



**DOGGER BANK  
TEESSIDE A & B**



**March  
2014**


# Environmental Statement Chapter 27 Terrestrial Archaeology

**Application Reference: 6.27**

Cover photograph: Indicative image showing installation of meteorological mast within the Dogger Bank Zone

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Terrestrial Archaeology  
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# 1 Introduction

## 1.1 Background

- 1.1.1 This chapter of the Environmental Statement (ES) assesses the potential impact of Dogger Bank Teesside A & B on the existing onshore environment with regard to cultural heritage. The purpose of this chapter is to provide a characterisation of the existing conditions, assess the potential impact of the onshore infrastructure, including buried cable systems, converter stations and enabling works required at the existing National Grid Electricity Transmission (NGET) substation at Lackenby, and propose mitigation measures where necessary to avoid, reduce or minimise potential impacts.
- 1.1.2 This chapter summarises the findings of a cultural heritage technical report (Dogger Bank Teesside A & B, Onshore Cultural Heritage Impact Assessment, URS, January 2014) which is provided in full as **Appendix 27A**.
- 1.1.3 Reference is also made to the landscape and visual impact assessment work (covered in **Chapter 21 Landscape and Visual Impact Assessment**) and **Chapter 18 Marine and Coastal Archaeology** as part of this cultural heritage assessment.

## 2 Guidance and Consultation

### 2.1 Policy

#### National Policy Statements

- 2.1.1 The assessment of potential impacts upon cultural heritage has been made with specific reference to the relevant National Policy Statements (NPS). These are the principal decision making documents for Nationally Significant Infrastructure Projects (NSIP) and should be read in conjunction with the recently introduced National Planning Policy Framework (NPPF, 2012). Those relevant to Dogger Bank Teesside A & B are:
- Overarching NPS for Energy (EN-1) (DECC 2011a);
  - NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b); and
  - NPS for Electricity Networks Infrastructure (EN-5) (DECC 2011c).
- 2.1.2 The specific assessment requirements for cultural heritage, as detailed in the NPSs, are summarised in **Table 2.1**, together with an indication of the paragraph numbers of the ES chapter where each is addressed. Where any part of the NPS has not been followed within the assessment an explanation as to why the requirement was not deemed relevant, or has been met in another manner, is provided.

Table 2.1 NPS assessment requirements

NPS Requirement	NPS Reference	ES Reference
The ES 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 detail to be included 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. It is expected that “as a <i>minimum</i> ” the relevant Historic Environment Record is consulted and an assessment of heritage assets is carried out “ <i>using expertise where necessary according to the proposed development’s impact</i> ”.	EN-1 Section 5.8.8	Section 4.2 and 4.3
An appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation’ should be carried out if the development site includes or if available evidence suggests that the site has the potential to include, heritage assets with an archaeological interest. Where proposed development will affect the setting of a heritage asset, representative visualisations may be necessary to explain the impact.	EN-1 Section 5.8.9	Section 3.2
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.	EN-1 Section 5.8.10	Section 6, 7 and 8

## National Planning Policy Framework (2012)

- 2.1.3 The National Planning Policy Framework (NPPF) (DCLG 2012) was published on 27 March 2012. It took immediate effect and represents a significant change to the national planning policy landscape. The NPPF is a material consideration in planning decisions and forms a single overarching planning policy for England, replacing all other Planning Policy Statements and Planning Policy Guidelines. It is also the basis for the preparation of local development plans.
- 2.1.4 The conservation and enhancement of the historic environment is granted an entire section (Section 12) within the NPPF which, in summary, highlights the following issues:
- The Local Plan should set a positive strategy for conservation and enjoyment of the historic environment, recognising that heritage assets are an irreplaceable resource (paragraph 126);
  - Substantial harm to or loss of designated heritage assets of the highest significance, should be wholly exceptional. Where a development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless there are substantial public benefits (paragraph 132 and paragraph 133);
  - In the case of non-designated heritage assets, a balanced judgment will be required having regard to the scale of any harm or loss and the significance of the heritage asset; and
  - Local planning authorities should make gathered information about the significance of the historic environment publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost, proportionate to the value of the asset.
- 2.1.5 Applications that may impact upon non-designated assets should be balanced, considering the presumption in favour of sustainable development, scale of harm or loss and the significance of the heritage asset. In the case of all heritage assets, those applications that will make a positive contribution to the significance or setting of the asset should be treated favourably.
- 2.1.6 The NPPF does not provide a qualitative definition of what constitutes 'substantial' or 'less than substantial' harm, however, draft guidance discussed within paragraphs 2.3.34 of **Appendix 27A** does provide an explanation of substantial harm. The ES is required to report on the significance of an effect and does not make a judgement on whether 'substantial' or 'less than substantial' harm will be caused. The judgement of whether an impact causes 'substantial' harm is based on whether the impact will result in significant harm to, or total loss of significance of an asset. This may include extensive physical damage to an asset or loss of critical elements of an asset's setting that contribute to its importance. The identification of 'substantial' harm is therefore one of professional judgment and not directly equitable to the significance of the effect.

## Local planning policy

- 2.1.7 The Redcar and Cleveland Local Plan will be prepared to replace the existing development plan documents (the Core Strategy, Development Policies and Minerals and Waste DPDs), and will be a single document that will incorporate strategic, detailed and site-specific policies within the area (proposed adoption August 2014). The Local Plan will eventually replace the Local Development Framework (LDF).
- 2.1.8 The LDF is a series of Development Plan Documents (DPD) setting out the Council's adopted policies and proposals that make up the statutory development plan for Redcar and Cleveland. The LDF currently contains the following:

Table 2.2 Relevant local planning policies

Document	Policy / Guidance	Policy / Guidance Purpose
Core Strategy DPD	CS25	The Core Strategy DPD was adopted July 2007 and sets out strategies for dealing with the implications of development within the borough. Policy CS25 deals with the Built and Historic Environment and states that <i>"development proposals will be expected to contribute positively to the character of the built and historic environment of the Borough, and this character will be protected, preserved or enhanced"</i> . Particular protection will be given to the character and special features of conservation areas, listed buildings, historic parks and gardens, archaeological sites and the historic landscape of the Eston Hills.
Development Policies DPD	DP9	Policy DP9 states that part of the character of many of the conservation areas (in the Borough) derives not only from the built fabric but from their open spaces and special relationships. Spaces which individually or collectively provide for attractive vistas within or from without, or settings to buildings or features, or have a particular historic or landscape importance, will be protected, and goes on to state that development affecting the setting of a conservation area will only be permitted where it preserves or enhances the appearance of the conservation area.
	DP10	Policy DP10 states that the control of the development of, or around, listed buildings is stringent since it is of paramount importance that their special qualities are preserved and where possible enhanced, and states that development affecting the setting of a listed building will only be permitted if the proposal: <ul style="list-style-type: none"> <li>• Preserves or enhances its special character as a listed building;</li> <li>• Protects its immediate setting including the space(s) around the building and the hard and soft landscaping including trees, hedges, walls, fences and surfacing; and</li> <li>• Retains historic plot boundaries and layouts.</li> </ul>
	DP11	Policy DP11 states that the Council will ensure important archaeological sites, whether scheduled or not, are protected from inappropriate development. Specifically the policy states that <i>"development that would adversely affect important archaeological sites or monuments will not be approved. Development that may affect a known or possible archaeological site will require the results of an archaeological evaluation to be submitted as part of the</i>



Document	Policy / Guidance	Policy / Guidance Purpose
		<p><i>planning application. Development that affects a site where there is evidence that archaeological remains may exist will only be permitted if:</i></p> <ul style="list-style-type: none"> <li>• <i>Any archaeological remains are preserved in situ; or</i></li> <li>• <i>Where in situ preservation is not required, or appropriate satisfactory provision is in place for archaeological investigation, recording and reporting to take place before, or where necessary during development. Where archaeological investigation, recording and reporting has taken place it will be necessary to publish the findings within an agreed timetable".</i></li> </ul>

## 2.2 Other legislation, standards and guidance

2.2.1 The following legislation and guidance has also been taken into consideration as part of this assessment:

- The Ancient Monuments and Archaeological Areas Act 1979;
- Planning (Listed Buildings and Conservation Areas) Act 1990;
- The Setting of Heritage Assets (English Heritage 2011a);
- Institute for Archaeologists (IfA) Standard and Guidance for Historic Environment Desk-Based Assessment (Institute for Archaeologists 2012); and
- Seeing History in the View: A Method for Assessing Heritage Significance within Views (English Heritage 2011b).

## 2.3 Consultation

2.3.1 To inform the ES, Forewind has undertaken a thorough pre-application consultation process, including the following key stages:

- Scoping Report submitted to the Planning Inspectorate (May 2012);
- Scoping Opinion received from the Planning Inspectorate (June 2012);
- First stage of statutory consultation (in accordance with sections 42 and 47 of the Planning Act 2008) on Preliminary Environmental Information (PEI) 1 (report published May 2012); and
- Second stage of statutory consultation (in accordance with sections 42, 47 and 48 of the Planning Act 2008) on the ES (published November 2013) designed to allow for comments before final application to the Planning Inspectorate).

2.3.2 In addition, consultation associated with the Dogger Bank Creyke Beck application (Forewind August 2013) has been taken into account for Dogger Bank Teesside A & B where appropriate.

2.3.3 In between the statutory consultation periods, Forewind consulted specific groups of stakeholders on a non-statutory basis to ensure that they had an opportunity to inform and influence the development proposals. Consultation undertaken throughout the pre-application development phase has informed

Forewind's design decision making and the information presented in this application. Further information on the consultation process is presented in **Chapter 7 Consultation**. A Consultation Report is also provided alongside this ES as part of the overall planning submission.

- 2.3.4 A summary of the consultation carried out at key stages throughout the project, of particular relevance to Terrestrial Archaeology, is presented in **Table 2.3**. This table only includes the key items of consultation that have defined the assessment. A full explanation of how the consultation process has shaped the ES, as well as tables of all responses received during the statutory consultation periods, is provided in the Consultation Report.

**Table 2.3 Summary of consultation and issues raised by consultees**

Date	Consultee	Summary of issue	ES Reference
May 2012 (Scoping, Statutory)	Planning Inspectorate	It was noted that there were six options for converter station site; the relevant heritage assets for assessment comprise coastal archaeology, Wilton Conservation Area, Kirkleatham Conservation Area, Yearby Conservation Area and all listed buildings therein. Also noted the Conservation Plan for Kirkleatham.	Section 4
December 2012 (Non-statutory)	Redcar and Cleveland Borough Council (RCBC)	RCBC confirmed that aerial photographs (APs) and pre-OS mapping are still held by Tees Archaeology and there are ongoing discussions between Tees Archaeology and RCBC regarding the availability of the archive.	N/A
January 2013 (Non-statutory)	RCBC	Written Scheme of Investigation (WSI) approved by RCBC Archaeological Advisor.	Section 4.4
January 2013 (Non-statutory)	English Heritage (Regional Office Newcastle)	English Heritage confirmed they were happy with proposed methodology (study areas, consideration of assets) and agreed with initial identification of key heritage issues: Identified Kirkleatham and association with Yearby as key consideration; Potential impact to Eston Hills historic landscape also a key consideration; and English Heritage's Places Advisor should be contacted for assets relating specifically to Kirkleatham.	Section 3.1 and 4.2
March 2013 (Non-statutory)	English Heritage	Email to English Heritage regarding the level of importance to attach to non-designated First World War assets identified in the high voltage direct current (HVDC) cable route. No response from English Heritage received so a moderate value has been assigned to the remains due to historic and potential evidential value, although the level of preservation has not been evaluated.	Sections 4.3 and 4.4
March 2013 (Non-statutory)	RCBC	Correspondence with RCBC to discuss principle of post-determination evaluation. Following the review of geophysical survey results, RCBC agreed during a telephone conversation that the results would not trigger a cable re-route and that trial trenching could be undertaken post-consent.	N/A
May 2013 (Non-statutory)	RCBC	Confirmation required over status of Kirkleatham Conservation Area Action Plan (CAAP). RCBC not aware of a CAAP for Kirkleatham.	Section 4.2 and 7.1

Date	Consultee	Summary of issue	ES Reference
June 2013 (Non-statutory)	Tees Archaeology	Following Tees Archaeology responding to PE11 to say that they no longer advise RCBC on archaeology,	N/A
September 2013 (Non-statutory)	English Heritage	No further comments at the present time. They agree with the summary outlining the assessment undertaken on the range of assets identified.	N/A
December 2013 (Statutory)	English Heritage	English Heritage responded to request for pre-application advice. Response stated that English Heritage were satisfied the proposals would not result in harm to any designated assets. Advised the opinion of Archaeological Consultant for RCBC is sought regarding impact to non-designated assets.	Archaeological Consultant for RCBC has been consulted previously. No further action required.
December 2013 (Statutory)	RCBC	There was no comment from the Archaeological Consultant for RCBC. The Council had been copied into a response from English Heritage with regard to terrestrial impacts. At this time no formal comments have been received from the Council's archaeology consultant, however all previous advice offered from the consultant should be considered in the final drafting of this chapter.	Sections 5-10

## 3 Methodology

### 3.1 Study area

- 3.1.1 Two different study areas have been used for designated and non-designated heritage assets (as agreed with English Heritage and RCBC) and comprise:
- Designated (statutory and non-statutory): 5km from the edge of the cable route corridor and converter stations (**Figure 3.1** and **Figure 3.2**); and
  - Non-designated assets: 1km from the edge of the cable route corridor and converter stations (**Figure 3.3** and **Figure 3.4**).
- 3.1.2 At the landfall, the study area finishes at the Mean High Water Mark (MHWM).

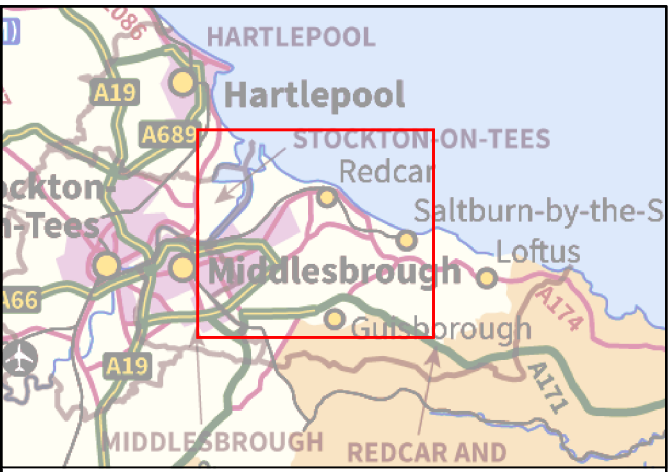
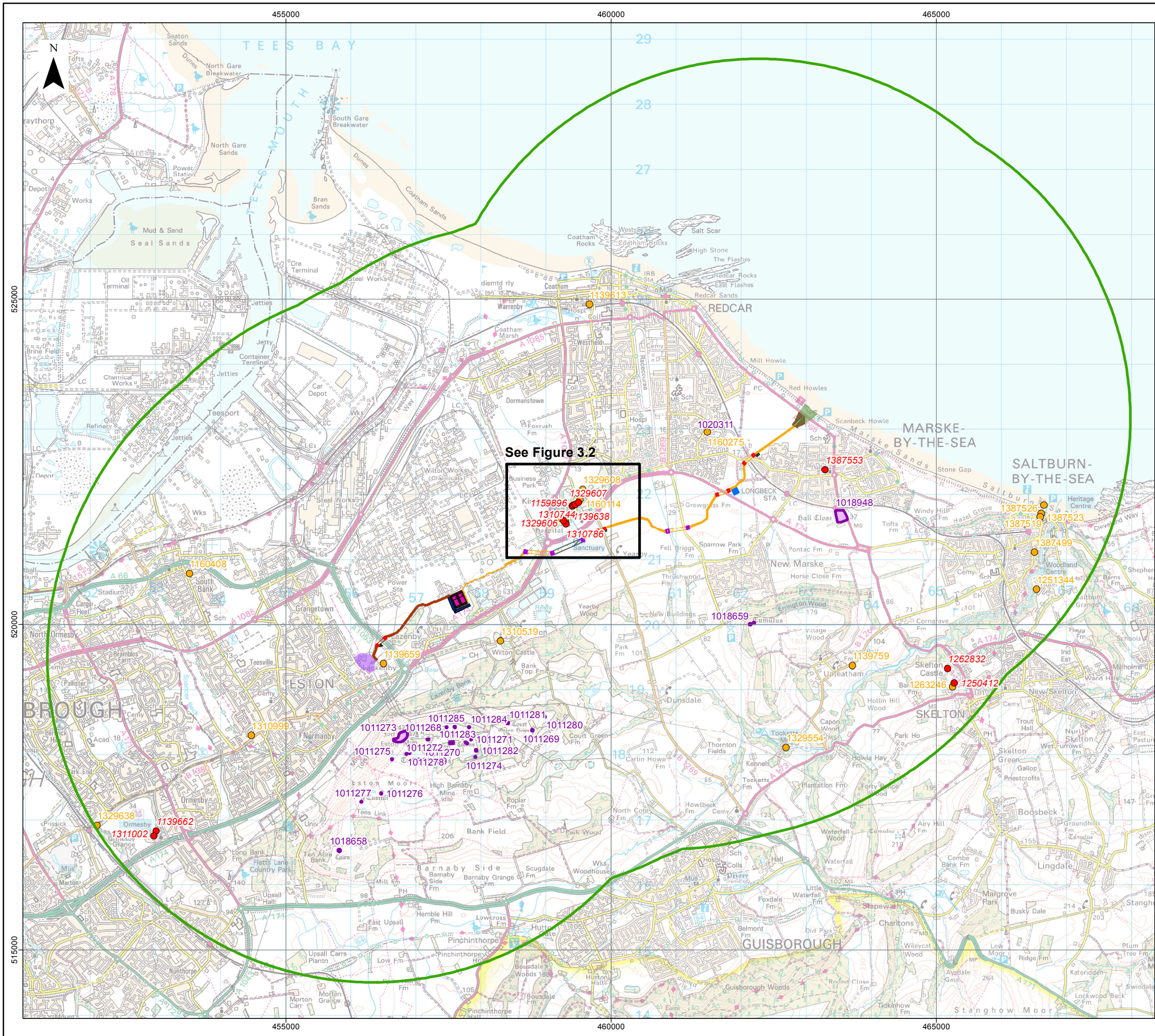
### 3.2 Characterisation of existing environment - methodology

- 3.2.1 Characterisation of the existing environment has been informed through a desk based study of available data in accordance with the published Standard and Guidance for Historic Environment Desk-Based Assessment (IfA 2012) and Code of Conduct (IfA 2010) of the Institute for Archaeologists (IfA).
- 3.2.2 In summary, this work has involved:
- Collation of data on designated and non-designated assets, including historic landscape features, held by Tees Archaeology Historic Environment Record (collected March 2012);
  - Review of local history information at Kirkleatham Museum;
  - Collation of data on designated assets held on the National Heritage for England List;
  - Collation of data on locally listed buildings and Conservation Areas from RCBC;
  - An examination of available documentary and historic map sources held by RCBC;
  - A review of existing baseline studies and field survey reports relevant to the site;
  - A site walkover survey;
  - The Zone of Theoretical Visibility (ZTV); and
  - A visual assessment of potential impacts to the setting of designated assets during a site visit.
- 3.2.3 The objectives of the baseline study are to establish the baseline conditions for cultural heritage assets and the importance of heritage remains within the study area. The specific aims of the study are to:

- Identify non-designated heritage assets within the study area;
- Identify designated heritage assets including scheduled monuments, listed buildings, registered parks and gardens and conservation areas within the study area;
- Identify areas with the potential to contain previously unrecorded archaeological or historical remains;
- Identify the location, extent and severity of modern ground disturbance and previous construction impacts;
- Establish the significance of the heritage assets identified within the study area;
- Assess the level of possible harm of the proposed development upon identified heritage assets; and
- Propose further surveys necessary to inform an impact assessment of the proposed development.







**LEGEND**

- 5km Study Area
- Teesside A&B cable landfall envelope
- Teesside A&B landfall construction envelope
- Teesside A&B HVDC, Open trench
- Teesside A&B HVDC, HDD
- Teesside A&B HVAC, Open trench
- Teesside A&B HVAC, HDD
- Teesside A&B major horizontal directional drill entry or exit locations (2,000m²)
- Teesside A&B minor horizontal directional drill entry or exit locations (1,200m²)
- HDD or open trench to be confirmed
- Teesside A&B cable route primary construction compound (10,000m²)
- Teesside A&B intermediate construction compound (784m²)
- Teesside A&B converter stations
- Teesside A&B converter stations construction compounds (10,000m² per project)
- Lackenby 400kV substation
- Scheduled Monuments

**Listed Buildings**

- Grade I
- Grade II\*

0 2 Kilometres

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PROJECT TITLE  
**DOGGER BANK TEESSIDE A & B**

DRAWING TITLE  
**Figure 3.1:  
Designated assets of high  
importance in the 5km study area**

VER	DATE	REMARKS	Drawn	Checked
1	18/07/2013	Draft	SW	AH
2	28/08/2013	Submit for PEI3	SW	AH
3	23/01/2014	Pre-DCO Submission review	SW	AH

DRAWING NUMBER:  
**F-ONL-MA-503**

SCALE	1:60,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG
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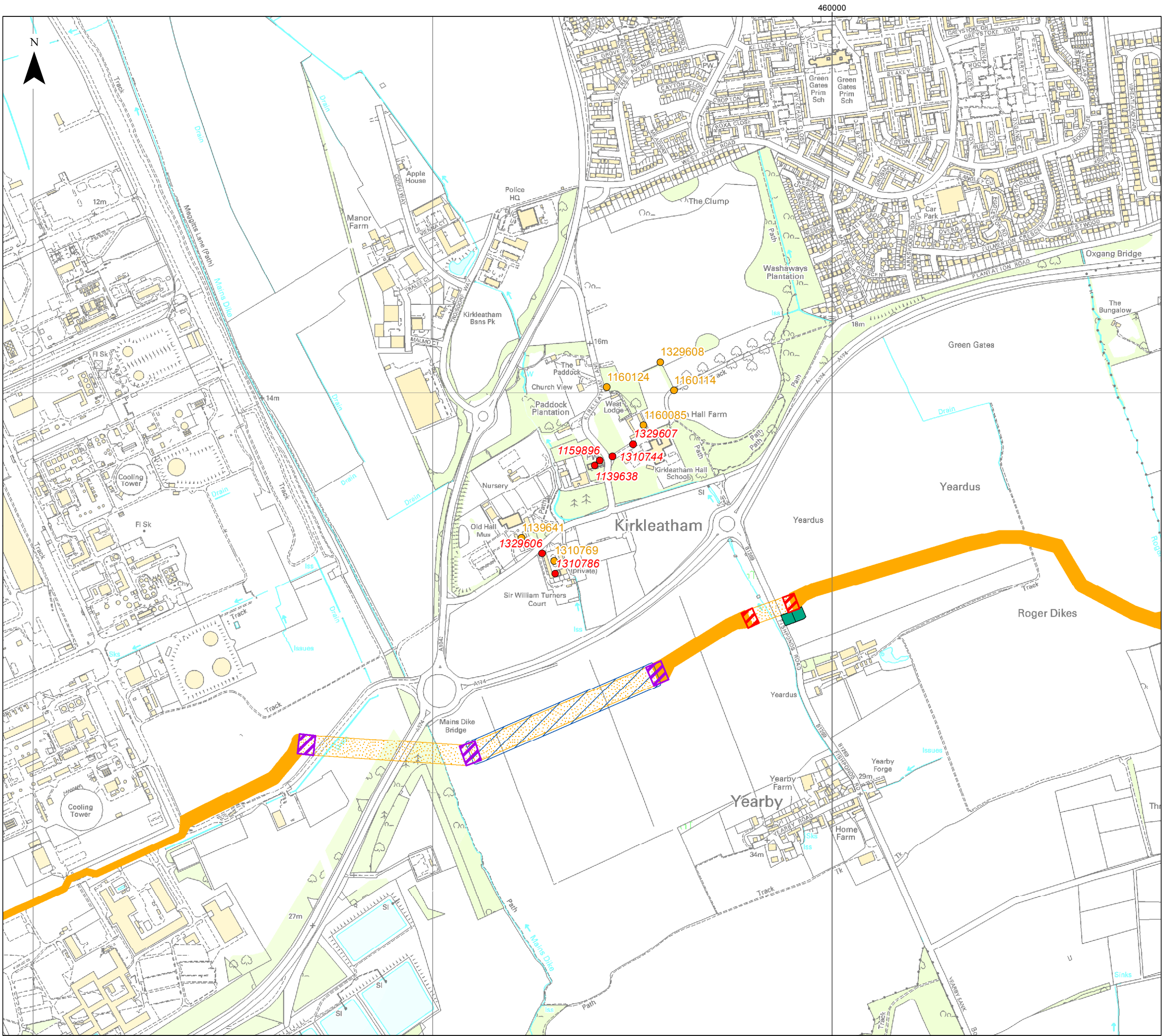
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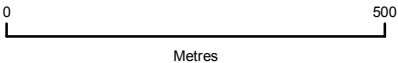


**LEGEND**

- 5km Study Area
- Teesside A&B HVDC, Open trench
- Teesside A&B HVDC, HDD
- Teesside A&B major horizontal directional drill entry or exit locations (2,000m<sup>2</sup>)
- Teesside A&B minor horizontal directional drill entry or exit locations (1,200m<sup>2</sup>)
- HDD or open trench to be confirmed
- Teesside A&B intermediate construction compound (784m<sup>2</sup>)

**Listed Buildings**

- Grade I
- Grade II\*



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PROJECT TITLE  
***DOGGER BANK TEESSIDE A & B***

DRAWING TITLE  
**Figure 3.2:  
Designated assets of high  
importance in Kirkleatham**

VER	DATE	REMARKS	Drawn	Checked
1	18/07/2013	Draft	SW	AH
2	28/08/2013	Submit for PEI3	SW	AH
3	23/01/2014	Pre-DCO Submission review	SW	AH

DRAWING NUMBER:  
**F-ONL-MA-504**

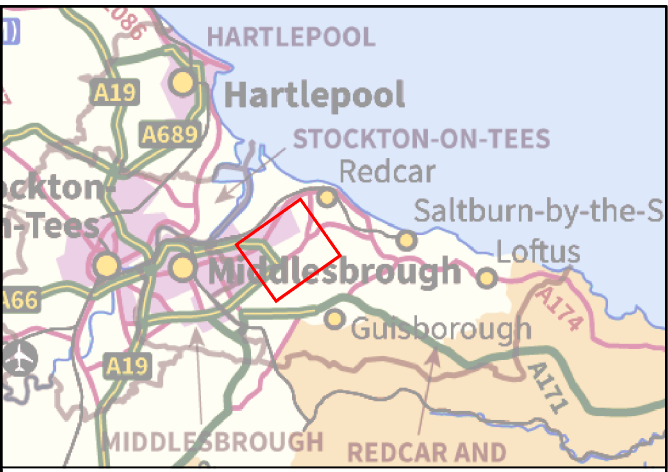
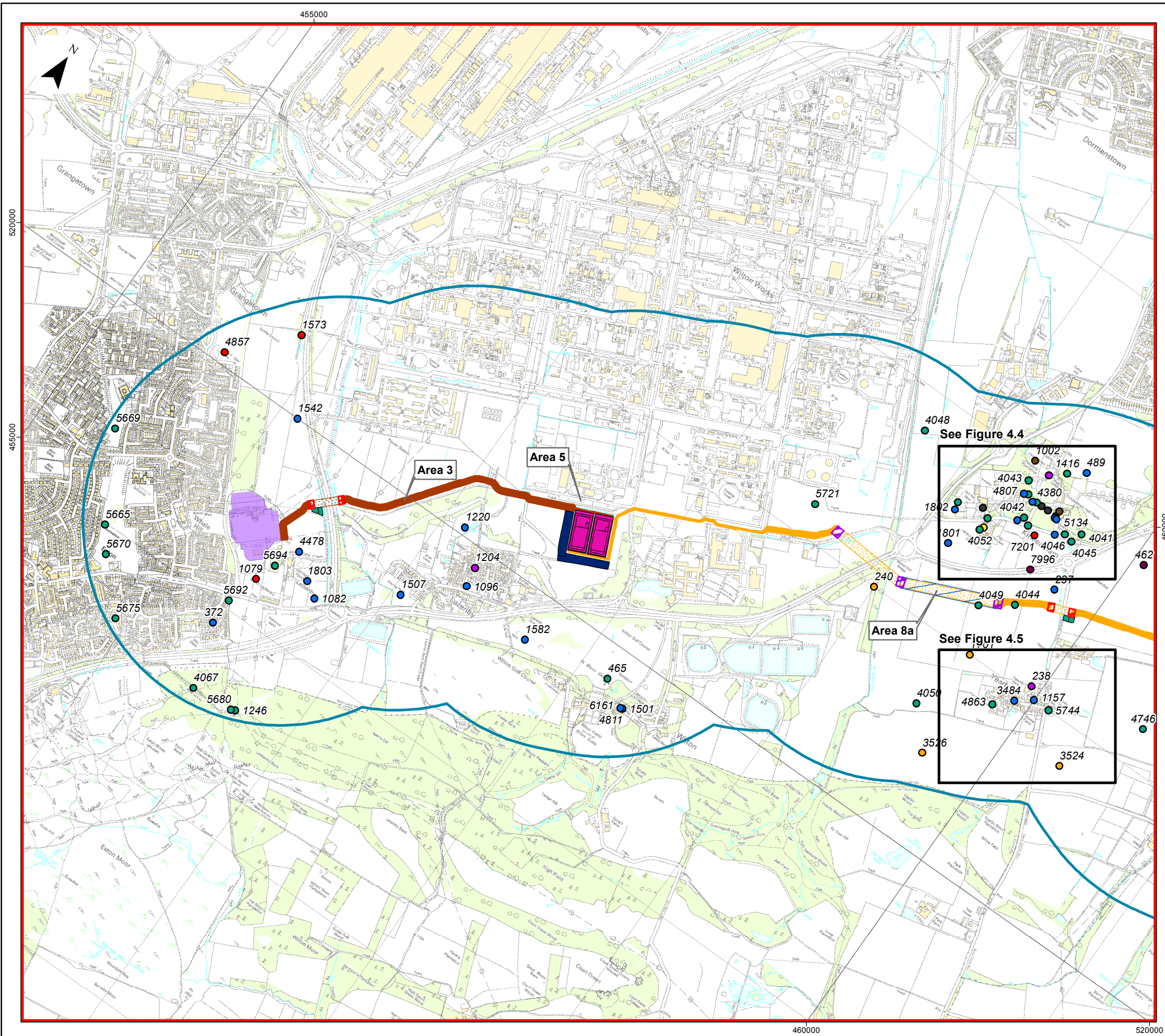
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**LEGEND**

- 1km Study Area
- Teesside A&B HVDC, Open trench
- Teesside A&B HVDC, HDD
- Teesside A&B HVAC, Open trench
- Teesside A&B HVAC, HDD
- Teesside A&B major horizontal directional drill entry or exit locations (2,000m²)
- Teesside A&B minor horizontal directional drill entry or exit locations (1,200m²)
- HDD or open trench to be confirmed
- Teesside A&B intermediate construction compound (784m²)
- Teesside A&B converter stations
- Teesside A&B converter stations construction compounds (10,000m² per project)
- Lackenby 400kV substation

**HER Heritage Assets**

- Post Medieval
- Medieval
- Neolithic
- Bronze Age
- Iron Age
- Roman
- World War II
- Modern
- Unknown

0 1 Kilometres

Data Source:  
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PROJECT TITLE  
**DOGGER BANK TEESSIDE A & B**

DRAWING TITLE  
**Figure 3.3:  
Non-designated assets in  
the 1km study area**

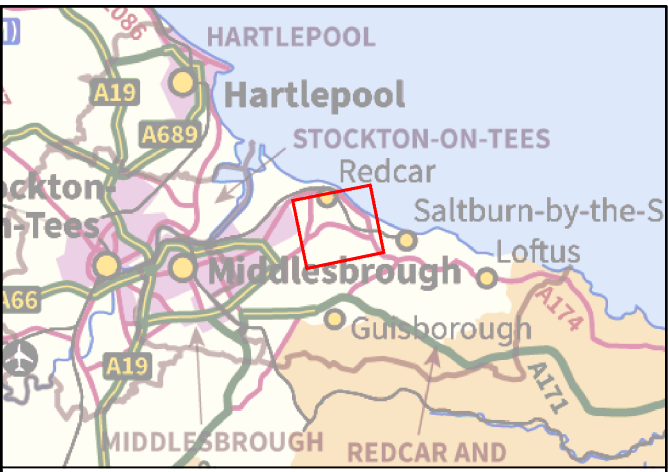
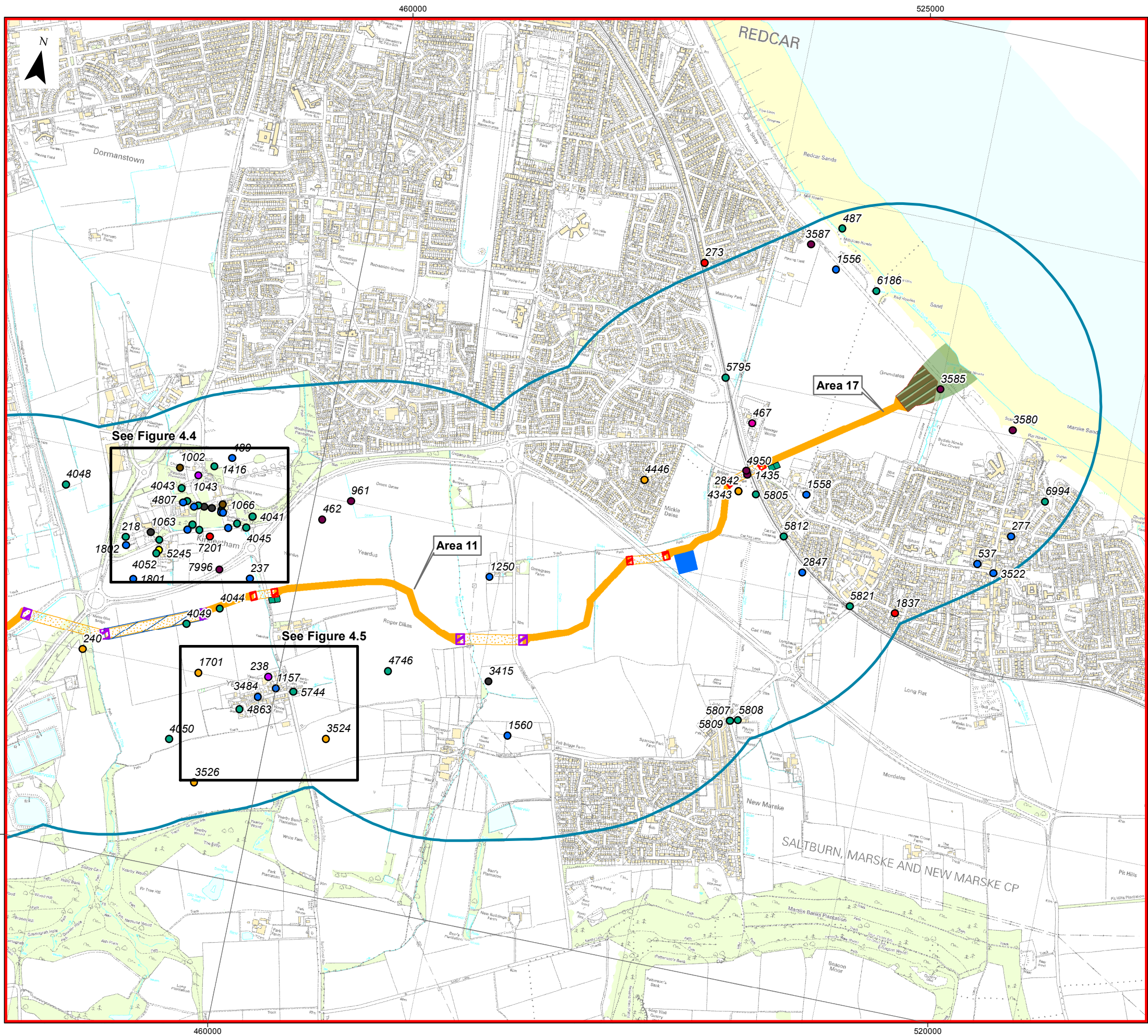
VER	DATE	REMARKS	Drawn	Checked
1	18/07/2013	Draft	SW	AH
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**F-ONL-MA-508**

SCALE	1:20,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG
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**LEGEND**

- 1km Study Area
- Teesside A&B cable landfall envelope
- Teesside A&B landfall construction envelope
- Teesside A&B HVDC, Open trench
- Teesside A&B HVDC, HDD
- Teesside A&B major horizontal directional drill entry or exit locations (2,000m<sup>2</sup>)
- Teesside A&B minor horizontal directional drill entry or exit locations (1,200m<sup>2</sup>)
- HDD or open trench to be confirmed
- Teesside A&B cable route primary construction compound (10,000m<sup>2</sup>)
- Teesside A&B intermediate construction compound (784m<sup>2</sup>)

**HER Heritage Assets**

- Post Medieval
- Medieval
- Neolithic
- Bronze Age
- Iron Age
- Roman
- World War I
- World War II
- Modern
- Unknown

0 1  
Kilometres

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PROJECT TITLE  
**DOGGER BANK TEESSIDE A & B**

DRAWING TITLE  
**Figure 3.4:  
Non-designated assets in  
the 1km study area**

VER	DATE	REMARKS	Drawn	Checked
1	18/07/2013	Draft	SW	AH
2	28/08/2013	Submit for PEI3	SW	AH
3	23/01/2014	Pre-DCO Submission review	SW	AH

DRAWING NUMBER:  
**F-ONL-MA-509**

SCALE	1:20,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG
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## Assessment of impacts - methodology

### Definition of impacts

- 3.2.4 The term impact is used to refer to changes or perturbations arising from the proposed development e.g. loss of heritage asset or changes affecting an asset's setting. Where relevant, impacts will be considered on the basis of their magnitude, duration and reversibility.
- 3.2.5 For the purpose of this assessment an indirect impact is defined as an impact to the setting of a heritage asset. A direct impact is defined as a change to an asset's physical form.

### Receptor importance

- 3.2.6 For the purposes of this impact assessment, the term importance is used to describe the value or weight given to a heritage asset and is intended to have the same meaning as the definition of 'significance' (for heritage policy) in Annex 2 of the NPPF:
- "Significance is the value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting."*
- 3.2.7 The importance of heritage assets and magnitude of effect is determined by professional judgement, guided by statutory and non-statutory designations, national and local policies, and archaeological research agendas.
- 3.2.8 Paragraph 132 of the NPPF recognises that heritage assets with the highest level of significance comprise Scheduled Monuments, Registered Battlefields, Grade I and II\* listed buildings, Registered Parks and Gardens and World Heritage Sites. For the EIA process, importance levels are applied on a relative scale and are not an absolute statement of heritage significance.
- 3.2.9 For the purposes of this impact assessment the criteria for assessing the importance of heritage assets are defined in **Table 3.1**.

**Table 3.1** Factors determining the importance of heritage assets

Importance	Definition
High	<ul style="list-style-type: none"> <li>• Remains of inscribed international importance, such as World Heritage Sites;</li> <li>• Grade I and Grade II* Listed Buildings;</li> <li>• Grade I and Grade II* Registered Parks and Gardens;</li> <li>• Scheduled Monuments;</li> <li>• Registered battlefields;</li> <li>• Non –designated heritage assets of archaeological interest that are demonstrably of equivalent importance to scheduled monuments.</li> </ul>
Moderate	<ul style="list-style-type: none"> <li>• Grade II listed Buildings;</li> <li>• Conservation Areas;</li> <li>• Grade II Registered Parks;</li> <li>• Sites of high archaeological resource value as identified through consultation; and;</li> </ul>

Importance	Definition
	<ul style="list-style-type: none"> <li>Historic Townscapes with historic integrity in that the assets that constitute their make-up are clearly legible.</li> </ul>
Low	<ul style="list-style-type: none"> <li>Non-designated buildings, monuments, sites or landscapes that can be shown to have important qualities in their fabric or historical association;</li> <li>Locally important historic or archaeological sites, sites with a local value for education or cultural appreciation and of medium archaeological resource rating;</li> <li>Parks and gardens of local interest.</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>The Site of a findspot removed from its place and with no surviving contextual associations; and</li> <li>Assets whose values are compromised by poor preservation or survival or of contextual associations to justify inclusion into a higher grade.</li> </ul>

## Impact magnitude

3.2.10 Once a level of importance has been assigned, the magnitude of change is measured. The magnitude of change is based on the level of potential impact resulting from the proposed development. The magnitude of effects is defined in **Table 3.2**.

**Table 3.2** Factors for measuring magnitude of change

Magnitude of change	Definition
High	The significance of the asset is totally altered or destroyed. Comprehensive change to setting affecting significance, resulting in changes in our ability to understand and appreciate the resource and its historical context and setting.
Medium	The significance of the asset is affected. Changes such that the setting of the asset is noticeably different, affecting significance resulting in changes in our ability to understand and appreciate the resource and its historical context and setting.
Low	The significance of the asset is slightly affected. Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the resource and its historical context and setting.
Minimal	Changes to the asset that hardly affect significance. Changes to the setting of an asset that have little effect on significance and no real change in our ability to understand and appreciate the resource and its historical context and setting.
No change	The development does not affect the significance of the asset. Changes to the setting do not affect the significance of the asset or our appreciation of it.

## Overall impact

3.2.11 The significance of the impact is determined by combining the importance of the heritage asset and the magnitude of change (**Table 3.3**).

**Table 3.3** Impact matrix using magnitude and importance in combination

Importance of Asset	Magnitude of Change				
	High	Medium	Low	Minimal	No Change
High	Major	Major	Moderate	Minor	Negligible
Moderate	Major	Moderate	Minor	Minor	Negligible
Low	Moderate	Minor	Minor	Minor	Negligible
Negligible	Minor	Minor	Minor	Minor	Negligible

3.2.12 Measures to mitigate impacts would normally consist of design adjustments to allow important heritage assets to be protected and retained where possible, or where this is not feasible, investigation and recording before and/ or during development. The residual impact reflects the success rating for the recommended mitigation strategy. The residual impact is outlined in **Table 3.4**.

**Table 3.4** Terminology for the definition of the impact

Impact	Definition
Major beneficial	Positive effect that would be an important consideration at a national level.
Moderate beneficial	Positive effect that would be an important consideration at a regional or county level.
Minor beneficial	Positive effect that would be a relevant consideration in a local context.
Neutral	Residual effect that is nil, imperceptible and not significant.
Minor adverse	Negative effect that would be a relevant consideration in a local context.
Moderate adverse	Negative effect that would be an important consideration at a regional or county level.
Major adverse	Negative effect that would be an important consideration at a national level.

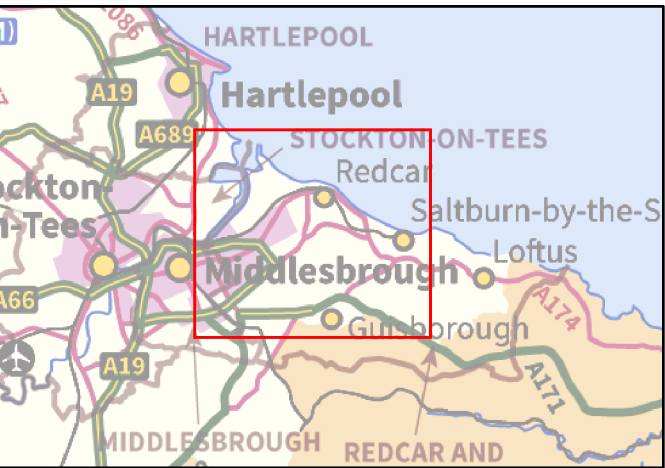
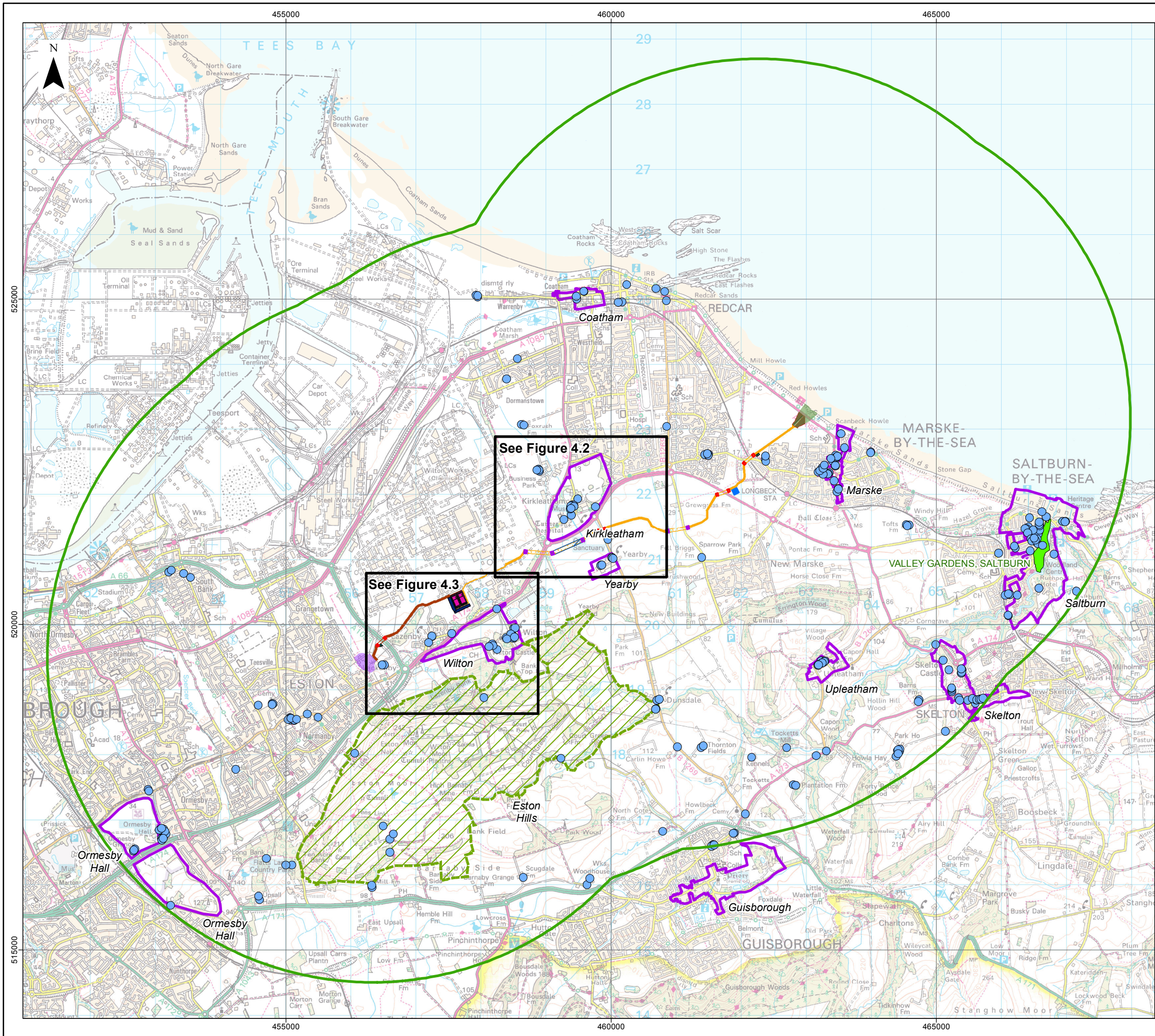


## 4 Existing Environment

### 4.1 Introduction

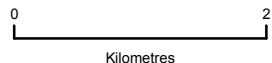
- 4.1.1 This section describes the existing environment in relation to cultural heritage. The section summarises the detailed baseline, which is presented in full within **Appendix 27A**. The numbers in parentheses accompanying an asset description are identifiers assigned by either English Heritage (for designated assets) or the Historic Environment Record (for undesignated assets).
- 4.1.2 There are no World Heritage Sites within the 5km study area.
- 4.1.3 A total of 22 Scheduled Monuments and 294 listed buildings have been identified within the 5km study area (**Figure 3.1**). The listed buildings comprise 11 Grade I, 21 Grade II\* and 262 Grade II. The locations of Scheduled Monuments and Grade I and Grade II\* listed buildings, which are assessed to be of high importance (based upon criteria within **Table 3.1**) is shown on **Figure 3.1**.
- 4.1.4 There are also eight Conservation Areas, one Grade II Registered Park and Garden and the Eston Hills which is designated as a Historic Landscape. These assets are assessed to be of moderate importance (based upon criteria within **Table 3.1**), and are shown on **Figure 4.1**, **Figure 4.2** and **Figure 4.3**.
- 4.1.5 There are 105 non-designated assets, including findspots, known archaeological areas and sites of former structures, which have been identified within the 1km study area. In addition, 2 locally listed buildings are also present. The locations of non-designated heritage assets are shown on **Figure 3.3**, **Figure 3.4**, **Figure 4.4** and **Figure 4.5**.





**LEGEND**

- 5km Study Area
- Teesside A&B cable landfall envelope
- Teesside A&B landfall construction envelope
- Teesside A&B HVDC, Open trench
- Teesside A&B HVDC, HDD
- Teesside A&B HVAC, Open trench
- Teesside A&B HVAC, HDD
- Teesside A&B major horizontal directional drill entry or exit locations (2,000m<sup>2</sup>)
- Teesside A&B minor horizontal directional drill entry or exit locations (1,200m<sup>2</sup>)
- HDD or open trench to be confirmed
- Teesside A&B cable route primary construction compound (10,000m<sup>2</sup>)
- Teesside A&B intermediate construction compound (784m<sup>2</sup>)
- Teesside A&B converter stations
- Teesside A&B converter stations construction compounds (10,000m<sup>2</sup> per project)
- Lackenby 400kV substation
- Registered Parks and Gardens
- Conservation Areas
- Historic Landscape
- Listed Buildings
  - Grade II



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PROJECT TITLE  
**DOGGER BANK TEESSIDE A & B**

DRAWING TITLE  
**Figure 4.1:  
Designated assets of moderate  
importance in the 5km study area**

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2	28/08/2013	Submit for PEI3	SW	AH
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**F-ONL-MA-505**

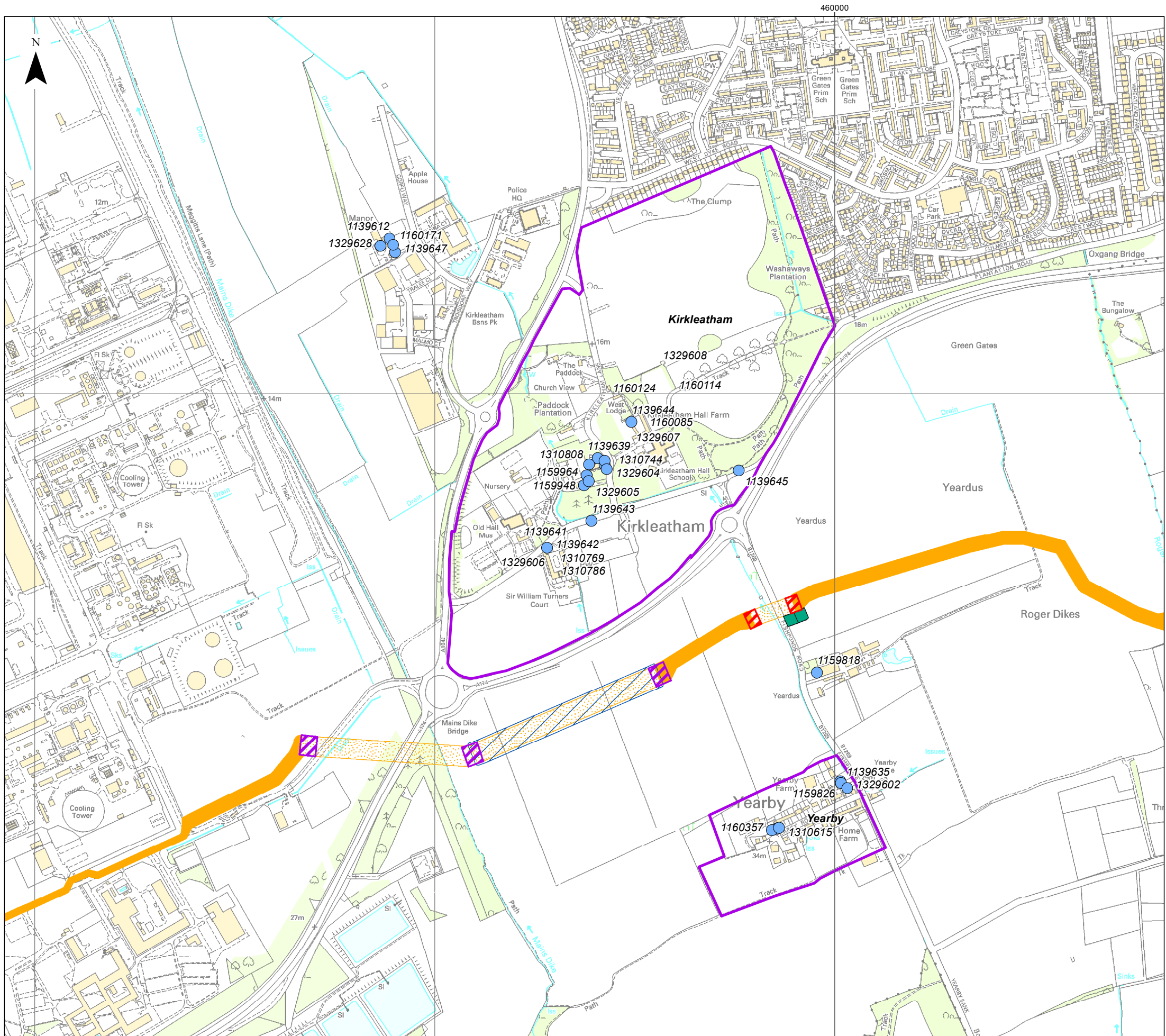
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- LEGEND**
- Teesside A&B HVDC, Open
  - Teesside A&B HVDC,
  - Teesside A&B major horizontal directional drill entry or exit locations (2,000m<sup>2</sup>)
  - Teesside A&B minor horizontal directional drill entry or exit locations (1,200m<sup>2</sup>)
  - HDD or open trench to be confirmed
  - Teesside A&B intermediate construction compound
  - Conservation Areas
  - Listed Buildings**
  - Grade II

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PROJECT TITLE  
**DOGGER BANK TEESSIDE A & B**

DRAWING TITLE  
**Figure 4.2:  
Designated assets of moderate  
importance in Kirkleatham and Yearby**

VER	DATE	REMARKS	Drawn	Checked
1	18/07/2013	Draft	SW	AH
2	28/08/2013	Submit for PEI3	SW	AH
3	23/01/2014	Pre-DCO Submission review	SW	AH

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**F-ONL-MA-506**

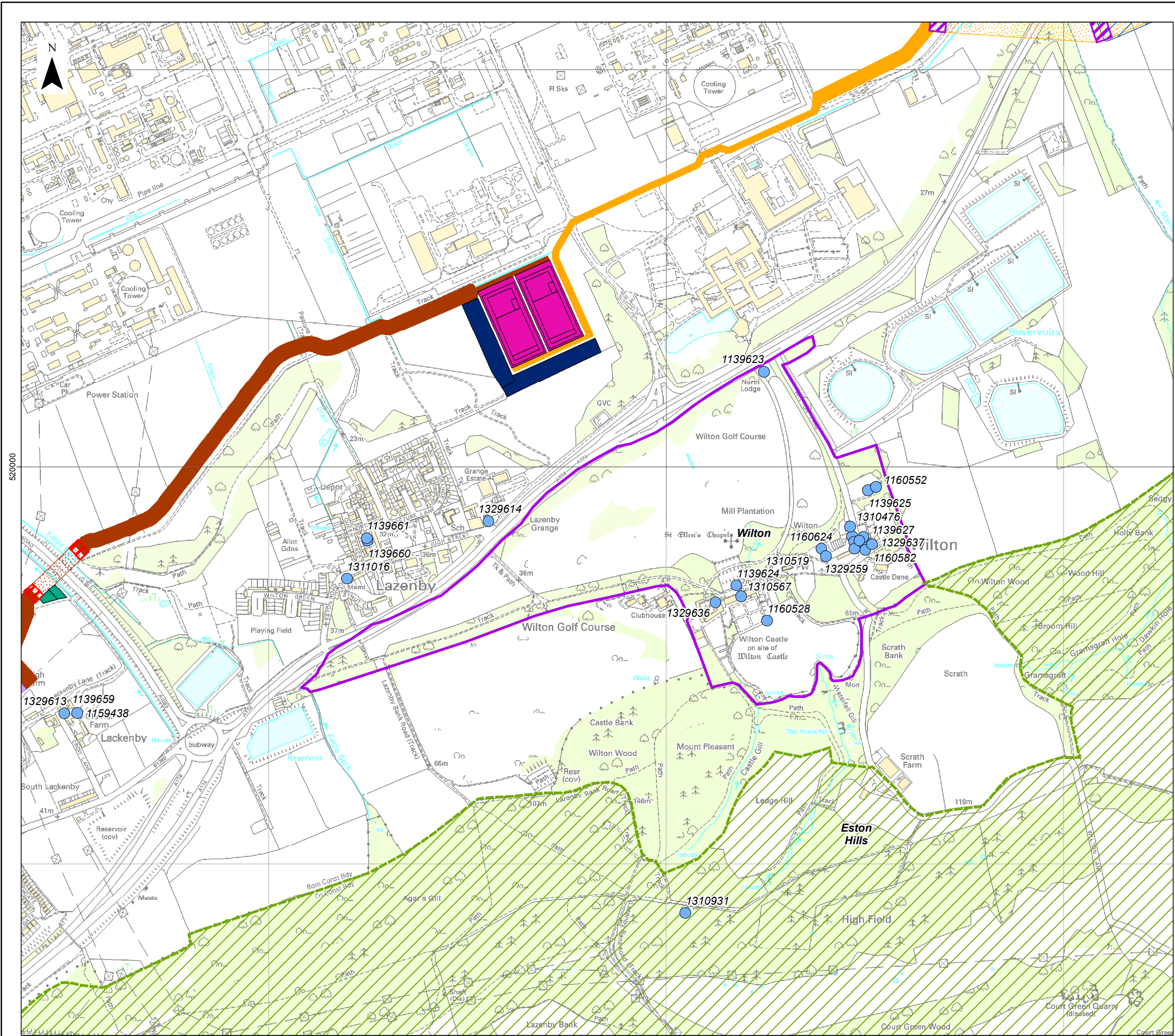
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**FOREWIND**







**LEGEND**

- 5km Study Area
- Teesside A&B HVDC, Open trench
- Teesside A&B HVDC, HDD
- Teesside A&B HVAC, Open trench
- Teesside A&B HVAC, HDD
- Teesside A&B major horizontal directional drill entry or exit locations (2,000m<sup>2</sup>)
- Teesside A&B minor horizontal directional drill entry or exit locations (1,200m<sup>2</sup>)
- HDD or open trench to be confirmed
- Teesside A&B intermediate construction compound (784m<sup>2</sup>)
- Teesside A&B converter stations
- Teesside A&B converter stations construction compounds (10,000m<sup>2</sup> per project)
- Lackenby 400kV substation
- Conservation Areas
- Historic Landscape
- Listed Buildings**
- Grade II



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PROJECT TITLE  
**DOGGER BANK TEESSIDE A & B**

DRAWING TITLE  
**Figure 4.3:  
Designated assets of moderate  
importance in Wilton and Lazenby**

VER	DATE	REMARKS	Drawn	Checked
1	18/07/2013	Draft	SW	AH
2	28/08/2013	Submit for PEI3	SW	AH
3	23/01/2014	Pre-DCO Submission review	SW	AH

DRAWING NUMBER:  
**F-ONL-MA-507**

SCALE	1:10,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG
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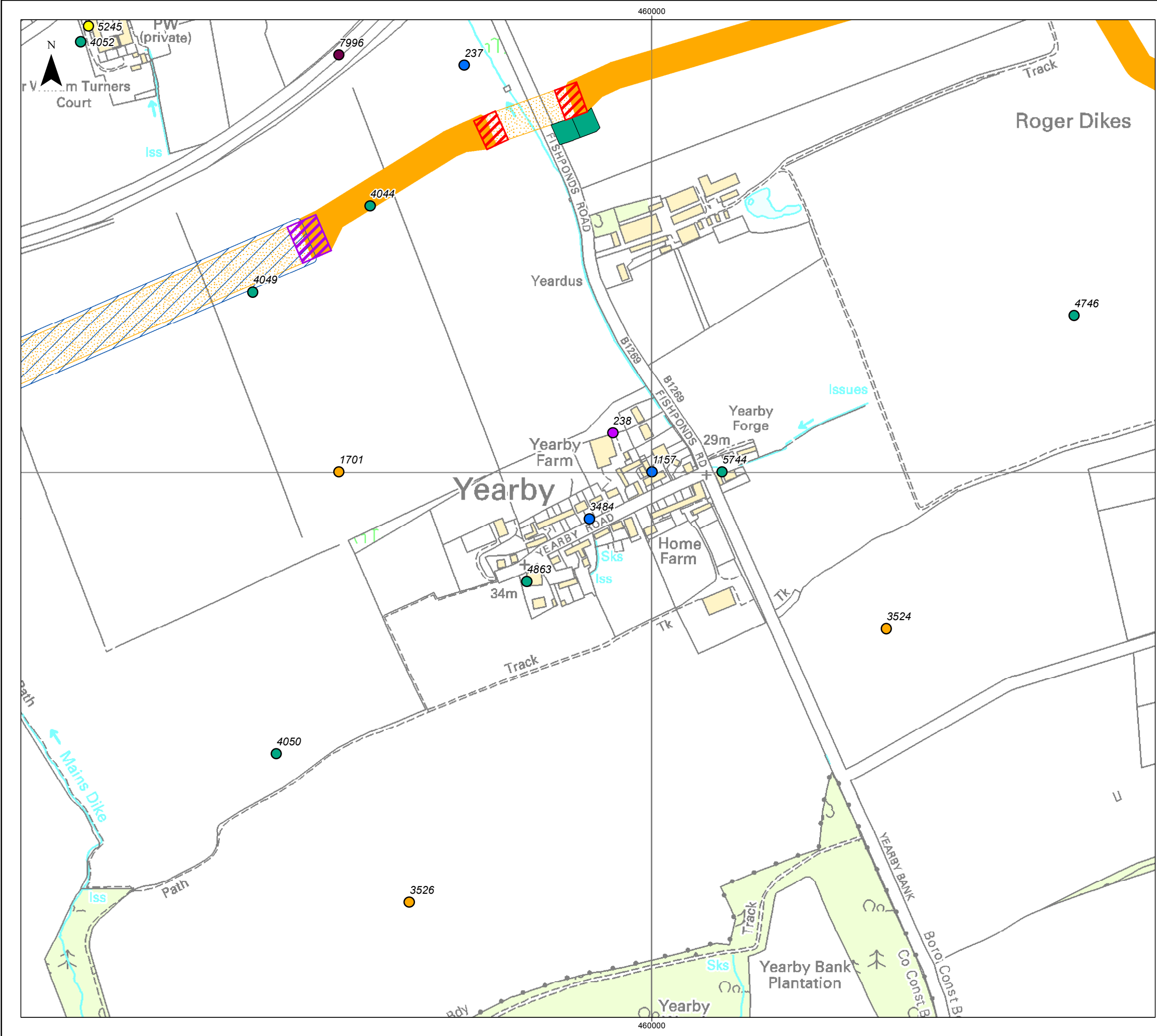










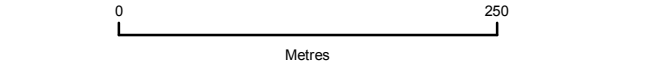


**LEGEND**

- Teesside A&B HVDC, Open trench
- Teesside A&B HVDC, HDD
- Teesside A&B major horizontal directional drill entry or exit locations (2,000m<sup>2</sup>)
- Teesside A&B minor horizontal directional drill entry or exit locations (1,200m<sup>2</sup>)
- HDD or open trench to be confirmed
- Teesside A&B intermediate construction compound (784m<sup>2</sup>)

**HER Heritage Assets**

- Post Medieval
- Medieval
- Bronze Age
- Iron Age
- World War II
- Modern



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PROJECT TITLE  
**DOGGER BANK TEESSIDE A & B**

DRAWING TITLE  
**Figure 4.5:  
Non-designated assets  
at Yearby**

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1	18/07/2013	Draft	SW	AH
2	28/08/2013	Submit for PEI3	SW	AH
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**F-ONL-MA-511**

SCALE	1:5,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG
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## 4.2 Designated assets within the 5km study area

### Scheduled Monuments within Eston Hills

- 4.2.1 The majority of the Scheduled Monuments (19 of the 22) are located on Eston Hills and have a level of association with each other as surviving features within a remnant prehistoric landscape.
- 4.2.2 The majority of the monuments comprise bowl barrows (see **Table 4.1**) which are funerary monuments dating from the Late Neolithic period to the Late Bronze Age, with most examples belonging to the period 2400-1500 BC. They were constructed as earthen or rubble mounds, sometimes ditched, which covered single or multiple burials. They occur either in isolation or grouped as cemeteries and often acted as a focus for burials in later periods. Often occupying prominent locations, they are a major historic element in the modern landscape and their considerable variation of form and longevity as a monument type provide important information on the diversity of beliefs and social organisations amongst early prehistoric communities.
- 4.2.3 During the site visit, an assessment of setting for each monument was undertaken to aid in the assessment of potential indirect impact arising from the proposed development. A summary is provided in **Table 4.1** and a full description in **Appendix 27A**. The monuments referenced below are identified by their National Heritage List for England reference number and are shown on **Figure 3.1**.

Table 4.1 Summary of Scheduled Monuments within Eston Hills

Monument Reference	Description	Setting
1011273	Includes a Late Bronze Age hillfort, a palisaded settlement, at least one Bronze Age bowl barrow and a 19th century beacon, situated on a steep, north facing scarp edge with extensive views in all directions monument is enhanced by the survival of contemporary settlements and funerary monuments in the vicinity; such evidence provides a clear indication of the extent of Bronze Age settlement and activity in the area and has the potential to increase greatly our knowledge of Bronze Age society	The hillfort on Eston Nab is the only surviving hillfort of any date in Cleveland. It is very well preserved and although it has been subject to partial excavation the extent of disturbance is relatively limited and its archaeological deposits remain largely intact. Its immediate setting is dominated by the remnants of its outer defensive circuit and by its precipitous position on an escarpment. The monument's wider setting is defined by its position within a remnant prehistoric landscape and its association with contemporary settlement and funerary monuments within the historic landscape of Eston Hills. Long range views which contribute to its setting are possible in all directions; Eston, Lazenby and the Wilton Complex are visible, and the North Sea is visible in longer views to the north and north east. Views of the converter stations associated with the proposed development will be visible from within the monument, and this potential impact to the setting of the asset will be assessed further.
1011280	Bowl barrow	Monument is separated from contemporary features due to an intervening plantation. The

Monument Reference	Description	Setting
		wider setting of the monument is defined by the extent of the Eston Hills prehistoric landscape and the contemporary features within it.
1011283	Two bowl barrows	The setting of the barrows is dominated by views to the south and the visual relationship with contemporary features to the east and south east, specifically barrows 1011271 and 1011282.
1011272	Bowl barrow	The immediate setting of the monument is dominated by its location within a wooded area; however the wider setting of the monument is defined by the extent of the remnant prehistoric landscape on Eston Hills and by the presence of numerous contemporary monuments.
1011274	Bowl barrow	The immediate setting of the monument is dominated by its location within a wooded area. The importance of the monument is defined by the extent of the remnant prehistoric landscape on Eston Hills and by its association with contemporary monuments within that landscape.
1011271	Bowl barrow	The barrow is positioned on a south facing slope and its setting is dominated by views to the south and the visual relationship with contemporary features to the south and south west, specifically barrow 1011283.
1011270	Three bowl barrows	The setting of the barrows is dominated by views overlooking the valley to the south. The monuments have no visual relationship with other contemporary features due to intervening vegetation, but the wider setting of the monuments is defined by their position within a remnant prehistoric landscape, and this contributes to the assets' importance.
1011282	Bowl barrow	The barrow is positioned on a south facing slope and its setting is dominated by views to the south and the visual relationship with contemporary features to the north and north west, specifically barrows 1011271 and 1011283.
1011281	Bowl barrow	The immediate setting of the monument is defined by its position on the edge of a plantation site, and shared views with the bowl barrow at Court Green Farm (1011269) which is to the south east.
1011268	Bowl barrow	Plantation to the north and west and the setting of the barrow is dominated by views to the south and the visual relationship with contemporary features to the east, specifically barrow 1011285 which is located 110m to the east.
1011285	Bowl barrow	There is plantation to the north and east. A visual relationship with contemporary features to the west, specifically barrow 1011268 which is located 110m to the west, contributes to the setting of the asset.
1011269	Bowl barrow	The immediate setting of the monument is defined by its position on the edge of a plantation, and

Monument Reference	Description	Setting
		shared views with the bowl barrow 1011269 which is located to the north west (1011281).
1011284	Bowl barrow	The monument is on the edge of a wooded area which restricts long-range views and contributes to an enclosed setting. The monument is located on the 230m contour on a south-facing slope and its wider setting is defined by its relationship with contemporary assets on the moor, specifically 1011268 and 1011285 to the west, and monuments down slope to the south.
1011279	Bowl barrow	Defined by the monument's visual and spatial relationship with contemporary monuments on the moor, specifically bowl barrow 1011278 to the west.
1011275	Bowl barrow	The setting is defined by its position on a north west facing slope within a remnant prehistoric landscape and by its spatial and visual relationship with contemporary monuments on the moor. The dominant visual relationship is with the hillfort at Eston Nab to the north.
1018658	Round barrow on edge of the Eston Hills ridge	The barrow is in relatively open land, but wooded areas to all sides restrict views towards contemporary monuments, although there are some undated earthworks to the east which may be contemporary but may be associated with surface quarrying. The wider setting of the monument is defined by its survival within a remnant prehistoric landscape, and the spatial relationship it has with contemporary features.
1011276	Bowl barrow	Located at approximately 200m Above Ordnance Datum (AOD), the monument's setting is defined by its spatial and visual relationship with contemporary monuments on the moor, and specifically views to the north which are dominated by the hillfort at Eston Nab.
1011277	Ring cairn situated in an area of flat moorland	The cairn's setting is defined by its prominent position at 210m AOD overlooking the Tees Valley to the south.
1011278	Bowl barrow	The setting of this asset is defined by the monument's visual and spatial relationship with contemporary monuments on the moor, specifically bowl barrow 1011279 to the east.

### Summary of potential effects on monuments on Eston Hills

- 4.2.4 There is no visual relationship between the barrow monuments on Eston Hills and Dogger Bank Teesside A & B. All of the assets are located outside of the ZTV and therefore there is unlikely to be any impacts affecting the setting or importance of each asset.
- 4.2.5 It is noted however that potential impacts to the setting of the hillfort at Eston Nab, which makes a significant contribution to the group value of heritage assets within this historic landscape, may result in secondary impacts. Therefore as a

precautionary measure, the level of impact to the group value of the monuments, as individual components of Eston Hills historic landscape, will be assessed further.

## Scheduled monuments outside Eston Hills

4.2.6 Information on the three other Scheduled Monuments located outside the Eston Hills Historic Landscape are summarised in **Table 4.2**.

**Table 4.2** Summary of Scheduled Monuments outside Eston Hills

Monument Reference	Description	Setting
1018659	Two Round Barrows on Patterson's Bank	The barrows are located on a slightly north-facing slope at a height of 170m AOD, and their immediate setting is dominated by their position on the edge of Errington Wood. The plantation prevents long range views which would link the barrows with contemporary monuments to the west and south west and therefore the setting of the assets is defined largely by the spatial and visual relationship they share with each other.
1020311	First World War early warning acoustic mirror. Part of a chain of similar acoustic devices located on the north east coast extending from the Tyne to the Humber. Erected to provide early warning of potential attacks on the important industrial complexes in the north east from ships and Zeppelins during First World War	The asset is located within the middle of a modern housing estate and its setting is dominated by the built residential character. The original setting of the monument, which would have been defined by long-range views to the north east, towards the coast and the Tees estuary, and possibly lines of intervisibility with other coastal defences, has been eroded and no longer contributes to the asset's importance.
1018948	Manorial settlement, dovecote and remnant field system	The setting of the settlement is defined by the extent of the associated earthworks within an enclosed space.

## Summary of Monuments outside Eston Hills

4.2.7 There will be no change to the physical appearance or setting of any of the three assets and therefore no further assessment will be undertaken.

## 4.3 Listed buildings

### Overview

4.3.1 The majority of the listed buildings within the 5km study area are concentrated around existing settlement areas at Kirkleatham, Wilton, Marske, Saltburn and Skelton. The majority of the remaining listed buildings are represented by farm buildings which are spread throughout the rural parts of the study area.

4.3.2 There are no listed buildings within the construction working width of the proposed High Voltage Direct Current (HVDC) and High Voltage Alternating Current (HVAC) cable routes or within the footprint of the proposed converter stations site. One locally listed structure, a World War II pillbox (4950), is



located within the HVDC construction working width (**Figure 3.4**) and potential impacts to this asset will be assessed further.

## Grade I Listed Buildings

4.3.3 There are 11 Grade I listed buildings in the 5km study area (**Figure 3.1**).

4.3.4 Five of the buildings (see **Table 4.3**) have no visual relationship with the proposed development due to distances involved and intervening settlement, landform and vegetation and no further assessment is required. Further information is provided in **Appendix 27A**.

**Table 4.3** Grade I Listed Buildings within study area not taken forward to impact assessment stage

Reference Number	Description	Assessment
1311002	Ormesby Hall - The hall dates to c. 1600 but large parts of it were rebuilt during the mid-late 18th century.	The Hall does not share a visual relationship with the proposed development and falls outside of the ZTV.
1139662	A stableblock in Church Lane, Ormesby Hall - dates to the late 18th century and forms part of a range of buildings arranged around a central courtyard associated with Ormesby Hall	The setting of the stableblock is defined by its position within a range of buildings and by its level of association with Ormesby Hall. The proposed development will not be visible from the building and the asset is located outside of the ZTV.
1387553	Marske Hall- former country house and was built in the early 17th century	The proposed development will not be visible from the hall and the asset is located outside of the ZTV.
1262832	Skelton Castle - former country house, set in its own landscaped grounds with associated outbuildings including stables. Developed into apartments.	The proposed development will not be visible from the building and the asset is located outside of the ZTV.
1250412	Stable house and coach house which date to the early 19th century and are used as residences and garages.	The proposed development will not be visible from the building and the asset is located outside of the ZTV.

4.3.5 The remaining six Grade I buildings are located within the village of Kirkleatham (**Figure 3.2**). Due to the group value of the buildings, and the number of Grade II\* and Grade II buildings also within Kirkleatham, any potential impact arising from Dogger Bank Teesside A & B will be assessed in conjunction with further assessment of Kirkleatham Conservation Area as a whole.

## Grade II\* Listed Buildings

- 4.3.6 There are 21 Grade II\* listed buildings in the 5km study area (**Figure 3.1**). Of the buildings, 13 will have no visual relationship with the proposed development due to distances involved and intervening settlement, landform and vegetation, and therefore their setting will not be affected by the proposed development (see **Appendix 27A**).
- 4.3.7 Six of the listed buildings are located within Kirkleatham village (**Figure 3.2**) and any potential impact to these structures will be included in the assessment of impact on Kirkleatham Conservation Area. The remaining two listed buildings comprise the Old Hall Farmhouse and garden wall at Lackenby (1139659) and the Church of St Cuthbert at Wilton (1310519). Potential impacts to these two assets will be assessed further.

## Grade II Listed Buildings

- 4.3.8 There are 262 Grade II listed buildings within the 5km study area (**Figure 3.1**). The majority of the buildings (217) are located outside of the ZTV and will have no visual relationship with the proposed development due to distances involved and intervening settlement, landform and vegetation. As such there will be no change to their setting and no further assessment of impact is required.
- 4.3.9 A detailed assessment of the remaining 45 buildings is presented in Section 4 of the Technical Appendix (**Appendix 27A**). **Table 4.4** summarises the detailed assessment of the remaining 45 buildings and identifies which assets were taken forward to the Environmental Impact Assessment (EIA) based on potential impacts to their setting.

**Table 4.4** Grade II Listed Buildings within study area

Reference Number	Description	Assessment
1159438 and 1329623.	A stable range and a byre barn associated with the Grade II* Old Hall Farmhouse at Lackenby.	Located on the edge of the ZTV; as such there is potential for components of the proposed development to be visible during construction and operation. Potential impacts to these assets will be assessed further.
1139660, 1139661, 1311016 and 1329614.	Four buildings within Lazenby: No.9 Chapel Street, No.11 Chapel Street, the village hall, Grange Farmhouse and cottage.	The setting of these assets is inward looking, and views are restricted to the village of Lazenby. There are no long-range views out of the village and there will be no views of the proposed development that will affect their setting. There will be no change to these assets and no further assessment of impact is required.
1139645, 1329607, 1139643, 1159948, 1159964, 1159896, 1329607, 1310799, 1310744, 1139638,	12 Grade II listed buildings within Kirkleatham Conservation Area.	All of these assets contribute to the character of the designated area and potential impacts will be assessed at the same time as the assessment of impact to the Conservation Area.



Reference Number	Description	Assessment
1329604 and 1329606.		
1160552,1139625,1221833,1140389,1329637,1310476,1160624,1139627,11403390,1139626,1160617,1160582,1310519,1329259,1139624,1329636,13110567 and 1160528.	18 Grade II listed buildings within Wilton Conservation Area.	All of these assets contribute to the character of the designated area and potential impacts will be assessed at the same time as the assessment of impact to the Conservation Area.
1139635,1159826,1329602,1310615,113962 and 1160357.	6 Grade II listed buildings within Yearby Conservation Area.	Potential impacts to the listed buildings will be assessed as part of potential impacts to the Conservation Area.
1159818	Turner's Arms Farmhouse	It is possible there will be temporary impacts to the setting of this asset during construction of the HVDC cable route and this impact will be assessed further.
1387500	Fell Briggs Farmhouse	Located approximately 500m south of the proposed HVDC cable route and therefore it is likely there will be temporary impacts to the setting of this asset during construction of the HVDC cable route and this impact will be assessed further.
1139618	Ryehills Farmhouse	Located approximately 200m east of the proposed route of the HVDC cable. The farmhouse, associated farm buildings and garden wall are all listed Grade II and the proximity to the proposed cable route means there is potential for temporary impacts to the setting of the assets to occur during construction. This potential impact will be assessed further.

## Conservation Areas

- 4.3.10 There are eight conservation areas in the 5km study area (**Figure 3.1**). Marske, Yearby, Kirkleatham, and Wilton are within 1km of a component of Dogger Bank Teesside A & B, and these are described in more detail in the following sections and in **Appendix 27A**. There is potential for the conservation areas to have a visual relationship with the proposed development; this may alter their character and result in an impact to their setting.

### **Marske Conservation Area**

- 4.3.11 Marske Conservation Area is located approximately 900m south east of the cable landfall, and over 6km east of the proposed converter stations site and the HVAC cable route.
- 4.3.12 The present High Street forms the principal linear axis of the settlement, running from north to south. The conservation area appraisal states that the sense of arrival in Marske Conservation Area is of key importance to its appreciation by residents and visitors alike, and as such approaches west from the Coast Road contribute to the character and experience of the area (RCBC 2011a).
- 4.3.13 There are no views of the operational Dogger Bank Teesside A & B and the conservation area falls outside of the ZTV. Views of the HVDC construction at the landfall will be visible in approaches to the conservation area from the west and this impact will therefore be assessed further in the impact assessment process.

### **Yearby Conservation Area**

- 4.3.14 Yearby Conservation Area is located approximately 450m south of the proposed HVDC cable route and over 2km east of the proposed converter stations site and the HVAC cable route. The layout of Yearby is based on a typical medieval form; comprising two rows of houses arranged either side of a principal access or through road.
- 4.3.15 Views within the conservation area are framed by the linear layout of the buildings, although long-range views out over an agricultural landscape and the Eston Hills beyond are also possible to the south. Views north towards the settlement at Kirkleatham are possible from the rear of the buildings which form the northern boundary of the village and from this position there will be temporary views of the HVDC cable construction. There is a potential for the roofs of the converter stations to be visible from the northwestern edge of the village. Potential impacts to the setting of Yearby will be assessed further.

### **Kirkleatham Conservation Area**

- 4.3.16 Kirkleatham Conservation Area is located approximately 200m north of the route of the proposed HVDC cable and 2km north east of the proposed converter stations site and HVAC cable route. Kirkleatham is classed as an 'outstanding' conservation area due to the high number of listed buildings, the quality of architecture and the level of historical importance and intact historical context. A CAAP proposed for Kirkleatham is no longer being undertaken by RCBC; however key views and characteristics which contribute to area's importance are set out in Kirkleatham Conservation Area Appraisal (RCBC 2011c). Kirkleatham contains six Grade I, six Grade II\* and 12 Grade II listed buildings.
- 4.3.17 Kirkleatham is a prominent feature in the low-lying landscape around Wilton and Redcar and its dense wooded areas breaks up the visual monotony of the flat and treeless coastal plain. The roads leading into the conservation area afford important views. The approach from the west is dominated by the tall elevations

of the Old Hall Museum, followed by the side view of Turner's Hospital with its domed, Baroque, clock tower. Views of these assets against a backdrop of mature woodland make an important contribution to the landscape qualities of the area.

- 4.3.18 Potential impacts to key views with historical importance out of the conservation area to the south may occur as a result of the HVDC cable construction. This impact would only be temporary during construction. There is a potential for the roofs of the operational converter stations to be visible from the western edge of the conservation area. These potential impacts will be assessed further.

### Wilton Conservation Area

- 4.3.19 Wilton Conservation Area is located 300m south of the proposed converter stations site and HVAC cable route, and 1km south of the HVDC cable route. Wilton is situated on a north-facing slope just below the steep escarpment of Eston Hills. The approach to the village is from the north up a densely wooded lane which leads through the village to Wilton Castle which is listed Grade II. The Church of St Cuthbert is listed Grade II\* and is located at the end of a small drive which is set back from the main approach road. The setting of the church is defined by its position within an enclosed graveyard which is surrounded by mature deciduous and evergreen trees. There will be no views of the operational converter stations due to this enclosed setting.
- 4.3.20 A double avenue of pollarded, mature deciduous trees planted in the late 19th century line a disused west carriage drive to the castle. The avenue runs for half a mile towards Lazenby, and is identified as the most important single landscape feature within the conservation area (RCBC 2011d). Views of the Wilton Complex are clearly visible from viewpoints along the avenue; however the proposed converter stations associated with Dogger Bank Teesside A & B will not be visible and are located outside of the ZTV.
- 4.3.21 The conservation area appraisal for Wilton identifies one of the most significant views as being from the castle forecourt to the south, across open parkland towards the mature trees which screen the A174 carriageway. It is also noted that the visually dramatic Wilton Complex forms an important component of this view; however the converter stations associated with the operational Dogger Bank Teesside A & B will not be visible from within the conservation area and will not therefore change the current setting or character of the conservation area. It is concluded that no further assessment is required.

### Registered Parks and Gardens – Valley Gardens

- 4.3.22 Valley Gardens in Saltburn-by-the-Sea is a Grade II Registered Park and Garden. It is located approximately 4km south east of the proposed HVDC cable route and over 8km east of the proposed converter stations site (**Figure 4.1**). Valley Gardens form part of the late Victorian seaside resort of Saltburn-by-the-Sea which was developed between 1861 and 1873 by the Quaker Henry Pease. The approximately 10ha Valley Gardens lie on the eastern edge of Saltburn, on the west bank of a steep wooded glen (formerly called Camp Bank)

along Skelton Beck, and they follow the long narrow landform of the glen. The eastern boundary of the site runs along White House Wood and Rigg Wood which cover the east bank of the glen. To the north, the site meets the Lower Promenade (formerly The Esplanade) which runs along the seafront, while the western boundary abuts two roads: Albion Terrace and Glenside. To the south, woodland merges into Rifts Wood, which is linked to the Valley Gardens by a series of footpaths.

- 4.3.23 There are extensive views from various points within the site, the principal one being north towards the Lower Promenade and the sea. There are also important views east towards White House Wood and Saltburn Bank, and south to Thompson's Wood and Rushpool Hall. The latter, a 19th century villa now converted to a hotel, is situated on top of a hill and forms an important focal point.
- 4.3.24 The construction and operation of Dogger Bank Teesside A & B will not be visible from the park, even from the Lower Promenade at the seafront. Furthermore, principal views within and out of the park will not be impacted by Dogger Bank Teesside A & B and the importance of the park will not be affected. No further assessment is therefore required.

### **Eston Hills Historic Landscape**

- 4.3.25 The Eston Hills are an outlier of the North York Moors (**Figure 4.1**). They represent a distinct landscape block in which human activity has taken place, largely separate from the surrounding area (Redcar and Cleveland Local Plan 1999). The area is a designated historic landscape due to the number and diversity of sites of archaeological and historic interest that survive. The survival of early prehistoric to industrial features provides an insight into the history of the area and the character of the local people. The importance of the area lies in the group value of interrelated sites and the relationship each asset has with the natural landscape, and as such the setting of the historic landscape is primarily defined by the extent of surviving archaeological features.
- 4.3.26 The operation of Dogger Bank Teesside A & B has the potential to affect the setting of this historic landscape, due to the visual nature of the proposed converter stations, and as such this potential impact has been assessed and the details can be found in the operational impacts section of this chapter, and Section 9 of **Appendix 27A**.

## **4.4 Non-designated assets within the study area**

- 4.4.1 105 non-designated heritage assets, including findspots, known archaeological areas and sites of former structures have been identified within the 1km study area. These assets are listed in **Appendix 27A** and are illustrated on **Figure 3.3** and **Figure 3.4**.
- 4.4.2 There are no known non-designated assets located within the proposed converter stations site. There are four non-designated assets within the proposed HVDC cable corridor:

- Site of a brick extraction pit/pond (4049);
- Site of a 19th century dovecote (4044);
- World War II pillbox; locally listed structure (4950); and
- World War II gun emplacement complex (3585).

4.4.3 **Appendix 27A** provides a chronological overview of the archaeological and historical character of the study area, (paragraphs 4.3.4 to 4.3.37).

### Historic Landscape Characterisation

- 4.4.4 Historic Landscape Characterisation (HLC) takes into account known archaeological sites in an area and also the patterns and shapes of field boundaries, woodlands, settlements and roads, as well as heathland and moorland. Assessment of all these elements helps the understanding of the historical and archaeological development of a landscape. Tees Archaeology has worked with North Yorkshire Council in order to develop HLC for the former County of Cleveland (RCBC 2010).
- 4.4.5 Certain landscapes in the Tees Valley, in particular the Eston Hills in Redcar and Cleveland, are of particular importance because of the range and quality of the archaeological and historic components they contain. Tees Valley contains a number of parks and gardens that are of historic interest; of these, the Valley Gardens in Saltburn is categorised as Grade II on the Register of Parks and Gardens of Special Historic Interest. Tees Valley also contains many conservation areas and listed buildings.
- 4.4.6 The Borough is largely a rural area despite the fact that many of the founding industries of Teesside were located within it. The area has abundant mineral wealth which has been exploited throughout history.
- 4.4.7 Industries have developed around the extraction of minerals such as alum and ironstone, and other materials have been worked to feed the services and infrastructure required by these industries, for example sand, gravel, clay and stone extraction.
- “Many industrial sites have, through time, become assimilated into the countryside following their abandonment. Industrial features, such as ironstone mines, are now often remote and add a sense of history to the diverse landscapes of the Borough” (Tees Archaeology 2007).*
- 4.4.8 Enclosure was the process of dividing up the medieval open field system into smaller enclosed fields that could be bounded by ditches, walls, fences or hedgerows. Records of enclosure can detail the means and dates of creating the field boundary, thus allowing its accurate dating. However, most records of enclosure are incomplete, and can only be used to date the period in which an area was enclosed, giving an approximate age to the feature of that landscape.
- 4.4.9 Within Redcar and Cleveland the current field patterns were created predominantly during three different periods of enclosure: medieval, pre-1720 and post-1720. Medieval enclosure (largely associated with priories, abbeys



and their outlying farms/granges) and pre-1720 enclosure (often referred to as early enclosure) both took place by private agreement, and usually resulted in a characteristic piecemeal field enclosure pattern. Post-1720 enclosure took place under parliamentary acts and can be recognised by its uniform and regular fields.

- 4.4.10 Historical documents reveal that the greater part of Redcar and Cleveland was enclosed during the process of early enclosure, i.e. before 1720, and parliamentary enclosure occurred mainly in the Teesmouth area (for example at Redcar, Coatham and Kirkleatham) and in areas of common land (for example on Easington Moor and Moorsholm Moor).
- 4.4.11 The Eston Hills are characterised by a complex of prominent steep-sided hills linked by low saddles which form a parallel series of foothills, or outliers, to the main escarpment of the Cleveland Hills, which lie within the North York Moors National Park. Open moorland and wooded hillsides and escarpments contribute to the distinctive character of this area and give it an identity unlike any other part of the Borough.
- 4.4.12 Dogger Bank Teesside A & B will pass through an agricultural landscape which is characterised by large open and rectangular enclosed fields with several open watercourses. The HVDC cable route will pass through agricultural field systems but will use HDD (Horizontal Directional Drill) where possible to avoid watercourses, access routes and small wooded areas.

### **Non-designated Historic Structures**

- 4.4.13 A search of the Historic Environment Record (HER) has identified two structures of local historic or architectural interest within the 1 km study area, comprising two WWII pillboxes. In addition to this, a site visit was undertaken to highlight any structure of interest not previously identified. No additional structures were noted.

### **Map Regression**

- 4.4.14 First edition Ordnance Survey (OS) mapping for the area shows the principal settlement areas within the study area, consisting of Kirkleatham, Yearby, Lazenby, Lackenby and Wilton, along with the smaller farms in the area including Grew Grass and Ryehills.
- 4.4.15 It is notable that Kirkleatham village and the fields to the south of Kirkleatham are annotated as one, which illustrates the historical links the village has with the arable landscape to the south. The area of the proposed HVDC cable route is occupied by large enclosed arable fields. To the west of Kirkleatham is Sand Pits Farm which is an indication of current or former quarrying in the area. The site of the proposed converter stations, to the north east of the village of Lazenby, is occupied by a large semi-enclosed arable field, and Toyne Farm is located just beyond the eastern edge of the converter stations site.
- 4.4.16 The landscape is predominantly agricultural although a brickyard is annotated to the south of Marske and the railway (Saltburn Branch) is a prominent feature.

## 4.5 Site walkover survey

- 4.5.1 A walkover survey was undertaken in November 2012. A summary of the findings of the survey are provided below. Further details and photographs are given in Section 4.5 in **Appendix 27A**.

### Landfall

- 4.5.2 The proposed landfall from the A1085 Coast Road to MHWL is characterised by grassed amenity areas and dunes formed by windblown sands. Long Beck Creek flows from the south in to the landfall area.
- 4.5.3 The Defence of Britain Project dataset documents numerous WWII assets at the landfall area including trenches, a weapons' pit, the location of a former minefield, pillboxes, an anti-tank cube and gun emplacements (Council for British Archaeology 2006). All of these assets are recorded as 'removed' and there are no visible structures or earthworks associated with these features within the HVDC landfall envelope seaward of the A1085 Coast Road.

### HVDC Cable Route

- 4.5.4 Part of the proposed HVDC cable route is located within the Wilton Complex, but the majority of the route passes through a predominantly agricultural landscape and through many of the field boundaries noted on the first edition OS map (Plate 8, **Appendix 27A**).
- 4.5.5 From the converter stations site north east to the HDD point at the A174 carriageway, the cable route follows the course of one of the principal access roads within the Wilton Complex. The verges have been landscaped extensively and the presence of large soil bunds at the side of the access routes suggest that large areas within the complex have been truncated through levelling activities. No features of heritage interest were noted along the course of the HVDC cable route within the Wilton Complex.
- 4.5.6 The HVDC cable route from Fishponds Road east towards Grewgrass Farm will pass through two large enclosed fields, which are unchanged from the early 19th century, and will cut through the smaller enclosed fields to the south of Grewgrass Farm. The smaller enclosed fields do not appear on the first edition OS, and therefore post-dates the survey.
- 4.5.7 There is remnant ridge and furrow surviving in the fields which follows the alignment of the surrounding enclosures. The ridge and furrow is likely to be associated with the farm and therefore is likely to be earlier than the first edition OS survey. The HVDC cable will be installed via HDD from the east of Grewgrass Lane to the west of Rogers Dike and the area of ridge and furrow will not be directly impacted by the construction.
- 4.5.8 The HVDC cable route from Grewgrass Farm to the railway line passes through agricultural land and scrub. There was a scatter of post-medieval tile to the east of Grewgrass Farm (NGR NZ 461488 522038) and a fragment of a possible

(medieval) whetstone was recovered to the north east of the A174 (NGR NZ 461976, 522184), but otherwise no features of heritage interest were noted.

- 4.5.9 At the railway line, at a point where the proposed HVDC cable will pass, is a WWII pillbox which is a locally listed structure (4950) (Plate 15, **Appendix 27A**). The structure is located adjacent to the railway line for strategic defence reasons. Access and closer inspection was not possible as there was no public access to the railway line and the structure was fenced with Heras fence panels, therefore all observations were made from the road bridge above the structure.
- 4.5.10 The land-use from the railway line to landfall is agricultural and the topography is flat. A scatter of early 20th century pottery, brick fragments and glass was noted to the north east of the sewage works (NGR NZ 462288 522970) and fragments of ceramic building material were noted approximately 200m north of the sewage works (NGR NZ 562087 523111).
- 4.5.11 Between Ryehills Farm and the allotment gardens, several artefacts were noted, including fragments of green-glazed pottery and numerous pieces of burnt flint (NGR NZ 462672 522893). At the far eastern edge of the field were small fragments of possible quernstone.
- 4.5.12 The area north of the allotment gardens to the Coast Road is very flat, with First World War practice trenches identified from aerial photographs (EH 2008). Also at the landfall is the site of a WWII gun emplacement (3585), which is represented by a circular concrete base. This asset is located 65m north west of the location recorded by the HER at NGR NZ 462930, 523551, and there is potential for it to be directly impacted by the construction of the HVDC cable and temporary works access due to its proximity to the HVDC construction corridor (**Figure 3.4**).

### **Converter Stations Site**

- 4.5.13 The site comprises a roughly rectangular arable field, bordered on the northern and western edge by a cut ditch and bank. A copse of mature deciduous trees is located at the eastern and south eastern edges of the field. Ground level is generally flat across the northern part of the field and rises steeply to the south towards the A174 carriageway.
- 4.5.14 A small cluster of ceramic building material fragments was observed in the northern part of the field (NGR NZ 457630, 520419). A cluster of fire cracked flint, brick fragments and oyster shell was observed in an area along the southern edge of the site (NGR NZ 457774, 520267). These finds are not significant and are indicative of modern disturbance and possible late prehistoric activity in the wider area.

The site is within the Wilton Complex and is bordered to the east and north by industrial structures. Further arable fields are located to the west and south towards the village of Lazenby. Apart from the south, which is dominated by the Eston Hills, the views out of the site are characterised predominantly by the existing industrial surroundings of the Wilton Complex.

## HVAC Cable Route

- 4.5.15 The proposed HVAC cable route passes through a predominantly agricultural landscape, and largely follows the alignment of existing trackways. From the converter stations site the route follows a metalled trackway and then follows the northern edge of a small wooded area to the A1053. The HVAC route passes through more arable fields to the west of the A1053 and will connect to the existing substation at Lackenby. Ground level rises towards the substation due to a north west, south east aligned ridge. An area of scrub and disturbed ground is located along the eastern edge of the field (adjacent to the A1053) and a trackway runs along the eastern and southern perimeter. The rooftops and upper storey of the listed farm buildings at Lackenby are visible from the HVAC route and from the location of the proposed temporary construction compounds. No previously unrecorded features of potential archaeological interest were noted along the HVAC cable route.

## 4.6 Archaeological field surveys

### Geophysical survey

- 4.6.1 As part of the baseline survey and in order to inform the impact assessment, a geophysical survey was undertaken between 18 February and 19 April 2013. The work comprised a geomagnetic survey for the proposed onshore cable routes and onshore infrastructure for Dogger Bank Teesside A & B (ASUD 2012). The surveys were conducted in accordance with a Written Scheme of Investigation (WSI) prepared by URS and approved by the Archaeological Consultant for RCBC (URS 2013), as well as English Heritage guidelines (David, Linford & Linford 2008); the Institute for Archaeologists Standard and Guidance for archaeological geophysical survey (IfA 2011); the IfA Technical Paper No.6 (Gaffney, Gater & Ovenden 2002); and the Archaeology Data Service Guide to Good Practice (Schmidt & Ernenwein 2011).
- 4.6.2 The survey was split according to existing field boundaries into 27 different areas. Potential important archaeological features have been identified in five of these areas and the features range in likely importance and complexity from possible boundary ditches to more complex curvilinear and rectilinear enclosures.
- 4.6.3 The potential archaeological sites identified from the geophysical survey will be permanently impacted by the construction of Dogger Bank Teesside A & B. This impact is assessed in Section 8 of **Appendix 27A**.

## 4.7 Summary of baseline

- 4.7.1 **Table 4.5** lists the assets taken forward into the detailed impact assessment and also identifies at which stage of Dogger Bank Teesside A & B, i.e. construction, operation or decommissioning, an assessment of impact is required.



**Table 4.5 Summary of baseline detailing assets taken into assessment**

Asset Name / ID	Further impact assessment required		
	Construction	Operation	Decommissioning
Eston Nab Hillfort 1011273	Y	Y	Y
Eston Hills Historic Landscape	Y	Y	Y
Historic Landscape (general)	Y	N	N
Lackenby: Grade II* Old Hall farmhouse (1139659) grade II stable range (1159438) and byre barn (1329623)	Y	N	N
Kirkleatham Conservation Area	Y	Y	N
Yearby Conservation Area	Y	Y	N
Marske Conservation Area	Y	N	N
Ryehills farmhouse (1139618), barn (1329632) and garden wall (1310671) all grade II	Y	N	N
Fell Briggs Farm (1387500) grade II	Y	N	N
Turner's Arms Farmhouse (1159818) grade II	Y	N	N
4049 Site of a brickearth extraction	Y	N	N
4044 Site of 19th century dovecote	Y	N	N
4950 World War II pillbox	Y	N	N
3585 World War II gun emplacement	Y	N	N
Potential archaeological sites identified through geophysical survey	Y	N	N
Previously unrecorded buried archaeology within construction footprint for Dogger Bank Teesside A & B	Y	N	N

## 5 Assessment of Impacts – Worst Case Definition

### 5.1 Introduction

#### Construction Scenarios

- 5.1.1 The specific timing and phasing of construction of Dogger Bank Teesside A & B will be determined post-consent, and therefore a Rochdale Envelope approach has been undertaken for the EIA. There are four key principles that form the basis of the Rochdale Envelope, relating to how the projects will be built. These are:
- The two projects may be constructed at the same time, or at different times;
  - If built at different times, either project could be built first;
  - If built at different times, the duration of the gap between the end of the first project to be built, and the start of the second project to be built may vary from overlapping, to up to five years; and
  - Partial installation of elements of the second project may be completed during the construction of the first project, e.g. through the use of ducts to provide conduits for a later cable installation.
- 5.1.2 To determine which construction scenario is the realistic worst case for a given receptor two types of effect exist with the potential to cause a maximum level of impact on a given receptor:
- Maximum duration effects; and
  - Maximum peak effects.
- 5.1.3 To ensure that the Rochdale Envelope incorporates all three overarching onshore construction scenarios (as outlined in **Chapter 5 Project Description**), both the maximum duration effects and the maximum peak effects have been considered for each onshore receptor. Furthermore, the option to construct each project in isolation is also considered ('Build A in isolation' and 'Build B in isolation'), enabling the assessment to identify any differences between the two projects.
- 5.1.4 The four construction scenarios for Dogger Bank Teesside A & B considered within the onshore assessment for land use and agriculture impacts are therefore:
- i. Build A in isolation;
  - ii. Build B in isolation;
  - iii. Build A & B concurrently – provides the worst 'peak' impact and maximum working footprint; and

- iv. Build the first project, followed by a gap of up to five years before building the second project (sequential) – provides the worst ‘duration’ of impact.

- 5.1.5 Dogger Bank Teesside A & B have similar landfall, cable route, and converter station locations; however they are adjacent rather than identical projects. The impacts arising from Dogger Bank Teesside A in isolation will however be identical to those arising as a result of Dogger Bank Teesside B in isolation due to the spatial proximity of the projects and the extensive nature of the archaeological resource. The archaeology identified extends across the construction footprint of both projects. Therefore the character and importance of the archaeology impacted during the construction of one project will be identical to the archaeology impacted during the construction of the second.
- 5.1.6 Furthermore, the partial installation of elements of the second project during construction of the first will ultimately result in the same level of direct impact to buried archaeological remains within the construction footprint. Different direct impacts to buried archaeological remains will only ever occur where there is spatial separation between the projects, or a discrete archaeological feature has been defined within an area to be utilised by only one project. This is not the case in this assessment.
- 5.1.7 The duration or timing of construction is irrelevant, as an impact to a heritage asset is measured by the magnitude of change to an asset's physical appearance or to its setting, rather than for how long the impact occurs. Furthermore the level of indirect impact arising from the construction of the second project will never be more than the impact arising from the first build, this is because the first project will become part of the setting and its presence will lessen the impact the second project has on this setting.
- 5.1.8 Therefore taking these principles into account, there is only one construction scenario for Dogger Bank Teesside A & B, which requires covering by a Rochdale Envelope for the assessments of direct and indirect effects to cultural heritage:
  - i. Build A and B concurrently.
- 5.1.9 As stated above, for the assessment of effects on cultural heritage, the duration or timing of an effect is not a necessary consideration as the impact to heritage assets is measured by the magnitude of change to the asset's physical appearance or its setting. As such, only the maximum peak effects are relevant for this impact assessment and maximum duration effects do not need to be considered further.
- 5.1.10 The concurrent build of Dogger Bank Teesside A & B produces the maximum peak effects which represent the maximum area of physical disturbance and the greatest magnitude of change to the setting of heritage assets and provides a Rochdale Envelope which covers all potential effects associated with all four construction scenarios. A concurrent build is therefore identified as the worst case construction scenario and therefore an impact assessment for a single project has not been carried out.

- 5.1.11 Impacts arising from the concurrent build construction scenario of both projects are set out in the summary of residual impacts **Table 12.1**.

### Operation scenarios

- 5.1.12 The worst case scenario during operation is measured by the level of indirect impact, i.e. the magnitude of change to the setting of assets. The greatest magnitude of change to the setting of heritage assets is represented by both projects being operational at the same time and this is identified as the worst case operational scenario.

### Decommissioning scenarios

- 5.1.13 There will be no additional direct impacts to heritage assets during the decommissioning of both projects, in isolation or at the same time, as all impacts would have occurred as a result of construction. It is assumed that cable systems will be left *in situ*, except for a small section at the landfall which will be removed, and if they were to be removed there would be no additional impact beyond the maximum width corridor used during construction. Therefore the worst case decommissioning scenario is measured by the level of indirect impact, i.e. the magnitude of change to the setting of assets, which is represented by activity associated with the decommissioning of both stations at the same time. The concurrent decommissioning of Dogger Bank Teesside A & B is therefore identified as the worst case scenario.
- 5.1.14 The construction, operation and decommissioning are shown in **Table 5.1**.

**Table 5.1** Realistic worst case scenario for the assessment of terrestrial archaeology impact

Impact	Realistic worst case scenario	Rationale
<b>Construction</b>		
Concurrent build	<p>Maximum peak effects, i.e. what is considered to represent the greatest magnitude of change to heritage assets. The worst case assumes direct impact to assets within defined parameters, specifically the following values:</p> <ul style="list-style-type: none"> <li>Maximum HVDC trenched route length = 6km;</li> <li>Maximum HVDC total construction corridor width = 36m;</li> <li>HVDC Construction works primary compounds = 2 x 5000m<sup>2</sup>;</li> <li>HVDC Construction works intermediate compounds = 4 x 784m<sup>2</sup>;</li> <li>HVDC HDD maximum compound area = 2000 m<sup>2</sup>;</li> <li>HVAC maximum route length = 2km;</li> <li>HVAC maximum construction corridor width= 39m;</li> <li>HVAC construction compound = 2 x 784m<sup>2</sup>; and</li> </ul>	<p>The concurrent build of Dogger Bank Teesside A &amp; B produces the maximum peak effects which represent the maximum area of physical disturbance and the greatest magnitude of change to the setting of assets; as such the maximum values are used. The magnitude of impact is the key factor which defines the worst case scenario for heritage as any change to an asset's physical character or setting will affect its importance. Note: duration effects, the timing or duration of the impact is largely irrelevant.</p>



Impact	Realistic worst case scenario	Rationale
	<ul style="list-style-type: none"> <li>HVAC HDD maximum compound area = 1,200m<sup>2</sup>.</li> </ul> Total converter stations' site area = 10ha	
<b>Operation</b>		
Worst case scenario is identified as both converter stations being operational at the same time.	<ul style="list-style-type: none"> <li>Converter hall maximum dimensions = 2 x 110m x 75m x 20m high;</li> <li>AC switch yard maximum dimensions = 2 x 60m x 75m x 11m high; and</li> <li>Maximum height of lightening protection rods = 30m.</li> </ul>	There will be no additional direct impacts to assets during operation (all occurred as a result of construction), therefore worst case scenario is defined by the level of indirect impact, i.e. the magnitude of change to the setting of assets. The greatest magnitude of change is represented by both stations being operational at the same time and is therefore identified as the worst case scenario.
<b>Decommissioning</b>		
Worst case scenario is defined as the decommissioning of both projects at the same time. Impacts will be temporary.	<ul style="list-style-type: none"> <li>Dismantling/ removal of all above ground infrastructure; and</li> <li>Buried cable system left <i>in situ</i>.</li> </ul>	There will be no additional direct impacts to assets during decommissioning (all occurred as a result of construction and cable systems will be left <i>in situ</i> ), therefore worst case scenario is defined by the level of indirect impact, i.e. the magnitude of change to the setting of assets. The greatest magnitude of change is represented by the activity associated with the decommissioning of both stations at the same time and is therefore identified as the worst case scenario.

## 6 Assessments of Impacts During Construction

### 6.1 Introduction

- 6.1.1 The assessment of impacts during construction considers the concurrent build of Dogger Bank Teesside A & B. The nature of the identified archaeological resource and the proximity of the two projects results in identical impacts arising from both projects, therefore an assessment of only one construction scenario, concurrent build, has been undertaken.

### 6.2 Embedded mitigation

- 6.2.1 A series of design criteria has been considered during the site selection and project design process in order to minimise the potential effects to cultural heritage sites (**Chapter 6 Assessment of Alternatives**). These criteria sought to avoid direct impact upon historic assets and their setting and include siting and design considerations relating to the cable routes, converter stations and associated infrastructure. Significant impacts to heritage assets were reduced through the iterative design process as described in **Chapter 6** which included:
- Siting the two converter stations within the same site located within an existing industrial setting in order to minimise impacts to key views and the setting of heritage assets;
  - Burying the cable systems rather than have overhead lines in order to avoid impacts to the setting of heritage assets; and
  - Avoidance of designated and non-designated heritage assets during the design of the HVDC and HVAC routes.

### 6.3 Direct impacts - HVDC route

- 6.3.1 The HVDC cable route is a maximum length of 7km (approximately 6km of this is open trench) and its construction has the potential for temporary indirect impacts on the setting of heritage assets as well as permanent direct impacts on buried archaeological remains within the maximum working width corridor. The assessment of direct impacts arising from the construction of the HVDC cable route takes into account impacts arising from the provision of two primary construction compounds and four intermediate construction compounds, up to 11 HVDC HDD compounds.
- 6.3.2 Baseline surveys have identified one scheduled monument, one designated historic landscape, three conservation areas, five listed buildings, and four non-designated assets which have the potential to be impacted during the construction of the HVDC cable and associated compounds; in addition the geophysical survey has identified three potential archaeological sites which are also likely to be impacted.

## Kirkleatham Conservation Area

- 6.3.3 The HVDC route will be constructed approximately 100m south of the southern edge of Kirkleatham Conservation Area (**Figure 3.2**). Kirkleatham has strong historical links with the landscape to the south, towards Yearby, and views to the south therefore contribute to the importance of the area. Kirkleatham Conservation Area is classed as 'outstanding' due to the number and variety of listed buildings within it, and is therefore assessed to be of high importance.
- 6.3.4 Construction of the HVDC cable will result in a minimal magnitude of change to the setting of the conservation area in views out from its southern edge, as although the works will be visible, the visual impact will be temporary and will not change the ability to appreciate the area's links to the landscape to the south or affect its significance. The level of impact is therefore assessed to be minor.
- 6.3.5 Furthermore, the construction works intermediate compounds are set back from Fishponds Road and there will be no change to the setting of the conservation area arising from their construction. The level of impact arising from the construction of the intermediate compounds is assessed as neutral.
- 6.3.6 The overall impact to Kirkleatham Conservation Area arising from the construction of Dogger Bank Teesside A & B is assessed as **minor adverse** (based on the minimal magnitude of change and the high importance afforded to the designation) and therefore no mitigation is required.

## Yearby Conservation Area

- 6.3.7 The HVDC cable route is located approximately 380m north of Yearby and its construction will be visible from the northern edge of the village (**Figure 4.2**). The area is assessed to be of moderate importance. The HVDC cable construction will temporarily impact views of historical importance which link Yearby with the settlement at Kirkleatham, however this magnitude of change is assessed to be minimal as it will not alter the character of the area or the ability to appreciate its context and setting. The level of impact is therefore assessed as minor.
- 6.3.8 The construction works intermediate compounds are set back from Fishponds Road and there will be no change to the setting of the conservation area as a result of their construction. The level of impact arising from the construction compounds is therefore assessed as neutral.
- 6.3.9 The overall impact to Yearby Conservation Area arising from the construction of Dogger Bank Teesside A & B is assessed as **minor adverse**, this is due to its moderate importance and minimal magnitude of change. Therefore, no mitigation is required.

## Marske Conservation Area

- 6.3.10 Marske is located 900m from the HVDC cable route and the site visit confirmed that views of the HVDC construction at landfall will be visible from the northern tip of the conservation area. These views will be temporary during construction and will not affect the key views, from and towards this point, which contribute to

the character of the area. Key views comprise the approach along the Coast Road from the west which are dominated by the Gothic style Cliff House and the tower of St Mark's Church. Glimpsed views of the HVDC construction will not detract from these key views and will not affect the character of the conservation area.

- 6.3.11 The importance of the conservation area is assessed as moderate, and the magnitude of change arising from the construction of the HVDC cable is assessed as no change, as the construction activities at the landfall will not affect the importance of the area or the ability to appreciate its setting in approaches from the west. The level of impact is therefore assessed as **neutral** and no mitigation is required.

### Fell Brigg Farm (Listed Building 1387500, Figure 4.1)

- 6.3.12 Fell Briggs Farm is Grade II listed and is located on the western edge of Grewgrass Lane approximately 400m south of the HVDC cable route. The 2-storey farmhouse dates to the early 19th century and is associated with a range of single-storey and 2-storey farm buildings which are arranged around a rectangular courtyard to the south (rear) of the house. The front of the house overlooks agricultural fields to the north which define its setting and denuded ridge and furrow is visible in the fields to the west of the farm buildings.
- 6.3.13 The importance of the farmhouse is moderate. Views of the construction of the HVDC cable will be visible from the house; however this impact will be temporary and will have no change upon the setting of the asset which is defined primarily by the arable landscape around it or the ability to appreciate its context. The level of impact is therefore assessed as **neutral** and no mitigation is required.

### Turner's Arms Farmhouse, (Listed Building 1159818 Figure 4.1)

- 6.3.14 Turner's Arms Farmhouse and attached wall are both Grade II listed and located 200m south of the proposed HVDC cable route and 125m south of the HVDC construction compound on the eastern side of Fishponds Road. The farmhouse was formerly an Inn and is a grand 2-storey 18th century structure with 3-storey end towers and embattled parapets. The building has several ancillary farm buildings arranged to the east, and has a small formal garden to the west. From the house and garden there are clear views west across the flat agricultural landscape and there are long-range views of the Wilton Complex and Eston Hills.
- 6.3.15 The house is assessed to be of moderate importance. Views of the HVDC cable construction will be visible from the house, but this will not change the asset's setting which is defined primarily by its position within an agricultural landscape, or affect its importance, and therefore the magnitude is assessed as no change. The level of impact is therefore assessed as neutral.
- 6.3.16 Views of the construction compound which is located to the north of the house will be screened by a small plantation area comprising mature and semi-mature deciduous trees, however the proximity of the compound will likely result in an



increase in noise levels during construction which will result in a low magnitude of change to the current setting of the house from the garden. The impact to the setting of the house is assessed to be minor.

- 6.3.17 The overall impact to Turner's Arms Farmhouse arising from the construction of Dogger Bank Teesside A & B is therefore assessed as **minor adverse** and no mitigation is required.

#### **Ryehills Farmhouse, Barn and Garden Wall (Listed Building 1139618, 1329632 and 1310671, Figure 4.1)**

- 6.3.18 Ryehills Farmhouse (1139618) is located approximately 125m east of the proposed route of the HVDC cable and approximately 60m from the HVDC construction compound. The farmhouse is Grade II listed along with a barn and a garden wall (1329632 and 1310671) and is therefore assessed to be of moderate importance. The primary setting of this group of buildings is defined by the immediate farmyard context and the agricultural fields to the north. The HVDC cable construction will not affect the significance of the group of assets or change their setting which will affect the ability to appreciate their importance and therefore the magnitude of change is assessed to be no change. The level of impact arising from the HVDC cable construction is therefore assessed as neutral.
- 6.3.19 The proximity of the HVDC construction compound and temporary works access is likely to increase noise and activity levels in the area; however it is assessed that this will not result in any harm to the setting of the buildings or the group value of the assets. The magnitude of change arising from the HVDC construction compound is assessed as low resulting in a temporary minor impact.
- 6.3.20 Taking into account the above assessment, the overall impact to the listed buildings at Ryehills Farmhouse, Barn and Garden Wall arising from the construction of Dogger Bank Teesside A & B is assessed as **minor adverse**, due to its moderate importance and low magnitude of change. No mitigation is therefore required.

#### **Historic Landscape**

- 6.3.21 The HVDC cable route will pass through agricultural field systems but will use HDD to avoid main watercourses and historic routes such as Grewgrass Lane and Fishponds Road. There will be no direct impact on historic hedgerows (i.e. hedgerows which appear on first edition OS maps) or remnants of medieval or post-medieval ridge and furrow. Furthermore, any impact to the setting of the historic landscape will be temporary, as the excavated trenches will be reinstated upon completion.
- 6.3.22 The importance of the historic landscape is assessed to be low as although the principal settlement areas are present, the contemporary medieval and post-medieval landscape is not intact and has seen significant changes as a result of intensive farming. The magnitude of change to the historic landscape as a result of the HVDC construction is assessed to be minimal, as any changes will

be temporary and will hardly affect the importance of the asset. The level of impact is therefore assessed as **minor adverse** and no mitigation is required.

### Brickearth Extraction Pit, Garden Field Pond: Asset 4049

- 6.3.23 This comprises the site of a brickearth extraction pit which was subsequently utilised as a pond, named Garden Field pond. The site centre is recorded on the HER as falling just outside of the HVDC cable route however it is clearly visible extending into the HVDC cable route corridor from the geophysical survey results. Brickearth extraction is associated with the manufacture of bricks and will relate to the building of structures in the local area. The asset is of local interest and its importance is assessed as low.
- 6.3.24 The magnitude of change arising from the construction of the HVDC cable for Dogger Bank Teesside A & B is assessed as high as it will entail the complete removal of archaeological deposits associated with the asset within the construction corridor.
- 6.3.25 The mitigation outlined in **Table 6.1** below will be implemented during the construction phase to minimise impacts.

**Table 6.1 Mitigation measures in relation to the Brickearth Extraction Pit**

Mitigation Measures
<ul style="list-style-type: none"> <li>• An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>○ Detailed desk-based research;</li> <li>○ Trial trench evaluation;</li> <li>○ Detailed excavation, post-excavation assessment and analysis;</li> <li>○ Watching brief during specific construction activities, recording and reporting; and</li> <li>○ Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>• The mitigation strategy will be discussed and agreed with RCBC.</li> <li>• All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>

- 6.3.26 With the implementation of the mitigation detailed above, the level of residual impact will be reduced to **minor adverse**.

### Site of Dovecote: Asset 4044 (Figure 3.4)

- 6.3.27 This asset represents the site of a former dovecote. The asset is no longer extant and foundations are likely to have been shallow and any remains subsequently truncated by ploughing. The asset is not designated and its importance is assessed as low. There will be no change to the asset arising from the construction of the HVDC cable and the level of impact is assessed as **neutral**. No mitigation is required.

### World War II pillbox: Asset 4950 (Figure 3.4)

- 6.3.28 This comprises a WWII pillbox located on the western edge of the railway line. The pillbox is a locally listed structure and although the walls are covered in

graffiti and vegetation is growing inside of it, the asset appears structurally sound. The importance of the asset is assessed as moderate.

- 6.3.29 The HVDC cable route at this point will be installed by HDD and an entry and exit pit will be excavated either side of the railway line. As such the installation of the HVDC cable will not result in any physical change to the asset and will not change its current setting. The magnitude of change is therefore assessed to be no change resulting in a **neutral** impact and no mitigation is required.

### World War II Gun Emplacement: Asset 3585 (Figure 3.4)

- 6.3.30 This asset comprises a WWII gun emplacement which is located at the landfall immediately landward of the Coast Road. The baseplate remains in situ and is visible on the surface of the ploughed field. The asset is located within an area of HVDC cable which will be installed by HDD. There is potential for the asset to be directly impacted by the temporary works access and construction traffic during activities associated with the HVDC construction and therefore it is recommended that the asset is fenced during construction to ensure its preservation.
- 6.3.31 The asset is non-designated and is therefore assessed as being of low importance. Impacts arising during construction the impact would likely entail the complete removal of the asset which would result in a high magnitude of change.
- 6.3.32 **Table 6.2** details the mitigation that will be implemented during the construction phase to reduce the overall impacts.

**Table 6.2** Mitigation measures in relation to the World War II Gun Emplacement

Mitigation Measures	
	<ul style="list-style-type: none"> <li>Prior to construction works, the asset will be fenced to create a physical barrier between the asset and construction activities.</li> </ul>

- 6.3.33 The implementation of the mitigation above will result in there being no change to the asset. The residual level of impact following mitigation will be **neutral**.

### Geophysical Survey Area 8a (Figure 3.3)

- 6.3.34 Area 8a was identified from the geophysical survey and comprises a series of rectilinear enclosures (**Figure 3.3**). The enclosures are not regular with the largest measuring approximately 25m x 25m and the smallest measuring 10m x 12m, but evidence for possibly earlier circular enclosures and trackways suggest an area of late prehistoric and possibly early Roman settlement which may produce evidence relating to changing farming practices.
- 6.3.35 The magnitude of change arising from the construction of the HVDC cable is assessed as high as it will entail the complete removal and loss of archaeological remains within the construction corridor.

- 6.3.36 The mitigation measures outlined in **Table 6.3** will minimise impacts to these features during the construction phase.

**Table 6.3 Mitigation measures in relation to Geophysical Survey Area 8a**

Mitigation Measures
<ul style="list-style-type: none"> <li>An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>Detailed desk-based research;</li> <li>Trial trench evaluation;</li> <li>Detailed excavation, post-excavation assessment and analysis;</li> <li>Watching brief during specific construction activities, recording and reporting; and</li> <li>Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>The mitigation strategy will be discussed and agreed with RCBC.</li> <li>All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>

- 6.3.37 With the implementation of the mitigation detailed in **Table 6.3**, the archaeological remains would be preserved by the record thereby reducing the residual impact to **minor adverse**.

### Geophysical Survey Area 11 (Figure 3.4)

- 6.3.38 Area 11 was identified from the geophysical survey and comprises a sub-rectangular enclosure and possible trackway. The enclosure measures approximately 40m x 50m and may be related to Iron Age stock enclosure or settlement. The site is non-designated and is potentially of local importance. Its importance is therefore assessed as low.
- 6.3.39 The magnitude of change arising from the construction of the HVDC cable is assessed as high as it will entail the complete removal and loss of archaeological remains which appear to be contained within the construction corridor.
- 6.3.40 **Table 6.4** details the mitigation measures that will be undertaken to minimise the impacts on the Geophysical Survey Area 11.

**Table 6.4 Mitigation measures for Geophysical Survey Area 11**

Mitigation Measures
<ul style="list-style-type: none"> <li>An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>Detailed desk-based research;</li> <li>Trial trench evaluation;</li> <li>Detailed excavation, post-excavation assessment and analysis;</li> <li>Watching brief during specific construction activities, recording and reporting; and</li> <li>Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>The mitigation strategy will be discussed and agreed with RCBC.</li> <li>All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>



- 6.3.41 The implementation of the mitigation would seek to preserve the archaeological remains by record thereby reducing the residual impact to **minor adverse**.

### Geophysical Survey Area 17 (Figure 3.4)

- 6.3.42 The geophysical survey detected linear anomalies which correspond to a 'support trench' and curvilinear anomalies which reflect 'communication trenches' associated with First World War practice trenches. First World War features are relatively rare in comparison with WWII assets but these remains are likely to have been truncated as a result of ploughing. Furthermore they do not have a group value with contemporary assets in the study area and are not related to a wider network of First World War facilities or defences.
- 6.3.43 The value of the remains is recognised due to the historical association with warfare and defence along the north east coast, and although these remains are non-designated, their historical and evidential value will contribute to the extensive knowledge of features relating to the defence of Britain. Their importance is therefore assessed as moderate.
- 6.3.44 Construction of the HVDC cable route for either project will remove a proportion of the sub-surface deposits associated with the remains, but will not impact the total remains, which continue beyond the HVDC cable corridor. The magnitude of change is assessed as medium, as the asset will not be totally destroyed, but a large part of the historical context of the asset would be permanently affected.
- 6.3.45 The mitigation detailed in **Table 6.5** will be implemented in order to reduce the construction impacts.

**Table 6.5 Mitigation measures for Geophysical Survey Area 17**

Mitigation Measures
<ul style="list-style-type: none"> <li>An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>Detailed desk-based research;</li> <li>Trial trench evaluation;</li> <li>Detailed excavation, post-excavation assessment and analysis;</li> <li>Watching brief during specific construction activities, recording and reporting; and</li> <li>Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>The mitigation strategy will be discussed and agreed with RCBC.</li> <li>All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>

- 6.3.46 With the implementation of mitigation, the residual impact level will be reduced to **minor adverse**.

### Previously unrecorded assets

- 6.3.47 It is likely that the HVDC cable route will impact features and deposits previously unrecorded or not identified from the geophysical survey. Impacts to previously unrecorded archaeology will be mitigated (**Table 6.6**).

**Table 6.6 Mitigation measures for previously unrecorded assets**

Mitigation Measures
<ul style="list-style-type: none"> <li>• An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>○ Trial trench evaluation;</li> <li>○ Detailed excavation, post-excavation assessment and analysis;</li> <li>○ Watching brief during specific construction activities, recording and reporting; and</li> <li>○ Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>• The mitigation strategy will be discussed and agreed with RCBC.</li> <li>• All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>

## 6.4 HVAC cable construction and National Grid Enabling Works

- 6.4.1 The HVAC cable approximate route length and corridor width is 2km by 39m and construction will entail the removal of topsoil and the excavation of trenches to house the cable systems. There are no known heritage assets within the HVAC route as identified from the HER, but there is potential for archaeological remains as identified from the geophysical survey. The assessment of impact arising from the construction of the HVAC cable route also takes into account potential impacts arising from the construction compounds and HDD compounds.
- 6.4.2 The National Grid enabling works will entail an extension to the existing NGET substation at Lackenby. The works will not entail the creation of any new roads, including haul roads, and will be undertaken within the footprint of the existing substation. Any buried archaeological remains will have been impacted by the construction of the existing substation, and therefore there will be no additional impacts to buried heritage assets as a result of the enabling works. Potential impacts to the setting of heritage assets as a result of the enabling works are considered.

### Listed Buildings at Lackenby (1139659) (Figure 4.3)

- 6.4.3 Old Hall Farmhouse at Lackenby is listed Grade II\* (1139659) and is associated with a stable range (1159438) and a byre barn (1329623) which are grade II listed. The buildings are located approximately 185m south of the HVAC route and approximately 310m south east of the HVAC construction compound. The group value of the buildings is assessed to be of high importance due to the presence of a Grade II\* building and a denuded but visible historic landscape to the south.
- 6.4.4 The construction of the HVAC cable will not be visible from the ground floor of the buildings due to intervening landform and screening from a natural ridge which separates the buildings from the HVAC route. Construction activities including that within the temporary construction compound is likely to be visible from the upper storey of the farmhouse; however the magnitude of change to

the group value of the buildings is minimal, as the temporary works will not affect the importance of the group or change the setting of the historic landscape to the south. The level of impact is therefore assessed as **minor adverse** and no mitigation is required.

6.4.5 All works relating to the extension of the existing substation at Lackenby will be contained within the existing site.

6.4.6 There will be no increase in activity levels that will affect the importance of the listed buildings during the enabling works. Views of the construction activities may be visible from the northern edge of Crow Lane, however this will not have a significant impact on the setting of the buildings which is defined by their position within a historic settlement. The magnitude of change arising from the enabling works is assessed to be minimal. This results in a **minor adverse** impact and no mitigation is required.

### Geophysical Survey Area 3

6.4.7 The geophysical survey returned a series of linear positive magnetic anomalies which are likely to reflect soil filled ditches associated with a rectilinear enclosure.

6.4.8 The remains are undated but are likely to be associated with settlement and enclosure of local importance. The asset is currently assessed to be of low importance. The magnitude of change arising from the construction of the HVAC cable for Dogger Bank Teesside A or B is assessed as high as it will entail the complete removal and loss of archaeological remains within the HVAC cable corridor.

6.4.9 The mitigation detailed in **Table 6.7** will be implemented in order to reduce the construction impacts.

**Table 6.7 Mitigation measures for Geophysical Survey Area 3**

Mitigation Measures
<ul style="list-style-type: none"> <li>• An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>◦ Detailed desk-based research;</li> <li>◦ Trial trench evaluation;</li> <li>◦ Detailed excavation, post-excavation assessment and analysis;</li> <li>◦ Watching brief during specific construction activities, recording and reporting; and</li> <li>◦ Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>• The mitigation strategy will be discussed and agreed with RCBC.</li> <li>• All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>

6.4.10 The successful implementation of the mitigation strategy would result in a **minor adverse** level of residual impact.

## Previously unrecorded assets

- 6.4.11 The geophysical survey noted a significant amount of debris and disturbance in the area of Lackenby substation and it is likely that the ground in this area has experienced a level of disturbance and truncation as a result of the construction of the substation. Archaeological potential in this area is therefore assessed to be low. There is however a low potential for previously unrecorded within other section of the HVAC route, for example in the vicinity of Area 3.
- 6.4.12 The mitigation detailed in **Table 6.8** will be implemented in order to reduce the construction impacts.

**Table 6.8** Mitigation measures for previously unrecorded assets

Mitigation Measures
<ul style="list-style-type: none"> <li>An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>Detailed desk-based research;</li> <li>Trial trench evaluation;</li> <li>Detailed excavation, post-excavation assessment and analysis;</li> <li>Watching brief during specific construction activities, recording and reporting; and</li> <li>Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>The mitigation strategy will be discussed and agreed with RCBC.</li> <li>All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>

## 6.5 Converter stations construction

### Eston Nab Hillfort and Eston Hills Historic Landscape

- 6.5.1 The construction of the converter stations will be visible from the hillfort which is a scheduled monument and is therefore of high importance. However, due to the distance involved and the current setting surrounding the converter stations site, construction activities will form a small component of a view dominated by a largely industrial setting. Views of construction activities will constitute no change to the setting of the hillfort which will affect the ability to appreciate its setting or historical context. Furthermore, there will be no change to the wider historic landscape of Eston Hills as a result of construction.
- 6.5.2 It is assessed therefore there will be no change to the hillfort or Eston Hills historic landscape during the construction of the converter stations which will result in a **neutral** level of impact and no mitigation is required.

### Geophysical Survey Area 5

- 6.5.3 The geophysical survey of the converter stations site identified an anomaly beneath the footprint of the proposed converter stations for Dogger Bank Teesside A & B comprising a large outer circuit measuring approximately 150m diameter, with an inner circular enclosure measuring 50m diameter with a circular structure measuring 10m diameter at its centre. The survey suggests



the remains of a large enclosure; however the form is unusual and may also reflect regular geological anomalies.

- 6.5.4 If the features are archaeological in origin, they are likely to relate to late prehistoric settlement and enclosure and are therefore assessed to be of low (local) importance. The magnitude of change arising from the construction of the converter stations will be high as it will entail complete removal of the asset.
- 6.5.5 The mitigation detailed in **Table 6.9** will be implemented in order to reduce the construction impacts.

**Table 6.9 Mitigation measures for Geophysical Survey Area 5**

Mitigation Measures	
	<ul style="list-style-type: none"> <li>An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>Detailed desk-based research;</li> <li>Trial trench evaluation;</li> <li>Detailed excavation, post-excavation assessment and analysis;</li> <li>Watching brief during specific construction activities, recording and reporting; and</li> <li>Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>The mitigation strategy will be discussed and agreed with RCBC.</li> <li>All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>

- 6.5.6 The successful implementation of a mitigation strategy would result in a **minor adverse** level of residual impact.

### Previously unrecorded assets

- 6.5.7 The geophysical survey noted several potential linear anomalies which may relate to former trackways and field boundaries within the converter stations site. If the curvilinear anomaly is archaeological in origin then there is a high potential for encountering archaeological remains within the remainder of the converter stations site, including beneath the construction compounds.
- 6.5.8 The mitigation detailed in **Table 6.10** will be implemented in order to reduce the construction impacts.

**Table 6.10 Mitigation measures for previously unrecorded assets**

Mitigation Measures	
	<ul style="list-style-type: none"> <li>An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work: <ul style="list-style-type: none"> <li>Detailed desk-based research;</li> <li>Trial trench evaluation;</li> <li>Detailed excavation, post-excavation assessment and analysis;</li> <li>Watching brief during specific construction activities, recording and reporting; and</li> <li>Deposition of archive with RCBC and Tees Archaeology.</li> </ul> </li> <li>The mitigation strategy will be discussed and agreed with RCBC.</li> <li>All stages of field work and reporting will be in accordance with IfA guidance and a WSI.</li> </ul>

## 7 Assessment of Impacts During Operation

### 7.1 Introduction

- 7.1.1 An assessment of the setting of each asset was undertaken during the baseline study (further details are provided in Section 4 and Section 6 of **Appendix 27A**). The assessment concluded that several assets have the potential to share a visual relationship with the converter stations for Dogger Bank Teesside A & B and may therefore experience an indirect impact to their setting. An assessment of potential indirect impacts is presented in this section and a summary presented in **Table 12.1**. There will be no additional direct impacts to buried archaeological remains during operation, as any impact will have occurred during the construction phase.

#### Eston Nab Hillfort, Eston Hills (1011273)

- 7.1.2 It was assessed during the site walkover that the proposed converter stations associated with Dogger Bank Teesside A & B would be visible from the hillfort at Eston Nab. The hillfort is designated a scheduled monument, and is therefore assessed as being of high importance in accordance with the assessment methodology, and is located within the ZTVs for Dogger Bank Teesside A & B (**Chapter 21**, Figure 3.4).
- 7.1.3 The views from the hillfort with the most historical significance, in terms of the monument's association with contemporary landscapes, are to the south and south west, looking over the prehistoric landscape within the Tees Valley, and towards the Cleveland Hills and Roseberry Topping. However views to the north across Wilton and beyond to the North Sea are dramatic, and the difference between the low-lying nature of the flat, open landscape around Wilton and the prominence of the steep sided Eston Hills, reinforces the importance of the monument's position in the landscape in terms of its visibility.
- 7.1.4 A viewpoint from Eston Nab towards the converter stations site confirms that the converter stations will form part of a view which is predominantly industrial, and the structures are lower in height than existing industrial structures in this area (**Chapter 21** Figure 6.2 Viewpoint 7). The converter stations will not therefore dominate views in this direction and do not represent a significant change in views from the monument. In addition, no part of the proposed development will compete with the vertical dominance of Eston Nab or interrupt views of the monument from any point within the wider landscape. It is assessed there will be no change to the setting of the hillfort as a result of the operational converter stations, as the importance of the asset will not be affected. The level of impact in accordance with the assessment methodology is therefore assessed as **neutral** and no mitigation is required.

## Eston Hills Historic Landscape

- 7.1.5 There are a further 18 scheduled monuments on Eston Hills which are interrelated due to the level of association they have as surviving features within a remnant prehistoric landscape. The assets are assessed as being of high importance.
- 7.1.6 All of the scheduled monuments are located outside of the ZTV and will not therefore have a visual relationship with the converter stations associated with Dogger Bank Teesside A & B during operation. However, the assets share a group value with the hillfort at Eston Nab which does have a visual relationship with the converter stations.
- 7.1.7 The impact to the hillfort has been assessed as neutral and as such there will be no secondary or cumulative impact upon the group value of the monuments within Eston Hill Historic Landscape. There will be no magnitude of change to Eston Hills historic landscape as a result of the operational converter stations and the overall impact in accordance with the assessment criteria is assessed as **neutral**.

## Yearby Conservation Area

- 7.1.8 The settlement at Yearby is arranged along two parallel rows of single and 2-storey 18th century cottages and farm buildings and its wider setting is defined by the arable landscape it sits within, although there is very little of the medieval landscape surviving. The conservation area is assessed to be of moderate importance.
- 7.1.9 Key views out of the conservation area comprise long-range views to the south and south west towards an agricultural landscape and the Eston Hills, and also views north towards the settlement at Kirkleatham. Views to the north west, towards the operational converter stations, are screened by intervening vegetation and buildings, comprising existing field boundaries, tree-lines adjacent to the A174 carriageway and existing structures within the Wilton Complex. The conservation area is located outside of the ZTV and the site visit further confirmed there would be no views of the operational converter stations. The magnitude of change arising from the operational converter stations of Dogger Bank Teesside A & B is therefore assessed to be no change. The character and importance of the conservation area and all of the listed buildings therein will not be affected. The level of impact is therefore assessed as **neutral**.

## Kirkleatham Conservation Area

- 7.1.10 Kirkleatham is classed as an 'outstanding' conservation area due to the high number of listed buildings, and the variety and quality of the architecture. It is therefore assessed to be of high importance. The setting to the south of the conservation area has historic importance as the area around Yearby once formed part of Kirkleatham Hall Park deer park.

- 7.1.11 Views to the west, towards Dogger Bank Teesside A & B and along the former A174 have historical importance as this represents one of the main approaches to and from the area. A photomontage viewpoint from the A1042 carriageway to the southeast of Kirkleatham shows that glimpsed views of the roofs of the converter stations will be possible through the deciduous trees which screen the eastern edge of the Wilton Complex during winter and early spring; however this viewpoint is taken from outside of the conservation area.
- 7.1.12 The ZTV for Dogger Bank Teesside A & B (Dogger Bank Teesside A & B, **Chapter 21**, Figure 3.4) does illustrate a narrow corridor of theoretical visibility from an area south of Turner's Hospital; however the site visit confirmed that any views of the operational converter stations will be screened by existing vegetation within the hospital ground and bordering the A1042 carriageway.
- 7.1.13 It is assessed there will be no change to the setting or character of the conservation area arising from the operational Dogger Bank Teesside A & B. The impact of the Dogger Bank Teesside A & B during operation is therefore assessed as **neutral**.



## 8 Assessment of Impacts During Decommissioning

### 8.1 Potential effects and impacts

- 8.1.1 There will be no additional impacts on buried cultural heritage assets during decommissioning activities. Decommissioning will be undertaken within the same footprint used during construction and therefore any impact to buried cultural heritage remains will have occurred, and have been mitigated, at the construction phase. It is assumed that the HVDC and HVAC cable systems will be left *in situ*; as such there will be no impacts to buried archaeological remains, and there will be no temporary impacts to the setting of heritage assets (listed buildings and conservation areas) during decommissioning. If any sections of the cable systems were to be removed during decommissioning, there will be no additional impact to buried heritage assets as any impact would have already occurred at the construction stage.
- 8.1.2 Decommissioning activities, comprising the use of machinery to disassemble the converter station buildings, are likely to be visible from the scheduled hillfort at Eston Nab, and could potentially impact upon the assets setting (screening of potential setting impacts outlined in Section 4.2.5, **Appendix 27A**), which is assessed to be of high importance. However decommissioning activities will not represent a significant change in views from the monument which will change the asset's setting. In accordance with assessment methodology it is assessed there will be no change to the setting or importance of the monument as a result of decommissioning resulting in a **neutral** impact.

## 9 Inter-Relationships

### 9.1 Inter-relationships

- 9.1.1 In order to address the environmental impact of the proposed development as a whole, this section establishes the inter-relationships between cultural heritage and other physical, environmental and human receptors. The objective is to identify where the accumulation of impacts on a single receptor, and the relationship between those impacts, may give rise to a need for additional mitigation.
- 9.1.2 **Table 9.1** summarises the inter-relationships that are considered of relevance to cultural heritage and identifies where they have been considered within the ES.

**Table 9.1** Inter-relationships relevant to the assessment of cultural heritage

Inter-relationship	Section where addressed	Linked Chapter
Influence of landscape and visual effects on the setting of designated sites.	Sections 6 and 7	<b>Chapter 21 Landscape and Visual Impact Assessment</b>

- 9.1.3 **Chapter 31 Inter-relationships** provides an overview of all the inter-related impacts associated within the proposed development.

## 10 Cumulative Impacts

### 10.1 Introduction

- 10.1.1 This section describes the Cumulative Impact Assessment (CIA) for Terrestrial Archaeology, taking into consideration other plans, projects and activities. A summary of the CIA is presented in **Chapter 33 Cumulative Impact Assessment**.
- 10.1.2 In its simplest form the CIA onshore involves consideration of whether impacts on a receptor can occur on a cumulative basis between the onshore elements of Dogger Bank Teesside A & B and other activities, projects and plans for which sufficient information regarding location and scale exist.
- 10.1.3 The strategy recognises that data and information sufficient to undertake an assessment will not be available for all potential projects, activities, plans and/or parameters, and seeks to establish the 'confidence' we can have in the data and information available.

### 10.2 Screening

- 10.2.1 The identified projects, activities and plans relevant to land use and agriculture are presented in **Table 10.1** along with a screening exercise to identify whether these are taken forward to the assessment.

**Table 10.1** Projects considered within the Terrestrial Archaeology Cumulative Impact Assessment

Development Number	Title	Distance to nearest point (m)	Known dates	Potential to result in cumulative terrestrial archaeology?
1	Tees Renewable Energy Plant	3640	Expected operational in 2015	No, given no shared boundary with Dogger Bank Teesside A & B.
2	Tees Renewable Energy Plant underground cable	0 (intersects project)	Expected operational in 2015	Yes
3	York Potash Project	0 (intersects project)	Application expected in 2013	Yes
4	Anemometry Mast at The Wilton Centre	30	Approved February 2011, construction must begin within 3 years	No, given no shared boundary with Dogger Bank Teesside A & B.
5	Northern Gateway Terminal	2680	Outline permission given in 2007. October 2012	No, given no shared boundary with Dogger Bank Teesside A & B.

Development Number	Title	Distance to nearest point (m)	Known dates	Potential to result in cumulative terrestrial archaeology?
			decision: Grant Reserved	
6	Breagh Pipeline	2890	Approved April 2012, development must begin within 3 years.	No, given no shared boundary with Dogger Bank Teesside A & B.
7	Two storey 2, 3 and 4 bedroom dwelling houses and garages	2320	Public consultation ends March 2013	No, given no shared boundary with Dogger Bank Teesside A & B.
8	Installation of single pole to house transformer unit (application submitted under section 37 of the electricity act 1989)	3420	Public consultation end February 2013	No, given no shared boundary with Dogger Bank Teesside A & B.
9	Redevelopment comprising the erection of 288 dwellings and ancillary works (amended scheme)	1920	Granted planning /permission	No, given no shared boundary with Dogger Bank Teesside A & B.
10	Demolition of various buildings	415	Granted deemed consent February 2013	No, given no shared boundary with Dogger Bank Teesside A & B.
11	Erection of 6 dwellings	770	Granted planning permission February 2013	No, given no shared boundary with Dogger Bank Teesside A & B.
12	Teesside Power Station	350	Permission not required December 2012	No, given no shared boundary with Dogger Bank Teesside A & B.
13	Three storey 72 bedroom care home	3300	Planning permission granted, March 2013	No, given no shared boundary with Dogger Bank Teesside A & B.
14	Screening opinion request for new biomass import facility	3140	EIA not required, November 2012	No, given no shared boundary with Dogger Bank Teesside A & B.
15	Screening opinion for proposed potash processing plant	1850	Insufficient info in planning application, November 2012	No, given no shared boundary with Dogger Bank Teesside A & B.



Development Number	Title	Distance to nearest point (m)	Known dates	Potential to result in cumulative terrestrial archaeology?
16	Two storey management block with associated 92 space car park	600	Insufficient info in planning application, November 2012	No, given no shared boundary with Dogger Bank Teesside A & B.
17	Dogger Bank Teesside Projects C and D	0 (intersects project)	Application expected in 2014	Yes
18	Scoping Request for two wind turbines (140m maximum height to top) including compound, equipment, buildings, new vehicular access onto A174 and associated infrastructure	0 (m) (intersects project)	Currently at Scoping Opinion	Yes
19	1 wind turbine	130m	Public consultation ended November 2013. Application withdrawn.	No, given no shared boundary with Dogger Bank Teesside A & B
20	Waste Treatment Facility	3160m	Public consultation ended October 2013.	No, given no shared boundary with Dogger Bank Teesside A & B
21	Extension to Factory	670m	Application Approved	No, given no shared boundary with Dogger Bank Teesside A & B
22	Teesside Power Plant	200m	Planning permission not required.	No, given no shared boundary with Dogger Bank Teesside A & B use
23	Anaerobic power plant	2435m	Application Approved	No, given no shared boundary with Dogger Bank Teesside A & B
24	Erection of wind turbine	590m	Application Approved	No, given no shared boundary with Dogger Bank Teesside A & B
25	Effluent main pipeline	2415m	Application Approved	No, given no shared boundary with Dogger Bank Teesside A & B
26	Wind Farm	2925m	Public consultation ended November 2013.	No, given no shared boundary with Dogger Bank Teesside A & B
27	Single Wind Turbine	2160m	Public consultation ended september 2013	No, given no shared boundary with Dogger Bank Teesside A & B

Development Number	Title	Distance to nearest point (m)	Known dates	Potential to result in cumulative terrestrial archaeology?
28	Changes to house types	2210m	Public consultation ended August 2013	No, given no shared boundary with Dogger Bank Teesside A & B
29	Four Bungalows	1440m	Application Approved	No, given no shared boundary with Dogger Bank Teesside A & B
30	1000 dwelling development	1460m	Public consultation ended November 2013	No, given no shared boundary with Dogger Bank Teesside A & B
31	Erection of agricultural building	0 (m) (intersects project)	Public consultation ended June 2013	No, given no shared boundary with Dogger Bank Teesside A & B (area being HDDed, so no direct impact)
32	Residential Development	1080m	Application Approved	No, given no shared boundary with Dogger Bank Teesside A & B

## Criteria for scoping out cumulative impact assessment projects

- 10.2.2 A cumulative impact will arise where the construction, operation or decommissioning of a proposed development will create an increase to an impact arising from Dogger Bank Teesside A & B.
- 10.2.3 For a cumulative impact to arise as a result of impacts during construction to buried heritage assets a proposed development would have to share a boundary with Dogger Bank Teesside A & B and could therefore potentially impact the same buried archaeological resource during construction, these are shown in **Table 10.1**.
- 10.2.4 Cumulative impacts during operation can arise where the above ground built elements of a proposed development, when viewed alongside the converter stations of Dogger Bank Teesside A & B, will interrupt lines of sight between assets which are related, or will contribute to changes in the view from heritage assets, for example an increase in massing or height of buildings which are clearly visible in views from an asset. The scheduled hillfort at Eston Nab is the only heritage asset which shares a visual relationship with operational converter stations of Dogger Bank Teesside A & B and therefore cumulative impacts from other developments would have to have above ground components also visible from this viewpoint.

## 10.3 Cumulative impacts during construction

- 10.3.1 The projects which share a boundary with Dogger Bank Teesside A & B and have the potential for cumulative impacts to buried heritage assets during construction comprise:

- Dogger Bank Teesside C & D;
- Tees Renewable Energy Plant underground cable;
- York Potash Project; and
- 2 wind turbines (140m maximum height to top) including compound, equipment, buildings, new vehicular access onto A174 and associated infrastructure.

### Dogger Bank Teesside C & D

- 10.3.2 Dogger Bank Teesside C & D are the third and fourth projects of the second stage of the Dogger Bank development and will comprise two wind farms, each with a generating capacity of up to 1.2GW.
- 10.3.3 The proposed HVDC cable corridor from the A174 to the Wilton Complex will share a boundary with the HVDC cable for Dogger Bank Teesside A & B, and the potential sites identified from geophysical survey along this stretch of the cable corridor are known to extend into the cable corridor for Dogger Bank Teesside C & D (ASUD 2013). The construction of the HVDC cable route will entail additional permanent impacts to non-designated buried archaeological remains which are likely to be of local value; therefore assessed as low importance. The magnitude of change as a result of construction will be high involving the complete removal of archaeological remains. Mitigation via a planning condition is likely to entail archaeological trench evaluation, detailed excavation and reporting, and once implemented will reduce the residual impact to **minor adverse**.
- 10.3.4 There are no other cumulative impacts arising from the construction of Dogger Bank Teesside C & D.

### Tees Renewable Energy Plant underground cable

- 10.3.5 The underground cable system associated with Tees Renewable Energy Plant, will potentially share a boundary with the HVAC cable for Dogger Bank Teesside A & B, as the application boundary for the project intersects with Dogger Bank Teesside A & B cable system to the north east of the existing substation at Lackenby. The baseline has identified a low potential for archaeological remains to be present in this area, due to the level of disturbance caused by the construction of the substation, however if archaeology was present it is likely to be related to medieval farming and settlement and will be of low (local) importance.
- 10.3.6 The construction of the Tees Renewable Energy Plant cable route will potentially entail additional permanent impacts to non-designated buried archaeological remains of low importance. The magnitude of change as a result of construction will be high as it will entail the complete removal of archaeological remains. Mitigation via a planning condition is likely to entail archaeological trench evaluation, detailed excavation and reporting, and once implemented will reduce the residual impact to **minor adverse**.

## York Potash Project

- 10.3.7 The York Potash Project will share a boundary with Dogger Bank Teesside A & B to the south of Kirkleatham, where the pipeline will cross the line of the HVDC cable corridor. The pipeline crosses either side of a potential archaeological site identified from geophysical survey (Area 8a, **Figure 3.3**), resulting in permanent impacts to non-designated buried archaeological remains which are likely to extend beyond the HVDC cable corridor for Dogger Bank Teesside A & B.
- 10.3.8 The geophysical survey identified possible settlement enclosures relating to archaeological remains of local (low) importance. The level of cumulative impact arising from the pipeline construction is assessed to be high; this assumes the construction will totally remove the asset in its entirety. The adoption of a suitable mitigation strategy, comprising archaeological trench evaluation and a programme of detailed excavation and reporting will result in a **minor adverse** residual impact.

## Project 18: Scoping request for 2 turbines

- 10.3.9 This potential project entails a scoping request for two wind turbines (140m maximum height to top) including compound, equipment, buildings, new vehicular access onto A174 and associated infrastructure. The project, if consented, will share a boundary with Dogger Bank Teesside A & B to the south of Kirkleatham, where the HVDC cable route crosses the A174 carriageway. This section of the HVDC cable route will be installed via HDD; therefore impacts to buried archaeological remains will be avoided. There will be no change to archaeological assets and the level of impact is **neutral** and no cumulative impacts are anticipated.

## 10.4 Cumulative impacts during operation

- 10.4.1 The projects with above ground components which have the potential for cumulative impacts during operation to the setting of the hillfort at Eston Nab comprise:
- Dogger Bank Teesside C & D;
  - Anemometry mast at the Wilton Centre; and
  - Scoping request for two turbines.
- 10.4.2 These projects are located within 1km of Dogger Bank Teesside A & B and have built components which will be visible alongside built components of Dogger Bank Teesside A & B from the scheduled hillfort at Eston Nab. The remaining projects are located beyond 1km and will be viewed as individual sites and clearly distinct from Dogger Bank Teesside A & B in spatial terms, rather than an addition to it. Teesside Power Station and power plant are within 1km of Dogger Bank Teesside A & B but these schemes involve the demolition of generator exhaust stacks and power plant components rather than the construction of built components and as such will not create cumulative impacts.



## Dogger Bank Teesside C & D

- 10.4.3 The converter stations associated with operational Dogger Bank Teesside C & D will be spatially separate from Dogger Bank Teesside A & B and will be located within an existing industrial setting. The proposed development will not represent an impact above that already identified for Dogger Bank Teesside A & B and will not constitute a cumulative indirect effect upon the setting of designated assets of high importance. Operational Dogger Bank Teesside A & B and Dogger Bank Teesside C & D will be visible in the same views from the scheduled hillfort at Eston Nab, however there will be no change to the setting of the asset due to the existing industrial setting of the Wilton Complex. There is no cumulative impact and the overall impact is assessed to be **neutral**.

## Anemometry mast at the Wilton Centre

- 10.4.4 The mast is a consented project (consented February 2011) and will entail the installation of a temporary 70m high anemometry mast. The mast is a temporary structure and will be erected for 2.5 years.
- 10.4.5 The mast will be visible from Eston Nab hillfort in views to the north east, and the upper section of the mast will be clearly visible behind Teesside Dogger Bank A & B converter stations. The visual backdrop of this view is dominated by the existing industrial structures within the Wilton Complex, which includes several structures of a similar height to the proposed mast (**Chapter 21**, Figure 3.4). The operation of the mast will be in-keeping with the existing setting and will not therefore result in any change to the setting of the hillfort. The hillfort is assessed to be of high importance and there will be no magnitude of change to its setting as a result of the operational mast. There are no cumulative impacts and the overall impact is assessed as **neutral**.

## Scoping Request for two turbines

- 10.4.6 This project is currently in scoping and will entail two wind turbines that will have a maximum blade tip height of 140m. The turbines are likely to be clearly visible in views to the north from Eston Nab hillfort; views that will also take in the converter stations associated with Dogger Bank Teesside A & B. However, the converter stations are located within the industrial setting of the Wilton Complex whereas the proposed turbines will be located in an agricultural setting on the edge of the industrial area. The distance between the turbines and the converter stations will be sufficient to establish that they are separate developments and there will be no sense that the proposed turbines are part of Dogger Bank Teesside A & B. There will be no cumulative impact arising from the operational two turbine project and therefore the impact is assessed as **neutral** in accordance with **Table 3.3**.

## 11 Transboundary

### 11.1 Transboundary effects

- 11.1.1 No transboundary effects have been identified in relation to terrestrial archaeology.

## 12 Summary

### 12.1 Summary

- 12.1.1 This chapter of the ES has assessed the potential impact of Dogger Bank Teesside A & B on the baseline terrestrial archaeology in the Redcar and Cleveland Borough.
- 12.1.2 **Table 12.1** provides a summary of the potential impacts on terrestrial archaeology arising from the realistic worst case scenarios set out in Section 5 of the chapter.
- 12.1.3 The impact assessment has identified seven significant impacts relating to non-designated assets, and mitigation has been recommended in order to reduce the level of residual impact. This mitigation includes measures such as archaeological evaluation, excavation and reporting.
- 12.1.4 The impact assessment has concluded there will be no significant impacts to designated cultural heritage assets arising from the construction, operation or decommissioning of Dogger Bank Teesside A & B, and in accordance with the guidance in the NPPF, the residual impacts presented within **Table 12.1** indicate there will be no substantial harm to heritage assets as a result of Dogger Bank Teesside A & B. In addition it is concluded that there are no significant cumulative impacts.

Table 12.1 Summary of predicted impacts of Dogger Bank Teesside A & B on terrestrial archaeology

Asset number	Site Name	Description of impact	Key mitigation measures	Residual impact (worst case scenario)
1011273	Hillfort at Eston Nab and Eston Hills Historic Landscape	Views of construction activities will constitute <b>no change</b> to the setting of the hillfort which will affect the ability to appreciate its setting or historical context. Furthermore, there will be no change to the wider historic landscape of Eston Hills as a result of construction. The impact is assessed as <b>neutral</b> .	No mitigation is required.	Neutral
N/A	Kirkleatham Conservation Area	The construction of the HVDC cable will have a <b>minimal</b> magnitude of change on views to the south from the southern edge of the conservation area which are of historical significance. Temporary impact will not harm the character or importance of the conservation area and the impact is assessed as <b>minor</b> .	No mitigation is required.	Minor adverse
N/A	Yearby Conservation Area	The construction of the HVDC cable will have a <b>minimal</b> magnitude of change on views of historical importance which link Yearby with the settlement at Kirkleatham. This temporary impact will not affect the setting or importance of the conservation area and the impact is assessed as <b>minor</b> .	No mitigation is required.	Minor adverse
N/A	Marske Conservation Area	The construction of the HVDC cable at landfall will have <b>no change</b> upon views towards the area. There will be no change to the conservation area and the impact is assessed as <b>neutral</b> .	No mitigation is required.	Neutral
1139659 1159438 1329623	Old Hall farmhouse Stable range Byre barn	Construction of HVAC cable and NG enabling works will have a <b>minimal</b> magnitude of change on the group value of the buildings, resulting in a <b>minor</b> impact.	No mitigation is required.	Minor adverse
1387500	Fell Briggs Farm	The construction of the HVDC cable will have <b>no change</b> upon the setting of the asset which is	No mitigation is required.	Neutral



Asset number	Site Name	Description of impact	Key mitigation measures	Residual impact (worst case scenario)
		defined primarily by the arable landscape around it. The overall impact is therefore assessed as <b>neutral</b> .		
1159818	Turner's Arms Farmhouse	Views of the HVDC cable construction will be visible from the house, but this will not change the asset's setting which is defined primarily by its position within an agricultural landscape and the impact is assessed as <b>neutral</b> . Views of the construction compound which is located to the north of the house will be screened however noise levels from construction compound will result in a <b>low</b> magnitude of change to the asset's setting resulting in a <b>minor</b> impact.	No mitigation is required.	Minor adverse
1139618, 1329632, 1310671	Ryehills Farmhouse, barn and wall.	HVDC cable route construction will <b>not change</b> assets' setting. HVDC construction compound is likely to increase noise; however it is assessed that this will not result in any harm to the setting or group value of the assets and is a <b>low</b> magnitude of change. Result is a <b>minor</b> impact.	No mitigation is required.	Minor adverse
N/A	Historic Landscape	The magnitude of change to the historic landscape as a result of the HVDC construction is assessed to be <b>minimal</b> , and the impact is <b>minor</b> .	No mitigation is required.	Minor adverse
HER Asset 4049	Brickearth Pit	HVDC cable construction will permanently impact part of asset resulting in a <b>high</b> magnitude of change and a <b>moderate</b> impact.	Archaeological evaluation, excavation and reporting.	Minor adverse
4044	Site of Dovecote	Asset is no longer extant and subsurface remains are unlikely to be present. The impact is <b>neutral</b> .	No mitigation is required.	Neutral
4950	WWII Pillbox	Asset will be avoided by design; HDD will be used to avoid asset. The impact is <b>neutral</b> .	No mitigation is required.	Neutral
3585	WWII Gun Emplacement	The asset is located within an area of HVDC cable which will be installed by HDD. Impact during construction will result in a <b>high</b> magnitude of	The asset will be fenced off during construction to ensure preservation.	Neutral

Asset number	Site Name	Description of impact	Key mitigation measures	Residual impact (worst case scenario)
		change resulting in a <b>moderate</b> impact.		
Area 8a	Site identified from geophysical survey	There will be a permanent <b>high</b> magnitude of change on the enclosures from the construction of HVDC cable resulting in a <b>moderate</b> impact.	Archaeological evaluation, excavation and reporting.	Minor adverse
Area 11	Site identified from geophysical survey	There will be a permanent <b>high</b> magnitude of change on the enclosure from the construction of HVDC cable resulting in a <b>moderate</b> impact.	Archaeological evaluation, excavation and reporting.	Minor adverse
Area 17	Site identified from geophysical survey	The construction of the HVDC cable will impact a section of the First World War practice trenches resulting in a <b>medium</b> magnitude of change. The impact prior to mitigation is <b>moderate</b> .	Archaeological study, evaluation, excavation and reporting.	Minor adverse
Area 3	Site identified from geophysical survey	The construction of the HVAC cable will result in a <b>moderate</b> impact to potential enclosure.	Archaeological evaluation, excavation and reporting.	Minor adverse
1139659	Old Hall Farmhouse, Lackenby	Construction of HVAC cable will have a temporary impact on setting of asset; this is assessed to be a <b>minor</b> impact.	No mitigation is required.	Minor adverse
Area 5	Site identified from geophysical survey	Potential enclosure will be permanently impact by construction of the converter stations and compounds resulting in a <b>moderate</b> impact.	Archaeological evaluation, excavation and reporting.	Minor adverse
1011273	Hillfort at Eston Nab	Setting of monument will not be affected by the operational Teesside A & B. The impact is assessed as <b>neutral</b> .	No mitigation is required.	Neutral
N/A	Eston Hills Historic Landscape	There will be no direct or secondary impact to the landscape as a result of the operational Teesside A & B. The impact is assessed as <b>neutral</b> .	No mitigation is required.	Neutral
N/A	Kirkleatham Conservation Area	The operational development will <b>not change</b> the current setting of the conservation area and will not impact key views of historical significance to the south or the west. The impact of the operational development is therefore assessed as	No mitigation is required.	Neutral

Asset number	Site Name	Description of impact	Key mitigation measures	Residual impact (worst case scenario)
		<b>neutral.</b>		
N/A	Yearby Conservation Area	The character and importance of the conservation area and all of the listed buildings therein will <b>not change</b> and there will be no impact arising from the operational development. The impact is therefore assessed as <b>neutral</b> .	No mitigation is required.	Neutral
1011273	Hillfort at Eston Nab	Activity associated with the decommissioning of Teesside A & B will not affect the monument's setting, resulting in <b>no change</b> . The impact is assessed as <b>neutral</b> .	No mitigation is required.	Neutral
N/A	Eston Nab Historic Landscape	Activity associated with the decommissioning of Teesside A & B will not affect the setting of the landscape, resulting in <b>no change</b> . The impact is assessed as <b>neutral</b> .	No mitigation is required.	Neutral

## 13 References

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