaries or natural features, identified on aerial photography.	Low
MHU11031	APS_053	D60A	Linear cropmarks and possible ring ditches shown on aerial photography.	Low
MHU3062	APS_054	N / A	Site of a complex of rectilinear and curvilinear enclosures and other ditches.	Low to High
MHU13247	APS_057	N / A	Causeway visible as cropmarks on satellite imagery	Low to Medium
MHU3718, MHU19598	APS_060	N / A	Medieval Grange visible as residual earthworks on Lidar data	Medium
MHU13246	N / A	N / A	Recorded site of sluice.	Low
MHU13250	N / A	N / A	Linleyhill low barn, Leven Carrs, recorded on the 1855 OS map.	Low
MHU13180	N / A	N / A	Waterloo Swing Bridge marked on 1891 OS map.	Low
N / A	APS_066	N / A	An area of Medieval / Post Medieval ridge and furrow is visible as an eroded residual earthwork on aerial imagery sources.	Low
MHU6543	APS_068	N / A	Former field boundaries.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU13170	APS_069	N / A	Sand pits north of Aikedale Farm, marked on 1st Edition OS map and now infilled and not visible.	Low
MHU13171	N / A	N / A	Saltings on east side of river hull	Low
MHU13151	N / A	N / A	Saltings on east side of river hull	Low
MHU13172	N / A	N / A	'Aqueduct' printed and shown on OS maps dating to 1855 and 1891	Low
MHU9480	N / A	N / A	Canal location during the post-medieval period	Low
N / A	APS_070	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources	Low
MHU3729	APS_073	N / A	Medieval Grange visible as residual earthworks on Lidar data	Medium
N / A	APS_074	N / A	Ditch visible as a cropmark on aerial imagery sources.	Low
MHU3734	APS_081	N / A	Cropmark complex with ditches and enclosures visible as cropmarks on aerial imagery sources	Low to Medium
N / A	APS_071	N / A	Post Medieval field boundary visible as cropmarks on aerial imagery sources	Low
N / A	APS_072	N / A	Eroded Medieval / Post Medieval ridge and furrow.	Negligible as no longer extant
N / A	APS_077	N / A	Former structure, a cottage, which is now removed. Mapped on 1st Ed OS 1852-55.	Low
MHU3703	APS_078	N / A	Ditch visible as a cropmark on aerial imagery sources.	Low
N / A	APS_076	N / A	Eroded Medieval / Post Medieval ridge and furrow.	Low
N / A	APS_095	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately east - west is visible as an earthwork and later as a cropmark on aerial imagery sources.	Low
N / A	APS_101	N / A	Iron Age / Roman enclosures visible as cropmarks on aerial imagery sources	Low to Medium

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU6588	N / A	N / A	A series of rectilinear enclosures, circular features and linear features identified on aerial photography.	Low to High
MHU6590	N / A	N / A	Possible round barrow visible on aerial photography.	Medium
N / A	APS_105	N / A	A group of former field boundaries dating to the Post Medieval period are visible as cropmarks on aerial imagery sources.	Low
MHU3725	APS_106	D107A and D107B	Medieval manor previously excavated during 1950s. The site is visible as earthwork and ditches on aerial photography. A well-defined negative linear anomaly [D107A] crosses the centre of the survey area. This has been categorised as having a probable archaeological origin as it appears to be a continuation of a feature visible on APs that is associated with Winthorpe Manor House (MHU3725). A few less well-defined linear trends and linear zones of elevated response [D107B] show some correlation with features associated with Winthorpe Manor House (MHU3725). However, interpretation is limited by the elevated level of background response in this area.	Medium
N / A	APS_109	N / A	An area of Medieval / Post Medieval Ridge and Furrow which is orientated approximately northeast - southwest is visible as an earthwork and later as a cropmark on aerial imagery sources.	Low
MHU3726	N / A	N / A	Post-medieval manor house previously excavated during the 1950s and the successor of Winthorpe Manor.	Medium
MHU22141	APS_112, APS_113	D113A, D113B, D113C, D113D, D113E, D113F	Iron Age / Roman enclosures visible as cropmarks on aerial imagery sources Data from the geophysical survey would suggest the complex is more extensive than the cropmarks suggest.	Low to Medium
			An enclosure system has been identified within the main enclosure; an internal division [D113B] has been detected. Superimposed on this is a circular anomaly [D113C] approximately 15m in diameter. Geophysical survey cannot date features, but the data would suggest that [D113C] is not contemporary with the enclosure system. Additional linear trends [D113D] have been detected which suggest the enclosure system extends northwards. Additional linear trends [D113E] have been detected which are most likely ditches associated with the enclosure / field system, but they are much weaker and not as well defined. Several discrete areas of enhanced response [D113F] have also been noted. The nature and form of the responses suggest potential archaeological deposits, although they could have natural origins.	
N / A	APS_114	N / A	Extractive pits which are now vegetated. Mapped by 1st Ed OS 1852-55.	Low
MHU21869	N / A	N / A	Medieval gold finger ring	Negligible
MHU3346	APS_126	D121A, D122A	Ditches visible as cropmarks, which could be part of the nearby medieval settlement at Raventhorpe. Light toned soilmarks which are not well defined, may indicate areas of buried features, in the south-west of this area Geophysical survey observed a poorly defined linear trench D121A possibly associated with MHU3346. Also detected was an L-shaped anomaly identified to be part of a possible enclosure [D122A]. Approximately 30m to the north-west of [D122A] is a well-defined circular anomaly [D122B]. The response suggests a possible ring ditch 10m in diameter.	Low to Medium
MHU13020	N / A	N / A	Dog Kennel farm mapped on 1855 OS map.	Negligible as no longer extant
N / A	APS_132	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N / A	APS_129	N / A	An area of Medieval / Post Medieval Ridge and Furrow which is orientated approximately northeast - southwest is visible as an earthwork and later as a cropmark on aerial imagery sources.	Low
N / A	APS_128	N / A	Eroded and buried field system with attached ditched buried enclosure and associated trackway.	Low to Medium
N / A	APS_133	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources	Low
N / A	APS_139	N / A	Area of Medieval / Post Medieval ridge and furrow visible on aerial imagery sources	Low
N / A	APS_143	N / A	Eroded Medieval / Post Medieval ridge and furrow.	Low
N / A	APS_147	N / A	An area of Medieval / Post Medieval ridge and furrow is visible as an earthwork on aerial imagery sources.	Low
N / A	APS_146	N / A	A pit of unknown date and type was visible as an earthwork on earlier aerial imagery sources.	Low
MHU20855	N / A	N / A	Three Gold Iron Age Coins	Negligible
MHU6605	APS_148	D141A, D141B, D141C, D142A, D142B, D142C	Noted in the Humber HER as a series of cropmarks, geophysical survey detected several strong linear trends showing good correlation to this record. The data from this survey area is dominated by a series of strong linear trends [D141A] which form a series of rectilinear enclosures which show good correlation with the known cropmark complex (MHU6605). These extend to the adjacent field - as is mapped by the Humber HER record MHU6605 – with [D142A] also corresponding to strong linear trends in the north of the adjacent field within the Onshore Development Area. These cropmarks indicate a series of enclosures and a trackway. Additional, less well-defined linear trends [D141C] have also been detected which are likely to be part of the same enclosure system. Several discrete pit type anomalies [D141D] have also been noted. These may indicate pit type features, although some may have natural origins.	Medium to High
			Further well-defined linear trends [D142B] extend south of [D142A] through the rest of the survey area. These correspond with known cropmarks which are noted as part of the same complex (MHU6605). However, it is not clear, based on the gradiometer data, if these are all contemporary. Additional, less well-defined linear trends [D142C] have also been detected which are likely to be part of the same enclosure system.	
N / A	APS_151	N / A	Ditch visible as cropmark and as residual microtopography on aerial imagery sources.	Low to Medium
MHU3663	APS_152	N / A	Possible double ditched dyke visible as cropmarks on aerial imagery sources.	Low to Medium
N / A	APS_153	N / A	Field boundary visible as cropmark on aerial imagery sources	Low
MHU12968	N / A	N / A	Park mapped on 1893 OS map.	Low
MHU13030	N / A	N / A	‘Old Marl Pit’ printed and shown on 1855 OS map and called ‘Autherd Pit’.	Low
N / A	APS_173	N / A	A ditch orientated east - west which is visible as an earthwork has been identified through aerial imagery sources.	Low
N / A	APS_177	N / A	Former WWII bomb crater recorded by NMP and surviving as very slight microtopography. Eroded Medieval / Post Medieval ridge and furrow.	Low
MHU9750	APS_185	N / A	Former medieval manor house within Shrunken Medieval Village (SMV). The site of an eroded Deserted Medieval Settlement of Bentley is visible as earthworks then as cropmarks on aerial imagery sources.	Medium
N / A	APS_189	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately north - south is visible as cropmarks on aerial imagery sources.	Low
N / A	APS_191	N / A	An area of Medieval / Post Medieval ridge and furrow is visible as an earthwork on aerial imagery sources.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU3530	N / A	D173A, D173B	The geophysical survey detected a series of positively enhanced linear trends forming rectangular enclosures 200m to the west of MHU3530. A series of positively enhanced linear trends forming rectangular enclosures and other delineations traverse the survey area in the south, on a predominantly east-west alignment [D173A]. On their own these form a small ladder settlement, albeit without a known historic road to follow. However, they may be a continuation of known cropmarks suggesting rectangular enclosures and settlement on a similar alignment 200m to the east (MHU3530), suggesting a potentially much larger settlement. Trenching previously carried out for DBS observed well-preserved remains of a double ditched trackway with associated enclosures and pits was recorded. The pottery recovered from the early phases of activity can only be broadly dated to the Iron Age or Roman periods, but a later phase of Roman activity (2nd to 4th century AD) is identifiable. A significant assemblage of Iron Age to Roman artefacts was recovered from the excavated features and it is suggested that a settlement lay in the vicinity of the trackway (AOC, 2024).	Medium
MHU12993	N / A	N / A	‘Bentley Cottages’ mapped and labelled on 1893 OS map.	Low
N / A	APS_207	N / A	Series of eroded buried ditches which comprise a settlement site and likely field system including trackways, pits and enclosures, under or overlain by circular ditched enclosures.	Medium
N / A	APS_208	N / A	An area of Medieval / Post Medieval ridge and furrow is visible as an earthwork on aerial imagery sources.	Low
MHU12996	N / A	N / A	Three buildings mapped on 1893 OS map labelled ‘Mouse Hill’	Negligible as no longer extant
N / A	APS_175	N / A	A bank roughly orientated northeast - southwest which is visible as an earthwork has been identified through aerial imagery sources.	Low
N / A	APS_176	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately northwest - southeast is visible as an earthwork on aerial imagery sources.	Low
N / A	APS_178	N / A	A ditch roughly orientated northeast - southwest which is visible as an earthwork has been identified through aerial imagery sources.	Low
N / A	APS_180	N / A	A former field boundary dating to the Post Medieval period is visible as an earthwork and is orientated approximately northwest - southeast.	Low
MHU12805	N / A	N / A	‘Dunflat Gate’ printed but not shown on 1890 OS map	Negligible as no longer extant
N / A	APS_190	N / A	Parallel ditch orientated east - west which is visible as cropmarks has been identified through aerial imagery sources.	Low
N / A	APS_192	N / A	An area of Medieval / Post Medieval Ridge and Furrow which is orientated approximately north - south is visible as an earthwork and later as cropmarks on aerial imagery sources.	Low
N / A	APS_188	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately east - west is visible as an earthwork and later as cropmarks on aerial imagery sources.	Low
N / A	APS_193	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately east - west is visible as an earthwork on aerial imagery sources.	Low
MHU9237	N / A	N / A	Post-medieval toll road	Low
N / A	APS_198	N / A	The site of an undated mound which is visible as an earthwork on aerial imagery sources.	Low to Medium
N / A	APS_205	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately north - south is visible as an earthwork on aerial imagery sources.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N / A	APS_210	N / A	A group of former field boundaries dating to the Post Medieval period are visible as cropmarks on aerial imagery sources.	Low
MHU1381	APS_215	N / A	Two round barrows located prior to 1968. The Humber HER lists the site of two round barrows. The OS 1st Ed OS map shows two extant mounds but no antiquity is labelled. Modern visualised Lidar data shows no topography over these former mounds.	Low to High
N / A	APS_213	N / A	An area of former field systems and ditches which are visible as cropmarks through aerial imagery sources.	Low
N / A	APS_218	N / A	A ditch orientated approximately north - south which is visible as a cropmark and has been identified through aerial imagery sources.	Low
MHU20109	N / A	N / A	Neolithic axe head	Negligible
N / A	APS_226	N / A	Former field boundary visible as cropmark on aerial imagery sources.	Low
OCS Zone 4				
N / A	APS_223	D183	A ditch orientated approximately north - south which is visible as a cropmark has been identified through aerial imagery sources. On the geophysical survey, weak negative linear trends have been detected running through the survey area on a broadly north-south alignment. These have been noted as having a possible archaeological origin, although interpretation is cautious due to their ephemeral and fragmentary nature.	Low
N / A	APS_222	D184A, D184C	A partial double ditched enclosure which is visible as a cropmark on aerial imagery sources.	Low to Medium
			A concentration of linear trends [D184A] has been detected along the southern limits of this survey area. Although fragmentary, the responses form a clearly defined series of enclosures. These are not recorded in the Humber HER or on AP transcriptions, but the size and form of the postulated enclosures are comparable to those recorded to the west (MHU3530) and east (1565989). In addition, the responses appear to respect the Iron Age / Roman track recorded in aerial photographs.	
N / A	APS_224	N / A	Multi-period complex cropmarked site which comprises a scarped trackway, enclosures and boundaries, which likely overlie possible Bronze Age funerary monuments. Extends to the east outside the AISA under and around later house and garden.	Low to High
N / A	N / A	D184B	In the northeast of the survey area a well-defined circular anomaly [D184B] has been detected. This is approximately 18m in diameter and consistent with a ring ditch suggesting a possible barrow. Although no barrow is recorded in the Humber HER at this location, barrows are noted within the wider area.	Low to High
N / A	N / A	D184D	Several amorphous zones of enhanced magnetism [D184D] have been noted within and around the enclosure system [D184A]. These are noted as having possible archaeological origins. While some may indicate in-situ deposits some may be due to natural variations or agricultural activity.	Low to Medium
N / A	APS_220	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately east - west, separated by two ditches is visible as an earthwork and later a cropmark on aerial imagery sources.	Low
N / A	N / A	D181A	A negatively enhanced trend is present crossing from the north and extending beyond the west of the survey area [D181A]. This could be an undocumented field boundary or trackway; however, given the weak response it may have a more natural origin.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N / A	N / A	D182A	Two negative linear trends [D182A] have been noted along the southern limits of the survey area. These have been noted as having a possible archaeological origin, although interpretation is cautious due to the elevated level of background response.	Low
OCS Zone 8				
MHU12981	N / A	N / A	Chalk Pit printed and shown on 1893 OS map	Negligible as no longer extant.
MHU12378	N / A	N / A	Barn shown but not named on 1855 OS map.	Negligible as no longer extant.
MHU12977	N / A	N / A	The 1893 OS map shows ponds mapped south of Briarpit Plantation.	Negligible as no longer extant.
MHU9751	N / A	N / A	Reserved Findspot	Negligible
N / A	APS_170	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately north - south is visible as earthworks on aerial imagery sources.	Low
N / A	APS_171	N / A	A pit of unknown date is visible as an earthwork on aerial imagery sources.	Low
N / A	APS_169	N / A	A former field boundary dating to the Post Medieval period is visible as a cropmark and is orientated approximately northeast - southwest.	Low
N / A	APS_164	N / A	Ditch visible as cropmark on aerial imagery sources.	Low
N / A	APS_167	N / A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately north - south is visible as an earthwork and later as cropmarks on aerial imagery sources.	Low
N / A	N / A	N / A	Cellar Heads Deer Park and Deer Run	Medium
N / A	N / A	D165A, D165B, D166A, D166B	The geophysical survey identified relatively well-defined trends (D165A & and D165B) suggesting a series of enclosures, some of which are present around the location of the former barn (MHU12378).	Low
			D166A and D166B corresponding to linear trends suggests a westward extension of the system of enclosure.	
N / A	APS_165	N / A	Water filled hollows visible via visualised LiDAR data, westernmost marked as a chalk pit on the 1st Ed OS 1852-55.	Low
N / A	APS_158	N / A	Eroded Medieval / Post Medieval ridge and furrow. A curvilinear bank is visible as slight microtopography via visualised LiDAR data. This bank may either under or overlie the residual ridge and furrow in this area.	Low

24.6.1.8 Above Ground Archaeological Remains and Heritage Assets

163. Features considered to represent above ground heritage assets within the Onshore Development Area are summarised in **Table 24-14**.

Table 24-14 Above Ground Heritage Assets Within the Onshore Development Area

Humber HER ID	Aerial Imagery Site ID	Description	Perceived Heritage Importance
Landfall			
MHU21240	N / A	Square pillbox constructed on the line of a field boundary ditch to the east of two earlier weapons pits but now within an enlarged field.	Low to Medium
MHU18422	APS_010, APS_011	WWII pillbox showing on aerial photography	Low to Medium
Onshore ECC			
MHU13146	N / A	Barfhill Bridge mapped on 1855 and 1891 OS maps.	Low
MHU13260	N / A	Swing Bridge dating to between the post-medieval and 19th century	Low
MHU13183	N / A	Linleyhill Road Bridge marked on 1891 OS map.	Low
S0005645	1420168	A WWII-dated pillbox noted as part of the Defence of Britain Project.	Low
MHU13113	N / A	New Road Bridge printed and shown on 1891 OS map.	Low
MHU13033	N / A	Milestone situated on the B1248.	Low
MHU12377	N / A	'MS Beverley 2 miles' printed and shown on OS 6" 1855 map	Low
OCS Zone 4			
There are no above ground heritage assets present in OCS Zone 4.			
OCS Zone 8			
There are no above ground heritage assets present in OCS Zone 8.			

164. These heritage assets represent only those within the Onshore Development Area which are considered to represent above ground remains as indicated by descriptive information held by the HER, through the assessment of aerial photographic, LiDAR and historic map analysis (**Volume 2, Appendix 24.3 Assessment of Airbourne and Satellite Remote Sensing Data Report**), and following the heritage walkover survey (**Volume 2, Appendix 24.4 Onshore Heritage Walkover Report**).

165. Those heritage assets which are described as above ground extant structures or earthworks within the HER information but which were found to be no longer extant (due to coastal erosion) during the heritage walkover survey have been retained in **Table 24-13**.

166. It is acknowledged that examples of above ground historic earthworks are a rare resource within Holderness as a result of agricultural activity and as such are considered valuable where they do survive as above ground features.

24.6.1.9 Archaeological Potential within the Onshore Development Area

167. The overall archaeological potential within the Onshore Development Area, as assessed in the ADBA (**Volume 2, Appendix 24.2 Onshore Archaeological Desk-Based Assessment**) prior to the assessment of the geophysical survey data, is considered to be moderate, with the following key distinctions drawn out based on information available to date:

- There is limited potential for encountering archaeology of Palaeolithic date within the Onshore Development Area;
- Evidence of Mesolithic and Neolithic settlement activity (largely comprising stray finds) is recorded at landfall, mainly on the foreshore, at the site of Withow Mere suggesting a moderate potential for encountering unrecorded assets;
- The presence of Bronze Age Barrows within the onshore ECC suggests there is moderate potential for further archaeology dating to this period, especially within the southeast section of the OCS Zone 4;
- Though limited within the Onshore Development Area, the extent of Iron Age records in the wider Study Area suggests a moderate potential for further Iron Age activity;
- Evidence of activity broadly dating to the Prehistoric period is present towards landfall with several flint findspots suggesting a moderate potential for further activity that can be dated broadly to the Prehistoric period;

- Evidence for Romano-British activity is concentrated at landfall with investigation to the north of the onshore ECC recording several Romano-British finds, supported by a known former settlement site, now presumed to be eroded. There is potential for further Romano-British activity also within OCS Zone 4 where PAS data highlights the recovery of 186 mapped findspots. As a result, there is high potential for further Romano-British activity to be uncovered;
- With only two records dating to the early medieval period located within the Study Area, there is low potential for early medieval activity to be uncovered within the Onshore Development Area;
- Medieval settlement activity is present across the Onshore Development Area including at landfall as well as recorded activity along the onshore ECC near Bentley suggesting a moderate to high potential for further activity dating to this period;
- Evidence of post-medieval activity includes the site of Winthorpe Hall mapped within the onshore ECC, suggesting a moderate potential for further post-medieval dated activity;
- The extent of non-designated heritage assets situated within the 500m Study Area dating to the 19th century suggests some potential for further activity dating to this period, though with the records principally corresponding to structures, there is low potential for buried archaeological remains dating to the 19th century; and
- There is a concentration of Modern activity dating to WWI and WWII at landfall including the presence of two extant pillboxes, though an additional pillbox is present to the northeast of Scorborough along the onshore ECC.

168. A large number of undated assets including enclosures, ring ditches and field systems are also recorded within the Onshore Development Area which may be of prehistoric or Roman date.

169. The archaeological potential within the Onshore Development Area is based on an assessment of data obtained through an assessment of baseline data gathering and survey campaigns to inform the assessment. As the EIA progresses, ongoing survey work will further inform and add to the archaeological potential within the Onshore Development Area.

24.6.1.10 Heritage Importance

170. The non-designated heritage assets within the Onshore Development Area (identified to date as part of this assessment) are examples of locally common features representing Medieval / Post Medieval agriculture, and modern military activity. Based on information available to date, these assets may contain evidence that would contribute to understanding the archaeological resource of the local area. They are therefore anticipated to be of low heritage importance.

171. Evidence of the Mesolithic, Neolithic, Bronze Age, Iron Age and Medieval periods has also been recorded across the Onshore Development Area. As well as stray finds and recorded 'sites', these have included earthworks and cropmarks. Given the uncertainty regarding the origin of potential sub-surface archaeological remains of this nature (based on available data), this chapter has been prepared in line with the precautionary principle whereby the highest likely level of importance may be assigned and assessed within **Section 24.7**, as necessary. This precautionary approach represents good practice in archaeological impact assessment and reduces the potential for impacts to be under-estimated.

172. For the previously unrecorded non-designated heritage assets, identified as a result of the analysis of aerial photography, LiDAR data and historic mapping (**Volume 2, Appendix 24.3 Assessment of Airbourne and Satellite Remote Sensing Data Report**) and geophysical survey (**Volume 2, Appendix 24.6 Onshore Geoarchaeological Desk-Based Assessment**) it has not yet been possible to determine the precise nature, extent or date of these features. It may also be the case that some (or many) of the features prove to be non-archaeological. Given this uncertainty, these potential heritage assets have also been assigned a precautionary heritage importance, where appropriate, depending on the nature of the asset in question, against which potential impacts have been assessed in **Section 24.7**.

24.6.1.11 Heritage Setting Considerations

173. Designated and non-designated heritage assets have been considered as part of an ongoing heritage setting assessment, the initial results with respect to the Project's onshore infrastructure are presented in **Volume 2, Appendix 24.5 Onshore Heritage Setting Assessment**.

174. To date 18 heritage assets have been identified where a permanent change in setting could lead to harm to their significance. These are:

- Bowl barrow 400m north of Highfield House (NHLE 1007731 – Scheduled Monument);
- Beverley sanctuary limit stone, Bishop Burton cross (NHLE 1012589 – Scheduled Monument);
- Beverley sanctuary limit stone, Bentley Cross (NHLE 1012590 – Scheduled Monument);
- Beverley sanctuary limit stone, Walkington Cross (NHLE 1012591 – Scheduled Monument);
- Ling Howe long barrow (NHLE 1015306 – Scheduled Monument);
- Ella Hill round barrow (NHLE 1018622- Scheduled Monument);

- ‘Cellar Heads’ moated site and related ridge and furrow earthworks at Risby Park, 700m north west of Risby Park Farm (NHLE 1015312 – Scheduled Monument);
- Risby Hall (NHLE 1001419 – Grade II Registered Park and Garden), Risby Jacobean gardens, hall and medieval settlement remains (NHLE 1018600 – Scheduled Monument);
- Heavy Anti-aircraft gunsite, 350m west of Butt Farm (NHLE 1019186 – Scheduled Monument);
- The Minster Church of St John (Beverley Minster) (NHLE 1084028 – Grade I Listed Building);
- Walkington Conservation Area;
- Church of All Hallows (NHLE 1161425 Grade II* Listed Building);
- The Black Mill (NHLE 1310087 – Grade II Listed Building); and
- Old Hall (NHLE 1103420 – Grade II Listed Building) including associated buildings at Low Hall (NHLE 1103419, NHLE 1310090, NHLE 1346992 – Grade II Listed Buildings).

175. As the EIA progresses and the OCS zones are refined further, a re-evaluation of Step 3 and consideration of Step 4 of the setting assessment will be undertaken and presented as an updated technical appendix to the ES chapter.

176. A setting assessment with respect to the Project’s offshore infrastructure has been scoped out of this assessment due to the distance of the Array Area (210km) from the coastline. At this distance, changes to setting affecting heritage significance are unlikely to be significant.

24.6.1.12 Historic Landscape Characterisation

177. The HLC data held by the Humber HER has been obtained as it assists in the interpretation of the current landscape’s history and evolution and forms an aid to identifying areas of the landscape which may be sensitive to change. The Historic Landscape Characterisation of the Onshore Development Area is shown on **Figure 24.2-5**.

178. Overall, the HLC data identifies a distinctly rural landscape, the history of which is mostly related to the period of Enclosure (piecemeal and parliamentary). There are links to the earlier history of the landscape, however, with surviving earthworks of medieval villages and medieval moated manors. The route of the Onshore Development Area passes through fields of distinctly modern agricultural character, with large fields that have developed since the period of Enclosure, most often amalgamated from smaller fields from the mid-20th century onwards.

179. The majority of the Onshore Development Area is characterised as Modern Fields. Towards landfall, in addition to the beach, the onshore ECC is made up of enclosed land either dated to the medieval period or 18th century parliamentary planned enclosure, as well as isolated farm complexes and modern fields. As the route progresses in a south-westerly direction towards the OCS zones, the onshore ECC continues to pass through modern fields. Towards Scorborough the route passes through early enclosure dating to the 16th century as well as further planned enclosure dating to the 19th century. Continuing south past Cherry Burton and Bishop Burton, the onshore ECC passes through modern fields and parliamentary planned enclosure as well as a golf course.

180. Within OCS Zone 4 the historic landscape is characterised by early enclosure dating to the 16th and 17th centuries as well as modern fields. Across OCS Zone 8 the landscape consists of modern fields, an area of enclosure dating to the 16th century. Between the two OCS zones, the onshore ECC is characterised by areas of plantation woodland as well as 17th century-dated areas of enclosure.

181. To the west of OCS Zone 8 lies the scheduled site of 'Cellar Heads' moated site (NHLE 1015312). This Scheduled Monument is part of a 16th century development which shapes the area’s historic landscape with the moated lodge or banqueting house built on the southern edge of a deer park established in 1541 covering c.100 acres for a visit by Henry VIII and his court. The exact extent of this deer park is unknown. However it is thought that a natural deer run was established using the glacial valleys. Much of the parkland character still exists and it is designated as a Local Wildlife Site (LWS) (Risby Park).

24.6.1.13 Geoarchaeological and Palaeoenvironmental Potential

182. A Geoarchaeological Desk-Based Assessment (GDBA) (**Volume 2, Appendix 24.6 Onshore Geoarchaeological Desk-Based Assessment**) identified deposits of archaeological and geoarchaeological interest within the Onshore Development Area. The GDBA Study Area was defined as 1km from the Onshore Development Area. The GDBA deposit model comprised the review of recent and historic geotechnical and BGS borehole records located in the Study Area.

183. For the purposes of the GDBA, the Onshore Development Area was divided into five segments (**Figure 24.6-2**):

- Area A: Skipsea to A165 / Bridlington Road;
- Area B: A165 / Bridlington Road to Beverley Airfield;
- Area C: Beverley Airfield to Bealey’s Beck;
- Area D: Bealey’s Beck to The Avenue / Walkington; and
- Area E: The Avenue / Walkington to Beverley (OCS zones).

184. Deposits of potential archaeological interest include Holocene alluvium, organic, Lacustrine deposits, glaciofluvial deposits and near surface till.

185. Chalk bedrock is mapped across the entire Onshore Development Area. This is overlain by Pleistocene glacial till in Areas A and B. This till represents a period of glaciation prior to melting and re-glaciation. It is only identified with certainty where remains of glacial lakes overlie the till. All instances of this deposit are outside the Study Area. Deposits of archaeological interest are not anticipated to be present within these deposits.

186. Glaciolacustrine deposits are northwest and west of Area A (**Figure 24.6-18**) and are modelled to extend into the western end of the Study Area in Area A, extending into the northeast of Area B (**Figure 24.6-19**), and external to the Study Area to the northwest of Area B and Area C (**Figure 24.6-19** and **Figure 24.6-20**). This represents lake deposits formed during a warming period of ice melt, when glaciers receded and meltwater inhabited depressions in the underlying surface. Archaeological remains of Palaeolithic date (e.g. worked lithics, faunal remains) may survive in these deposits, although not likely to be in situ.

187. Glacial till of probable Devensian (c. 116,000 to 11,800 BP) origin is recorded across the entirety of the Onshore Development Area. It comprises stiff, gravelly clay, with sand and chalk. The deposit may also include the earlier deposit of Glacial Till 1, as it is difficult to distinguish between the two glacial till deposits unless they are separated by the glaciolacustrine deposits identified. These are overlain by Pleistocene glaciofluvial deposits and pre-Holocene surface. Archaeological remains are not expected within this unit but may survive on / within its surface.

188. Glaciofluvial sands and gravels represent the path of meltwater channels produced by declining ice mass upon climatic warming. These may have been beneath or downstream of glacial ice. The glaciofluvial deposits also represent the final unit deposited during the Pleistocene period, and as such the surface topography represents the likely land surface at the beginning of the Holocene (c. 11,800 years ago). These deposits are mapped within Areas A, B, C and D and varying thicknesses. Rare palaeolithic archaeological remains (e.g. worked lithics, faunal remains) may be found within this unit but would be ex-situ and likely abridged.

189. Lacustrine deposits formed within lake environments, locally called meres. These formed in depressions in the surface of the underlying geology, filling with water from melting ice as the climate warmed. These deposits are therefore likely to be of Late Devensian to Early Holocene date. The deposits are recorded across the centre (Area B) to northeast (Area A) of the modelled area. These deposits comprise primarily fine-grained, minerogenic material, such as clay, silt, and sand. Generally, these are laminated or varved, representative of changes to local depositional conditions. These deposits may contain archaeological remains associated with acquisition of lake resources or may bury earlier archaeological remains.

190. Holocene lower alluvium is mapped across Areas A, B, C and E and is defined as minerogenic alluvial deposits recorded underlying organic or archaeological deposits. Earlier prehistoric archaeological remains may be sealed within or beneath these deposits. Holocene organic deposits are representative of wetland development and comprise peat, and organic silt and clay. These seasonally waterlogged environments are still dry enough to allow vegetation to take hold (woodland or reeds etc). In Area B a depression in the surface is recorded c. 600m from the northwest of the onshore ECC (TA15SW2) reaching -8.5m OD, potentially indicating a former channel or similar environment. In-situ archaeological remains may be preserved upon or within the organic deposits themselves (e.g. trackways, fish traps), or earlier remains may be sealed beneath them (e.g. cut features, flint tools) from the period prior to wetland development.

191. Archaeological remains have been identified in three interventions included in the modelling. These comprise infilled cut features which have been encountered during excavation of exploratory trial pits.

192. A pit feature was encountered external to the Study Area to the northwest of Area B. The intervention (AOC53152_TP013) records a pit feature with one fill, inclusions of which include shell fragments. The feature was encountered between 1.00 and 1.20m bgl (6.90 to 6.70m OD) overlying the lower alluvium and sealed by a unit of upper alluvium / warp.

193. Approximately 20m from the onshore ECC boundary in Area C, a linear feature was encountered (AOC53152_TP024) between 0.45 and 1.00m bgl (5.30 and 4.75m OD). The feature is situated between two deposits of alluvial material. The feature contains one fill, comprising soft, friable, mid blue-grey fine sandy clay with occasional orange mottling. This suggests the fill to have been deposited by water of changing level allowing for oxidation. As such, it may be that the feature represents a drainage ditch.

194. A further linear feature was encountered approximately 35m from the boundary of the onshore ECC in Area D (AOC53152_TP051). The feature was situated 0.40 to 0.50m bgl (18.49 to 18.39m OD) and contained one fill.

195. An upper unit of minerogenic alluvium or warp is recorded across Areas A, B, C, D and E. Due to the nature of deposition, it is not possible to make distinction between alluvium and anthropogenic warping. Alluvium represents more frequent seasonal or daily inundation and associated deposition of minerogenic material. Warp is late medieval, and more commonly post-medieval, intentional flooding of land as part of human agricultural activity, to increase the fertility of the soils. Both deposits form as silt and clay units, differentiation between natural alluvium and warp can sometimes be indicated by colour and compaction. Later prehistoric and onwards archaeological remains may be sealed within or earlier archaeology beneath these deposits.

24.6.2 Predicted Future Baseline

196. If the Project is not developed, an assessment of future conditions for onshore archaeology and cultural heritage has been carried out and is described within this section.

197. The historic environment is vulnerable to the effects of climate change. Changes to environmental conditions have the potential to alter the range of flora and fauna within the environment, thereby potentially changing the inherent character of historic and designated landscapes and affecting historic building materials (e.g. fungal / plant growth and insect infestation due to the effects of global warming).

198. Extremes in temperature and cycles of wetting and drying resulting from climate change can also damage historic buildings, landscapes and buried archaeological remains, variously as a result of soil saturation and shrinkage and changes to soil chemistry.

199. Waterlogged archaeological and palaeoenvironmental remains are particularly vulnerable in this regard, with the desiccation of soils and lowered groundwater levels potentially increasing the risk of decay to such remains, if and where present. These damaging cycles create stressful environments for buried archaeology, with preservation in situ becoming increasingly difficult. Given that heritage assets, and the contexts in which they survive vary, it follows that multiple factors may affect their survival, stabilisation, or decay. On this basis, broad-scale strategies to safeguard the historic environment from the effects of climate change are therefore difficult to determine, with no one single solution available.

200. Elements of climate change considered to be of relevance to the Onshore Development Area include those associated with sea level change and erosion, which have the potential to damage and de-stabilise coastal heritage assets. In particular, increased frequency and severity of storms, coupled with sea level rise, will likely impact coastal heritage assets and in the medium to long-term, sea-level rise is likely to drive a very significant change. The sub-surface archaeology which is exposed, investigated, and recorded to professional standards may, however, be considered a public benefit in terms of understanding of and building upon the archaeological record, and certainly preferable to assets and remains being lost altogether.

24.7 Assessment of Effects

201. The likely significant effects to onshore archaeology and cultural heritage receptors that may occur during construction, operation and decommissioning of the Project are assessed in the following sections. The assessment follows the methodology set out in **Section 24.5** and is based on the realistic worst-case scenarios defined in **Section 24.4.4**, with consideration of embedded mitigation measures identified in **Section 24.4.3**.

202. As noted in **Section 24.4.5**, the assessment of likely significant effects for the OCS zone infrastructure will remain the same for both development scenarios, with the exception of impacts relating to a change in setting and associated heritage significance of designated and non-designated heritage assets and historic landscapes during the O&M phase. The assessment outcomes for these three impacts are likely to differ and have therefore been reported separately below.

24.7.1 Potential Effects During Construction

24.7.1.1 Physical Impacts to Designated Heritage Assets (ONA-C-01)

203. Impacts resulting in potential effects as part of the construction works are those associated with intrusive groundworks, including:

- The removal of topsoil anywhere across the Onshore Development Area;
- Open cut trenching as part of the onshore ECC installation works;
- The excavation of TJB / jointing bays, trenchless installation entry / exit pits and link boxes along the onshore ECC and at the landfall;
- Groundworks associated with the onshore ECC temporary construction corridor and associated access tracks;
- Groundworks associated with the OCS zone;
- Vibration from trenchless crossings and other intrusive groundworks; and
- Accidental damage from plant movement and other construction traffic.

204. Intrusive groundworks may also lead to changes in ground conditions and hydrological processes which could cause desiccation and drying out of wetland deposits and associated preserved waterlogged archaeological or geoarchaeological remains associated with designated heritage assets. Potential changes to ground conditions have been assessed with reference to **Chapter 21 Water Resources and Flood Risk** and **Chapter 19 Geology and Ground Conditions**.

205. Any physical impact to designated heritage assets (and their associated heritage significance) should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset the greater the justification would be needed for any loss (EN-1, Paragraph 5.8.15). Any physical impact would be permanent and irreversible. If disturbed or removed without an appropriate record having been made, their context and relationship to other heritage assets is partially or completely lost and their heritage significance is as such likely to be reduced.

206. Avoiding known designated heritage assets such as Listed Buildings, Scheduled Monuments, Registered Parks and Gardens and Conservation Areas, where possible, was adopted as a principle in the site selection process leading up to the identification of the Onshore Development Area (**Figure 24.2**) and will also be applied during further site selection refinements at ES stage (see **Chapter 5 Site Selection and Consideration of Alternatives** for more details). As such, **no change** is anticipated to occur to designated heritage assets.

24.7.1.2 Physical Impacts to Known and Unknown Non-Designated Heritage Assets (ONA-C-02)

207. Impacts resulting in potential effects as part of the construction work are those associated with intrusive groundworks, including:

- The removal of topsoil anywhere across the Onshore Development Area;
- Open cut trenching as part of the onshore ECC installation works;
- The excavation of TJB / jointing bays, trenchless installation entry / exit pits and link boxes along the onshore ECC and at the landfall;
- Groundworks associated with the onshore ECC temporary construction corridor and associated access tracks;
- Groundworks associated with the OCS zone;
- Vibration from trenchless crossings and other intrusive groundworks; and
- Accidental damage from plant movement and other construction traffic.

208. Intrusive groundworks may also lead to changes in ground conditions and hydrological processes which could cause desiccation and drying out of wetland deposits and associated preserved waterlogged archaeological or geoarchaeological remains. Potential changes to ground conditions have been assessed in **Chapter 21 Water Resources and Flood Risk** and **Chapter 19 Geology and Ground Conditions**.

209. Any adverse impacts (and associated effects) upon sub-surface archaeological remains, geoarchaeological / palaeoenvironmental deposits, and above ground heritage assets due to construction-related works would likely be permanent and irreversible in nature. Once archaeological deposits, and the relationships between deposits, material and their wider surroundings have been damaged or disturbed, it is not possible to reinstate or reverse those changes. As such, physical impacts to an asset's fabric (where elements lost contribute to heritage significance) can represent a total loss of an asset's heritage significance, or parts of it, and the character, composition or attributes of the asset may be fundamentally changed or lost from the site altogether.

210. A staged programme of assessment has commenced with a view to building upon an understanding of potential archaeological remains and their likely heritage significance in the Study Area and more specifically within the Onshore Development Area. This approach, to date, has identified several areas of possible archaeological and geoarchaeological interest, which have been assigned initial predicted heritage significance levels between low and high. Those considered to be most vulnerable regarding the various elements of construction are highlighted below. However, it should be borne in mind that the assessments and surveys being progressed will further inform the nature and extent of any features present and have the potential to alter the perceived heritage significance of assets encountered.

211. It should also be emphasised that the potential for buried archaeological remains, geoarchaeological / palaeoenvironmental remains, and above ground heritage assets, not currently represented by the desk-based and non-intrusive survey data, to be impacted as a result of construction works should not be discounted. In the absence of further data regarding the 'potential' archaeological resource, such assets must be considered as potentially having a high perceived heritage importance.

212. Extant earthworks, field boundaries and ancient woodland are an integral part of the HLC. Any loss of such features arising as a result of construction activities therefore has the potential to impact upon an integral part of the HLC within the Onshore Development Area and wider surrounds. A full review of historic boundaries and lanes which may be impacted by the Onshore Development Area will be undertaken following further refinement of the Onshore Development Area and presented within the ES.

24.7.1.2.1 Receptor Importance (Sensitivity)

24.7.1.2.1.1. Landfall

213. At landfall, the data available and assessed to date (as part of this assessment) identifies a number of archaeological features and deposits recorded within the exposed cliff face as well as artefacts that have been recovered. Of particular note is the site of Withow Mere, a Mesolithic site which continued in use as a lake dwelling during the Neolithic period. At this site carved wooden rods and stakes dating to the early Neolithic and Mesolithic-dated Elk antlers have also been uncovered at landfall. Due to the limited amount of surviving archaeological remains attributed to these periods onshore, these assets have been assigned **medium** to **high** importance.

214. Several Modern features are also present at landfall. This includes two pillboxes which survive in good condition, one dating to WWI and the other to WWII. These extant features have been assigned a **low** to **medium** heritage importance.

215. With respect to the potential presence of geoarchaeological / palaeoenvironmental remains, the GDBA (**Volume 2, Appendix 24.6 Onshore Geoarchaeological Desk-Based Assessment**) notes glaciofluvial deposits which may contain preserved Palaeolithic archaeological remains as well as lacustrine deposits which may contain archaeological remains associated with acquisition of lake resources (such as Withow Mere) or may bury earlier archaeological remains. These deposits have a **medium** heritage importance.

216. The HLC and parliamentary planned enclosure, as well as isolated farm complexes and modern fields. Initial Aerial Photographic and LiDAR Analysis (**Volume 2, Appendix 24.3 Assessment of Airbourne and Satellite Remote Sensing Data Report**) has also recorded areas of eroded ridge and furrow dating to the medieval / post-medieval periods which have been assigned a **low** heritage importance.

24.7.1.2.1.2. Onshore ECC

217. Data available and assessed to date within the onshore ECC indicates the potential presence of sub-surface archaeological remains of varying type. Due to the extent of the onshore ECC, the large number of possible areas of archaeological interest currently identified and the inability to accurately ascertain the presence / absence, nature and extent of the potential buried remains within it, it is not possible at this stage of enquiry to identify each and every heritage asset representative of below ground archaeology that may be impacted by construction works associated with the final DCO Limits.

218. Areas of notable features within the Onshore Development Area are presented in **Section 24.6.1.2**, and all recorded heritage assets relating to potential sub-surface remains are listed in **Table 24-13**. These areas have been variously assigned a **low** to **high** perceived heritage importance based on information available to date.

219. In addition to areas of potential buried archaeological remains, above ground archaeological remains (historic earthworks) have been identified at **Table 24-14**. These have been assigned a **low** perceived heritage importance based on information available to date.

220. The GDBA (**Volume 2, Appendix 24.6 Onshore Geoarchaeological Desk-Based Assessment**) highlights areas of glaciolacustrine deposits in the onshore ECC towards landfall in which there is the potential for the preservation of Prehistoric-dated archaeology though likely not in-situ. Glaciofluvial deposits are also present across the onshore ECC which have a moderate potential to preserve Palaeolithic material, although a low potential to preserve palaeoenvironmental material. The heritage importance for these deposits is considered to be **medium**.

24.7.1.2.1.3. OCS Zone 4

221. Within OCS Zone 4, initial Aerial Photographic and LiDAR Analysis (**Volume 2, Appendix 24.3 Assessment of Airbourne and Satellite Remote Sensing Data Report**) has highlighted the presence of several ditches visible as cropmarks including a partial double ditched enclosure as well as an area of ring ditches and enclosures. Due to the uncertainty of the heritage significance of these cropmarks and geophysical anomalies, and in the absence of further assessment and survey, these assets have been assigned a precautionary **low** to **high** heritage importance.

24.7.1.2.1.4. OCS Zone 8

222. Initial Aerial Photographic and LiDAR Analysis (**Volume 2, Appendix 24.3 Assessment of Airbourne and Satellite Remote Sensing Data Report**) has highlighted several areas of medieval and post-medieval ridge and furrow as well as a post-medieval field boundary. These have been assigned a **low** heritage importance.

223. Data available and assessed to date within OCS Zone 8 also includes the 19th century ponds and barn mapped in the centre and to the north of OCS Zone 8. As these assets are not extant, their heritage importance is **negligible**.

224. The eastern boundary of the historic deer park and deer course which formed part of the landscaped grounds of Risby Hall (NHLE 1018600) falls within OCS Zone 8, with the southern section surviving as an extant field boundary. This historic landscape is considered to have a **medium** level of heritage importance.

225. The GDBA (**Volume 2, Appendix 24.6 Onshore Geoarchaeological Desk-Based Assessment**) identifies deposits of Pleistocene – Glacial Till across both OCS zones which has a **low** heritage importance.

24.7.1.2.1.5. Summary

226. Overall, the heritage importance of the receptors at landfall are considered to be of **low** to **high** importance, with those mapped along the onshore ECC as being from **low** to **high**, the known heritage assets within OCS Zone 4 range from **low** to **high** and within OCS Zone 8 are considered to be of **medium** heritage importance.

24.7.1.2.2 Impact Magnitude

227. The Applicant has committed to undertake additional programmes of survey and evaluation where of relevance to sub-surface archaeological remains, which may include geophysical survey and a scheme wide programme of trial trenching. This strategy will be outlined as part of the Outline Onshore WSI (see **Table 24-4**, Commitment ID CO62), submitted with the DCO application. The survey and evaluation work may indicate the presence of previously unknown buried archaeology as well as further verify previously known or anticipated buried remains as indicated by previous non-intrusive survey, enabling the resource to be appropriately addressed by means of mitigating any impacts in a manner proportionate to the significance of the remains present.

228. Archaeological mitigation is envisaged to comprise a combination of the following recognised standard approaches:

- Further advance and enacting of preservation in situ options and requirements (e.g. avoidance / micro-siting / trenchless installation techniques, etc., where possible);
- Archaeological excavation: including subsequent post-excavation assessment, and analysis, publication and archiving;
- Archaeological monitoring / watching brief: including subsequent post-excavation assessment, and analysis, publication and archiving (where appropriate); and
- Earthwork condition surveys: including subsequent reporting and archiving (followed by backfilling and reinstatement, where required on a case-by-case basis).

229. Further evaluation of potential geoarchaeological / palaeoenvironmental remains is likely to include a programme of geoarchaeological monitoring of engineering-led GI works to inform mitigation approaches such as geoarchaeological assessment and palaeoenvironmental survey (see **Table 24-4,** Commitment ID CO62).

230. Impact to the HLC (including hedgerows and parish boundaries) will be minimised by returning field boundaries / areas / hedgerows, where practicable, to their pre-construction condition (noting the limitations of tree planting directly over the installed onshore export cables) and character post-construction, as part of a sensitive programme of backfilling and reinstatement / landscaping. Certain hedgerows and field boundaries (e.g. parish boundaries) may require recording prior to the construction process and enhanced provisions made during reinstatement (see **Table 24-4**, Commitment IDs CO65, CO100 and CO101).

231. Site-specific measures adopted by the Applicant will be determined post-consent as the Project progresses in a specific and bespoke manner tailored on a case-by-case or area-by-area basis (as required) accordingly and in response to the combination of onshore archaeological and cultural heritage assessment. Opportunities to optimise the programme, will be considered where practicable, including efficient commencement of archaeological work in the post-consent stages.

232. The preferred and optimum mitigation measure is preservation in situ, wherever possible. By avoiding buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets, either largely or in their entirety (as indicated by existing and available data), the magnitude of impact may be reduced depending on the extent of the asset in question (with reference to change or impact upon heritage significance) and the degree to which preservation in situ has been applied.

233. Where avoidance is not possible, significant impacts upon buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets may potentially, to a degree, be offset by the application of appropriate alternative mitigation measures which serve to preserve archaeological remains, where present, by record (e.g. following intrusive evaluation and subsequent excavation, where required).

234. Although preservation by record cannot be considered to reduce the magnitude of impact (and associated significance of effect) per se, given the physical loss of a given asset, the acquisition of a robust archaeological record of an asset may be considered to adequately compensate identified, recognised and acceptable harm to a heritage asset in line with industry standard good practice mitigation measures and compatible with the definitions outlined in **Section 24.5.3**.

235. It is considered that the impact to known and unknown non-designated heritage assets will be **negligible** to **low** as a worst-case scenario.

24.7.1.2.3 Effect Significance

236. Overall, it is predicted that the heritage receptors at the landfall, onshore ECC and OCS Zone 4 are of **low** to **high** heritage importance, with receptors at OCS Zone 8 being **medium**. The magnitude of impact is **negligible** to **low**. With the application of mitigation through preservation by record, it is anticipated that the residual magnitude of impact and significance of effect can be reduced or offset to levels considered **non-significant** in EIA terms (i.e. anticipated to be no worse than a **minor adverse** significance of effect).

237. The application of mitigation by preservation in situ would result in **no change**.

24.7.1.3 Changes to the Setting of Designated and Non-Designated Heritage Assets, Which Could Affect their Heritage Significance (ONA-C-03 and ONA-C-04)

238. Activities undertaken as part of construction works for the Project have the potential to impact designated and non-designated heritage assets through a temporary change in their setting which may affect their heritage significance. Temporary changes in the setting of heritage assets, should they occur, may do so for example through the presence of machinery, construction traffic and general construction activities taking place within and adjacent to the Onshore Development Area. The sight, sound, any dust created, and even smell, during the construction phase has the potential to temporarily change the setting of heritage assets and their associated heritage significance.

24.7.1.3.1 Receptor Importance (Sensitivity)

239. Initial review of the designated heritage assets located in proximity to the Onshore Development Area and therefore potentially susceptible to a temporary change to their setting include the following assets:

- Skipsea Grange (NHLE 1083825 - Grade II Listed Building)
- Hallgarth medieval hall and moat (NHLE 1013705 - Scheduled Monument)
- Barf Hill moated site (NHLE 1007717 - Scheduled Monument)
- Former Lockington Railway Station (NHLE 1346972 - Grade II Listed Building)
- Moated site 310m northeast of Scorborough church (NHLE 1015818 - Scheduled Monument)
- Hall Garth motte and bailey castle, moated site and fishponds (NHLE 1021289 - Scheduled Monument)
- Bishop Burton Grange (NHLE 1103431 - Grade II Listed Building)
- Risby Hall (NHLE 1001419 - Grade II Listed Registered Park and Garden)
- Risby Jacobean gardens, hall and medieval settlement remains (NHLE 1018600 - Scheduled Monument)
- Garden Walls at Low Hall (NHLE 1310090 - Grade II Listed Building)

240. These heritage assets have a **medium** to **high** level of heritage importance and are shown on **Figure 24.2**.

24.7.1.3.2 Impact Magnitude

241. During construction, the movement of construction traffic and machinery will be temporary and localised. Traffic management and movement of construction traffic and machinery will be managed through the CTMP and CoCP (see **Table 24-4**, Commitment IDs CO39 and CO73). The removal of hedgerows and trees will be avoided where possible. On completion of construction, all areas of land temporarily disturbed within the Onshore Development Area will be fully reinstated (see **Table 24-4**, Commitment IDs CO65, CO100 and CO101).

242. No above ground infrastructure will remain at the landfall and along the onshore ECC, other than the possibility of above ground link boxes, bollards, fencing or similar equipment at link box locations where required and small marker posts installed along the operational easement (see **Table 24-6**). Replanting / planting of replacement trees will be undertaken in a suitable location within the Onshore Development Area but not directly over the installed onshore export cables. A LMP will be developed to secure the restoration and, where possible, enhancement of the landscape post-construction (see **Table 24-4**, Commitment ID CO65).

243. Any impact during construction would be short term and reversible. In light of the commitments detailed above, it is therefore considered that any change to setting and associated heritage significance would result in a **negligible** magnitude of impact.

24.7.1.3.3 Effect Significance

244. Overall, it is predicted that the heritage assets have a **medium** to **high** level of heritage importance and the magnitude of impact is **negligible**. Therefore the effect is of **minor adverse** significance (as a worst-case scenario), which is **not significant** in EIA terms.

24.7.1.5 Changes to the Setting of Historic Landscapes, Which Could Affect Their Heritage Significance (ONA-C-05)

245. Activities undertaken as part of construction works for the Project have the potential to impact historic landscapes through a temporary change in their setting which may affect their heritage significance. Temporary changes in the setting of historic landscapes, should they occur, may do so for example through the presence of machinery, construction traffic and general construction activities taking place within and adjacent to the Onshore Development Area. The sight, sound, any dust created, and even smell, during the construction phase has the potential to temporarily change the setting of historic landscapes and their associated heritage significance.

24.7.1.5.1 Receptor Importance (Sensitivity)

24.7.1.5.1.1. OCS Zone 8

246. The eastern boundary of the historic deer park and deer course which formed part of the landscaped grounds of Cellar Heads moated site (NHLE 1015312) may extend into OCS Zone 8, with the potential southern section surviving as an extant field boundary. This historic landscape is considered to have a **medium** level of heritage importance.

24.7.1.5.2 Impact Magnitude

247. Any impact during construction would be short term and reversible. It is therefore considered that any change to setting and associated heritage significance would result in a **low** magnitude of impact.

24.7.1.5.3 Effect Significance

248. It is predicted that the heritage receptors are of **medium** heritage importance and the magnitude is **low**. Therefore the effect significance is **minor adverse** (as a worst-case scenario), which is **not significant** in EIA terms.

24.7.2 Potential Effects During Operation

24.7.2.1 Physical Impacts to Designated Heritage Assets and Known and Unknown Non-Designated Heritage Assets (ONA-O-01 and ONA-O-02)

249. During operation, it is expected that there will be no further requirement for land to be disturbed or excavated, except if onshore export cables require unplanned intrusive maintenance works at the landfall and within the onshore ECC. However, in the rare event that this is required, these activities would not extend beyond the construction footprint. As such, there would be **no physical impacts** to both designated and non-designated heritage assets during operation.

250. Heat loss from the installed onshore export cables has the potential to have a damaging effect on any waterlogged archaeological remains that may be present, such a palaeoenvironmental / geoarchaeological remains, or other organic material and waterlogged wood. The soil structure (thermal properties) and final engineering design will determine the maximum heat loss and subsequent dissipation of heat through the soil. However, heat dissipation will be localised to areas immediately around the export cables and ducts.

251. The soil surrounding the immediate locality of a large portion of the export cables will have been subject to disturbance as a result of open cut trenching during cable duct installation works. As any sub-surface archaeological remains present therein will have been considered as vulnerable to the effects of trenching, any assets identified will have been subject to survey and evaluation, and subsequent mitigation, where required. On this basis, there will be **no impact** during operation associated with any heat loss from the export cables.

252. Therefore, overall there would be **no change** to known and unknown designated heritage assets as a result of physical impacts during operation.

24.7.2.2 Changes to the Setting of Designated and Non-Designated Heritage Assets, Which Could Affect their Heritage Significance (ONA-O-03 and ONA-O-04)

253. The presence of permanent above ground infrastructure within the OCS Zone 4 or OCS Zone 8 could have an ongoing impact on the setting of heritage assets for the duration of the O&M phase due to its presence within the landscape and its day-to-day use.

24.7.2.2.1 Receptor Importance (Sensitivity)

254. The heritage assets listed in **Section 24.6.1.11** may be subject to a change in setting affecting their heritage significance, due to the presence of the OCS and ESBI and have been identified as requiring further assessment following refinement of the OCS zones.

24.7.2.2.1.1. OCS Zone 4

255. The following heritage assets may be subject to a change in setting affecting their heritage significance, due to the presence of the OCS and ESBI and have been identified as requiring further assessment:

- Old Hall (NHLE 1103420 – Grade II Listed Building) including associated buildings at Low Hall (NHLE 1103419, NHLE 1310090, NHLE 1346992 – Grade II Listed Buildings)

256. These heritage assets have a **medium** level of heritage importance and are shown on **Figure 24.2**.

24.7.2.2.1.2. OCS Zone 8

257. The following heritage assets may be subject to a change in setting affecting their heritage significance, due to the presence of the OCS and ESBI and have been identified as requiring further assessment:

- Risby Hall (NHLE 1001419 - Grade II Registered Park and Garden);
- Risby Jacobean gardens, hall and medieval settlement remains (NHLE 1018600 - Scheduled Monument); and
- 'Cellar Heads' moated site and related ridge and furrow earthworks at Risby Park, 700m north west of Risby Park Farm (NHLE 1015312 - Scheduled Monument).

258. These heritage assets have a **medium** to **high** level of heritage importance and are shown on **Figure 24.2**.

24.7.2.2.2 Impact Magnitude

259. The OCS and ESBI will be designed in accordance with the Design Vision (see **Table 24-4**, Commitment ID CO63 and CO64) to minimise the overall massing and perceivability of associated structures and other elements as far as possible. Landscape proposals will include measures for the enhancement of the landscape during the O&M phase of the OCS and ESBI. This will include landscape screening of the OCS and ESBI such as hedgerow and woodland planting. Once matured, this will help to integrate the OCS and ESBI into the existing landscape of arable fields and boundary trees / hedgerows. Further detail on the principles of mitigation will be set out in the Outline LMP (see **Table 24-4**, Commitment ID CO65).

260. The setting assessment work is ongoing with the initial assessment presented in **Volume 2**, **Appendix 24.5 Onshore Heritage Setting Assessment**. This has been informed by site visits to understand how the Project could change the setting of each asset and whether these changes would impact on the significance of the asset. This assessment will be revisited and updated in the ES.

24.7.2.2.2.1. OCS Zone 4

261. Whilst the final design for the OCS and ESBI is not yet confirmed, the mitigation measures are likely to reduce the magnitude of impact upon the identified heritage assets due to change to their setting affecting their heritage significance from **medium** to **low**, as a worst-case scenario.

24.7.2.2.2.2. OCS Zone 8

262. Whilst the final design for the OCS and ESBI is not yet confirmed, the mitigation measures are likely to reduce the magnitude of impact upon the identified heritage assets due to change to their setting affecting their heritage significance from **medium** to **low**, as a worst-case scenario.

24.7.2.2.3 Effect Significance

263. In consideration of the locations of each OCS zone, the significance of effect is assessed separately for each zone.

24.7.2.2.3.1. OCS Zone 4

264. The heritage assets at OCS Zone 4 are of **medium** heritage importance and the magnitude of impact is **medium** to **low**. In accordance with the significance of effect matrix (**Table 24-11**) and in consideration of the Project's commitments to sensitive design and landscaping, should impacts occur from changes to setting from the presence of the OCS and ESBI, there is potential for a **minor adverse** significance of effect, which is **not significant** in EIA terms.

24.7.2.2.3.2. OCS Zone 8

265. The heritage assets at OCS Zone 8 are of **medium** to **high** heritage importance and the magnitude of impact is **medium** to **low**. In accordance with the significance of effect matrix (**Table 24-11**) and in consideration of the Project's commitments to sensitive design and landscaping, should impacts occur from changes to setting from the presence of the OCS and ESBI, there is potential for a **minor adverse** significance of effect, as a worst-case scenario for Risby Hall (NHLE 1001419 - Grade II Registered Park and Garden). There is, however, the potential for a **moderate adverse** significance of effect, as a worst-case scenario, which is **significant** in EIA terms on Risby Jacobean gardens, hall and medieval settlement remains (NHLE 1018600 - Scheduled Monument) and 'Cellar Heads' moated site and related ridge and furrow earthworks at Risby Park, 700m north west of Risby Park Farm (NHLE 1015312).

266. As a preferred OCS Zone is not yet selected and key details on the design of the OCS and ESBI has not yet been finalised. However, the design will seek to minimise the height and massing of the OCS and ESBI within the OCS zone as much as possible. A draft version of the **Design Vision** (document reference 7.4) has been developed for PEIR stage for consultation, which sets out design principles for the OCS and ESBI. The Design Vision will be further refined post-PEIR and submitted with the DCO application.

24.7.2.2.4 Additional Mitigation and Residual Effect

24.7.2.2.4.1. OCS Zone 8

267. No additional mitigation has been identified at PEIR stage. Therefore, the residual effect during operation remains as described above. Any requirements for additional mitigation, and the resulting residual effect, will be determined at ES stage, following further refinements to the design of the OCS and ESBI.

24.7.2.3 Changes to the Setting of Historic Landscapes, Which Could Affect their Heritage Significance (ONA-O-05)

268. The presence of permanent above ground onshore infrastructure could affect heritage significance due to change in the setting of historic landscapes due to the presence of new, permanent above ground onshore infrastructure associated with the Project being introduced to (and present within) the landscape.

24.7.2.3.1 Receptor Importance (Sensitivity)

24.7.2.3.1.1. OCS Zone 8

269. The eastern boundary of the historic deer park and deer course which formed part of the landscaped grounds of Cellar Heads moated site (NHLE 1015312) may extend into OCS Zone 8, with the potential southern section surviving as an extant field boundary. This historic landscape is considered to have a **medium** level of heritage importance.

24.7.2.3.2 Impact Magnitude

270. The OCS and ESBI will be designed in accordance with the Design Vision (see **Table 24-4**, Commitment ID CO63 and CO64) to minimise the overall massing and perceivability of associated structures and other elements as far as possible. Landscape proposals will include measures for the enhancement of the landscape during the O&M phase of the OCS and ESBI. This will include landscape screening of the OCS and ESBI such as hedgerow and woodland planting. Once matured, this will help to integrate the OCS and ESBI into the existing landscape of arable fields and boundary trees / hedgerows. Further detail on the principles of mitigation will be set out in the Outline LMP (see **Table 24-4**, Commitment ID CO65).

24.7.2.3.2.1. OCS Zone 8

271. Whilst the final design for the OCS and ESBI is not yet confirmed, the mitigation the mitigation measures are likely to reduce the magnitude of impact upon the historic deer park due to change to its setting affecting its heritage significance from medium to **low adverse**, as a worst-case scenario.

24.7.2.3.3 Effect Significance

24.7.2.3.3.1. OCS Zone 8

272. The heritage assets are of **medium** heritage importance and the impact magnitude is **low** to **adverse**. Based on the criteria detailed in **Table 24-11** and in consideration of the Project's commitments to sensitive design and landscaping, the effect significance is **minor adverse** (as a worst-case scenario), which is **not significant** in EIA terms.

24.7.3 Potential Effects During Decommissioning

273. No decision has been made regarding the final decommissioning strategy for the onshore infrastructure, as it is recognised that regulatory requirements and industry best practice change over time.

274. Commitment ID CO56 (see **Table 24-4**) requires an Onshore Decommissioning Plan to be prepared and agreed with the relevant authorities prior to the commencement of onshore decommissioning works. This will ensure that decommissioning onshore archaeology and cultural heritage impacts will be assessed in accordance with the applicable regulations and guidance at that time of decommissioning where relevant, with appropriate mitigation implemented as necessary to avoid significant effects.

275. The detailed activities and methodology for decommissioning will be determined later within the Project's lifetime, but would be expected to include:

- Deinstallation and removal of electrical equipment, buildings and other infrastructure for the OCS and ESBI;
- Removal of above-ground link boxes along the onshore ECC;
- Inspection of underground infrastructure to be left in-situ along the onshore ECC and at the landfall (i.e. TJB, jointing bays, underground link boxes, onshore export cables and ducting) to ensure they are safe to remain in place. If considered unsuitable to be left in-situ at the time of decommissioning, these components will be removed; and
- Site reinstatement and landscaping.

276. Whilst a detailed assessment of decommissioning impacts cannot be undertaken at this stage, for this assessment, it is assumed that decommissioning is likely to operate within the parameters identified for construction (i.e. any activities are likely to occur within the temporary construction working areas and require no greater amount or duration of activity than assessed for construction). The decommissioning sequence will generally be the reverse of the construction sequence. It is therefore assumed that decommissioning impacts would likely be of similar nature to, and no worse than, those identified during the construction phase.

24.7.4 Additional Mitigation Measures

277. No additional mitigation measures have been proposed for onshore archaeology and cultural heritage.

24.8 Cumulative Effects

278. Cumulative effects are the result of the impacts of the Project acting in combination with the impacts of other proposed and reasonably foreseeable developments on receptors. This includes plans and projects that are not inherently considered as part of the current baseline.

279. The overarching framework used to identify and assess cumulative effects is set out in**, Chapter 6 Environmental Impact Assessment Methodology**. The four-stage approach is based upon the Planning Inspectorate Nationally Significant Infrastructure Projects: Advice on Cumulative Effects (Planning Inspectorate, 2024). The fourth stage of the process is the assessment stage, which is detailed within the sections below for potential cumulative effects on onshore archaeology and cultural heritage receptors.

280. As detailed in **Section 24.5.5**, this section presents an assessment of cumulative effects in relation to onshore archaeology and cultural heritage.

24.8.1 Screening for Potential Cumulative Effects

281. Stage four of this process, the CEA assessment, is undertaken in two stages.

282. The first step of the CEA identifies which impacts associated with the Project alone, as assessed under **Section 24.7**, have the potential to interact with other plans and projects to give rise to cumulative effects. All potential cumulative effects to be taken forward in the CEA are detailed in **Table 24-15** with a rationale for screening in or out. Only impacts determined to have a residual effect of negligible or greater are included in the CEA. Those assessed as 'no change' are excluded, as there is no potential for them to contribute to a cumulative effect.

Table 24-15 Onshore Archaeology and Cultural Heritage – Potential Cumulative Effects

Impact ID	Impact and Project Activity	Potential for Cumulative Effects	Rationale
Construction			
ONA-C-01	Physical impacts to designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	No	There is no potential for cumulative direct effects as no physical impacts are anticipated to occur to designated heritage assets.
ONA-C-02	Physical impacts to known and unknown non-designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	Yes	Cumulative effects arising from two or more projects are possible given the level of uncertainty regarding the nature and extent of the potential archaeological resource. Impacts may occur to individual archaeological features (buried or above ground) in an area of overlap or those with an extent which intersects two or more proposed project boundaries (where groundworks are anticipated). Effects may occur which affect the nature of the archaeological resource on a wider scale. Such effects also have the potential to affect the HLC of the Study Area (e.g., loss of earthworks as a result of one project could affect the HLC as summarised for the purposes of another project).
ONA-C-03	Changes to the setting of designated heritage assets, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	Yes	Cumulative changes in heritage setting arising from two or more projects are possible, particularly in the event that the construction of two or more projects is concurrent and within sight of an individual heritage asset or historic landscape, although additional factors affecting setting may also occur.
ONA-C-04	Changes to the setting of non-designated heritage assets, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement		
ONA-C-05	Changes to the setting of historic landscapes, which could affect their heritage significance -construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement		
Operation and Maintenance			
ONA-O-01	Physical impacts to designated heritage assets -arising through changes to drainage or heating	No	As there is no change to known and unknown designated heritage assets as a result of physical impacts during operation, there is no potential for cumulative effects.
ONA-O-02	Physical impacts to known and unknown non-designated heritage assets arising through changes to drainage or heating	No	

Impact ID	Impact and Project Activity	Potential for Cumulative Effects	Rationale
ONA-O-03	Changes to the setting of designated heritage assets, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility	Yes	Cumulative changes in heritage setting arising from two or more projects are possible, particularly in the event that the infrastructure of two or more projects occurs within sight of an individual heritage asset or a historic landscape, although additional factors affecting setting may also occur.
ONA-O-4	Changes to the setting of non-designated heritage assets, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility		
ONA-O-05	Changes to the setting of historic landscapes, which could affect their heritage significance -presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility		
Decommissioning			
There is insufficient information available on other plans and projects which could have a spatial and temporal overlap with the Project's onshore decommissioning works. The details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning and provided in the Onshore Decommissioning Plan (see **Table 24-4**, Commitment ID CO56). This will include a detailed assessment of decommissioning impacts and appropriate mitigation measures to avoid significant effects, including cumulative effects. For this assessment, it is assumed that cumulative decommissioning effects would be of similar nature to, and no worse than, those identified during the construction phase.			

24.8.2 Screening for Other Plans / Projects

283. The second step of the CEA identifies a short-list of other plans and projects that have the potential to interact with the Project to give rise to significant cumulative effects during the construction and O&M phases. The short-list provided in **Table 24-16** has been produced specifically to assess cumulative effects on onshore archaeology and cultural heritage receptors. The exhaustive list of all onshore plans and projects considered in the development of the Project's CEA framework is provided in **Volume 2**, **Appendix 6.5 Cumulative Effects Screening Report - Onshore**.

284. Developments that were fully operational during baseline characterisation, including at the time of site-specific surveys, are considered as part of baseline conditions for the surrounding environment. It is assumed that any residual effects associated with these developments are captured within the baseline information. As such, these developments are not subject to further assessment within the CEA and excluded from the screening exercise presented in **Table 24-16**.

285. For developments that were not fully operational, including those in planning / pre-construction stages or under construction, during baseline characterisation and operational developments with potential for ongoing impacts, these are included in the screening exercise presented in **Table 24-16**.

286. The screening exercise has been undertaken based on available information on each plan or project up to and including 31st December 2024. Information has been obtained from the Planning Inspectorate's Nationally Significant Infrastructure Projects portal and ERYC and Hull City Council's planning portal. It is noted that further information regarding the identified plans and projects may become available between PEIR publication and DCO application submission or may not be available in detail prior to construction. The assessment presented here is therefore considered to be conservative at the time of PEIR publication. The list of plans and projects will be updated at ES stage to incorporate more recent information at the time of writing.

287. Plans and projects identified in **Table 24-16** have been assigned a tier based on their development status, the level of information available to inform the CEA and the degree of confidence. A three-tier system based on the Planning Inspectorate Advice Note 17 has been adopted (Planning Inspectorate, 2024).

288. A total of nine schemes have been identified for inclusion on the short list of projects to be assessed cumulatively for onshore archaeology and cultural heritage. Schemes that have not been considered as resulting in likely cumulative significant effects for onshore archaeology and cultural heritage are as a result of the distance to the projects, spatial coverage, scale and form of the CEA schemes.

289. The zone of influence (ZoI) used to identify relevant plans and projects for the onshore archaeology and cultural heritage CEA is 5km from the OCS zones and 1km from the onshore ECC and landfall.

290. Each plan or project in **Table 24-16** has been considered on a case-by-case basis. Only plans and projects with potential for significant cumulative effects with the Project are taken forward to a detailed assessment, which are screened based on the following criteria:

- There is potential that a pathway exists whereby an impact could have a cumulative effect on a receptor;
- The impact on a receptor from the Project and the plan or project in consideration has a spatial overlap (i.e. occurring over the same area);
- There is sufficient information available on the plan or project in consideration and moderate to high data confidence to undertake a meaningful assessment; and
- There is some likelihood that the residual effect (i.e. after accounting for mitigation measures) of the Project could result in significant cumulative effects with the plan or project in consideration.

291. The CEA for onshore archaeology and cultural heritage has identified five plans and projects where significant cumulative effects could arise in combination with the Project. A detailed assessment of cumulative effects is provided in the section below.

Table 24-16 Short List of Plans / Projects for the Onshore Archaeology and Cultural Heritage Cumulative Effect Assessment

Project / Plan	Development Type	Status	Tier	Construction / Operation Period	Closest Distance to Onshore ECC (km)	Closest Distance to OCS Zone 4 (km)	Closest Distance to OCS Zone 8 (km)	Potential for Significant Cumulative Effects	Rationale
A164 And Jock's Lodge Junction Improvement Scheme Adjacent to and South of Beverley Road (20 / 01073 / STPLF)	Road Improvement Scheme	Under Construction	1	Construction: 2024 to 2026 Operation: 2027+	0.77	0.40	1.94	No	Impacts to the setting of designated and non-designated heritage assets are not considered to be a significant concern, due to the scale and form of this road improvement project which would not result in a combination of impacts resulting in a significant cumulative effect.
Creyke Beck Solar Farm (21 / 02335 / STPLF)	Solar Farm	Approved	1	Construction: Unknown Operation: Unknown	0.33	1.05	1.56	No	Impacts to the setting of designated and non-designated heritage assets are not considered to be a significant concern, due to the scale and form of this solar farm project which would not result in a combination of impacts resulting in a significant cumulative effect.
Dogger Bank South Offshore Wind Farms (EN010125)	Offshore Wind Farm	Examination	1	Construction: 2026 to 2033 Operation: 2034+	0	0.10	0.30	Yes	There is potential for cumulative changes to the setting of designated and non-designated heritage assets, and historic landscapes during the O&M phase.
Hornsea Project Four Offshore Wind Farm (EN010098)	Offshore Wind Farm	Under Construction	1	Construction: 2024 to 2028 Operation: 2029+	0	0.11	0.01	Yes	There is potential for cumulative changes to the setting of designated and non-designated heritage assets, and historic landscapes during the O&M phase.
Wanlass Beck National Grid Substation (24 / 03819 / STPLF)	400kV substation	Pending Consideration	1	Construction: 2026 to 2030 Operation: 2031+	0.91	2.09	3.02	Yes	There is potential for cumulative changes to the setting of designated and non-designated heritage assets, and historic landscapes during the O&M phase.
Peartree Hill Solar Farm (EN010157)	Solar Farm	Planning	2	Construction: 2026 to 2027 Operation: 2028+	0.42	1.05	2.66	No	There is no spatial overlap between the solar farm project and the Project, therefore there is no potential for cumulative effects on heritage assets of a physical nature. Changes to the setting of designated and non-designated heritage assets are not considered to be a significant concern due to the archaeological mitigation measures in place for the solar farm project.

Project / Plan	Development Type	Status	Tier	Construction / Operation Period	Closest Distance to Onshore ECC (km)	Closest Distance to OCS Zone 4 (km)	Closest Distance to OCS Zone 8 (km)	Potential for Significant Cumulative Effects	Rationale
Birkhill Wood National Grid Substation	Electricity Transmission Infrastructure	Planning	3	Construction: 2026 to 2030 Operation: 2031+	0	1.11	2.31	Yes	There is potential for cumulative changes to the setting of designated and non-designated heritage assets, and historic landscapes during the O&M phase.
North Humber to High Marnham Grid Upgrade (EN020034)	Electricity Transmission Infrastructure	Planning	3	Construction: 2026 to 2027 Operation: 2028+	0	0.89	0.41	Yes	There is potential for cumulative changes to the setting of designated and non-designated heritage assets, and historic landscapes during the O&M phase.

24.8.3 Assessment of Cumulative Effects

292. The CEA for onshore archaeology and cultural heritage has identified the five following projects where significant cumulative effects could arise:

- Hornsea Project Four Offshore Wind Farm;
- Dogger Bank South Offshore Wind Farms;
- North Humber to High Marnham Grid Upgrade;
- Birkhill Wood National Grid Substation; and
- Wanlass Beck National Grid Substation.

293. It should be noted that these potential cumulative effects will only occur during the O&M phase of the projects and the Project as a result of their permanent above ground infrastructure, and the potential changes this may have to the setting and associated heritage significance of heritage assets and the historic landscape character.

294. It is also noted that Dogger Bank South Offshore Wind Farms, North Humber to High Marnham Grid Upgrade, Birkhill Wood National Grid Substation and Hornsea Project Four Offshore Wind Farm overlap with the Project spatially and therefore there is potential for physical cumulative effects on archaeological and geoarchaeological / palaeoenvironmental remains and built heritage assets. However, as each project will have undertaken a staged approach to mitigating any physical impacts prior to construction, potential cumulative effects during construction have been scoped out of this assessment.

295. Similar to the approach noted in **Section 24.4.5**, there is potential for the OCS zone infrastructure to differ between the two development scenarios. Where the assessment outcomes are likely to differ, these have been reported separately below. Only one OCS zone option will be taken forward to development. Therefore, there is no cumulative development scenario in which both OCS zones would be developed to be considered in the CEA.

24.8.3.1 Cumulative Impact 1: Changes to the Setting of Designated and Non-Designated Heritage Assets, Which Could Affect their Heritage Significance (ONA-O-03 and ONA-O-04)

296. The five projects identified in **Section 24.8.3** have the potential for cumulative effects to occur during the O&M phases as a result of the locations of their permanent above ground infrastructure.

24.8.3.1.1 Receptor Importance (Sensitivity)

24.8.3.1.1.1. OCS Zone 4

297. As identified within **Section 24.7.2.2.1** the heritage assets which may be subject to a change in setting affecting their heritage significance have a **medium** level of heritage importance.

24.8.3.1.1.2. OCS Zone 8

298. As identified within **Section 24.7.2.2.1** the heritage assets which may be subject to a change in setting affecting their heritage significance have a **medium to high** level of heritage importance.

24.8.3.1.2 Cumulative Impact Magnitude

299. Although it is anticipated that the five projects identified in **Section 24.8.3** will adopt a sensitive design and mitigation measures similar to those of the Project, there is potential for greater changes to heritage setting and associated heritage significance where more than one project is visible or experienced from an individual heritage asset or group of heritage assets.

24.8.3.1.2.1. OCS Zone 4

300. In the absence of a confirmed final design for the Project, the mitigation measures are likely to reduce the potential cumulative impact magnitude from medium to **low adverse**, as a worst-case scenario. These potential impacts would be cumulative from Hornsea Project Four Offshore Wind Farm, North Humber to High Marnham Grid Upgrade, Birkhill Wood and Wanlass Beck National Grid Substations due to proximity to the receptors. It is likely that once built Hornsea Project Four Offshore Wind Farm will screen views towards Wanlass Beck National Grid Substation from the receptors at OCS Zone 4.

24.8.3.1.2.2. OCS Zone 8

301. In the absence of a confirmed final design for the Project, the mitigation measures are likely to reduce the potential cumulative impact magnitude from medium to **low adverse**, as a worst-case scenario. These impacts would be cumulative from Dogger Bank South Offshore Wind Farms and North Humber to High Marnham Grid Upgrade due to proximity to the receptors.

24.8.3.1.3 Cumulative Effect Significance

24.8.3.1.3.1. OCS Zone 4

302. Overall, it is predicted that the heritage importance is **medium**, and the magnitude of impact is **low** on Old Hall (NHLE 1103420 – Grade II Listed Building) including associated buildings at Low Hall (NHLE 1103419, NHLE 1310090, NHLE 1346992 – Grade II Listed Buildings). The cumulative effect is therefore of **minor adverse** significance, which is **not significant** in EIA terms.

24.8.3.1.3.2. OCS Zone 8

303. It is predicted that the heritage importance of Risby Hall (NHLE 1001419 - Grade II Registered Park and Garden) is medium, and the magnitude of impact is low resulting in a cumulative effect of **minor adverse** significance, which is **not significant** in EIA terms.

304. In consideration of Risby Jacobean gardens, hall and medieval settlement remains (NHLE 1018600 - Scheduled Monument) and 'Cellar Heads' moated site and related ridge and furrow earthworks at Risby Park, 700m north west of Risby Park Farm (NHLE 1015312 - Scheduled Monument) which have a heritage importance of **high**, the **low** magnitude of impact would result in a cumulative effect of **moderate adverse** significance, which is **significant** in EIA terms.

24.8.3.2 Cumulative Impact 2: Changes to the Setting of Historic Landscapes Which Could Affect their Heritage Significance (ONA-O-05)

305. The five projects identified in **Section 24.8.3** have the potential for cumulative effects to occur during the O&M phases as a result of the locations of their permanent above ground infrastructure.

24.8.3.2.1.1. OCS Zone 8

306. As identified in **Section 24.7.2.3** the heritage importance of the historic deer park associated with Cellar Heads moated site (NHLE 1015312) is considered to be **medium**.

24.8.3.2.2 Cumulative Impact Magnitude

307. Although it is anticipated that the five projects identified in **Section 24.8.3** will adopt a sensitive design and mitigation measures similar to those of the Project, there is potential for greater changes to the heritage setting and associated heritage significance of the historic deer park and deer course where more than one project is visible or experienced.

24.8.3.2.2.1. OCS Zone 8

308. In the absence of a confirmed final design for the Project, the mitigation measures are likely to reduce the potential cumulative impact magnitude from **medium** to **low**, as a worst-case scenario.

24.8.3.2.3 Cumulative Effect Significance

24.8.3.2.3.1. OCS Zone 8

309. Overall, it is predicted that the heritage importance is **medium**, and the magnitude of impact is **low**. The cumulative effect is therefore of **minor adverse** significance, which is **not significant** in EIA terms.

24.9 Inter-Relationships and Effects Interactions

24.9.1 Inter-Relationships

310. Inter-relationships are defined as effects arising from residual effects associated with different environmental topics acting together upon a single receptor or receptor group. Potential inter-relationships between onshore archaeology and cultural heritage and other environmental topics have been considered, where relevant, within the PEIR. **Table 24-17** provides a summary of key inter-relationships and signposts to where they have been addressed in the relevant chapters.

Table 24-17 Onshore Archaeology and Cultural Heritage – Inter-Relationships with Other Topics

Impact ID	Impact and Project Activity	Related EIA Topic	Where Assessed in the PEIR Chapter	Rationale
Construction				
ONA-C-02	Physical impacts to known and unknown non-designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement.	**Chapter 21 Water Resources and Flood Risk**	**Sections 24.7.1.1** and **24.7.1.2**	Potential impacts due to changes to ground conditions affecting buried archaeological deposits.
		Chapter 19 Geology and Ground Conditions	**Sections 24.7.1.1** and **24.7.1.2**	Potential impacts due to changes to ground conditions affecting buried archaeological and geoarchaeological deposits.

Impact ID	Impact and Project Activity	Related EIA Topic	Where Assessed in the PEIR Chapter	Rationale
		Chapter 25 Noise and Vibration	**Sections 24.7.1.1** and **24.7.1.2**	Potential for vibration from groundworks affecting the fabric of a heritage asset.
ONA-C-03 ONA-C-04 ONA-C-05	Changes to the setting of designated heritage assets, which could affect their heritage significance Changes to the setting of non-designated heritage assets, which could affect their heritage significance. Changes to the setting of historic landscapes, which could affect their heritage significance. Construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement.	**Chapter 27 Landscape and Visual Assessment**	**Sections 24.7.1.3** and **24.7.1.4**	There could be potential impacts with respect to landscape and visual receptors which could also represent potential changes to the setting of heritage assets.
		Chapter 26 Traffic and Transport	**Sections 24.7.1.3** and **24.7.1.4**	Potential impacts related to the presence of construction traffic and machinery could change the setting of heritage assets.
		Chapter 25 Noise and Vibration	**Sections 24.7.1.3** and **24.7.1.4**	Potential impacts related to noise and vibration could change the setting of heritage assets.
		Chapter 26 Air Quality and Dust	**Sections 24.7.1.3** and **24.7.1.4**	Potential impacts from dust could change the setting of heritage assets.
Operation and Maintenance				
ONA-O-03 ONA-O-04 ONA-O-05	Changes to the setting of designated heritage assets, which could affect their heritage significance Changes to the setting of non-designated heritage assets, which could affect their heritage significance.	**Chapter 27 Landscape and Visual Assessment**	**Sections 24.7.2.2** and **24.7.2.3**	There could be potential impacts with respect to visual receptors at the OCS zone which could also represent potential changes to the setting of heritage assets.
	Presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility.			
Decommissioning				
The details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning and provided in the Onshore Decommissioning Plan (see **Table 24-4**, Commitment ID CO56). For this assessment, it is assumed that inter-relationships during the decommissioning phase would be of similar nature to those identified during the construction phase.				

24.9.2 Interactions

311. The impacts identified and assessed in this chapter have the potential to interact with each other. Potential interactions between impacts are identified in **Table 24-18**. Where there is potential for interaction between impacts, these are assessed in **Table 24-19** for each receptor or receptor group.

312. Interactions are assessed by development phase ("phase assessment") to see if multiple impacts could increase the overall effect significance experienced by a single receptor or receptor group during each phase. Following from this, a lifetime assessment is undertaken which considers the potential for multiple impacts to accumulate across the construction, O&M and decommissioning phases and result in a greater effect on a single receptor or receptor group. When considering synergistic effects from interactions, it is assumed that the receptor importance remains consistent, while the magnitude of different impacts is additive.

Table 24-18 Onshore Archaeology and Cultural Heritage – Potential Interactions between Impacts throughout the Project's Lifetime

Construction, Operation and Maintenance

	ONA-C-01	ONA-C-02	ONA-C-03	ONA-C-04	ONA-C-05	ONA-O-1	ONA-O-02	ONA-O-03	ONA-O-4	ONA-O-05
Physical impacts to designated heritage assets (ONA-C-01)		No	No	No	No	No	No	No	No	No
Physical impacts to known and unknown non-designated heritage assets (ONA-C-02)	No		No	Yes	Yes	No	No	No	Yes	Yes
Changes to the setting of designated heritage assets, which could affect their heritage significance (ONA-C-03)	No	No		No	No	No	No	Yes	No	Yes
Changes to the setting of non-designated heritage assets, which could affect their heritage significance (ONA-C-04)	No	Yes	No		No	No	No	No	Yes	Yes
Changes to the setting of historic landscapes, which could affect their heritage significance (ONA-C-05)	No	Yes	No	No		No	No	Yes	Yes	Yes
Physical impacts to designated heritage assets (ONA-O-01)	No	No	No	No	No		No	No	No	No
Physical impacts to known and unknown non-designated heritage assets (ONA-O-02)	No	No	No	No	No	No		No	No	No
Changes to the setting of designated heritage assets, which could affect their heritage significance (ONA-O-03)	No	No	Yes	No	Yes	No	No		No	Yes
Changes to the setting of non-designated heritage assets, which could affect their heritage significance (ONA-O-04)	No	Yes	No	Yes	Yes	No	No	No		Yes
Changes to the setting of historic landscapes, which could affect their heritage significance (ONA-O-05)	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	

Decommissioning

The details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning and provided in the Onshore Decommissioning Plan (see **Table 24-4**, Commitment ID CO56).

For this assessment, it is assumed that interactions during the decommissioning phase would be of similar nature to, and no worse than, those identified during the construction phase.

Table 24-19 Interaction Assessment – Phase and Lifetime Effects

Receptor	Impact ID	Highest Significant Level			Phase Assessment	Lifetime Assessment
		Construction	Operation	Decommissioning		
Designated Heritage Assets	ONA-C-01 ONA-O-01 ONA-C-03 ONA-O-03	No change	Minor adverse	TBC – assumed no greater than construction	**Construction:** No greater than individually assessed impact. There would be no physical disturbance during construction, as no designated heritage assets are present within the Onshore Development Area. Setting is not relevant to the construction phase, as any change will be temporary. Therefore, there will no pathway for interactions between the construction impacts. **Operation and Maintenance:** No greater than individually assessed impact. There would be no physical disturbance during operation, as no designated heritage assets are present within the Onshore Development Area. Therefore, there will no pathway for interactions between the operational impacts. **Decommissioning:** No greater than individually assessed impact. For assessment purposes, it is assumed that decommissioning impacts will be of similar nature and no worse than construction impacts.	No greater than individually assessed impact. Infrastructure is only installed during construction, therefore there is no greater footprint taken as part of the operational or decommissioning phases. Setting is not relevant to the construction and decommissioning phases as any change will be temporary. It is therefore considered that over the Project's lifetime, these impacts would not interact to change the overall effect significance.
Non-Designated Heritage Assets	ONA-C-02 ONA-O-02 ONA-C-04 ONA-O-04	Minor adverse	Moderate adverse	TBC – assumed no greater than construction	**Construction:** No greater than individually assessed impact. Mitigation measures will minimise or offset the potential for physical impacts on non-designated heritage assets during construction. Setting is not relevant to the construction phase, as any change will be temporary. Therefore, there will no pathway for interactions between the construction impacts. **Operation and Maintenance:** No greater than individually assessed impact. There would be no physical disturbance to non-designated heritage assets during operation. Therefore, there will no pathway for interactions between the operational impacts. **Decommissioning:** No greater than individually assessed impact. For assessment purposes, it is assumed that decommissioning impacts will be of similar nature and no worse than construction impacts.	No greater than individually assessed impact. Infrastructure is only installed during construction, therefore there is no greater footprint taken as part of the operational or decommissioning phases. Setting is not relevant to the construction and decommissioning phases as any change will be temporary. It is therefore considered that over the Project's lifetime, these impacts would not interact to change the overall effect significance.
Historic Landscapes	ONA-C-05 ONA-O-05	Minor adverse	Minor adverse	TBC – assumed no greater than construction	**Construction:** No greater than individually assessed impact. Setting is not relevant to the construction phase, as any change will be temporary. Therefore, there will no pathway for interactions between the construction impacts. **Operation and Maintenance:** No greater than individually assessed impact. There would be no physical disturbance to historic landscapes during operation. Therefore, there will no pathway for interactions between the operational impacts.	No greater than individually assessed impact. Infrastructure is only installed during construction, therefore there is no greater footprint taken as part of the operational or decommissioning phases. Setting is not relevant to the construction and decommissioning phases as any change will be temporary.

Receptor	Impact ID	Highest Significant Level			Phase Assessment	Lifetime Assessment
		Construction	Operation	Decommissioning		
					Decommissioning: No greater than individually assessed impact. For assessment purposes, it is assumed that decommissioning impacts will be of similar nature and no worse than construction impacts.	It is therefore considered that over the Project's lifetime, these impacts would not interact to change the overall effect significance.

24.10 Monitoring Measures

313. Monitoring requirements for onshore archaeology and cultural heritage will be described in the Outline Onshore WSI (**Table 24-4,** Commitment ID CO62) submitted with the DCO application and would be further developed and agreed with stakeholders prior to construction and taking account of the final detailed design of the Project.

314. Physical impacts would be offset or reduced through either preservation in situ or archaeological fieldwork and reporting, undertaken by professional archaeologists and monitored by Humber Archaeology Partnership on behalf of ERYC.

24.11 Summary

315. This chapter has provided a characterisation of the baseline environment for onshore archaeology and cultural heritage based on both existing and site-specific survey data which has established that there would be some minor adverse residual effects on heritage assets during construction, O&M and decommissioning phases of the Project, which is not significant in EIA terms. However, residual effects to changes to the setting of designated heritage assets from the operation of the OCS and ESBI within OCS Zone 8 are potentially moderate adverse which is significant in EIA terms.

316. **Table 24-20** presents a summary of the preliminary results of the assessment of likely significant effects on onshore archaeology and cultural heritage during the construction, operation and decommissioning of the Project.

317. In accordance with the assessment methodology presented in **Section 24.5.3**, this table should also be used in conjunction with the additional narrative explanations provided in **Section 24.7**.

318. The impact assessment as presented in this chapter assumes that activities associated with construction may theoretically occur anywhere within the Onshore Development Area.

319. With respect to physical effects (i.e. buried and above ground heritage assets) further refinement of the Onshore Development Area will seek to further avoid known heritage assets, where possible within the confines of other environmental, land and engineering constraints. In addition, with the implementation and completion of post-consent mitigation, it is not anticipated that there will be residual effects on the heritage significance of heritage assets with archaeological interest greater than minor adverse.

320. Heritage setting assessment work is ongoing, and final impact assessment and summaries / conclusions have not yet been conducted or drawn for individual heritage assets that are currently under consideration in this PEIR chapter. The settings assessment will be progressed and reported on in full in the DCO application. The significance of effect presented in **Table 24-20**, therefore, represents a preliminary worst-case scenario.

321. Potential beneficial effects could include the contribution of data to academic and scientific research, and enhancement of public understanding by adding to the archaeological record. An approach and will be set out in the Outline Onshore WSI submitted with the DCO application and established post-consent in consultation with Humber Archaeology Partnership on behalf of ERYC and Historic England.

24.12 Next Steps

322. Next steps include:

- Further programmes of survey and evaluation to inform a mitigation strategy for either preservation in situ or preservation by record (e.g. archaeological excavation, geoarchaeological / palaeoenvironmental assessment or watching brief).
- A programme of geoarchaeological / palaeoenvironmental survey to inform any mitigation requirements.
- Further site visits and / or revisits in respect of the proposed DCO Limits and specific associated infrastructure (e.g. OCS zone), as well as the application of landscape and visual impact assessment toolkits (i.e. ZTV and photomontages).
- Refinement of the **Design Vision** (document reference 7.4) (see **Table 24-4**, Commitment ID CO63 and CO64) for the OCS and ESBI in consultation with the Design Council to inform the assessment of permanent changes to the setting of heritage assets, and associated heritage significance, as a result of the operation of the OCS and ESBI.
- Drafting of the Outline Onshore WSI in consultation with the relevant heritage stakeholders (i.e. Historic England and Humber Archaeology Partnership, as advisors to ERYC).

Table 24-20 Summary of Potential Effects Assessed for Onshore Archaeology and Cultural Heritage

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Importance	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
Construction									
ONA-C-01	Physical impacts to designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	CO62	Designated heritage assets.	**Medium to High**	**No Impact**	**No Change (Not Significant)**	N / A	**No Change (Not Significant)**	N / A
ONA-C-02	Physical impacts to known and unknown non-designated heritage assets - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	CO62 CO65 CO100 CO101	Known and potential non-designated heritage assets including buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets.	**Low to High**	**Negligible to Low Adverse**	**Minor Adverse (Not Significant)**	N / A	**Minor Adverse (Not Significant)**	N / A
ONA-C-03	Changes to the setting of designated heritage assets, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	CO39 CO62 CO65 CO73 CO100 CO101	Designated heritage assets	**Medium to High**	**Negligible to Low Adverse**	**Minor Adverse (Not Significant)**	N / A	**Minor Adverse (Not Significant)**	N / A

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Importance	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
ONA-C-04	Changes to the setting of non-designated heritage assets, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	CO39 CO62 CO65 CO73 CO100 CO101	Non-designated heritage assets	**Low to Medium**	**Negligible to Low Adverse**	**Minor Adverse (Not Significant)**	N / A	**Minor Adverse (Not Significant)**	N / A
ONA-C-05	Changes to the setting of historic landscapes, which could affect their heritage significance - construction activities, such as intrusive earthworks, establishment of temporary compounds and haul roads, plant and traffic movement	CO39 CO62 CO65 CO73 CO100 CO101	Historic Landscapes	**Medium**	**Negligible to Low Adverse**	**Minor Adverse (Not Significant)**	N / A	**Minor Adverse (Not Significant)**	N / A
Operation and Maintenance									
ONA-O-1	Physical impacts to designated heritage assets -arising through changes to drainage or heating	N / A	Designated heritage assets	**Medium to High**	**No Impact**	**No Change (Not Significant)**	N / A	**No Change (Not Significant)**	N / A
ONA-O-02	Physical impacts to known and unknown non-designated heritage assets arising through changes to drainage or heating	N / A	Non-designated heritage assets	**Low to High**	**No Impact**	**No Change (Not Significant)**	N / A	**No Change (Not Significant)**	N / A

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Importance	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
ONA-O-03	Changes to the setting of designated heritage assets, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility	CO60 CO61 CO63 CO64 CO65 CO100 CO101	Designated heritage assets	**Medium (OCS Zone 4)** **Medium to High (OCS Zone 8)**	**Low Adverse**	**Minor Adverse (OCS Zone 4) (Not Significant)** **Minor to Moderate Adverse (OCS Zone 8) (Significant)**	Requirements for additional mitigation for OCS Zone 8 will be determined at ES stage.	**Minor Adverse (OCS Zone 4) (Not Significant)** **Minor to Moderate Adverse (OCS Zone 8) (Significant)** Residual effect for OCS Zone 8 will be determined at ES stage with the application of additional mitigation.	N / A
ONA-O-4	Changes to the setting of non-designated heritage assets, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility	CO60 CO61 CO63 CO64 CO65 CO100 CO101	Non-designated above ground heritage assets	**Low to Medium**	**Low Adverse**	**Minor Adverse (Not Significant)**	N / A	**Minor Adverse (Not Significant)**	N / A
ONA-O-05	Changes to the setting of historic landscapes, which could affect their heritage significance - presence of above-ground infrastructure within OCS zone during operation with potential for intervisibility	CO60 CO61 CO63 CO64 CO65 CO100 CO101	Historic landscapes	**Medium**	**Low Adverse**	**Minor Adverse (Not Significant)**	N / A	**Minor Adverse (Not Significant)**	N / A

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Importance	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
Decommissioning									
ONA-D-01	Physical impacts to designated heritage assets – decommissioning activities not yet defined	CO56	The details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning and provided in the Onshore Decommissioning Plan (see **Table 24-4**, Commitment ID CO56). This will include a detailed assessment of decommissioning impacts and appropriate mitigation measures to avoid significant effects. For this assessment, it is assumed that impacts during the decommissioning phase would be of similar nature to, and no worse than, those identified during the construction phase.						
ONA-D-02	Physical impacts to known and unknown non-designated heritage assets – decommissioning activities not yet defined								
ONA-D-03	Changes to the setting of designated heritage assets, which could affect their heritage significance – decommissioning activities not yet defined								
ONA-D-04	Changes to the setting of non-designated heritage assets, which could affect their heritage significance – decommissioning activities not yet defined								
ONA-D-05	Changes to the setting of historic landscapes, which could affect their heritage significance– decommissioning activities not yet defined								

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List of Acronyms

Acronym	Definition
AD	Anno Domini
ADBA	Archaeological Desk-Based Assessment
ADS	Archaeology Data Service
ALS	Airborne Laser Scanning
APS	Air Photo Services
BC	Before Christ
BGS	British Geological Survey
CEA	Cumulative Effects Assessment
CHIA	Cultural Heritage Impact Assessment
CIfA	Chartered Institute for Archaeologists
CITiZAN	Coastal and Intertidal Zone Archaeological Network
CoCP	Code of Construction Practice
CTMP	Construction Traffic Management Plan
DBD	Dogger Bank D Offshore Wind Farm
DBS	Dogger Bank South Offshore Wind Farms
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ERYC	East Riding of Yorkshire Council
ES	Environmental Statement
ESBI	Energy Storage and Balancing Infrastructure
ETG	Expert Topic Group
GDBA	Geoarchaeological Desk-Based Assessment
Ha	Hectare
HDD	Horizontal Directional Drilling
HER	Historic Environment Record
HLC	Historic Landscape Character
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IEMA	Institute of Environmental Management and Assessment
IHBC	Institute of Historic Building Conservation
LiDAR	Light Detection and Ranging
LMP	Landscape Management Plan
LWS	Local Wildlife Site
MHCLG	Ministry of Housing, Communities and Local Government
MHWS	Mean High Water Springs
NHLE	National Heritage List for England
NMP	National Mapping Project
NPPF	National Planning Policy Framework
NPS	National Planning Statement
NSIP	Nationally Significant Infrastructure Project
OCS	Onshore Converter Station
ORPAD	Offshore Renewables Protocol for Archaeological Discoveries
OS	Ordnance Survey
PA	Priority Areas

Acronym	Definition
PAD	Protocol for Archaeological Discoveries
PAS	Portable Antiquities Scheme
PCS	Power Conversion System
PEIR	Preliminary Environmental Information Report
PPG	Planning Practice Guidance
RAF	Royal Air Force
RCZAS	Rapid Coastal Zone Assessment Surveys
SSSI	Site of Special Scientific Interest
TJB	Transition Joint Bay
WSI	Written Scheme of Investigation
WWI	World War I
WWII	World War II
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility