FOREWIND

DOGGER BANK
TEESSIDE A & B

March 2014

Environmental Statement Chapter 27 Appendix A Onshore Cultural Heritage Impact Assessment

Application Reference: 6.27.1

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

URS

Dogger Bank Teesside A & B

Onshore Cultural Heritage Impact Assessment

February 2014

UNITED KINGDOM & IRELAND

REVISION SCHEDULE					
Rev	**Date**	**Details**	**Prepared by**	**Reviewed by**	**Approved by**
1	December 2012	Draft for comment	Annie Calder Principal Heritage Consultant	Amy Jones Principal Heritage Consultant	
2	January 2013	Draft Baseline	Annie Calder Principal Heritage Consultant	Amy Jones Principal Heritage Consultant	
3	June 2013	Draft Impact Assessment	Annie Calder Principal Heritage Consultant	Amy Jones Principal Heritage Consultant	
4	July 2013	Final Draft	Annie Calder Principal Heritage Consultant	Amy Jones Principal Heritage Consultant	Annette Roe Technical Director - Heritage
5	September 2013	Final – PEI2	Annie Calder Principal Heritage Consultant	Amy Jones Principal Heritage Consultant	Annette Roe Technical Director - Heritage
7	February 2014	Final – DCO Submission	Annie Calder Principal Heritage Consultant	Amy Jones Principal Heritage Consultant	Annette Roe Technical Director - Heritage

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Contents

Figures

Plates

Tables

Appendices

1 Introduction

1.1.1 URS was commissioned by Forewind Limited to undertake a Cultural Heritage baseline study and impact assessment as part of a wider Environmental Impact Assessment to support a Development Consent Order application for the proposed Dogger Bank Teesside Offshore Wind Farms. Dogger Bank Teesside is the second stage of the Dogger Bank development. Dogger Bank Teesside will comprise four wind farms, and have a total generating capacity of up to 4.8GW.

1.1.2 This report sets out the baseline conditions and impact assessment for terrestrial heritage assets only and supports the DCO application for the first two projects, Dogger Bank Teesside A & B, which will each have a generating capacity of 1.2GW. Baseline conditions and impact assessment for marine and coastal archaeology is presented in Chapter 18 of the Environmental Statement (ES).

1.1.3 The baseline desk-study was carried out between November 2012 and January 2013. The impact assessment was completed between January 2013 and May 2013 January 2014 following the completion of archaeological geophysical surveys along the proposed cable routes and site of the proposed converter stations. Consultation with English Heritage (EH) and the Archaeological Consultant for Redcar and Cleveland Borough Council (RCBC) was undertaken throughout the preparation of the baseline study and impact assessment.

1.1.4 This report identifies scheduled monuments, listed buildings, registered parks and gardens, conservation areas, historic landscapes and non-designated heritage assets within the study area, and assesses the level of potential impact on heritage assets as a result of Dogger Bank Teesside A & B.

1.2 Site Description

1.2.1 From landfall, the proposed cable route passes through open agricultural fields on a north-east, south-west alignment between Marske-by-the-Sea and Redcar. The cable route passes through more open agricultural land and smaller enclosed fields between Kirkleatham and Yearby, and enters the Wilton Complex at the south-east corner (**Figure 1**).

1.2.2 The predominant land-use within the Wilton Complex is industrial with pockets of enclosed arable land to the south-east, south and west of the site.

1.3 Proposed Development

1.3.1 The onshore elements of Dogger Bank Teesside A & B which are subject to the archaeological assessment consists of all infrastructure landward of the Mean High Water Mark (MHWM), comprising:

- Cable landfall and reception pits;
- Transition bays;
- Two buried onshore High Voltage Direct Current (HVDC) export cable systems, carrying power from the landfall to the onshore converter stations;
- Horizontal Directional Drilling (HDD) under roads, foreshore, railway, watercourses, pipelines and potentially other cables;

- Two onshore converter stations (one per project, which are co-located) with associated access roads, compounds, fencing, landscaping and drainage;
- Two onshore High Voltage Alternating Current (HVAC) export cable systems, carrying power from the onshore converter stations to the existing National Grid substation at Lackenby;
- Connection bay within the existing National Grid substation at Lackenby containing isolation switch gear and electrical equipment for connection of the export cable systems to the transmission network;
- Temporary works and laydown areas;
- Permanent and temporary access roads; (and)
- Service corridors, including telecommunications/ water, and enabling works at the existing National Grid substation at Lackenby.

1.3.2 The cable route will come onshore to the north of Marske-by-the-Sea (**Figure 1**), where it will cross under the railway line and Redcar Road, south of the Markse Sewage Treatment Works. The route will then head south to the A174, and at this location large construction compounds will be sited. The cable route will then cross agricultural fields south of Grewgrass Farm and north of Fell Briggs Farm, Thrushwood Farm and the village of Yearby until it reaches the Wilton complex, where the converter stations and associated infrastructure will be located. The HVDC will be converted to HVAC at the converter stations and connect into the current Lackenby substation to the west of the A1053 via a HVAC cable. HDD techniques will be used to cross significant obstacles such as watercourses, railway lines and major roads where trenching cannot be achieved. During HDD, tunnels are bored under the structure and the cables pulled through the underlying geology.

The Landfall

1.3.3 The landfall comprises an area along the Teesside coastline, where the joint transition bay will be located. The preferred landfall is to the north of Marske-by-the-Sea. Connection to the offshore export cables will be via HDD, starting landward of the A1085 carriageway. The location of the joint transition bay will be approximately 450m from the shoreline; however the joint transition bay and the associated construction compound may be located anywhere within the landfall construction envelope.

The HVDC Cable Route and Compounds

1.3.4 The HVDC cable route length from landfall to the converter stations site is approximately 7km and the cable trench will be excavated to a depth of *c*1.5m. The total construction corridor width for Dogger Bank Teesside A & B will be 36m which includes space for topsoil storage and a 6m wide haul road, but does not include temporary construction works areas (site compounds). The total construction corridor width for the HVDC within the Wilton Complex is 18m. Construction compounds for the HVDC cable will comprise two primary compounds each covering an area of 5000m², and four intermediate compounds each measuring 784m². For the HVDC section of the route 11 HDD compounds may be used. Of the 11 HDD compounds, there are five major compounds measuring 4000m² and six minor compounds measuring 2400m².

The Converter Stations

1.3.5 Two converter stations will be constructed for Dogger Bank Teesside A & B and will connect to the existing National Grid substation at Lackenby. The total site area for each converter station is approximately 5ha, which is inclusive of construction areas, construction compounds and mitigation areas. Each converter hall will measure up to 110m by 75m and will be a maximum height of 20m. The AC switch yard maximum dimensions will measure up to 60m x 75m and will be 11m high.

The HVAC Cable Route

1.3.6 The HVAC cable route length between the proposed converter stations site and the existing National Grid substation at Lackenby is approximately 2km and the cable trench will be excavated to a depth of *c*1.5m. The total construction corridor width for the HVAC cable route for Teesside A & B will be 39m which includes storage space for topsoil and a 6m wide haul road. There are two HVAC construction compounds each measuring 784m². The maximum compound area for the HVAC HDD is 1200m².

National Grid Enabling Works at existing Lackenby Substation

1.3.7 Enabling works will be required at the existing Lackenby Substation for Dogger Bank Teesside A & B comprising an extension to the existing Switch Gear. The National Grid works will be within the footprint of the existing substation and will not require the construction of additional roadways or haul roads or entail significant earthworks.

Summary of construction activities and impact

1.3.8 Potential harm to heritage assets may result from construction, operation and maintenance of the proposed onshore infrastructure associated with Dogger Bank Teesside A & B, and from the eventual decommissioning. Anticipated activities with the potential to harm heritage assets comprise topsoil stripping, horizontal drilling and heavy plant movement. In addition, temporary and permanent above ground components of Dogger Bank Teesside A & B, such as the converter stations, have the potential to harm the setting of heritage assets.

1.4 The Study Area

1.4.1 Different study areas for designated and non-designated heritage assets have been agreed with English Heritage and the Archaeological Consultant for RCBC.

1.4.2 For designated heritage assets, both statutory and non-statutory, a study area of 5km from the edge of the cable corridor and the edge of the converter stations site was used (**Figures 2** – **6** inclusive). The use of a 5km study area is a reflection of the relative importance of the assets, their sensitivity to change and their topographical setting in relation to the proposed development site.

1.4.3 For non-designated heritage assets, which are by inference of lower importance than designated assets, a study area of 1km from the edge of the cable corridor and the edge of the converter stations site was used (**Figures 7a – 9** inclusive).

1.4.4 At the landfall the study area stops at MHWM.

1.5 Objectives of the Baseline Study

1.5.1 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;
- To identify designated heritage assets including scheduled monuments, listed buildings, registered parks and gardens and conservation areas within the study area;
- To identify areas with the potential to contain previously unrecorded archaeological or historical remains;
- To identify the location, extent and severity of modern ground disturbance and previous construction impacts;
- To establish the significance of the heritage assets identified within the study area;
- To assess the level of possible harm of the proposed development upon identified heritage assets; (and)
- To propose further surveys necessary to inform an impact assessment of the proposed development.

1.5.2 The baseline study presents the evidence for known cultural heritage assets associated with Dogger Bank Teesside A & B and is informed through detailed desk-study and a site walkover survey conducted by members of the URS Heritage team.

2 Legislation, Policy and Consultation

2.1 Overview

2.1.1 This section provides a background to legislation and policy relevant to the construction of the onshore elements of Dogger Bank Teesside A & B in relation to any archaeological or cultural heritage assets that may be present. National policy and legislation for the protection of designated and non-designated assets is summarised.

2.1.2 Brief summaries are included of relevant local planning policy documents as these represent local planning practice for the treatment of archaeological and cultural heritage in the development process. A summary of relevant guidance published by English Heritage is also included.

2.1.3 An account of principal consultation events with English Heritage and the Archaeological Consultant to RCBC is listed in **Table 1**.

2.2 Legislative Context

2.2.1 The Ancient Monuments and Archaeological Areas Act 1979 is the central piece of legislation which protects the archaeological resource. The first section of the Act requires the Secretary of State for National Heritage to maintain a schedule of nationally important sites. For the purposes of the Act, a monument is defined as:

> *'a) any building, structure or work, whether above or below the surface of the land, and any cave or excavation; b) any site comprising the remains of any such building, structure or work or of any cave or excavation; and c) any site comprising, or comprising the remains of, any vehicle, vessel, aircraft or other moveable structure or part thereof which neither constitutes nor forms part of any work which is a monument as defined within paragraph a) above; d) and any machinery attached to a monument shall be regarded as part of the monument if it could not be detached without being dismantled.' (Section 61 (7)).*

2.2.2 A set of criteria, defined as survival/condition, period, rarity, fragility/vulnerability, diversity, documentation, group value and potential, assist in the decision making process as to whether a site is deemed of national importance and best managed by scheduling.

2.2.3 English Heritage is enabled by Section 8C of the Historic Buildings and Ancient Monuments Act 1953 (introduced by paragraph 10 of Schedule 4, of the National Heritage Act 1983) to compile a Register of Parks and Gardens of Special Historic Interest in England. Though designated of national interest, a park or garden on the register is not otherwise statutorily protected.

2.2.4 Section 72 of the Planning (Listed Buildings and Conservation Areas) 1990 Act establishes a desirability to preserve or enhance the character or appearance of a Conservation Area. A conservation area is an area of local interest designated principally by the Local Planning Authority.

2.2.5 For archaeological sites that are not covered by the above Act, protection is afforded through development control, the Town and Country Planning Act 1990 and the National Planning Policy Framework 2012.

2.3 Planning Context

National Policy Statements for Energy

2.3.2 The energy generation capacity of Dogger Bank Teesside A & B is in excess of 50MW and therefore it falls within the definition of a Nationally Significant Infrastructure Project (NSIP) under Section 15(2)(c) of the Planning Act 2008 (2008 Act).

2.3.3 As an NSIP, the proposed wind farm is required to operate within the policy framework set out within the National Policy Statements (NPSs) for Energy. The NPSs were approved in July 2011 and designated by the Department of Energy and Climate Change under the Planning Act 2008 and set out national policy against which proposals for major energy projects will be assessed. Overarching National Policy Statement for Energy (NPS EN-1) outlines issues which have a direct bearing on cultural heritage.

NPS EN-1

2.3.4 Section 5.8 of NPS EN-1 sets out the requirements for assessing and mitigating impacts of proposed energy NSIPs upon the historic environment.

2.3.5 Paragraph 5.8.8, the 'Applicant's assessment', requires the Environmental Statement submitted with an application for a development consent order (DCO Application) to 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 minimum*' the relevant Historic Environment Record (HER) is consulted and an assessment of heritage assets is carried out '*using expertise where necessary according to the proposed development's impact*'.

2.3.6 Paragraph 5.8.9 adds that '*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.

2.3.7 Paragraph 5.8.10 also requires applicants to 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'*.

National Planning Policy Framework

2.3.8 The National Planning Policy Framework (NPPF) came into effect on the 24th March 2012 replacing Planning Policy Statements with immediate effect (Department for Communities and Local Government, 2012). The NPPF sets out a series of policies that are a material consideration to be taken into account in development management decisions in relation to heritage consent regimes established in the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990. The NPPF sets out the Government's planning policies for England and how these are expected to be applied. More specifically Section 12 defines the policies for conserving and enhancing the historic environment and heritage assets.

2.3.9 Section 12 of the NPPF sets out the importance of being able to assess the significance of heritage assets that may be affected by a development. Significance is defined in Annex 2 as being the:

'value of an asset to this and future generations because of its heritage interest. This interest may be archaeological, architectural, artistic or historic interest'.

2.3.10 The definition of significance provided in Annex 2 also clearly states that significance is not only derived from an asset's physical presence, but also from its setting. The setting of a heritage asset is defined in Annex 2 as:

'the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve.'

2.3.11 Paragraphs 128 and 129 of the NPPF state that when determining applications, local authorities require an applicant to describe the significance of assets that may be affected by a development, to a level of detail that is proportionate to their importance and that is no more than sufficient to understand the potential impact on their significance; this should also include assets where their setting may be affected by a proposal.

2.3.12 With regard to development sites where there are known heritage assets, or there is potential for heritage assets with archaeological interest, paragraph 128 of the NPPF directs local planning authorities to require developers to submit an appropriate desk-based assessment and, where necessary, field evaluation.

2.3.13 Paragraph 132 recognises that heritage assets are irreplaceable and that where proposed development may impact on the significance of designated heritage assets, great weight should be placed on its conservation. A clear link is drawn between the level of significance of the asset and the level of weight given to conservation. The NPPF notes that alteration or destruction of a heritage asset or development within its setting can harm its significance.

2.3.14 Paragraph 132 further recognises that substantial harm or loss of heritage assets of the highest significance for example scheduled monuments, registered battlefields, grade I and II* listed buildings and registered parks and gardens and World Heritage Sites should be wholly exceptional.

2.3.15 The NPPF recognises that a balance needs to be struck between the preservation of the significance of a heritage asset and delivering public benefit. Paragraph 133 sets out considerations to be taken into account when determining a planning application which would result in substantial harm or total loss of significance of a designated heritage asset. It states that the local planning authority should weigh the public benefits of a proposed development against any harm, and in cases where it cannot be demonstrated that substantial harm or total loss is not outweighed by the public benefit, it directs the local planning authority to refuse consent.

2.3.16 The NPPF also clearly states that the effect of a planning application on non-designated heritage assets should be taken into account when considering the application. Paragraph 135 sets out the need for a balanced judgement between the significance of the heritage assets and the scale of any harm or loss, when considering assets directly or indirectly affected by a proposed development.

2.3.17 Within the NPPF, impacts are considered in terms of 'substantial' or 'less than substantial' harm. Paragraph 132 of the NPPF states that substantial harm to a designated asset should be

wholly exceptional and, in accordance with paragraph 133, weighed against the public benefit of the scheme.

2.3.18 The NPPF does not provide a qualitative definition of what constitutes 'substantial' or 'less than substantial' harm, however draft guidance discussed below in paragraph 2.3.34, 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 physical damage to an asset or loss of elements of an asset's setting that contribute to its importance. The identification of 'substantial' harm is not directly equitable to the significance of the effect in Environmental Impact Assessment (EIA) terms.

Local Planning Policy

2.3.19 The Redcar & 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.

2.3.20 The Local Development Framework (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:

Core Strategy DPD

2.3.21 The Core Strategy DPD was adopted July 2007 and sets out strategies for dealing with the implications of development within the borough.

2.3.22 Policy CS25 deals with the Built and Historic Environment and states that '*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*.'

2.3.23 *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

2.3.24 Development Policies were adopted in July 2007. The Development Policies document contains detailed policies against which all planning applications submitted to the Council will be considered. It will set out specific requirements and criteria for the development of buildings and land in the Borough. The Development Policies document covers a limited number of detailed policies which aim to deliver the Core Strategy – the strategic framework for the Local Development Framework.

2.3.25 Policies relating to cultural heritage comprise DP8 the Heritage Coast, DP9 Conservation Areas, DP10 Listed Buildings, and DP11 Archaeological Sites and Monuments.

2.3.26 Policy DP8 states ''Development will not be permitted within the Heritage Coast unless it is:

- Essential development which for operational reasons cannot be located outside the Heritage Coast; or
- Small-scale leisure or tourism development consistent with the conservation of the special qualities of the Heritage Coast; or
- Located within Development Limits.

2.3.27 Any development which is acceptable will be required to be designed and sited so as to cause no harm to the special character of the Heritage Coast, in particular the remote character, natural beauty, wildlife and geological value, heritage assets and marine environment.

2.3.28 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.

2.3.29 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:

- Preserves or enhances its special character as a listed building;
- 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)
- Retains historic plot boundaries and layouts.

2.3.30 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 ''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 planning application. Development that affects a site where there is evidence that archaeological remains may exist will only be permitted if:

- Any archaeological remains are preserved in situ; or
- 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.

Guidance

2.3.31 English Heritage guidance relevant to this assessment includes The Setting of Heritage Assets (English Heritage 2012). The guidance states that an assessment of the impact of a proposed development should identify whether the development would be acceptable in terms of the degree of harm to an asset's setting. This can be identified by using a broad 5-step approach that identifies: (1) which assets and settings are affected; (2) how and to what degree these settings make a contribution to the significance of the heritage asset; (3) assess the effects of

the proposed development; (4) explore ways to minimise harm and maximise enhancement; and (5) how to document the decision and monitor outcomes.

2.3.32 Setting is understood to embrace all of the surroundings from which the heritage asset can be experienced, and does not have a fixed boundary. Views to and from an asset will play an important part in the way that the asset is experienced. Other factors such as the 'character' of the view, screening and cumulative impacts of existing structures within the view need to be taken into consideration. This separates the concept of 'setting' from that of the 'view'; the perception or understanding of an asset or its context can still be appreciated despite changes within its view.

2.3.33 For many development proposals, visual effects may be the primary or sole issue requiring assessment for setting and may merit a formal views analysis such as that proposed in Seeing History in the View: A Method for Assessing Heritage Significance within Views (English Heritage 2011b).

Draft Guidance

2.3.34 Within the NPPF, impacts are considered in terms of their causing 'substantial' or 'less than substantial' harm. There is a presumption against granting consent if the harm to significance is substantial, or there is a total loss to significance (Paragraph 133). Where impacts are less than substantial, the harm should be weighed against the public benefits of the proposed development (Paragraph 134).

2.3.35 The NPPF does not quantify or provide an explanation of what constitutes 'substantial' or 'less than substantial' harm. A judgement of whether an impact causes 'substantial harm' is based on what constitutes the significance of the asset, including its setting, and how this is affected. Draft NPPF practice guidance published for testing and comment states that the scale of proposed works is not necessarily determinative of whether any harm caused is substantial or less than substantial, and substantial harm is likely to be caused by an impact that affects key elements which contribute to the importance of an asset and '*goes to the heart of why the place is worthy of designation*'. However local planning authorities are only expected to consider guidance that is in effect when plans are prepare or decisions taken, and consequently the weight of any material consideration associated with this draft guidance is for the decision taker to determine.

2.4 Consultation

2.4.1 During the preparation of this assessment, consultation has been undertaken with the archaeological advisor for RCBC and with English Heritage. The principal consultation events are listed below in **Table 1**.

Table 1: Consultation events

Date	Event	Consultee Response	URS Action
May 2012	Scoping Report issued to IPC	Scoping response received from IPC 19.06.12. Noted 6 options for converter station site; relevant heritage assets for assessment comprise coastal archaeology, Wilton Conservation Area, Kirkleatham Conservation Area, Yearby Conservation Area and all listed buildings therein. Also note Conservation Area Action Plan for Kirkleatham.	Effects upon designated and non-designated assets as identified by English Heritage are considered in the assessment – Section 4, 8, 9 and 10.
04.12.12	URS submitted information request to RCBC for HER update, regional research agenda update and access to pre-OS mapping and aerial photographs (APs).	RCBC responded 17.12.12 and confirmed that APs and pre-OS mapping are still held by Tees Archaeology. Discussions are on-going between Tees Archaeology and RCBC regarding availability of the archive.	For APs URS referred to English Heritage National Mapping Programme – North East Coast Rapid Coastal Zone Assessment Survey. Air Survey Mapping Report (2008). Referenced where relevant in Section 4 – Baseline Conditions.
16.01.13	Submitted Written Scheme of Investigation (WSI) for geophysical survey for comment/ approval.	05.02.13 Archaeological Consultant for RCBC issued email confirming approval of WSI	Instructed commencement of geophysical survey. Summary of survey results is at Section 5.
21.01.13	Meeting with English Heritage (Regional Office Newcastle) to discuss baseline methodology.	English Heritage confirmed they were happy with proposed methodology (study areas, consideration of assets) and agreed with initial identification of key heritage issues: • EH identified Kirkleatham and association with Yearby as key consideration. • Potential impact to Eston Hills historic landscape also a key consideration. URS should contact English Heritage's Places Advisor for assets relating specifically to	URS will assess impact to historical links between Kirkleatham/ Yearby, including views. Impacts to monuments on Eston Hills will be assessed together due to their group value. Refer to impact assessment Section 7 and 8.

Date	Event	Consultee Response	URS Action
		Kirkleatham.	
13.03.13	Email to English Heritage regarding the level of importance to attach to non-designated First World War assets identified in the HVDC cable route	No response from English Heritage	URS have allocated a moderate value to the remains due to historic and potential evidential value, although the level of preservation has not been evaluated (Section 8.2.38).
20.03.13	Correspondence with RCBC to discuss principle of post-determination evaluation.	Following the URS review of geophysical survey results, RCBC agreed during a telephone conversation with URS that the results would not trigger a cable re-route and that trial trenching could be undertaken post-consent.	URS confirmed in email to RCBC dated 26.03.13 that trial trenching would be undertaken post-consent. RCBC reaffirmed this position by return email dated 28.03.13. Trial trenching referenced in Section 11 Mitigation.
06.05.13	URS to EH Places Advisor (Catherine Dewar) to confirm status of Kirkleatham Conservation Area Action Plan (CAAP)	Catherine Dewar replied 09.05.13 – does not know status of CAAP. Suggest contact Phil Jones (RCBC).	URS contacted RCBC.
13.05.13	URS issued email to Phil Jones (RCBC) 13.05.13 regarding status of CAAP	Phil Jones responded 22.05.13 and confirmed he was not aware of a CAAP for Kirkleatham.	Updated technical appendix to confirm status of CAAP (Section 4.2.72).
02.08.13	PEI2 Early Stakeholder Consultation summary of ES issued to EH and RCBC.	EH (Rob Young) responded in email dated 04.09.13. Response stated they had no detailed comments at this stage and confirmed they agreed with the assessment of various impacts on the range of assets identified in the summary report.	Response noted. No further action necessary at this stage.

Date	Event	Consultee Response	URS Action
28.08.13	PEI2 Consultation response from RCBC	David Pedlow responded on behalf of RCBC to Forewind via email (Rebecca Sherwood). There was no comment from the Archaeological Consultant for RCBC.	No action required.
05.12.13	PEI3 Consultation response from EH	EH (Catherine Dewar) responded to request for pre-application advice. Response stated that EH 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.
23.12.13	PEI3 Consultation response from RCBC	No comment relating to cultural heritage	No action required.

3 Methodology

3.1 Sources of Information/ Data

3.1.1 This baseline has been carried out in accordance with the published Standard and Guidance for Historic Environment Desk-based Assessment (IfA 2012) and the Code of Conduct (IfA, 2010) of the Institute for Archaeologists. In summary the work has involved:

- The collation of data on designated and non-designated assets, including historic landscape features, held by Tees Archaeology HER (collected March 2012);
- Review of local history information at Kirkleatham Museum;
- The collation of data on designated assets held on the National Heritage for England List (http://www.english-heritage.org.uk);
- The 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);
- A visual assessment of potential impacts to the setting of designated assets during a site visit; (and)
- A geophysical survey of the construction footprint for Dogger Bank Teesside A & B.

3.1.2 Data sets have been collated and the results processed in ArcView GIS and plotted on Ordnance Survey (OS) base mapping.

3.1.3 All heritage assets within the study area are listed in Appendices A & B and referenced in the text where relevant to the site. The reference numbers are assigned to each designated asset by English Heritage and by Tees Archaeology HER for non-designated assets.

3.2 Assessment Methodology

Definition of Impact

3.2.2 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.

3.2.3 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.

Definition of Importance

3.2.4 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 National Planning Policy Framework (NPPF):

3.2.5 '*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*.'

3.2.6 The importance of heritage assets is determined by professional judgement, guided by statutory and non-statutory designations, national and local policies, and archaeological research agendas.

3.2.7 Paragraph 132 of the NPPF recognises that heritage assets with the highest level of importance (significance) comprise Scheduled Monuments, Registered Battlefields, Grade I and II* listed buildings, Grade I and II* 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. **Table 2** summarises the criteria for assessing the importance of heritage assets.

Table 2: Factors determining the importance of heritage assets

Importance	Criteria
High	Remains of inscribed international importance, such as World Heritage Sites. Grade I and Grade II* Listed Buildings. Grade I and Grade II* Registered Parks and Gardens. Outstanding Conservation Areas Scheduled Monuments. Registered battlefields Non-designated heritage assets of archaeological interest that are demonstrably of equivalent importance to scheduled monuments.
Moderate	Grade II listed Buildings. Conservation Areas. Grade II Registered Parks. Sites of high archaeological resource value as identified through consultation. Historic Townscapes with historic integrity in that the assets that constitute their make-up are clearly legible
Low	Non-designated buildings, monuments, sites or landscapes that can be shown to have important qualities in their fabric or historical association. Locally important historic or archaeological sites, sites with a local value for education or cultural appreciation and of medium archaeological resource rating. Parks and gardens of local interest.
Negligible	Assets whose values are compromised by poor preservation or survival or of contextual associations to justify inclusion into a higher grade. The Site of a findspot removed from its place and with no surviving contextual associations.

3.2.8 Once a level of importance has been assigned, the magnitude of change is measured. The magnitude of change reflects the level of change to a heritage asset as a result of a proposed development. **Table 3** provides a list of the criteria used to determine the magnitude of change.

Table 3: Factors for measuring the magnitude of change

Magnitude of Change	Description of Impact
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.

3.2.9 The level of impact as listed in **Table 4** is determined by combining the importance of the heritage asset and the magnitude of change. The level of impact takes into account embedded mitigation measures which have been incorporated into the scheme as part of the design development process.

Table 4: Level of impact matrix

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

3.2.10 Following the assessment of impact, additional mitigation may be considered to reduce the level of significant impacts. A significant impact is classed as anything moderate and above. Mitigation is used to avoid, reduce or, where appropriate, offset significant impacts. Measures to mitigate impacts to heritage assets would normally consist of preservation in situ where possible, or where this is not feasible, investigation and recording before and/ or during development. Re-assessing impact levels following the implementation of an agreed mitigation strategy allows the residual impact of a proposed development to be determined (**Table 5**).

Table 5: Level of residual impact following mitigation

Residual Impact	Definition
Major Adverse	Negative residual effect that would be an important consideration at a national level.
Moderate Adverse	Negative residual effect that would be an important consideration at a regional or county level
Minor Adverse	Negative residual effect that would be a relevant consideration in a local context
Neutral	Residual effect that is nil or imperceptible
Minor Beneficial	Positive residual effect that would be a relevant consideration in a local context.
Moderate Beneficial	Positive residual effect that would be an important consideration at a regional or county level.
Major Beneficial	Positive residual effect that would be an important consideration at a national level.

4 Baseline Conditions

4.1 Overview

4.1.1 There are no World Heritage Sites within the 5km study area (refer to section 1.4).

4.1.2 22 Scheduled Monuments and 294 listed buildings have been identified within the 5km study area. The listed buildings comprise 11 Grade I, 21 Grade II* and 262 Grade II. The location of Scheduled Monuments and Grade I and Grade II* listed buildings, which are assessed to be of high importance in accordance with **Table 2**, is shown on **Figures 2** and **3**.

4.1.3 Also within the 5km study area are nine Conservation Areas, one Grade II Registered Park and Garden and Eston Hills which is a designated Historic Landscape. These assets are assessed to be of moderate importance in accordance with **Table 2**, and are shown on **Figures 4, 5** and **6**.

4.1.4 108 non-designated assets, including findspots, known archaeological areas and sites of former structures have been identified within the 1km study area (refer to Section 1.4). This number includes two locally listed buildings. The location of non-designated heritage assets is shown on **Figures 7a**, **7b, 8** and **9**, and all assets are listed in Appendix A

4.2 Designated Assets

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. Due to this level of association and group value, a distinction is made in the baseline between the Scheduled Monuments on Eston Hills and those located within the rest of the study area.

Scheduled Monuments on Eston Hills

4.2.2 The majority of the monuments comprise bowl barrows 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, barrows are a major historic element in the modern landscape and their longevity and variation of form provide important information relating to early prehistoric beliefs and social organisation.

4.2.3 An assessment of setting for each monument has been undertaken to aid in the assessment of potential indirect impacts arising from Dogger Bank Teesside A & B. The monuments referenced below are identified by their National Heritage List for England reference number and are shown on **Figure 2**.

1011273 Eston Nab Hillfort, settlement and beacon

4.2.4 **Description**: The monument 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. Excavation has shown that the first activity on the hilltop was in the Early Bronze Age. The hilltop was first enclosed by two phases of wooden palisade during the Late Bronze Age before the construction of the extensive bank and

ditch visible today. Although the palisades are no longer visible at ground level, their foundation slots survive as buried features. In the south-eastern section of the hillfort, there are the remains of a square stone beacon which is believed to have been erected in the early 19th century when it served as a beacon during the Napoleonic wars. Evidence relating to its construction and to the complex history of the entire hilltop as well as the nature and duration of its use will be preserved within the archaeological deposits. Evidence relating to the Bronze Age environment around the monument and of the wider landscape will also survive. The importance of this 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.

4.2.5 **Setting**: 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.

4.2.6 The hillfort is a defensive site and long-range views to and from the monument are a major part of the asset's function and contribute to its significance. The importance of this highly visible location is reinforced by the site's later 19th century use as a beacon. 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 Dogger Bank Teesside A & B will be visible from within the monument. This potential impact to the setting of the asset is considered in Section 8 Assessment of Impacts during Construction, Section 9, Assessment of Impacts during Operation, and Section 10, Assessment of Impacts during Decommissioning.

1011280 Bowl Barrow 550m north-west of Court Green Farm

4.2.7 **Description**: The monument includes a bowl barrow of Bronze Age date situated below the top of a hill near the edge of a scarp at 200m above Ordnance Datum (AOD). The barrow mound measures 12m across and survives to a height of 60cm. The surrounding ditch, dug to provide the material to build the mound, is no longer visible at ground level but it survives as a buried feature measuring 2m across.

4.2.8 **Setting**: Visually, the monument is separated from contemporary features due to intervening plantation. The 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, 700m north-west of High Court Green

4.2.9 **Description**: The monument comprises two bowl barrows of Bronze Age date situated on a south facing slope at approximately 225m AOD. The first barrow measures 9m across and survives to a height of 20cm. The surrounding ditch, dug to provide the material to build the mound, is no longer visible at ground level but survives as a buried feature measuring 2m across. The second mound, situated at a distance of 10m to the north-west, measures 10m in diameter and stands to a height of 30cm. The surrounding ditch, dug to provide the material to build the mound is no longer visible at ground level but survives as a buried feature measuring 2m across.

Setting: 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 1.1km north-west of High Barnaby Farm

4.2.10 **Description**: The monument includes a bowl barrow of Bronze Age date currently situated within a forestry plantation, on an area of flat land with a southern aspect at approximately 225m AOD. The barrow mound measures 22m across and survives to a height of 1m. The surrounding ditch, dug to provide the material to build the mound, is no longer visible at ground level but survives as a buried feature measuring 2m across. The northern part of the barrow mound and ditch beyond the fence have been truncated by a track, and destroyed.

4.2.11 **Setting**: 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 450m north-west of High Court Green

4.2.12 Description: The monument comprises a bowl barrow of Bronze Age date situated in a coniferous plantation on a flat, south-facing terrace which lies at approximately 200m AOD. The mound measures 13m in diameter and survives to a height of 1m. The surrounding ditch, dug to provide the material to build the mound, is no longer visible at ground level but survives as a buried feature measuring 2m across.

4.2.13 **Setting**: 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 800m north of High Barnaby Farm

4.2.14 **Description**: The barrow mound measures 8m across and survives to a height of 20cm and is located at 225m AOD. The surrounding ditch, dug to provide the material to build the mound, is no longer visible at ground level but it survives as a buried feature 2m wide.

4.2.15 **Setting**: 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 850m north-west of High Barnaby Farm

4.2.16 **Description**: Three bowl barrows of Bronze Age date situated on flat land with a southern aspect at a height of approximately 225m AOD. The western barrow mound measures 17m in diameter and survives to a height of 1m. There are signs of disturbance at the centre of the mound, the result of partial excavation in the past. The second mound, some 10m to the east measures 16m across and stands to a height of 1.2m; it also shows evidence of slight central disturbance. Abutting the north-east side of the barrow is a small barrow 8m in diameter and 70cm high. Each of the barrow mounds is surrounded by a ditch dug to provide the material to build the mound; although no longer visible at ground level these ditches survive as buried features each measuring 2m across.

4.2.17 **Setting**: 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 500m north-west of High Court Green

4.2.18 **Description**: A large bowl barrow situated on a south-facing slope at a height of approximately 210m AOD. The barrow mound measures 21m in diameter and survives to a height of 50 cm. This monument is of unusual form; at its centre there is a smaller mound measuring 4m in diameter and standing to a height of 1m. The platform area between the central mound and the edge of the barrow is slightly concave in profile. The surrounding ditch survives as a buried feature measuring 2m across. The eastern edge of the barrow and its ditch has been truncated by the forestry plantation and does not survive beyond the fence.

4.2.19 **Setting**: 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 1km north-west of Court Green Farm

4.2.20 **Description**: A bowl barrow situated on a north-facing scarp on the edge of a densely wooded plantation; at a height of approximately 200m AOD. The barrow mound measures 12m across and survives to a height of 50cm. The surrounding ditch survives as a buried feature.

4.2.21 **Setting**: 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 1.1km north-west of High Court Green

4.2.22 **Description**: A bowl barrow of Bronze Age date situated near the edge of a scarp at approximately 230m AOD. The barrow mound has been truncated and spread by ploughing; it measures 12m across and survives to a height of 30cm. The surrounding ditch, dug to provide the material to build the mound, is no longer visible at ground level but survives as a buried feature.

4.2.23 **Setting**: There is 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 1km north west of High Court Green

4.2.24 **Description**: A bowl barrow situated near the top of a hill at a height of 230m AOD. The barrow mound measures 16m in diameter and survives to a height of 1m. The remains of what appears to be a modern field clearance cairn lie at the centre of the mound. The surrounding ditch survives as a buried feature.

4.2.25 **Setting**: 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 600m north-west of Court Green Farm

4.2.26 **Description**: The monument comprises a Bronze Age bowl barrow situated on the top of a hill near the edge of a scarp. The barrow mound measures 17m across and survives to a height of 1m. Several hollows at the centre of the mound represent the remains of partial excavation in the 19th and early 20th century; Bronze Age pottery and several flint tools were recovered from these excavations.

4.2.27 **Setting**: The immediate setting of the monument is defined by its position on the edge of a plantation, and shared views with the bowl barrow 1011269 which is located to the north-west (1011281).

1011284 Bowl Barrow 850m north-west of High Court Green

4.2.28 The monument comprises a bowl barrow situated on the edge of a scarp. The barrow mound measures 12m across and survives to a height of 1m. At the centre of the mound there is a hollow measuring 3m across, the remains of a partial excavation in recent years.

4.2.29 **Setting**: 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 1.2km north-west of High Barnaby Farm

4.2.30 **Description**: The monument comprises a bowl barrow of Bronze Age date situated on open moorland with a southerly aspect. The mound measures 10m across and survives to a height of 1.2m. At the centre of the mound there is a large hollow measuring 4m across, the result of partial excavation in the 19th century by William Ord which revealed the remains of a Bronze Age cremation and Bronze Age pottery.

4.2.31 **Setting:** The setting is 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 1.4km north-west of High Barnaby Farm

4.2.32 **Description**: The monument comprises a bowl barrow situated near the top of a scarp on a south-facing slope. The barrow mound measures 15m across and survives to a height of 1m. At the centre of the mound there is a hollow, the remains of partial excavation in the 19th century.

4.2.33 **Setting**: The setting of the barrow 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 Upsall Moor (also referred to as Mount Pleasant)

4.2.34 Description: The monument comprises a round barrow situated in a prominent position at the western end of the Eston Hills ridge. The barrow has an earth and stone mound standing up to 2m high. It is round in shape and 28m in diameter. In the centre of the mound there is a hollow caused by excavations in the past. Limited excavation by E W Sockett in 1949 showed that the barrow was originally structured around two circles of stones which defined it and supported the mound. Three stones belonging to the outer circle are visible on the surface of the mound.

4.2.35 **Setting**: 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 1.45km west of High Barnaby Farm

4.2.36 **Description**: The bowl barrow mound measures 11m across and survives to a height of 1m. At the centre of the mound there is a hollow measuring 3m across, the remains of partial excavation in the 19th century.

4.2.37 **Setting**: Located at approximately 200m 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 1.3km north of Mill Farm

4.2.38 **Description**: The monument comprises a ring cairn situated on an area of flat moorland. The ring cairn measures 16m in diameter; the annular bank, composed of small stones and earth, is 3 metres thick and stands to a height of 0.2m. It encloses a hollow central area measuring 10m in diameter. The burials which were deposited within the central area are not visible but will survive as buried features below the ground surface. There is no surface trace of an internal or external stone kerb revetment.

4.2.39 **Setting**: The cairn's setting is defined by its prominent position at 210m AOD overlooking the Tees Valley to the south.

1011278 Bowl Barrow 1.2km north-west of High Barnaby Farm

4.2.40 **Description**: The monument includes a bowl barrow of Bronze Age date. The mound measures 9m across and survives to a height of approximately 1m. At the centre of the mound there is a large hollow, the remains of partial excavation in the 19th century by William Ord which revealed the remains of a Bronze Age cremation within a stone cist.

4.2.41 **Setting**: 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 Impact to Eston Hills Historic Landscape

4.2.42 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. 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 in Section 8, Assessment of Impacts during Construction, Section 9, Assessment of Impacts during Operation, and Section 10 Assessment of Impacts during Decommissioning.

Scheduled Monuments in the 5km Study Area

4.2.43 There are an additional three scheduled monuments within the 5km study area which are not located within Eston Hills Historic Landscape.

1018659 Two Round Barrows on Patterson's Bank

4.2.44 The monument comprises two round barrows on Patterson's Bank which are in two separate areas of protection. The barrows are adjacent, one lying to the north east of the other. The larger of the two is to the south-west and has an earth and stone mound 17m in diameter and standing up to 1.8m high. It was originally surrounded by a kerb of stones which defined the barrow and supported the mound, two of which were decorated with cup marks. Some of the kerb stones are visible at the base of the mound in the south west and one in the east, but the remainder have been either taken away or buried by soil slipping from the mound. One cup marked stone is visible on the east side of the monument but it has slipped from its original position down the slope into a small quarry which clips the edge of the barrow. There is a hollow in the centre caused by the removal of an Ordnance Survey triangulation point. The smaller barrow lies 50m to the north east. It has a mound which is 11m in diameter and stands up to 1.5m high. In the centre there is a hollow caused by excavations in the past.

4.2.45 **Setting**: 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. The setting of these assets is defined primarily by each other. The proximity of these two barrows and their separation form the main groupings at Eston Hills may indicate they derived from a different group or had a different level of status.

4.2.46 There will be no change to the physical appearance or setting of the assets as a result of the proposed development and no further assessment is required.

1020311 First World War early warning acoustic mirror

4.2.47 **Description**: The monument comprises an early 20th century military early warning device located 1.2km inland from the coast on a flat plain on the southern side of the Tees estuary. The mirror was part of a chain of similar acoustic devices located on the north east coast extending from the Tyne to the Humber. They were erected to provide early warning of potential attacks on the important industrial complexes in the north east from ships and Zeppelins during the First World War. Little is currently known of the history and development of this particular system and it remains something of an enigma. Successful experiments in acoustic detection date to 1915 and it is thought that the Tees/Tyne early warning system dates to the last two years of the war. This mirror faces NNE and was positioned to cover the mouth of the Tees estuary. There were at least two other mirrors known to be part of the Tees estuary system. One was located at High Springwell 17km away on the northern side of the estuary and was orientated to cover the north eastern approaches. This was demolished in the 1960s. The other mirror is located overlooking the eastern approaches to the estuary 17km to the east at Boulby and is the subject of a separate scheduling. The mirror is a `U'-shaped concrete built structure with an inclined face and a shallow concave bowl shaped into its centre. The reflector is a smooth bowl 4.5m in diameter. Two flanking walls measure 3.9m long. The monument also includes a margin of 5m beyond the mirror on the northern, western and southern sides in which remains of the listening facilities may survive, and is also a grade II* listed structure.

4.2.48 **Setting**: 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. There will be no change to the physical appearance or setting of the asset as a result of the proposed development and no further assessment is required.

1018948 Manorial settlement, dovecote and remnant field system

4.2.49 **Description**: The monument includes the remains of a manorial settlement, a dovecote and part of a field system of medieval date, situated on a level site 1.25km from the sea. The settlement and its dovecote were referred to in a document dated 1304 when they belonged to the Fauconberg family. In 1366 the manorial settlement with its dovecote, orchards and gardens was assigned to Isabel, the widow of Walter de Fauconberg. The manorial settlement is visible as a series of earthworks which include the foundations of buildings, enclosures and ponds contained within a rectangular enclosure.

4.2.50 **Setting**: The setting of the settlement is defined by the extent of the associated earthworks within an enclosed space. The setting of the monument will not change as a result of the proposed development and no further assessment is required.

Listed Buildings

4.2.51 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.

4.2.52 There are no listed buildings within the construction working width of the proposed HVDC and HVAC cable routes or within the footprint of the proposed converter stations site. One structure which appears on the local list maintained by RCBC, World War II pillbox (4950), is located within the HVDC construction working width (**Figure 7b**) and potential impacts to this asset are assessed further in Section 8, Assessment of Impacts during Construction.

Grade I listed buildings

4.2.53 There are 11 Grade I listed buildings in the 5km study area (**Figure 2**). Five of the buildings have no visual relationship with the proposed development due to distances involved and intervening settlement, landform and vegetation and no further assessment is required. The assets requiring no further assessment comprise:

- 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. The setting of the asset will not be impacted by the proposed development and no further assessment is required.
- 1139662 – A stableblock in Church Lane, Ormesby Hall. The stableblock 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 stableblock does not share a visual relationship with the proposed development and falls outside of the ZTV. The setting of the asset will not be impacted by the proposed development and no further assessment is required.

- 1387553 – Marske Hall. The Hall is a 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. As such the setting and importance of the asset will not be affected and no further assessment is required.
- 1262832 – Skelton Castle. The Castle is a former country house, set in its own landscaped grounds with associated outbuildings including stables. The building has been developed into individual apartments with views across the gardens and ornamental lake. The proposed development will not be visible from the building and the asset is located outside of the ZTV. As such the setting and importance of the asset will not be affected and no further assessment is required.
- 1250412 – This asset represents the stable house and coach house which date to the early 19th century. The buildings form a U-shaped range and are arranged around a courtyard to the west which defines the immediate setting. The stables and coach house are currently residences and garages. The buildings do not share a visual relationship with the proposed development and are located outside of the ZTV. As such the setting and importance of the asset will not be affected and no further assessment is required.

4.2.54 Six of the Grade I buildings are located within the village of Kirkleatham (**Figure 3**). 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 the further assessment of Kirkleatham Conservation Area as a whole. The potential impact to listed buildings within Kirkleatham Conservation Area is considered in Section 8, Assessment of Impacts during Construction and Section 9, Assessment of Impacts during Operation.

Grade II* listed buildings

4.2.55 There are 21 Grade II* listed buildings in the 5km study area (**Figure 2**). A total of 13 of the buildings 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 Dogger Bank Teesside A & B and no assessment of impact is required. Six of the listed buildings are located within Kirkleatham village (**Figure 3**) and any potential impact to these structures will be included in the assessment of impact on Kirkleatham Conservation Area (4.2.72). The remaining two listed buildings comprise the Church of St Cuthbert at Wilton (1310519) (**Figure 2**) and the Old Hall Farmhouse and garden wall at Lackenby (1139659). Impacts to the Church of St Cuthbert are considered as part of the assessment of Wilton Conservation Area (4.2.78).

4.2.56 Old Hall farmhouse is associated with a grade II listed barn and stable range and collectively these buildings have a group value. The farmhouse dates to the mid-late 17th century and has several later alterations. The buildings are arranged in a rectangular layout around an enclosed yard which defines the immediate setting. The wider setting of this group of buildings is defined by the extent of the historic settlement at Lackenby and includes the remains of ridge and furrow in the arable fields to the south. Impacts to the setting of these buildings may occur during the construction of the HVAC cable and during the National Grid enabling works at the existing Lackenby substation. Potential impacts to this group of assets will be assessed further in Section 8, Assessment of Impacts during Construction and Section 9, Assessment of Impacts during Operation.

4.2.57 The 13 Grade II* buildings requiring no further assessment are listed below:

- 1160408 – An early 20th century Baptist Church in South Bank, Middlesbrough.

- 1139613 – Red Barns House and Hotel. Mid-late 19 century house and stables, Redcar.
- 1160275 – First World War listening post also scheduled monument 1020311, Redcar.
- 1387526 – Saltburn Pier. Constructed between 1867 and 1869 and restored in 1978.
- 1387519 – Inclined tramway at Saltburn Pier – lower building.
- 1387523 – Inclined tramway at Saltburn Pier – upper building.
- 1387499 – War memorial in Valley gardens, Saltburn.
- 1251499 – Rushpool Hall Hotel. Constructed 1862-63, Saltburn.
- 1263246 – The old church of All Saints; located in the wider grounds associated with Skelton Castle house, Skelton.
- 1139759 – The old church of St Andrew at Upleatham. Located within graveyard enclosed by a low dry stone wall.
- 1329554 – Tockets Mill, located adjacent to Tockets Beck within dense woodland.
- 1329638 – West Lodges associated with Ormesby Hall.
- 1310999 – Manor House, Normanby.

Grade II listed buildings

4.2.58 There are 262 Grade II listed buildings within the 5km study area (**Figure 4**). The majority of the buildings 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.

4.2.59 Two of the Grade II buildings are located at Lackenby and are located on the edge of the ZTV; as such there is potential for the roofs of the converter stations to be visible during operation. In addition the construction of the HVAC cable route and the National Grid enabling works may result in temporary impacts to the setting of the buildings. The buildings comprise a stable range (1159438) and a byre barn (1329623) (**Figure 4**) and are associated with the Grade II* Old Hall farmhouse. Potential impacts to these assets will be assessed further in Section 8, Assessment of Impacts during Construction and Section 9, Assessment of Impacts during Operation.

4.2.60 Four of the buildings are within Lazenby and comprise No.9 Chapel Street (1139660) and No.11 Chapel Street (1139661), the village hall (1311016) and Grange Farmhouse and cottage (1329614) (**Figure 6**). 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 construction or operation of Dogger Bank Teesside A & B that will affect their setting. There will be no change to these assets and no further assessment of impact is required.

4.2.61 There are 12 Grade II listed buildings within Kirkleatham Conservation Area (**Figure 5**). As all of these assets contribute to the character of the designated area, potential impacts will be assessed at the same time as the assessment of impact to the Conservation Area (refer to Section 8, Assessment of Impacts during Construction and Section 9, Assessment of Impacts during Operation).

4.2.62 There are 18 Grade II listed buildings within Wilton Conservation Area (**Figure 6**). As all of these assets contribute to the character of the designated area, potential impacts will be assessed at the same time as the assessment of impact to Wilton Conservation Area.

4.2.63 Yearby Conservation Area contains six Grade II listed buildings. Potential temporary impacts to the setting of the listed buildings may arise during the construction of the HVDC cable route. Impacts to the buildings will be assessed as part of potential impacts to the Conservation Area (refer to Section 8, Assessment of Impacts during Construction and Section 9, Assessment of Impacts during Operation).

4.2.64 Turner's Arms Farmhouse (1159818) is located on the eastern side of Fishponds Road and is Grade II listed. 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 (refer to Section 8, Assessment of Impacts during Construction).

4.2.65 Fell Briggs Farmhouse (1387500) is 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 (refer to Section 8, Assessment of Impacts during Construction).

4.2.66 Ryehills Farmhouse (1139618) is 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 (refer to Section 8, Assessment of Impacts during Construction).

Conservation Areas

4.2.67 There are nine conservation areas in the 5km study area (**Figure 4**). Four of the areas; 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. 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-by-the-Sea Conservation Area

4.2.68 Marske Conservation Area is located approximately 900m south-east of the cable landfall for Dogger Bank Teesside A & B, and over 6km east of the proposed converter stations site, and the HVAC cable route.

4.2.69 The conservation area encompasses the historic core of the town, following Main Street from the station to the south to the sea to the north. The present High Street forms the principal linear axis of the settlement, running from north to south. The street is enclosed by an almost continuous building line featuring structures from the 19th and 20th century. 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).

4.2.70 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 Section 8, Assessment of Impacts during Construction.

Yearby Conservation Area

4.2.71 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.

4.2.72 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. The buildings within the village consist of single and 2-storey 18th century cottages and farm buildings. The setting of Yearby is defined by the arable landscape it sits within, however the landscape has changed significantly and the former medieval layout of burgage plots and small strip fields have been replaced by large enclosed fields as a consequence of modern farming practices (RCBC 2011b).

4.2.73 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 nortwestern edge of the village. Potential impacts to the setting of Yearby will be assessed further in Section 8, Assessment of Impacts during Construction, and Section 9, Assessment of Impacts during Operation.

Kirkleatham Conservation Area (Figure 4)

4.2.74 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 Conservation Area Action Plan (CAAP) proposed for Kirkleatham is no longer being undertaken by RCBC; however key views and characteristics which contribute to the area's importance are set out in Kirkleatham Conservation Area Appraisal (RCBC 2011c). Kirkleatham contains six Grade I, six Grade II* (**Figure 3**) and 12 Grade II listed buildings (**Figure 5**).

4.2.75 The variety of building form in Kirkleatham is dictated by the diversity of building type. Buildings range from the Grade I listed Church of St Cuthbert (1139638), the Grade II* listed Old Hall Museum (1139641) (Plate 1), and the institutional Grade I listed Turner's Hospital (1310786). The building type also includes the stable block of the demolished Kirkleatham Hall, garden buildings and structures, and detached houses and terraced cottages (RCBC 2011c). The buildings date to 17th and 18th centuries and range in architectural style from Queen Anne through Baroque, Rococo and Palladian to Gothic.

Plate 1: Kirkleatham Old Hall Museum.

4.2.76 An important component of Kirkleatham's special character is its landscape setting comprising wooded parkland, with open farmland (formerly parkland) lying to the south. Historically this setting is important, as beyond Turner's Hospital and the former Kirkleatham Gardens which are to the south of the former A174 carriageway, is the agricultural landscape at Yearby which once formed part of Kirkleatham Hall Park deer park (Plate 2).

Plate 2: View from the southern edge of Turner's Hospital, within Kirkleatham Conservation Area, south towards the proposed HVDC cable route.

4.2.77 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.

4.2.78 The open aspect of the Old Hall Museum affords unhindered views out across the open fields towards the wooded hills rising abruptly above the village of Yearby and beyond to the Eston and Upleatham hills. Similar views are obtained from the truncated section of the former A174 road, to the east of Kirkleatham Gardens (RCBC 2011c).

4.2.79 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 in Section 8, Assessment of Impacts during Construction and Section 9, Assessment of Impacts during Operation.

Wilton Conservation Area (Figure 4)

4.2.80 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 (**Figure 6**).

4.2.81 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 castle is a 2 and 3-storey, rectangular-plan mansion with symmetrical elevations facing north and south. 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 church is constructed of sandstone and is a simple structure comprising a nave and chancel and built in a mixture of Romanesque and Gothic styles. 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.

4.2.82 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 Teesside A & B will not be visible and are located outside of the ZTV. From the avenue the traces of denuded ridge and furrow are also visible in the fields to the north.

4.2.83 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 Chemical Works 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 Registered Park and Garden, Saltburn

4.2.84 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**). The 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 *c*. 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.

4.2.85 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.

4.2.86 There are three main entrances to the site. The west entrance is situated along Glenside, directly opposite the east front of the Zetland Hotel. This, with elaborate gate piers and steps, was formerly a private entrance, used only by the Zetland Hotel guests. In the south corner of the site is a second entrance, with a Gardener's Cottage, situated on Rose Walk. This entrance can be approached from Albion Terrace through Camp Bank or via Glenside to the north. The third entrance lies at the north end of the site, along the Lower Promenade, and also gives access to the nearby miniature railway platform.

4.2.87 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

4.2.88 The Eston Hills are an outlier of the North York Moors (**Figure 4**). 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.

4.2.89 The operation of 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 will be assessed further in Section 9, Assessment of Impacts during Operation.

4.3 Non-designated Assets

4.3.1 108 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 A and are illustrated on **Figures 7a** and **7b**.

4.3.2 There are no known non-designated assets located within the proposed converter stations site. There are four non-designated assets, including a locally listed structure, recorded within the proposed HVDC cable corridor (**Table 6**).

Table 6: Non-designated assets within the HVDC cable route or within close proximity to the HVDC cable route

Asset ID	Figure	Description
4049	7a	Site of a brick extraction pit/ pond
4044	7a	Site of 19th century dovecote
4950	7b	World War II pillbox; locally listed structure
3585	7b	World War II gun emplacement complex

4.3.3 The following provides a chronological overview of the archaeological and historical character of the study area as defined in Section 1.4.

Palaeolithic to Bronze Age

4.3.4 There are no known Palaeolithic finds in the 1km study area, but Palaeolithic and early prehistoric activity is recorded along the north-east coast. A single Palaeolithic flint tool has been recovered from South Gare at Redcar, and submerged forests and peat beds have been identified in the inter-tidal zone off the North East Coast. C.T Trechman, who had been involved in an archaeological investigation (Trechman 1905, 1912), reported on flints collected from the submerged forest at Hartlepool which included animal bones dating from the early Mesolithic, late Mesolithic and Neolithic periods, a Neolithic skeleton and a hurdle panel radiocarbon dated to c.3700 cal BC (Tooley 1975). Further work undertaken by Cleveland Archaeology Section in 1990 uncovered a line of wooden stakes in association with a small pile of domestic waste, worked flints and a cut piece of antler which may indicate the presence of a settlement. Two Neolithic stone axe-heads have been recorded within Kirkleatham parish (1002 and 1066 (**Figure 8**)) and further evidence of Neolithic activity has been recorded outside the study area at Marske Sands.

4.3.5 Towards the end of the Neolithic and into the Bronze Age, a culture of land ownership developed and visible evidence survives on higher ground in the form of settlements, field systems, burial mounds and defensive positions. Funerary monuments represent the largest proportion of features representing the Bronze Age period and despite various levels of disturbance, the Bronze Age barrows on Eston Moor and Upleatham Hills survive relatively well. Contemporary with the barrows is a palisaded settlement at Eston Nab which preceded the hillfort (1011273). This was first constructed during the early Bronze Age and contains evidence of both settlement and burial sites.

4.3.6 Evidence for activity relating to Bronze Age settlement is present within the study area and the site of an early prehistoric enclosure is recorded at Blacks Bridge (4343) (**Figure 7b**) and a

lithic scatter 400m west of the enclosure at Wheatlands Farm (4446) (**Figure 7b**). Another two enclosures have been recorded to the south of Yearby (3526 and 3524) (**Figure 7b**) and a flint scatter (1701) and findspot of a beaker are recorded to the west of the village (**Figure 7b**). The area of the recorded enclosure at Blacks Bridge (4343) is within the HVDC corridor however this site has been disturbed significantly in the past and has subsequently been used for landfill. As such there is no potential for archaeological remains to be present within this section of the HVDC cable corridor. Collectively these features indicate evidence of Bronze Age activity and settlement within the area and suggest a low potential for previously unrecorded features of this date to be present within the construction footprint of Dogger Bank Teesside A & B.

Iron Age to Roman

4.3.7 During the Iron Age, the focus of settlement shifted away from the moor and new settlements were built in the valley, although Iron Age pottery scatters, associated with settlement activity, have been recorded outside of the study area on Wilton Moor (459 and 460) and an enclosure is present on Eston Moor (470).

4.3.8 Evidence for Iron Age industry has been recorded at Foxrush Farm, Dormanstown which is 600m north of the study area. Furnace and mould fragments were recorded which represent the smelting of iron ore and the manufacture of iron objects. Within the study area Iron Age findspot at Lazenby (1204) (**Figure 7a**), a findspot of a bracelet was found north of Yearby (238) (**Figure 7a and 9**) and a beehive quernstone fragment found at Kirkleatham (1043) (**Figure 8**).

4.3.9 There is very little evidence for Roman activity in the area. Finds include several pottery scatters at Kirkleatham (7201) (**Figure 8**), Lackenby (1079) (**Figure 7a**), and Grangetown (1573) (**Figure 7a**). In addition a Roman brooch (4857) was found at Grangetown approximately 400m west of the pottery scatter (**Figure 7a**). The lack of evidence for Roman settlement is unusual given the known earlier activity in the area; however the presence of these finds does at least indicate a low to moderate potential for previously unrecorded activity to be present within the construction footprint of Dogger Bank Teesside A & B.

Early Medieval to Medieval

4.3.10 The medieval rural landscape was one of small villages, with houses clustered around a parish church. Other characteristic sites include castles, moated manors, fishponds, patches of ridge-and-furrow and deserted medieval villages. Tees Archaeology HER cites the location of remnant medieval landscape features near the landfall at the southern edge of Redcar (1556) and at the point where the proposed HVDC cable route crosses the railway line (2842) (**Figure 7b**). This area has been disturbed significantly in the past and has subsequently been used for landfill. As such there is no potential for archaeological remains to be present within this section of the HVDC cable corridor.

4.3.11 The majority of known medieval activity is located within existing settlement areas. Kirkleatham is first recorded in the Domesday survey (dated 1086) with lands belonging to William de Percy, which continued through various lineage's until 1608. The location of the Domesday settlement is unknown, although it is suggested that the later settlement took the traditional pattern of a two row green village, laid out along the course of the old A174 (Rowe 1998).

4.3.12 Coatham is first mentioned by name in the medieval period and in Domesday Coatham is possibly represented by a holding of 3 carucates in Kirkleatham. The current golf links are in

the vicinity of 'East Coatham' - a medieval settlement first recorded in 1123, however the original extent and exact location of this settlement is not fully understood. From 1257 (East) Coatham was the site of a medieval market and fair, which later developed a port and numerous salt works. The extraction of salt from seawater became a major industry in the medieval period and numerous salt mounds survive at Coatham Marsh.

4.3.13 West Coatham is distinct from East Coatham and is first mentioned in 1236–9 and descended with Wilton Manor (Page, 1923).

4.3.14 The settlement at Yearby is represented by the 'manor' and 9 carucates (a plot of land tillable by eight oxen in a ploughing season) held in Kirkleatham in 1086 by the Count of Mortain, and later by the Brus family. In around 1119–24 Robert de Brus granted to Guisborough Priory 'all Lyum,' 9 carucates of land and tithe of his lordship of 'Lyum.' The gift was confirmed to the priory by Henry I and Henry II, and in 1284–5 the prior claimed to hold the 9 carucates in frankalmoign (a form of tenure) with soke (the right of local jurisdiction), and toll and team.

4.3.15 In 1365 Edward III granted the convent free warren in their demesne lands in 'Ureby,' and in 1539 the priory manor to which rights in Coatham were attached was called 'Uverby.' After the Dissolution the manor was given by Henry VIII to Sir Charles Brandon and his wife Elizabeth for their lives, and in 1563 Queen Elizabeth sold the reversion of the manor and courts, and lands pertaining to the manor to Richard and Thomas Osborne of London and their heirs. In November 1613 the manor was sold for £3,200 to Sir Warwick Hele. His nephew John Hele inherited it in 1626, and made it over in 1635 to John Turner, and from that time the manor of Yearby has followed the descent of Kirkleatham.

4.3.16 Medieval activity in the study area relates primarily to areas of known settlement and several pottery scatters are recorded at Kirkleatham (1801, 1802 and 4039) as well as a boundary ditch on the eastern side of Kirkleatham (5133 and 5134) along with fragments of early medieval and medieval worked stone in the vicinity of St Cuthbert's Church (4807 and 1426) (**Figure 8**).

4.3.17 To the west of the converter stations site, approximately 200m south of the HVAC cable route is the site of medieval ridge and furrow and field system at Lazenby Farm (1220), and to the south-east of the existing substation at Lackenby is the site of the medieval village of Lackenby (4478) and several pottery scatters (1082 and 1083) (**Figure 7a**). Remnants of medieval settlement and agriculture have been identified from aerial photographs in this area comprising north-south aligned ridge and furrow bounded to the north by an east-west aligned causewayed ditch (1082 AP Reference: 1990/9/29 and 1990/9/27) (**Figure 7a**). This area is currently used as pasture and is located outside of the construction footprint for Dogger Bank Teesside A & B and is outside of the indicative red line boundary for the National Grid enabling works.

4.3.18 The level of settlement and agriculture in the study area indicates a moderate to high potential for encountering previously unrecorded archaeology of this period in the construction footprint of Dogger Bank Teesside A & B.

Post-Medieval to Modern

4.3.19 The earliest known plan of Kirkleatham settlement is an engraved view of the estate from the north produced by L Kynff and J. Kip around 1700 (**Plate 3**). The engraving depicts Kirkleatham Hall and the land to the south. At the time of the engraving it appears that parts of the village were being cleared to make way for Sir William Turner's Hospital and the kitchen gardens of Kirkleatham Hall.

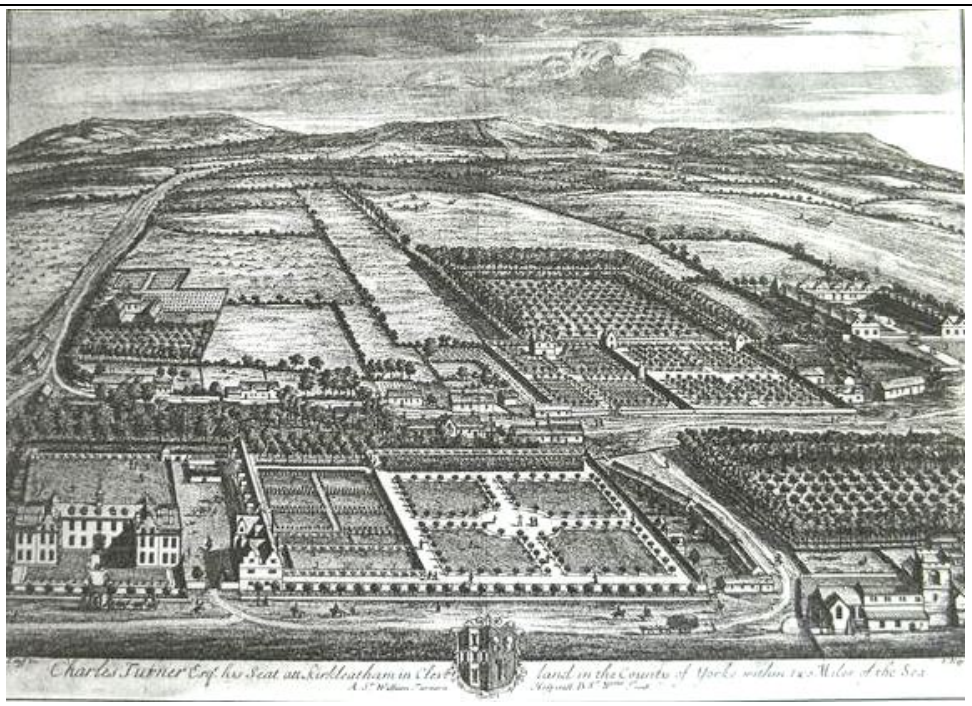

Plate 3: View from the north looking south. Kirkleatham *c.* 1700. Kirkleatham Hall is bottom left; Turner's Hospital is on the right.

4.3.20 The engraving depicts Kirkleatham's relationship with the surrounding area, and the depiction of the fields either side of Fishponds Road, which is shown leading up to the village, is a clear indication of the village's historical links with the agricultural land to the south of Kirkleatham and with the settlement at Yearby, which is shown to the right of Fishponds Road.

4.3.21 A 'Plan of the Manor of Kirkleatham' drawn from a survey of 1774 by Thomas Atkinson represents the earliest known map of the estate (Rowe 1998) (**Plate 4**). The main buildings portrayed comprise the remodelled Kirkleatham Hall, the Free School (Old Hall), St Cuthbert's Church and Turner's Hospital.

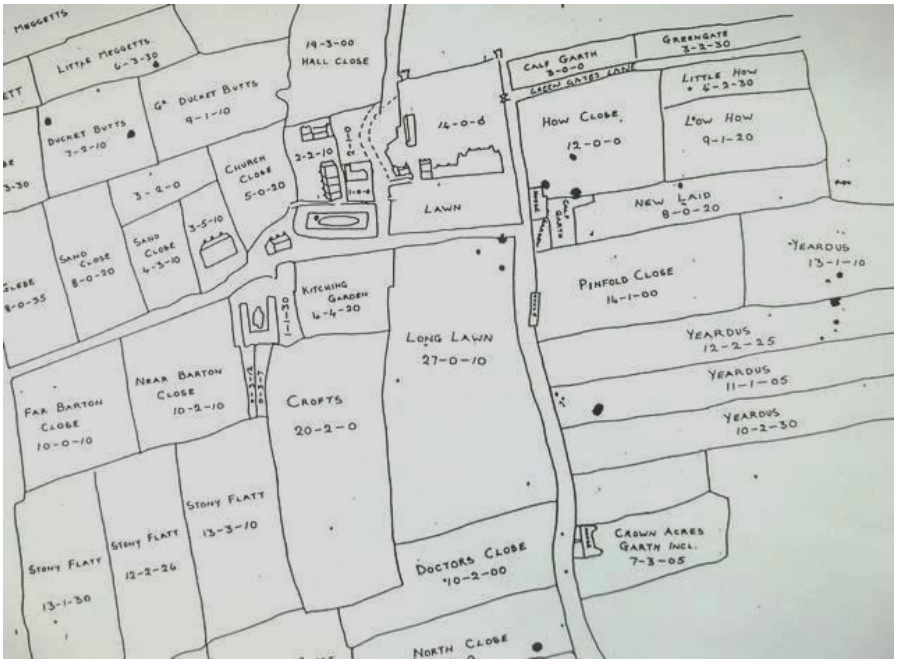

Plate 4: Extract from a copy of 'A Plan of the Manor of Kirkleatham' by Thomas Atkinson (1774)

4.3.22 The map is an aerial view aligned north and shows Fishponds Road leading up to the east-west aligned main route through Kirkleatham village. Turner's Hospital and the Kitching (sic) Garden are shown, but the rows of cottages either side of the main route and the pattern of enclosure to the south of Kirkleatham Hall, depicted by the earlier engraving, are no longer present.

Industry

4.3.23 The Borough of Redcar and Cleveland has an abundant mineral wealth and industry developed specifically for the extraction of mineral such as alum and ironstone. In addition, the area has numerous quarries relating to sand, gravel and stone extraction as well as brickworks developed at local clay pits in response to the demand for building materials in the 19th century.

4.3.24 The processing of alum is considered as one of the earliest chemical industries in the British Isles (Rowe and Green 2007). Post-medieval alum works are visible from aerial photography in the Redcar and Cleveland area, the most impressive example being Boulby Alum Quarry (612070) which is outside of the study area.

4.3.25 Many local landowners realised the potential of ironstone deposits in the early 1800s, and by 1847 ore was being shipped from Skinningrove to the blast furnaces at Tyneside. The discovery of ironstone at Eston Hills led to the establishment of blast furnaces near to the source and the construction of Eston Iron Works, which consisted of three blast furnaces. Identical furnaces were constructed at the nearby Cleveland Iron Works, closely followed by new works at Lackenby in 1871, Coatham in 1873 and Redcar and Skinningrove in 1874 (Rowe and Green 2007). The location of industrial sites in the study area is well recorded and the potential for encountering previously unknown assets from this period is low.

First World War

4.3.26 The use of aircraft as offensive weapons was a significant 20th century development in the history of warfare, and provoked new systems of strategic air defence. Experiments in early warning systems started before 1920 with the new possibility of attacks by airships. Early warning was initially based on visual spotting, but acoustic detection devices were soon developed. Mirrors were upright concave bowls between 3m and 4m in diameter; the walls were curved vertical structures up to 61m in length; the disc system used horizontal concave bowls designed for use in pairs as aircraft passed overhead to measure speed. At their most sophisticated, the devices could identify the sounds of surface vessels or aircraft up to 25 miles (c40km) away. The first operational acoustic reflectors were a pair of adjustable mirrors erected on the Kent coast in 1917, followed by a series of concrete static mirrors established on the north east coast.

4.3.27 The First World War early warning acoustic mirror 650m north-west of Bridge Farm (Scheduled Monument 1020311) (**Figure 2**), is only one of four known surviving examples in the north east of England. It survives well and makes a significant contribution to the study of early 20th century defences in England.

4.3.28 The First World War has left very little evidence on the North East coast, but the few extant features which are still present, either as earthworks or cropmarks, are those of practice trenches. These can be found almost anywhere throughout the country; over varying terrain depending on the training of the soldiers at the time and where they were to be based.

4.3.29 An example of practice trenches, displaying the classic layout of a front line trench, reserve trenches and communication trenches with saps in-between, has been observed previously during an assessment of aerial photography for the area (NMR 1458481) (English Heritage 2008). The location of the practice trenches noted on the aerial photograph is present within the working construction width of the proposed HVDC cable (**Plate 5**) and was detected within the HVDC cable landfall area during a geophysical survey undertaken for Dogger Bank Teesside A & B (Area 17, **Figure 7b**).

Plate 5: Extract from English Heritage 2008 National Mapping Project. Oblique aerial view to the south. A1085 Coast Road on the left. First World War practice trenches.

4.3.30 An airfield in Marske (NMR 1458559) may date to the First World War, but could also be an early grass-runway airfield from World War II (English Heritage 2008) (467) (**Figure 7b**).

World War II

4.3.31 Due to the strategic importance of the north-east coast in wartime home defence, World War II military remains are well represented in the area. One locally listed structure (4950) represents a World War II pillbox which is located beneath a road bridge adjacent to the railway line; this structure is located within the HVDC cable route (**Figure 7b**). There is another locally listed pillbox (1435) located within the 1km study area, and numerous other structures which do not appear on the local list, including two pillboxes at Yeardus (462 and 961) which are located 300m and 400m north of the proposed HVDC cable route respectively (**Figure 7b**).

4.3.32 At landfall as part of the coastal defences, there is the circular base of a gun emplacement (3585) located within the HVDC cable landfall (**Figure 7b**).

4.3.33 Old Kirkleatham Hall (demolished in 1956) was requisitioned during the war (Defence Area 57) as it provided an ideal defensive position in support of the front-line coastal defences and there are numerous references in the HER relating to assets from this period.

4.3.34 From June 1940, Kirkleatham formed a 'rearward defended locality' of the Left Sub-Sector, Central Zone of the North Riding Coastal Area which was defended by the 176th Infantry Brigade of 59 Division. This Central Zone was occupied by the 'Kirkleatham Battalion (Bn.)', which comprised the 16th Bn. South Staffordshire Regiment followed by the 6th Bn. North Staffordshire Regiment, and the 12th Bn. Green Howards. Battalion headquarters were based at Kirkleatham Hall (Foot, 2009).

4.3.35 The defence of Kirkleatham was based on nine pillboxes or infantry posts, four roadblocks, and an anti-tank ditch. The defences were constructed from the beginning of July 1940 by the 509th Field Company Royal Engineers, and the pillboxes and roadblocks had been largely completed by the end of that month, although some additional machine gun emplacements were asked for and built in August. The buildings associated with Turner's Hospital formed the southern perimeter defences, and two and three quarter miles of anti-tank ditch, forming the perimeter defences north, east, and south of Kirkleatham, were dug during August (Foot, 2009). The line of an anti-tank ditch (7996) (**Figure 8**) is still visible to the south of the village (**Plate 6**). The anti-tank ditch is located outside of the HVDC cable route and will not be impacted by the proposed development.

Plate 6: Kirkleatham in 1958. The line of the in-filled anti-tank ditch is visible to the south-east, aligned NW-SE (NMR).

4.3.36 There are several other assets dating to this period within Kirkleatham, including the site of machine gun post that was built within an 18th century drum tower at the perimeter wall of the former Kirkleatham Hall grounds, and a spigot mortar pedestal (a concrete emplacement for an anti-tank gun) at the perimeter wall at East Lodge (**Plate 7**). These assets will not be affected by the construction of Dogger Bank Teesside A & B.

Plate 7: Spigot mortar pedestal at the eastern end of Kirkleatham Hall grounds (© Report on Kirkleatham Defence Area 57).

4.3.37 Assets dating to this period tend to be well recorded by comparison with those of earlier periods and the potential for encountering additional unknown World War II assets in the construction footprint for Dogger Bank Teesside A & B is low. It is noted however that the

north-east coastline was heavily mined in World War II with anti-tank mines, and it is not currently known how extensive the minefield was, or how intensive its subsequent clearance was.

Historic Landscape Characterisation

4.3.38 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).

4.3.39 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.

4.3.40 Urban development in the Borough over the last 150 years or so has had a dominant influence on the major settlements. Many smaller towns and villages outside the main urban areas have only seen limited development and have retained much of their vernacular and historic character.

4.3.41 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.

4.3.42 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’. (Green and Rowe, 2007).

4.3.43 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.

4.3.44 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.

4.3.45 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).

4.3.46 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.

4.3.47 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 to avoid main watercourses, access routes and small plantation areas.

Non-designated Historic Structures

4.3.48 A search of the 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

4.3.49 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 (**Plate 8**), along with the smaller farms in the area including Grew Grass and Ryehills (**Plate 9**).

Plate 8: Extract from Ordnance Survey first series 1:63360 (1805 to 1869)

4.3.50 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.

4.3.51 The landscape is predominantly agricultural although a brickyard is annotated to the south of Marske and the railway (Upleatham/ Saltburn Branch Railway, HER 5805) is a prominent feature (**Plate 8**).

Plate 9: Extract from Ordnance Survey first series 1:63360 (1805 to 1869)

4.4 Previous work in the 1km study area

Archaeological surveys

4.4.2 At the time of writing there are no published archaeological surveys within the footprint of the proposed onshore infrastructure for Dogger Bank Teesside A & B, but numerous archaeological investigations have been undertaken within the 1km study area, with the majority being in the Kirkleatham and Wilton areas. Events reviewed as part of this baseline comprise:

- Event 576: A Desk-top survey undertaken by RSK Environment relating to Teesside Power Station, Lackenby;
- Event 212: A watching brief undertaken at No. 7 Yearby Village by Tees Archaeology;
- Event 355: Fieldwalking undertaken at Yearby Farm by Cleveland County Archaeology Section;
- Event 734: Watching brief undertaken at the kennels at Foxrush Farm, Dormanstown by Stephen Sherlock Services;
- Event 231, 232 and 233: Geophysical survey and trial trenching undertaken at Kirkleatham Business Park by Archaeological Services University of Durham;

- Event 230: trial trenching at Kirkleatham Business Park by Cleveland County Archaeology Section;
- Event 197 and 196, watching brief at Sir William Turner's Hospital, Kirkleatham by Tees Archaeology;
- Event 498 and 868: Building recording and trial trenching at the Old Saw Mill, Kirkleatham, undertaken by Stephen Sherlock Services;
- Event 862: Geophysical survey undertaken at land near Fishponds Road, Kirkleatham by North Pennines Archaeology;
- Event 815 and 816: Geophysical survey and trial trenching at land east of the walled garden at Kirkleatham, undertaken by North Pennines Archaeology;
- Event 101: Trial trenching at Kirkleatham Special School undertaken by Pre-construct Archaeology; and
- Event 435: Watching brief undertaken at Hall Farm, Lackenby by Cleveland County Archaeology Section.

Non-archaeological surveys

4.4.3 British Geological Survey (BGS) borehole data for the area provides a basic overview of the sedimentary sequence of buried deposits within the 1km study area (http://www.bgs.ac.uk). BGS borehole NZ62 SW15 is located along the Coast Road, between Millclose Howle and Red Howles. The borehole did not record any shallow superficial deposits and documents Boulder Clay (glacial till), overlying Mudstone (Jurassic Lower Lias).

4.4.4 There are no recorded boreholes within the proposed converter stations site however there are numerous boreholes within the wider Wilton Complex. The boreholes are centred on buildings associated with Wilton I.C.I. and the majority record a consistent below ground sequence of glacial till overlying mudstone.

4.4.5 There is no evidence for buried deposits which may contain palaeoenvironmental data in any of the boreholes viewed.

4.5 Site Walkover Survey

4.5.1 The site walkover was undertaken on 28th November 2012. The weather was wet and overcast and long-range visibility was poor. The site of the proposed converter stations within the Wilton Complex were surveyed, along with the route of the HVAC cable route from the converter stations site to the existing National Grid substation at Lackenby. The route of the proposed HVDC cable from the proposed converter stations site to landfall was also assessed.

Converter Stations Site

4.5.2 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 (**Plate 10** and **Plate 11**).

Plate 10: Converter stations site. Viewpoint is taken from the north-east corner of the site to the west.

4.5.3 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).

Plate 11: Converter stations site. Viewpoint is taken from the north-west corner of the site to the south towards Lazenby and Eston Hills in the background.

4.5.4 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.

Plate 12: Converter stations site. View from north (centre) of the site to the north-east.

4.5.5 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

4.5.6 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 were 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.

HVDC Cable Route

4.5.7 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.

4.5.8 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 leveling activities. No features of heritage interest were noted along the course of the HVDC cable route within the complex.

Plate 13: Principal access route within the Wilton Complex.

4.5.9 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 are likely to post-date the survey.

4.5.10 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 (**Plate 14**). The HVDC cable will be installed via HDD from the east of Grewgrass Lane to the west of Roger Dike and the area of ridge and furrow will not be directly impacted by its construction.

Plate 14: View to the south-west. Field to the south of Grewgrass Farm showing NNW-SSE aligned ridge and furrow.

4.5.11 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.

4.5.12 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**). 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 panels, therefore all observations were made from the road bridge above the structure.

4.5.13 The pillbox is a simple square concrete structure with an access door at the southern wall and a central window in each of the remaining three walls. A single concrete block forms the roof slab. The pillbox has been fenced off and has vegetation growing around and within it; the external faces are covered in graffiti.

Plate 15: Viewed from the road bridge above: WWII pillbox. HER asset 4950.

4.5.14 The land-use from the railway line to landfall is agricultural and the topography is flat (**Plate 16**). 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).

Plate 16: Viewed from Green Lane adjacent to railway line to the north-east to landfall.

4.5.15 Between Ryehills Farm and the allotment gardens (**Plate 17**) 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.

Plate 17: View from north of allotment gardens to landfall.

4.5.16 The area north of the allotment gardens to the Coast Road is very flat (Plate 17). In this area are 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.

Landfall

4.5.17 The proposed landfall from the A1085 Coast Road to MHWM is characterised by grassed amenity areas and dunes formed by windblown sands. Long Beck Creek flows from the south in to the landfall area (**Plate 18**)

Plate 18: View to the north-east. Landfall for HVDC cable.

4.5.18 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.

5 Archaeological Field Surveys

5.1 Geophysical Survey

5.1.1 As part of the baseline survey and in order to inform the impact assessment, a geophysical survey was undertaken between 18th February and 19th 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, Appendix B). The surveys were conducted in accordance with a 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).

5.1.2 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. The final geophysical survey report and interpretation plots are presented in Appendix B and a summary of the findings within the five areas is presented below.

Area 3 (Figure 7a)

5.1.3 A series of linear positive magnetic anomalies were detected which are likely to reflect soil-filled ditches and appear to form a rectilinear enclosure. There are no HER events in the immediate area which may be related to the survey results.

Area 5 (Figure 7a)

5.1.4 A large weak curvilinear positive magnetic anomaly has been detected in the eastern edge of this area, beneath the footprint of the proposed converter stations and may reflect the remains of a soil-filled ditch forming a large enclosure. There are no HER events in the immediate area which may be related to the survey results.

Area 8a (Figure 7a)

5.1.5 A series of linear and rectilinear positive magnetic anomalies have been detected which appear to represent rectangular ditched enclosures. There are no HER events in the immediate area which may be related to the survey results, although there are Bronze Age findspots to the west (240) and south-east (1701).

Area 11 (Figure 7b)

5.1.6 Rectilinear and curvilinear positive magnetic anomalies have been detected here, south of a former field boundary. These anomalies probably reflect soil-filled ditches forming a rectangular enclosure, with parts of a second enclosure ditch detected to the north and east. Further associated ditches also appear to be present. There are no HER events in the immediate area which may be related to the survey results.

Area 17 (Figure 7b)

5.1.7 At the east end of this area one linear and two curvilinear positive magnetic anomalies were detected, which reflect First World War practice trenches as identified on aerial photographs. The southern, linear anomaly corresponds to the 'support trench' and the curvilinear anomalies to the north reflect 'communication trenches'. The 'fire trench' should lie immediately north of the surveyed corridor. There are no other First World War assets in the immediate area. Marske airfield is located 800m west (467) but is not directly related to the practice trenches.

5.1.8 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, Assessment of Impacts during Construction.

6 Baseline Summary

6.1 Overview

6.1.1 The following provides a summary of the baseline conditions for Dogger Bank Teesside A & B, and confirms which assets require no further assessment and which assets are included in the impact assessment. **Table 7** 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.

6.2 Designated assets

Scheduled Monuments and Eston Hills Historic Landscape

6.2.2 The construction, operation and decommissioning of Dogger Bank Teesside A & B has the potential to impact the setting of designated assets in the 5km study area.

6.2.3 The scheduled hillfort at Eston Nab will share a visual relationship with the converter stations for Dogger Bank Teesside A & B. The existing industrial setting of the Wilton Complex suggests that this visual relationship will not affect the setting of the asset to an extent where its significance is harmed however the impact during construction, operation and decommissioning will be assessed further. In addition, the hillfort has a group value with contemporary scheduled monuments located within the designated historic landscape of Eston Hills and as such there is a potential for an impact to the hillfort to result in an impact to the historic landscape. Therefore the potential impact upon the setting of the Eston Hills historic landscape during construction, operation and decommissioning will also be considered further.

6.2.4 The scheduled First World War acoustic mirror (1020311) (**Figure 2**) has a contained setting and will not share a visual relationship with the proposed development during construction or operation. The setting or importance of the monument will not be affected by the construction, operation or decommissioning of Dogger Bank Teesside A & B and the significance of the monument will not be harmed. Further assessment is not required.

6.2.5 The scheduled manorial settlement at Marske (1018948) (**Figure 2**) will not have a visual relationship with the construction of the HVDC route due to screening from intervening roads and field boundaries. The setting of the asset, which is defined by the extent of the earthworks within an enclosed area, will not be affected by the construction, operation or decommissioning of Dogger Bank Teesside A & B and the significance of the monument will not be harmed. Further assessment is not required.

Historic Landscape

6.2.6 Potential impacts to the historic landscape arising from the construction of the HVDC cable route will be assessed further.

Listed Buildings and Conservation Areas

6.2.7 Grade II* Old Hall farmhouse (1139659) (**Figure 2**) and the grade II listed stable range (1159438) and byre barn (1329623) at Lackenby (**Figure 4**) may experience temporary impacts to their setting during the construction of the HVAC cable and increased noise and activity resulting from the presence of the temporary works compound. In addition, there is potential

for permanent impacts to their setting as a result of the National Grid enabling works. All of these impacts will be assessed further. The buildings are located outside of the ZTV and will not share views with the converter stations for Dogger Bank Teesside A & B. Therefore an assessment of impacts during the operation of Dogger Bank Teesside A & B is not required.

6.2.8 Listed buildings within the Conservation Areas at Kirkleatham, and Yearby may experience temporary impacts to their settings during construction of the HVDC cable. In addition, views with historical significance between Kirkleatham and the agricultural landscape to the south of the village towards Yearby are likely to be interrupted temporarily during construction of the HVDC cable. Views of the converter stations associated with Dogger Bank Teesside A & B from Yearby Conservation Area are unlikely due to intervening structures within the Wilton Complex and screening from field boundaries and wooded corridors adjacent to the A174 carriageway, however as a precautionary measure potential impacts to Yearby Conservation Area during operation will be assessed. Views of the operational converter stations may be possible from the southern or western edge of Kirkleatham Conservation Area and due to the quality of the conservation area an impact to any single asset has the potential to affect the character of the entire designated area. Assessment during operation is therefore applicable for Kirkleatham Conservation Area.

6.2.9 The construction of the HVDC cable at landfall may temporarily impact views along the coastline and key approaches to Marske Conservation Area. Further assessment of impacts during construction with regard to this key view will be undertaken.

6.2.10 The conservation areas comprising Coatham, Upleatham, Skelton, Saltburn and Wilton are screened from Dogger Bank Teesside A & B by intervening landform, existing settlement, field boundaries and wooded areas, and their character and the setting of individual buildings within the designated areas will not be affected. No further assessment is required for these areas.

6.2.11 The setting of the listed farm buildings comprising those at Ryehills, Fell Briggs and Turner's Arms farms are unlikely to be affected significantly as their setting is contained and defined by the agricultural land they are located within. The buildings will not have a visual relationship with the proposed converter stations and therefore an assessment of operational impacts arising from Dogger Bank Teesside A & B is not required. Due to the proximity of the HVDC cable route, the level of potential impact upon the assets during construction, although temporary, will be assessed further.

Registered Parks and Gardens

6.2.12 The only Registered Park and Garden in the study area is Valley Gardens in Saltburn, which is grade II registered. 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 changed by the proposed development and the importance of the park will not be harmed. Further assessment is not required.

6.3 Non-designated assets

6.3.1 A review of the HER for Redcar and Cleveland has identified four non-designated heritage assets which may be directly impacted by Dogger Bank Teesside A & B, specifically the construction of the HVDC cable route. These assets comprise:

- 4049 Site of a brickearth extraction pit, Garden Field Pond (Figure 7a);
- 4044 Site of 19th century dovecote (Figure 7a);

- 4950 World War II pillbox; locally listed structure (Figure 7b); and
- 3585 World War II gun emplacement complex (Figure 7b).

6.3.2 In addition, aerial photography and geophysical survey has identified First World War practice trenches near to the landfall, as well as features relating to settlement, enclosure and industry within the HVAC and HVDC cable routes and within the proposed converter stations site. There is potential that construction will directly impact these features and the effect of this will be considered further in the impact assessment.

6.3.3 Finally, there is potential for previously unrecorded archaeological features to be present within the proposed HVDC and HVAC cable corridors and within the proposed converter stations site. An assessment of potential and recommendations for suitable mitigation will be presented in order to mitigate impacts arising from Dogger Bank Teesside A & B during construction.

Table 7: Summary of Baseline

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

7 Assessment of Impact – Worst Case Definitions

7.1 Development Design and Impact Avoidance

7.1.1 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 (Refer to Chapter 6 of the Dogger Bank Teesside A & B ES). 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 5 Project Description of the Dogger Bank Teesside A & B ES 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;
- Bury 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.

7.2 Worst Case Scenarios

Construction Scenarios – Worst Case

7.2.2 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.

7.2.3 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 A in isolation will however be identical to those arising as a result of 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.

7.2.4 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.

7.2.5 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.

7.2.6 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, which is the concurrent build of Teesside A & B.

7.2.7 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.

7.2.8 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.

7.2.9 Impacts arising from the concurrent build construction scenario of both projects are set out in the summary of residual impacts **Table 9**.

Operational Scenarios – Worst Case

7.2.10 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 – Worst Case

7.2.11 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* 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 operational 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.

8 Assessment of Impacts during Construction

8.1 Overview

8.1.1 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. A summary of impacts during construction is set out in **Table 9**.

8.2 HVDC Cable Construction

8.2.1 The HVDC cable route is a maximum length of 7km 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 36m 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, four intermediate construction compounds and up to 11 HVDC HDD compounds for each project.

8.2.2 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

8.2.3 The HVDC route will be constructed approximately 100m south of the southern edge of Kirkleatham Conservation Area (**Figure 4**). 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. Kirkeatham 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** in accordance with **Table 2**.

8.2.4 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 in accordance with **Table 4** is therefore assessed to be **minor**.

8.2.5 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. In accordance with **Table 4** the level of impact arising from the construction of the intermediate compounds is assessed as **neutral**.

8.2.6 The overall impact to Kirkleatham Conservation Area arising from the construction of Dogger Bank Teesside A & B is assessed as **minor** (based on the highest level of predicted impact) and no mitigation is required.

Yearby Conservation Area

8.2.7 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**). The area is assessed to be of **moderate importance** in accordance with **Table 2**. 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 in accordance with **Table 4** is therefore assessed as **minor**.

8.2.8 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 in accordance with **Table 4** is therefore assessed as **neutral**.

8.2.9 The overall impact to Yearby Conservation Area arising from the construction of Dogger Bank Teesside A & B is assessed as **minor** and no mitigation is required.

Marske Conservation Area

8.2.10 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.

8.2.11 The importance of the conservation area is assessed as **moderate** in accordance with **Table 2**, 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. In accordance with **Table 4** the level of impact is assessed as **neutral** and no mitigation is required.

Listed Building 1387500 (Figure 4)

8.2.12 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.

8.2.13 The importance of the farmhouse is **moderate** in accordance with **Table 2**. 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, in accordance with **Table 4** is therefore assessed as **neutral** and no mitigation is required.

Listed Building 1159818 (Figure 5)

8.2.14 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 (Figure 5). 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.

8.2.15 The house is assessed to be of **moderate importance** in accordance with **Table 2**. 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 significance, and therefore the magnitude is assessed as **no change** in accordance with **Table 3**. The level of impact in accordance with **Table 4** is therefore assessed as **neutral**.

8.2.16 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 (**Table 3**) to the current setting of the house from the garden. The impact to the setting of the house is assessed to be **minor** in accordance with **Table 4**.

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

Listed Buildings 1139618, 1329632 and 1310671 (Figure 4)

8.2.18 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) (Figure 4) and is therefore assessed to be of **moderate importance** in accordance with **Table 2**. 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 to an extent that it will affect the ability to appreciate their importance. The magnitude of change is, therefore, assessed to be **no change** in accordance with **Table 3**. The level of impact arising from the HVDC cable construction, in accordance with **Table 4** is therefore assessed as **neutral**.

8.2.19 The proximity of the HVDC construction compound and the 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 in accordance with **Table 4**.

8.2.20 The overall impact to the listed buildings at Ryehills Farmhouse arising from the construction of Dogger Bank Teesside A & B is assessed as **minor** and no mitigation is required.

Historic Landscape

8.2.21 The HVDC cable route will pass through agricultural field systems but will use HDD to avoid main watercourses, historic routes such as Grewgrass Lane and Fishponds Road, and small plantation areas. 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.

8.2.22 The importance of the historic landscape is assessed to be **low** in accordance with **Table 2**, 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 significance of the asset (**Table 3**). The level of impact in accordance with **Table 4** is therefore assessed as **minor** and no mitigation is required.

Brickearth Extraction Pit, Garden Field Pond: Asset 4049 (Figure 7a)

8.2.23 This asset 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 (Area 8b). 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** in accordance with **Table 2**.

8.2.24 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. The level of the impact in accordance with **Table 4** is therefore assessed as **moderate**.

8.2.25 The level of residual impact in accordance with **Table 5** will be reduced to **minor adverse** following a programme of archaeological mitigation (Section 11, Mitigation).

Site of Dovecote: Asset 4044 (Figure 7a)

8.2.26 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** in accordance with **Table 2**. There will be **no change** to the asset arising from the construction of the HVDC cable and the level of impact in accordance with **Table 4** is assessed as **neutral**. No mitigation is required.

WWII pillbox: Asset 4950 (Figure 7b)

8.2.27 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 in accordance with **Table 2** is assessed as **moderate**.

8.2.28 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** (**Table 3**) resulting in a **neutral** impact in accordance with **Table 4**. No mitigation is required.

WWII Gun Emplacement: Asset 3585 (Figure 7b)

8.2.29 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 a 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.

8.2.30 The asset is non-designated and is therefore assessed as being of **low importance** in accordance with **Table 2**. Impacts arising during construction the impact would likely entail the complete removal of the asset which would result in a **high** magnitude of change in accordance with **Table 3**. The level of impact prior to mitigation in accordance with **Table 4** is therefore assessed to be **moderate**.

8.2.31 Mitigation, in the form of fencing to create a physical barrier between the asset and construction activities, will prevent any damage occurring during construction and will result in there being **no change** to the asset (**Table 3**). The residual level of impact following mitigation in accordance with Table 5 will be **neutral**.

Geophysical Survey Area 8a

8.2.32 Area 8a was identified from the geophysical survey and comprises a series of rectilinear enclosures (**Figure 7a**). 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.

8.2.33 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. The significance of the impact is therefore assessed as **moderate** however mitigation in the form of a programme of archaeological evaluation, excavation and recording (see Section 11) would seek to preserve the archaeological remains by record thereby reducing the overall impact to **minor adverse**.

Geophysical Survey Area 11

8.2.34 Area 11 was identified from the geophysical survey and comprises a sub-rectangular enclosure and possible trackway (**Figure 7b**). 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 in accordance with **Table 2** is assessed as **low**.

8.2.35 The magnitude of change arising from the construction of the HVDC cable is assessed as **high** (**Table 3**) as it will entail the complete removal and loss of archaeological remains which appear to be contained within the construction corridor. The level of the impact prior to mitigation is therefore assessed as **moderate** in accordance with **Table 4**.

8.2.36 Mitigation in the form of a programme of archaeological evaluation, excavation and recording (see Section 11) would seek to preserve the archaeological remains by record thereby reducing the overall impact, in accordance with **Table 5** to **minor adverse**.

Geophysical Survey Area 17

8.2.37 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 (**Figure 7b**). 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.

8.2.38 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** in accordance with **Table 2**.

8.2.39 Construction of the HVDC cable route for Project A or B 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**, in accordance with **Table 3**, as the asset will not be totally destroyed, but a large part of the historical context of the asset would be permanently affected. The level of impact, in accordance with **Table 4**, prior to the implementation of mitigation is therefore assessed as **moderate**.

8.2.40 Mitigation in the form of contextual study, archaeological evaluation and detailed excavation and recording will reduce the impact (see Section 11), and the residual impact level following successful mitigation will be **minor adverse** in accordance with **Table 5**.

Previously unrecorded assets

8.2.41 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 through a phased programme of archaeological investigation comprising trench evaluation followed by detailed excavation, recording and reporting as necessary (see Section 11, Mitigation).

8.3 HVAC Cable Construction and National Grid Enabling Works

8.3.1 The HVAC cable maximum route length and corridor width is approximately 2km x 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.

8.3.2 The National Grid enabling works will entail an extension to the existing 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 2)

8.3.3 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 history and purpose of the buildings is related to farming and agriculture and the setting of the buildings is defined by their level of association with each other but also includes the whole of the historic settlement at Lackenby, including the ridge and furrow in the fields to the south. 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.

8.3.4 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 significance of the group or change the setting of the historic landscape to the south (**Table 3**). The level of impact in accordance with **Table 4** is therefore assessed as **minor** and no mitigation is required.

8.3.5 All works relating to the extension of the existing substation at Lackenby will be contained within the existing site. The existing switch gear will be extended to house new infrastructure. There will be no increase in construction traffic during the enabling works, and onsite crushing or concrete batching is not envisaged.

8.3.6 There will be no increase in activity levels that will affect the significance 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. In accordance with **Table 3**, the magnitude of change arising from the enabling works is assessed to be **minimal**. This results in a **minor** level of impact in accordance with **Table 4** and no mitigation is required.

Geophysical Survey Area 3

8.3.7 The geophysical survey returned a series of linear positive magnetic anomalies which are likely to reflect soil-filled ditches associated with a rectilinear enclosure (**Figure 7a**).

8.3.8 The remains are undated but are likely to be associated with settlement and enclosure of local importance. In accordance with **Table 2** the asset is currently assessed to be of **low** importance. The magnitude of change arising from the construction of the HVAC cable for Project A or B is assessed as **high** as it will entail the complete removal and loss of archaeological remains within the HVAC cable corridor.

8.3.9 The level of impact prior to mitigation is therefore assessed as moderate. Archaeological mitigation in the form of a programme of archaeological evaluation, excavation and recording, would seek to preserve the archaeological remains by record. The successful implementation of a mitigation strategy (see Section 11, Mitigation) would result in a **minor adverse** level of residual impact (**Table 5**).

Previously unrecorded assets

8.3.10 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 (Figure 7a). Impacts to previously unrecorded archaeology will be mitigated through a phased programme of archaeological investigation comprising trench evaluation and detailed excavation and recording (see Section 11, Mitigation).

8.4 Converter Stations Construction

Eston Nab Hillfort and Eston Hills Historic Landscape

8.4.1 The construction of the converter stations will be visible from the hillfort which is a scheduled monument and is therefore of **high** importance in accordance with **Table 2**. 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.

8.4.2 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

8.4.3 The geophysical survey of the converter stations site identified a curvilinear 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.

8.4.4 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 in accordance with **Table 2**. The magnitude of change arising from the construction of the converter stations will be **high** as it will entail complete removal of the asset. The level of impact in accordance with **Table 4** and prior to mitigation is therefore assessed as **moderate.**

8.4.5 Archaeological mitigation in the form of a programme of archaeological evaluation, excavation and recording, would seek to preserve the archaeological remains by record. The successful implementation of a mitigation strategy (see Section 11, Mitigation) would result in a **minor adverse** level of residual impact (**Table 5**).

Previously unrecorded assets

8.4.6 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. Impacts to previously unrecorded archaeology will be mitigated through a phased programme of archaeological trench evaluation and recording (see Section 11, Mitigation).

9 Assessment of Impacts during Operation

9.1.1 There will be no additional direct impacts to buried archaeological remains during operation, as any impact will have occurred during construction. Potential indirect impacts arising from the operation of Dogger Bank Teesside A & B will therefore only occur as a result of changes to the setting of a heritage asset and will therefore be associated with the above ground components of the proposed development, i.e. the converter stations.

9.1.2 An assessment of the setting of each asset was undertaken during the baseline study and an assessment of potential indirect impacts is presented below and a summary presented in **Table 9.**

1011273 Eston Nab Hillfort, Eston Hills

9.1.3 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. As a defensive site, views to and from the hillfort are a key feature of its setting that contributes to its significance. The importance of this visibility is reinforced by its use in the 19th century as a beacon location. The hillfort is designated a scheduled monument, and is therefore assessed as being of **high** importance in accordance with **Table 2**, and is located within the ZTVs for A & B (**LVIA Figure 7 and Figure 8**).

9.1.4 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.

9.1.5 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 (**LVIA 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 significance of the asset will not be affected (**Table 3**). The level of impact in accordance with Table 4 is therefore assessed as **neutral** and no mitigation is required.

Eston Hills Historic Landscape

9.1.6 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 in accordance with Table 2

9.1.7 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.

9.1.8 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 (**Table 4**) is assessed as **neutral**.

Yearby Conservation Area

9.1.9 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 in accordance with **Table 2**.

9.1.10 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 building 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** (**Table 3**) as the character and importance of the conservation area and all of the listed buildings therein will not be affected. The level of impact in accordance with **Table 4** is therefore assessed as **neutral**.

Kirkleatham Conservation Area

9.1.11 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 in accordance with **Table 2**. The quality of the built form is an important component of Kirkleatham's special character along with its landscape setting comprising wooded parkland, and open farmland (formerly parkland) lying to the south. 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.

9.1.12 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 (**LVIA Figure 5**) 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.

9.1.13 The ZTV for Dogger Bank Teesside A & B (**LVIA Figure 7 and Figure 8**) 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.

9.1.14 In accordance with Table 3 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 in accordance with **Table 4** is therefore assessed as **neutral**.

10 Assessment of Impacts during Decommissioning

10.1.1 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.

10.1.2 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 which is assessed to be of **high** importance in accordance with **Table 2**. However decommissioning activities will not represent a significant change in views from the monument which will change the asset's setting. In accordance with **Table 3** 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 (**Table 4**).

11 Mitigation

11.1.1 A series of design criteria were considered during the site selection and project design process in order to minimise the potential effects to heritage assets. These design criteria, or embedded mitigation, sought to avoid direct impacts upon heritage assets and their setting. In addition, the layout of the proposed cable routes, converter stations and temporary construction areas, have been developed to avoid impacts to known non-designated heritage assets where possible.

11.1.2 The avoidance of significant archaeological remains has also been informed by a programme of archaeological fieldwork comprising a detailed walkover survey and a geophysical survey, the results of which have informed the design of Dogger Bank Teesside A & B.

Post-application mitigation

11.1.3 A level of impact resulting in moderate or above, in accordance with **Table 4**, is classed as a significant impact and will require mitigation to reduce the level of impact. Potential direct impacts to non-designated archaeological deposits have been identified in the area of the proposed HVDC and HVAC cable routes and within the converter stations site. It has been assessed that construction will result in a permanent impact to buried remains relating to former settlement and land-use.

11.1.4 An archaeological mitigation strategy will be produced which will set out the methodology for conserving the archaeological resource and reducing the level of residual impact to an acceptable level following mitigation, in accordance with **Table 5**. In all cases, the mitigation strategy will be undertaken as a condition of planning consent and will entail a systematic programme of archaeological investigation comprising one or all of the following stages of work:

- Detailed desk-based research (where applicable);
- Trial trench evaluation;
- Detailed excavation, post-excavation assessment and analysis;
- Watching brief during specific construction activities, recording and reporting; (and)
- Deposition of archive with RCBC and Tees Archaeology.

11.1.1 The mitigation strategy for Dogger Bank Teesside A & B will be discussed with the Archaeological Consultant for RCBC and all stages of fieldwork and reporting will be undertaken in accordance with IfA guidance and a WSI which has been agreed in writing with the Archaeological Consultant for RCBC.

12 Cumulative Impacts

12.1 Cumulative Developments

12.1.1 There are a number of other developments within the vicinity of Dogger Bank Teesside A & B. These include those currently in scoping stage through to operational. The projects which were considered for cumulative impact assessment (CIA) are listed below.

Table 8: Potential projects to be included within cumulative impact assessment

Project Number	Project Name	Project Description
1	Tees Renewable Energy Plant	300MW biomass power station that will burn woodchip to generate electricity for the equivalent of 600,000 homes
2	Tees Renewable Energy Plant underground cable	400kV underground cable for connection of Tees Renewable Energy Plant ' Tees Dock - Lackenby, Grangetown'
3	Yorkshire Potash Pipeline	No further information
4	Met Mast at The Wilton Centre	Installation of a temporary 70m high anemometry mast (for 2yrs and 6mths)
5	Northern Gateway Terminal	Approval of reserved matters (access, appearance, landscaping, layout and scale) following the approval of outline planning permission r/2006/0433/oo for a container terminal
6	Breagh Pipeline	Installation of an underground 20" natural gas pipeline (6.12km) and a 3" monoethylene glycol pipeline (6.12km) (revised route) including a beach valve compound
7	Two storey 2, 3 and 4 bedroom dwelling houses and garages	Housing development including new vehicular and pedestrian accesses and associated landscaping
8	Installation of single pole to house transformer unit (application submitted under section 37 of the electricity act 1989)	No further information
9	Redevelopment comprising the erection of 288 dwellings and ancillary works (amended scheme)	Redevelopment comprising the erection of 288 dwellings and ancillary works (amended scheme)
10	Demolition of various buildings	Demolition of various buildings and replace with new caretakers bungalow and garage; new two storey post 16 sen building; extension to existing school buildings with new lay-by; extended car parking; boundary fencing and vehicular gates with associated landscaping
11	Erection of 6 dwellings	No further information
12	Teesside Power Station	Prior notification for the proposed demolition of 8 off heat recovery system generator exhaust stacks
13	Three storey 72 bedroom care home	Three storey 72 bedroom care home; two storey 12 bedroom special needs unit and a single storey 5 apartment special needs unit including new

Project Number	Project Name	Project Description
		pedestrian access; car parking and associated landscaping
14	Screening opinion request for new biomass import facility	New facilities required to enable the import, short term storage and forward transportation of wood pellet biomass to power station customers.
15	Screening opinion for proposed potash processing plant	Processing up to 15 million tonnes of potash ore per year
16	Two storey management block with associated 92 space car park	Including 2 lighting columns and above ground septic tank (permission required until 31 December 2014)
17	Dogger Bank Teesside Projects C & D	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
18	Scoping Request for 2 Wind Turbines	Scoping request for 2 wind turbines (140m max height to top) including compound; equipment; buildings; new vehicular access onto A174 and associated infrastructure
19	1 Wind Turbine	Withdrawn
20	Waste Treatment Facility	Waste Treatment Facility for bioremediation and treatment of hazardous wastes. The WTF will be located within the footprint of the Teesport Landfill Site.
21	Extension to Factory	Extension to exisiting factory building with ancillary new access roads
22	Teesside Power Plant	Prior notification for demolition of a power station and associated structures and equipment
23	Anaerobic power plant	Proposed anaerobic digestion and combined heat and power plant
24	Erection of wind turbine	Erection of single wind turbine (max height 80m) and associated infrastructure including access tracks, hardstandings, control buildings and cabling
25	Effluent main pipeline	Installation of above ground effluent main pipeline to replace underground corrosive pipeline
26	Wind Farm	Wind farm including 5 No. wind turbines, control building and associated access.
27	Single wind turbine	Installation of a single wind turbine (max height to tip 51m), associated infratstructure, including external compant housing with underground cabling, turbine foundation and access tracks.
28	Changes to house Types	Substitution of 30 approved house types of planning permission with 28 new house types, boundary treatments and associated landscaping.
29	Four bungalows	3x four bedroomed special needs bungalows and daycare centre including new vehicular and pedestrian accesses and associated landscaping
30	1000 Dwelling development	Outline application for up to 1000 dwellings together

Project Number	Project Name	Project Description
		with ancillary uses including a park- and- ride car park, petrol filling station, drive-throu, public house/ restaurant and 60 bed hotel with details of access
31	Erection of agricultural building	Resubmission
32	Residential Development	Residential development comprising of 14 two storey detached dwellings with new access and landscaping

12.2 Criteria for scoping out CIA projects

12.2.1 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.

12.2.2 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 onshore infrastructure and could therefore potentially impact the same buried archaeological resource during construction.

12.2.3 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.

12.3 Cumulative Impacts during Construction

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

- Tees Renewable Energy Plant underground cable;
- Yorkshire Potash Project;
- Dogger Bank Teesside C & D; (and)
- Scoping request for 2 turbines.

Tees Renewable Energy Plant underground cable

12.3.1 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 in accordance with **Table 2**.

12.3.2 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. The level of impact in accordance with **Table 4** prior to any mitigation will therefore be **moderate**. Mitigation via a planning condition is likely to entail archaeological trench evaluation, detailed excavation and reporting, and once implemented will reduce the overall cumulative impact to **minor adverse** (**Table 5**).

Yorkshire Potash Project

12.3.3 The Yorkshire 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 7a**), resulting in permanent impacts to non-designated buried archaeological remains which are likely to extend beyond the HVDC cable corridor for Teesside A & B.

12.3.4 The geophysical survey identified possible settlement enclosures relating to archaeological remains of local (low) importance in accordance with **Table 2**. 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 level of cumulative impact prior to mitigation is assessed as moderate in accordance with the assessment criteria in **Table 4**. 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 cumulative impact in accordance with **Table 5**.

Dogger Bank Teesside C & D

12.3.5 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.

12.3.6 The proposed HVDC cable corridor from the A174 carriageway 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 in accordance with **Table 2**. The magnitude of change as a result of construction will be **high** involving the complete removal of archaeological remains. The level of impact in accordance with **Table 4** prior to any mitigation will therefore be **moderate**. Mitigation via a planning condition is likely to entail archaeological trench evaluation, detailed excavation and reporting, and once implemented will reduce the overall impact to **minor adverse** (**Table 5**).

12.3.7 There are no other cumulative impacts arising from the construction of Dogger Bank Teesside C & D.

Scoping request for 2 turbines

12.3.8 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 in accordance with **Table 4** is **neutral** and no cumulative impacts are anticipated.

12.4 Cumulative Impacts during Operation

12.4.1 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 2 turbines.

12.4.2 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 but these schemes involve the demolition of generator exhaust stacks and power pland components rather than the construction of built components and as such will not create cumulative impacts.

Dogger Bank Teesside C & D

12.4.3 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** in accordance with **Table 4**.

Anemometry mast at the Wilton Centre

12.4.4 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.

12.4.5 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 (**refer to LVIA viewpoint Figure 7**). 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, in accordance with **Table 2**, 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** in accordance with **Table 4**.

Scoping request for 2 turbines

12.4.6 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 2 turbine project and therefore the impact is assessed as **neutral** in accordance with **Table 4**.

Table 9: Summary of Impacts during Construction, Operation and Decommissioning

Asset No.	Site Name	Importance	Description of Impact	Mitigation	Significance of Residual Impact following mitigation
CONSTRUCTION					
1011273	Hillfort at Eston Nab and Eston Hills Historic Landscape	High: Scheduled Monument located within designated historic landscape.	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. The impact is assessed as **neutral**.	No mitigation is required	Neutral
N/A	Kirkleatham Conservation Area	High: The area contains six Grade I, six Grade II* and 12 Grade II listed buildings and is classed as an 'outstanding' conservation area by the local authority.	The construction of the HVDC cable will have a **minimal** 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 **minor**.	No mitigation is required.	Minor

Asset No.	Site Name	Importance	Description of Impact	Mitigation	Significance of Residual Impact following mitigation
N/A	Yearby Conservation Area	Moderate: The area contains six Grade II listed buildings and has important historical links/ shared views with Kirkleatham	The construction of the HVDC cable will have a **minimal** 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 **minor**.	No mitigation is required.	Minor
N/A	Marske Conservation Area	Moderate: The area contains multiple Grade II listed buildings and one Grade I listed building.	The construction of the HVDC cable at landfall will have **no change** upon views towards the area. There will be no change to the conservation area and the impact is assessed as **neutral**.	No mitigation is required.	Neutral
1139659 **1159438** **1329623**	Old Hall farmhouse Stable range Byre barn	High: Grade II* farmhouse and grade II buildings have an intact group value	Construction of HVAC cable and NG enabling works will have a **minimal** magnitude of change on the group value of the buildings, resulting in a **minor** impact	No mitigation is required.	Minor
1387500	Fell Briggs Farm	Moderate: Grade II listed building	The construction of the HVDC cable will have **no change** upon the setting of the asset which is defined primarily by the arable landscape around it. The overall impact is therefore assessed as **neutral**.	No mitigation is required.	Neutral

Asset No.	Site Name	Importance	Description of Impact	Mitigation	Significance of Residual Impact following mitigation
1159818	Turner's Arms Farmhouse	Moderate: Grade II listed building	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 **neutral**. 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 **low** magnitude of change to the asset's setting resulting in a **minor** impact.	No mitigation is required.	Minor
1139618, 1329632, 1310671	Ryehills Farmhouse, barn and wall.	Moderate: Grade II listed group of related assets	HVDC cable route construction will **not change** 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 **low** magnitude of change. Result is a **minor** impact	No mitigation is required	Minor
N/A	Historic Landscape	Low: Non-designated locally important asset	The magnitude of change to the historic landscape as a result of the HVDC construction is assessed to be **minimal,** and the impact is **minor**.	No mitigation is required.	Minor
HER Asset 4049	Brickearth Pit	Low: Non-designated locally important asset	HVDC cable construction will permanently impact part of asset resulting in a **high** magnitude of change and a **moderate** impact.	Archaeological evaluation, excavation and reporting.	Minor

Asset No.	Site Name	Importance	Description of Impact	Mitigation	Significance of Residual Impact following mitigation
4044	Site of Dovecote	Low: Site of non-designated asset of local historic importance	Asset is no longer extant and subsurface remains are unlikely to be present. The impact is **neutral**.	No mitigation is required.	Neutral
4950	WWII Pillbox	Moderate: Asset is on the local list	Asset will be avoided by design; HDD will be used to avoid asset. The impact is **neutral**.	No mitigation is required.	Neutral
3585	WWII Gun Emplacement	Low: Non-designated asset	The asset is located within an area of HVDC cable which will be installed by HDD. Impact during construction will result in a **high** magnitude of change resulting in a **moderate** impact.	The asset will be fenced off during construction to ensure preservation	Neutral
Area 8a	Site identified from geophysical survey	Low: Non-designated asset	There will be a permanent **high** magnitude of change on the enclosures from the construction of HVDC cable resulting in a **moderate** impact.	Archaeological evaluation, excavation and reporting.	Minor
Area 11	Site identified from geophysical survey	Low: Non-designated asset	There will be a permanent **high** magnitude of change on the enclosure from the construction of HVDC cable resulting in a **moderate** impact.	Archaeological evaluation, excavation and reporting.	Minor

Asset No.	Site Name	Importance	Description of Impact	Mitigation	Significance of Residual Impact following mitigation
Area 17	Site identified from geophysical survey	Moderate: Non-designated asset but of regional interest in relation to number of defensive structures along NE coastline	The construction of the HVDC cable will impact a section of the First World War practice trenches resulting in a **medium** magnitude of change. The impact prior to mitigation is **moderate**	Archaeological study, evaluation, excavation and reporting.	Minor
Area 3	Site identified from geophysical survey	Low: Non-designated asset	The construction of the HVAC cable will result in a **moderate** impact to potential enclosure	Archaeological study, evaluation, excavation and reporting.	Minor
1139659	Old Hall Farmhouse, Lackenby	High: Grade II*	Construction of HVAC cable will have a temporary impact on setting of asset; this is assessed to be a **minor** impact	No mitigation is required	Minor
Area 5	Site identified from geophysical survey	Low: Non-designated asset	Potential enclosure will be permanently impact by construction of the converter stations and compounds resulting in a **moderate** impact.	Archaeological evaluation, excavation and reporting.	Minor
OPERATION					
1011273	Hillfort at Eston Nab	High: Scheduled Monument	Setting of monument will not be affected by the operational Teesside A & B. The impact is assessed as **neutral**	No mitigation is required	Neutral

Asset No.	Site Name	Importance	Description of Impact	Mitigation	Significance of Residual Impact following mitigation
N/A	Eston Hills Historic Landscape	High: designated landscape with intact archaeological and historical context	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 **neutral**.	No mitigation is required	Neutral
N/A	Kirkleatham Conservation Area	High: The area contains six Grade I, six Grade II* and 12 Grade II listed buildings and is classed as an 'outstanding' conservation area.	The operational development will **not change** 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 **neutral**.	No mitigation is required	Neutral
N/A	Yearby Conservation Area	Moderate: The area contains six Grade II listed buildings and has important historical links/ shared views with Kirkleatham	The character and importance of the conservation area and all of the listed buildings therein will **not change** and there will be no impact arising from the operational development. The impact is therefore assessed as **neutral**	No mitigation is required	Neutral
DECOMMISSIONING					
1011273	Hillfort at Eston Nab	High: Scheduled Monument	Activity associated with the decommissioning of Teesside A & B will not affect the monument's setting, resulting in **no change**. The impact is assessed as **neutral**	No mitigation is required	Neutral

Asset No.	Site Name	Importance	Description of Impact	Mitigation	Significance of Residual Impact following mitigation
N/A	Eston Nab Historic Landscape	High: designated landscape with intact archaeological and historical context	Activity associated with the decommissioning of Teesside A & B will not affect the setting of the landscape, resulting in **no change**. The impact is assessed as **neutral**	No mitigation is required	Neutral

13 Summary

13.1.1 The impact assessment has concluded there will be no significant impacts to designated assets in the study area that would result in a level of harm to the assets or their setting. In addition it is assessed there are no significant cumulative impacts.

13.1.2 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.

WWII Gun Emplacement: Asset 3585

13.1.3 This asset comprises a WWII gun emplacement which is assessed as being of **low importance** in accordance with **Table 2**. Impacts arising during construction of the HVDC route at landfall, including the construction of a temporary works access could result in the complete removal of the asset which would result in a **high** magnitude of change in accordance with **Table 3**. The level of impact prior to mitigation in accordance with **Table 4** is therefore assessed to be **moderate**.

13.1.4 The asset is a discrete feature measuring approximately 1.5m diameter and therefore mitigation by avoidance of the asset is a realistic option. Mitigation, in the form of fencing to create a physical barrier between the asset and construction activities, will prevent any damage occurring during construction and will result in there being **no change** to the asset (**Table 3**). The residual level of impact following mitigation in accordance with Table 5 will therefore be reduced to **neutral**.

Geophysical Survey Area 3

13.1.5 Geophysical survey Area 3 identified possible archaeological remains potentially associated with settlement and enclosure which are assessed to be of **low** value. The magnitude of change arising from the construction of the HVAC cable route is assessed to be **high** as it will entail complete removal of the asset. The level of impact prior to mitigation is therefore assessed as **moderate adverse**. Archaeological mitigation in the form of a programme of archaeological evaluation, excavation and recording, would seek to preserve the archaeological remains by record and reduce the level of significant impact. The residual impact following mitigation is assessed to be **minor adverse**.

Geophysical Area 5

13.1.6 Geophysical survey Area 5 identified potential archaeological remains of **low** value. The magnitude of change arising from the construction of the converter stations is assessed to be **high** as it will entail complete removal of the asset. The level of impact prior to mitigation is therefore assessed as **moderate adverse**. Archaeological mitigation in the form of a programme of archaeological evaluation, excavation and recording, would seek to preserve the archaeological remains by record and reduce the level of significant impact. The residual impact following mitigation is assessed to be **minor adverse**.

Geophysical Survey Area 8a

13.1.7 Area 8a was identified from the geophysical survey and comprises a series of rectilinear enclosures assessed to be of **low** importance in accordance with **Table 2**. 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. The significance of the impact is therefore assessed as **moderate adverse.** Mitigation in the form of a programme of archaeological evaluation, excavation and recording (see Section 11, Mitigation) would seek to preserve the archaeological remains by record thereby reducing the overall residual impact to **minor adverse**.

Geophysical Survey Area 11

13.1.8 Area 11 was identified from the geophysical survey and comprises a sub-rectangular enclosure and possible trackway. The site is non-designated and is potentially of **low** (local) importance. The magnitude of change arising from the construction of the HVDC cable is assessed as **high** (**Table 3**) as it will entail the complete removal and loss of archaeological remains which appear to be contained within the construction corridor. The level of the impact prior to mitigation is therefore assessed as **moderate adverse** in accordance with **Table 4**. Mitigation in the form of a programme of archaeological evaluation, excavation and recording (see Section 11, Mitigation) would seek to preserve the archaeological remains by record thereby reducing the overall residual impact, in accordance with **Table 5** to **minor adverse**.

Geophysical Survey Area 17

13.1.9 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. The importance of the remains is assessed as **moderate** in accordance with **Table 2**. Construction of the HVDC cable route for Project A or B 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**, in accordance with **Table 3**, as the asset will not be totally destroyed, but a large part of the historical context of the asset would be permanently affected. The level of impact, in accordance with **Table 4**, prior to the implementation of mitigation is therefore assessed as **moderate adverse**.

13.1.10 Mitigation in the form of contextual study, archaeological evaluation and detailed excavation and recording will reduce the impact (see Section 11, Mitigation), and the residual impact level following successful mitigation will be reduced to **minor adverse** in accordance with **Table 5**.

Brickearth Extraction Pit, Garden Field Pond: Asset 4049 (Figure 7a)

13.1.11 This asset is assessed as **low** in accordance with **Table 2**. 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. The level of the impact in accordance with **Table 4** is therefore assessed as **moderate**. The level of residual impact in accordance with **Table 5** will be reduced to **minor adverse** following a programme of archaeological mitigation (Section 11, Mitigation).

Conclusion

13.1.12 Following mitigation it is assessed there will be no significant impacts arising from the construction, operation or decommissioning of Dogger Bank Teesside A & B.

13.1.13 In accordance with the guidance in the NPPF, the residual impacts presented within Table 9 indicate there will be no substantial harm to heritage assets as a result of Dogger Bank Teesside A & B.

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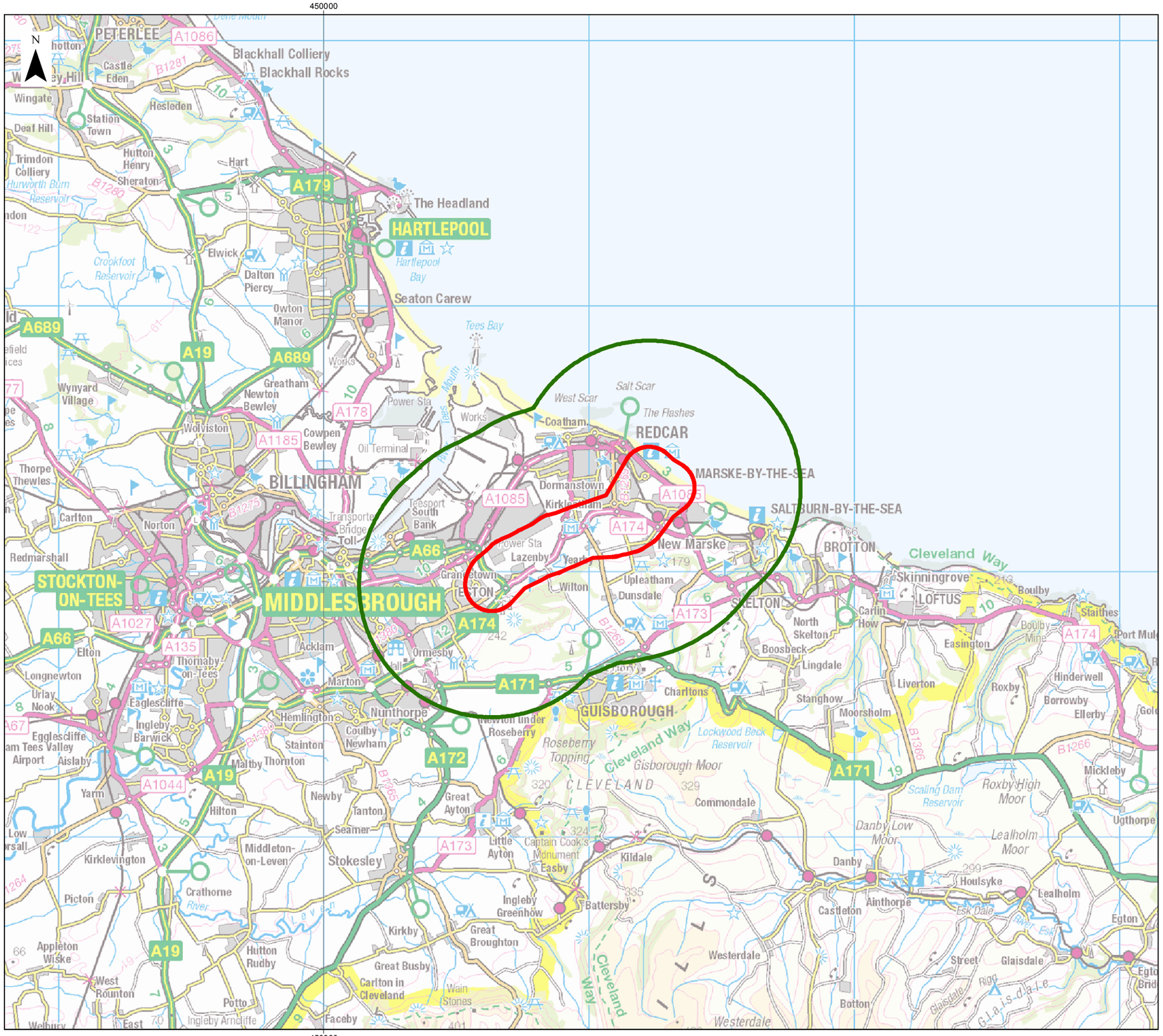

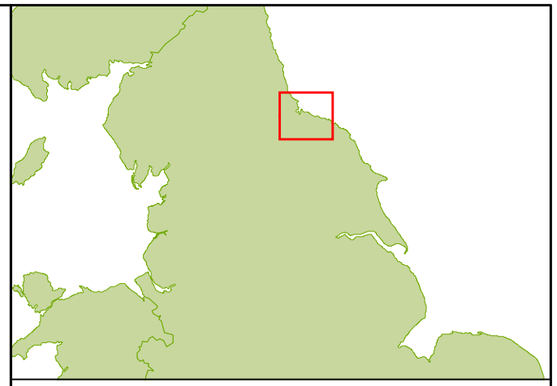

Key

1km Study Area

5km Study Area

0 2 4 6 8 10

Kilometres

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PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 1
SITE LOCATION PLAN

VER	DATE	REMARKS	Drawn	Checked
1	19/12/2012	Draft	GB	AC
3	07/02/2014	Draft	AJC	AC
4	11/02/2014	Final	GB	AC

DRAWING NUMBER:

47065276/AR/001

SCALE	1:150,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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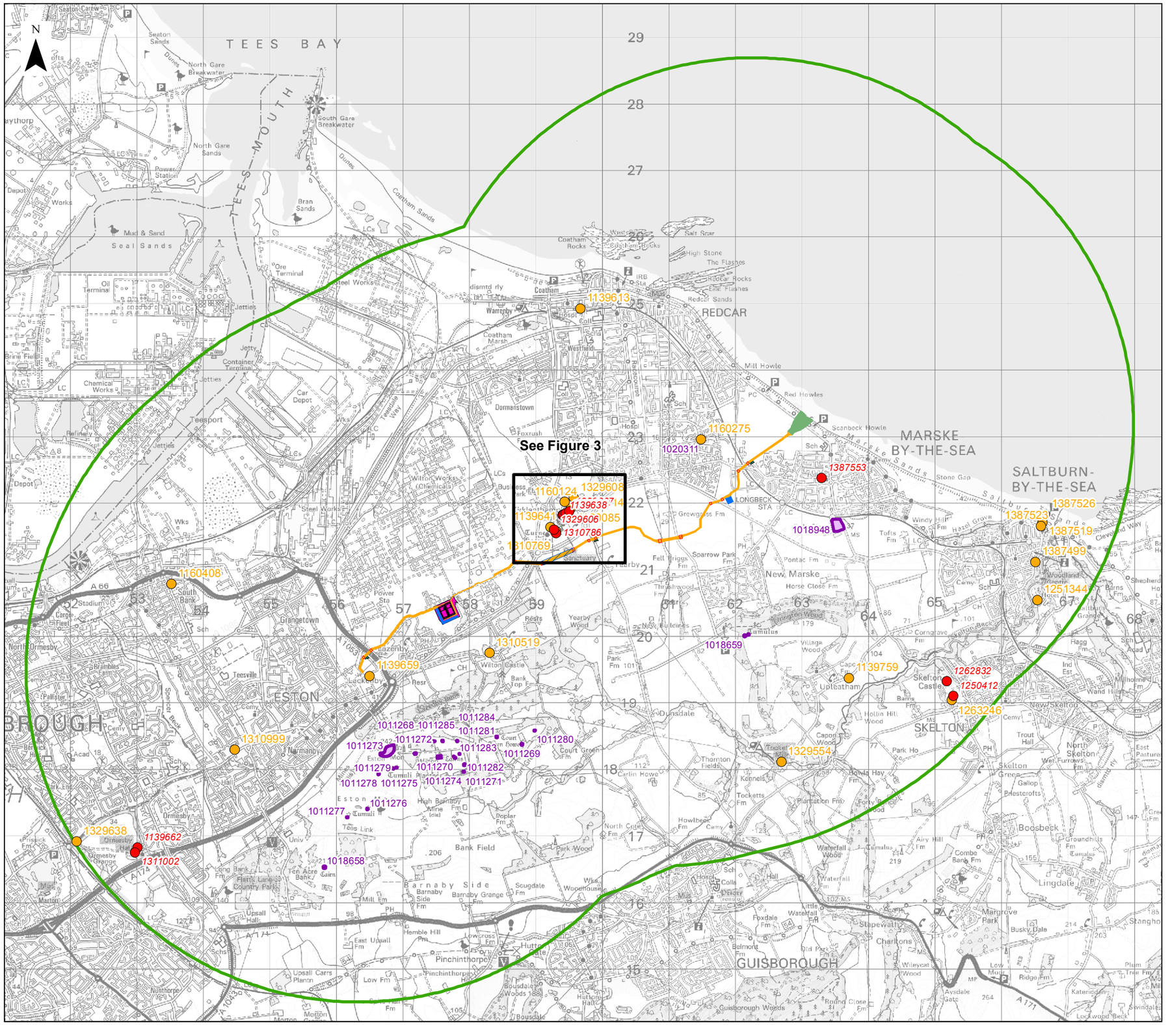

Key

- 5km Study Area
- Scheduled Monuments

Listed Buildings

- Grade I
- Grade II*

- Cable landfall envelope
- Onshore cable route
- Primary compound
- Intermediate compound
- Converter stations site
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

Data Source:
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PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 2
DESIGNATED ASSETS OF HIGH IMPORTANCE IN THE 5KM STUDY AREA

VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	07/02/2014	Minor edits	GB	AC
7	11/02/2014	Final	GB	AC

DRAWING NUMBER:

47065276/AR/002

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

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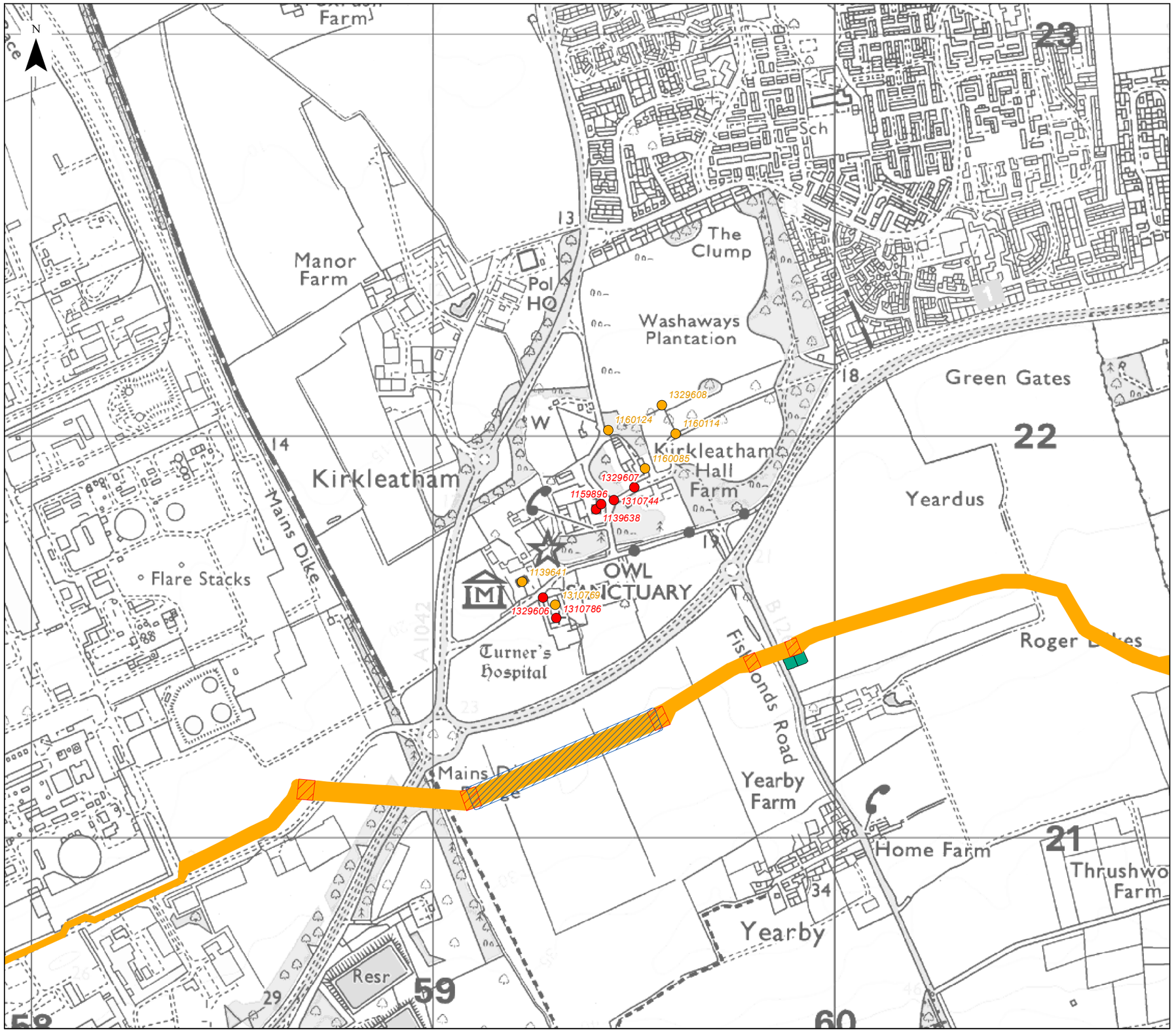
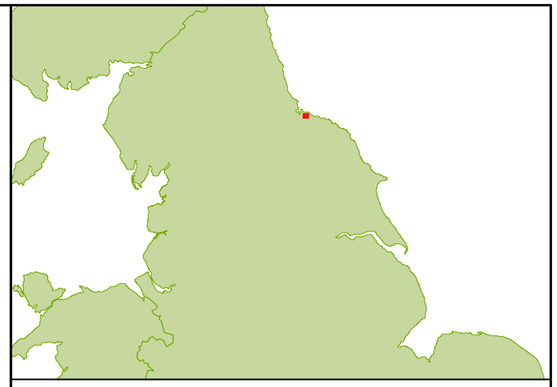




Key

Listed Buildings

- Grade I
- Grade II*
- Onshore cable route
- Intermediate compound
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

0 0.05 0.1 0.15 0.2 0.25

Kilometres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 3
DESIGNATED ASSETS OF HIGH IMPORTANCE IN KIRKLEATHAM

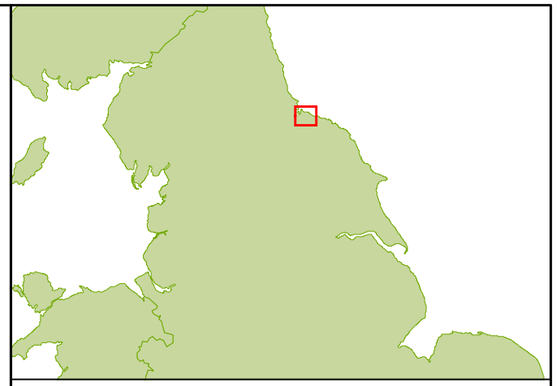
VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	07/02/2014	Minor edits	GB	AC
7	11/02/2014	Final	GB	AC

DRAWING NUMBER:

47065276/AR/003

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

FOREWIND



Key

- 5km Study Area
- Grade II Listed Buildings
- Registered Parks and Gardens
- Conservation Areas
- Historic Landscape
- Cable landfall envelope
- Onshore cable route
- Primary compound
- Intermediate compound
- Converter stations site
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

0 0.2 0.4 0.6 0.8 1
Kilometres

Data Source:

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 4
DESIGNATED ASSETS OF MODERATE IMPORTANCE IN THE 5KM STUDY AREA

VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	02/02/2014	Minor edits	GB	AC
7	11/02/2014	Final	GB	AC

DRAWING NUMBER:

47065276/AR/004

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

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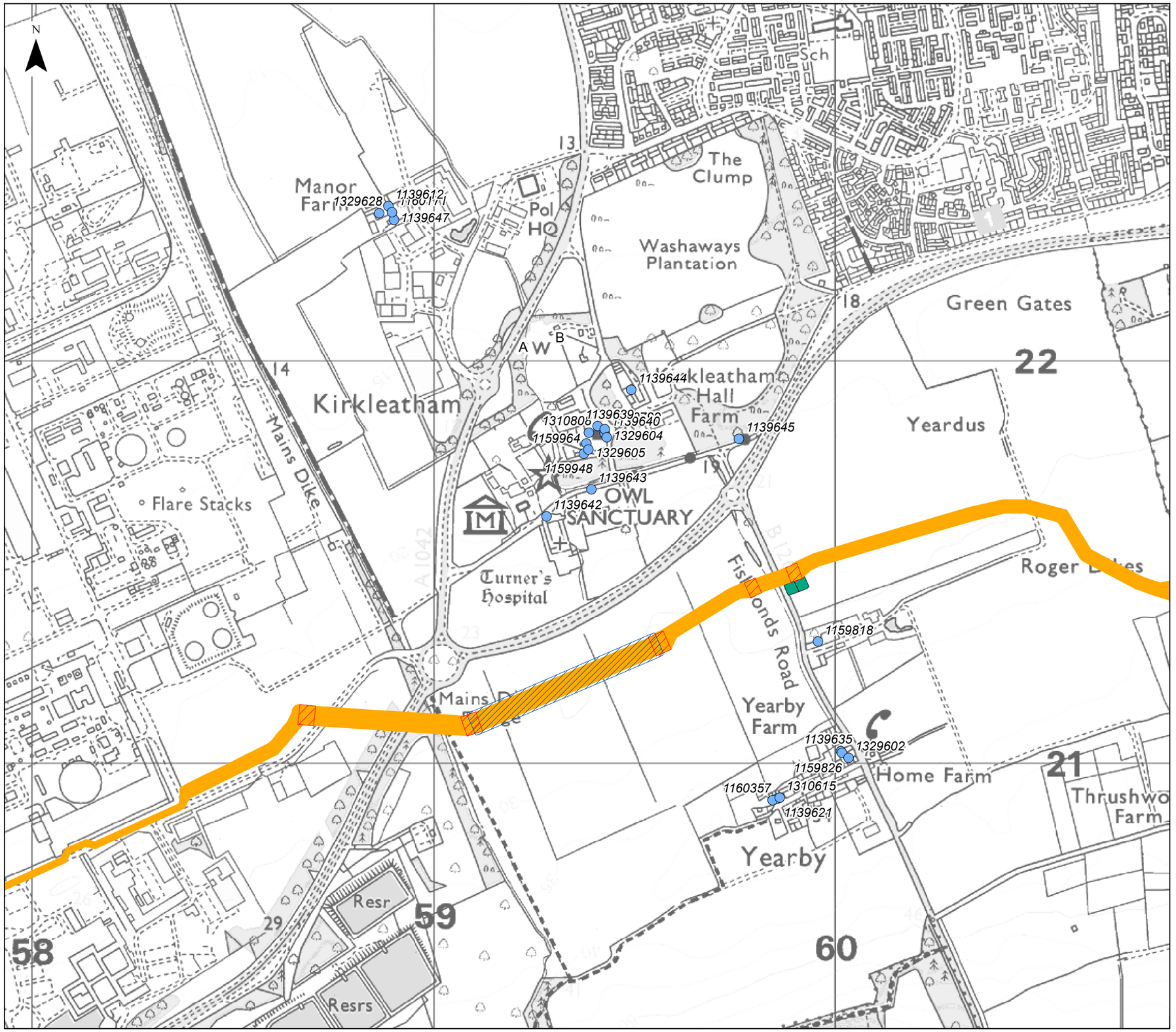

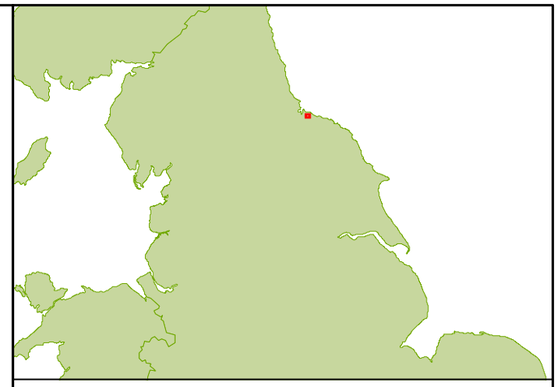

Key

- Conservation Area
- Grade II Listed Buildings
- Onshore cable route
- Intermediate compound
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

0 0.05 0.1 0.15 0.2 0.25

Kilometres

Data Source:

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 5
DESIGNATED ASSETS OF MODERATE IMPORTANCE IN KIRKLEATHAM AND YEARBY

VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	07/02/2014	Minor edits	GB	AC
7	11/02/2014	Final	GB	AC

DRAWING NUMBER:

47065276/AR/005

SCALE	PLOT SIZE	DATUM	PROJECTION
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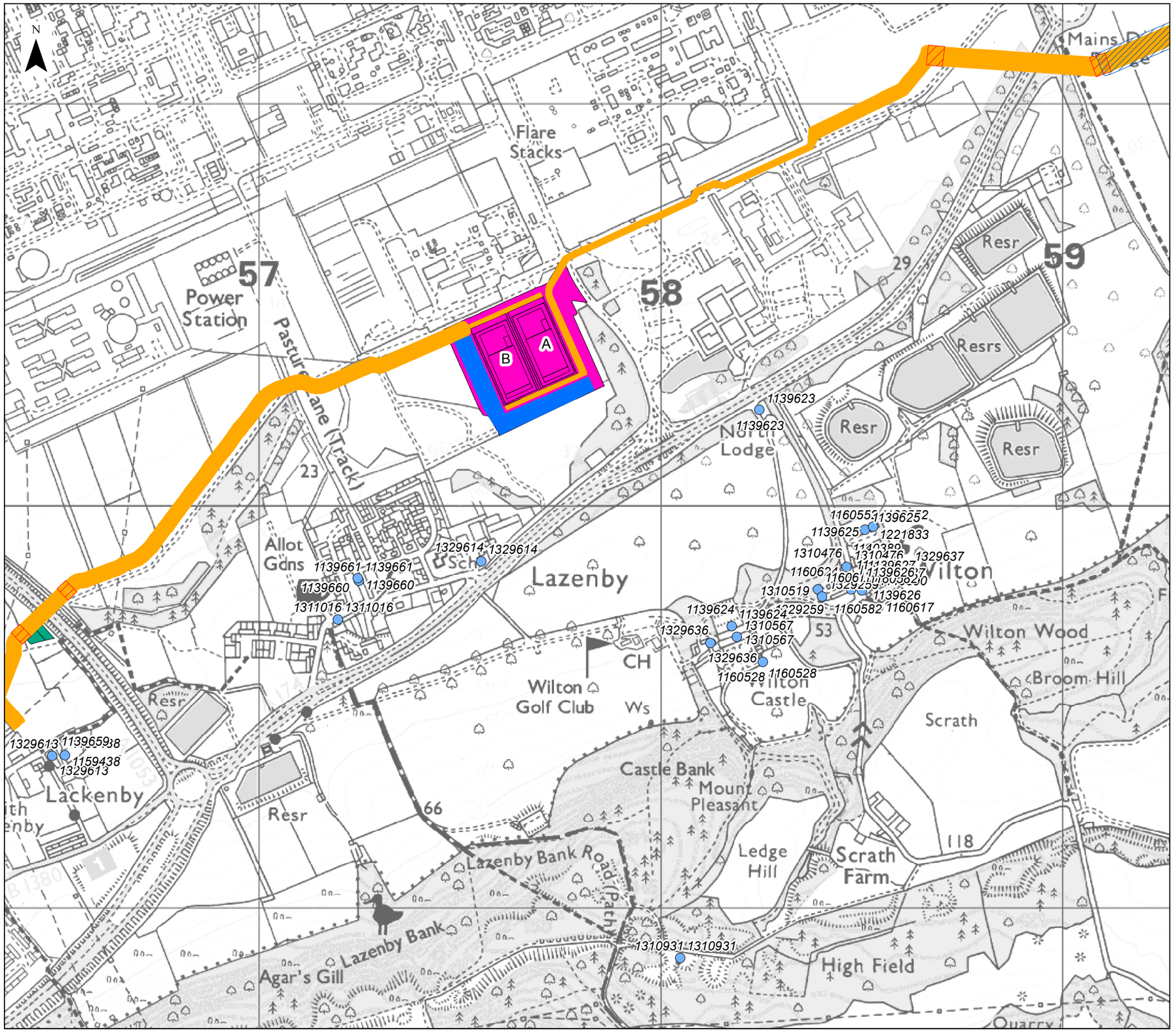
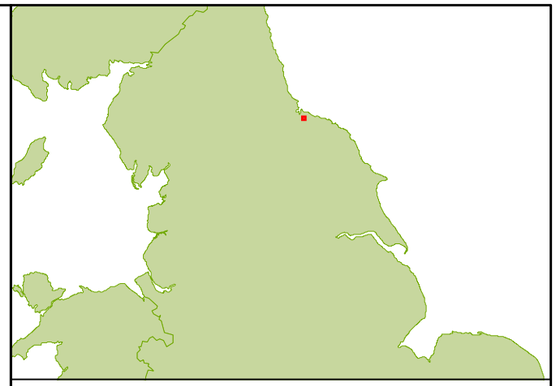




Key

- Grade II Listed Buildings
- Conservation Area
- Onshore cable route
- Primary compound
- Intermediate compound
- Converter stations site
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

0 0.05 0.1 0.15 0.2 0.25

Kilometres

Data Source:

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 6
DESIGNATED ASSETS OF MODERATE IMPORTANCE IN WILTON AND LAZENBY

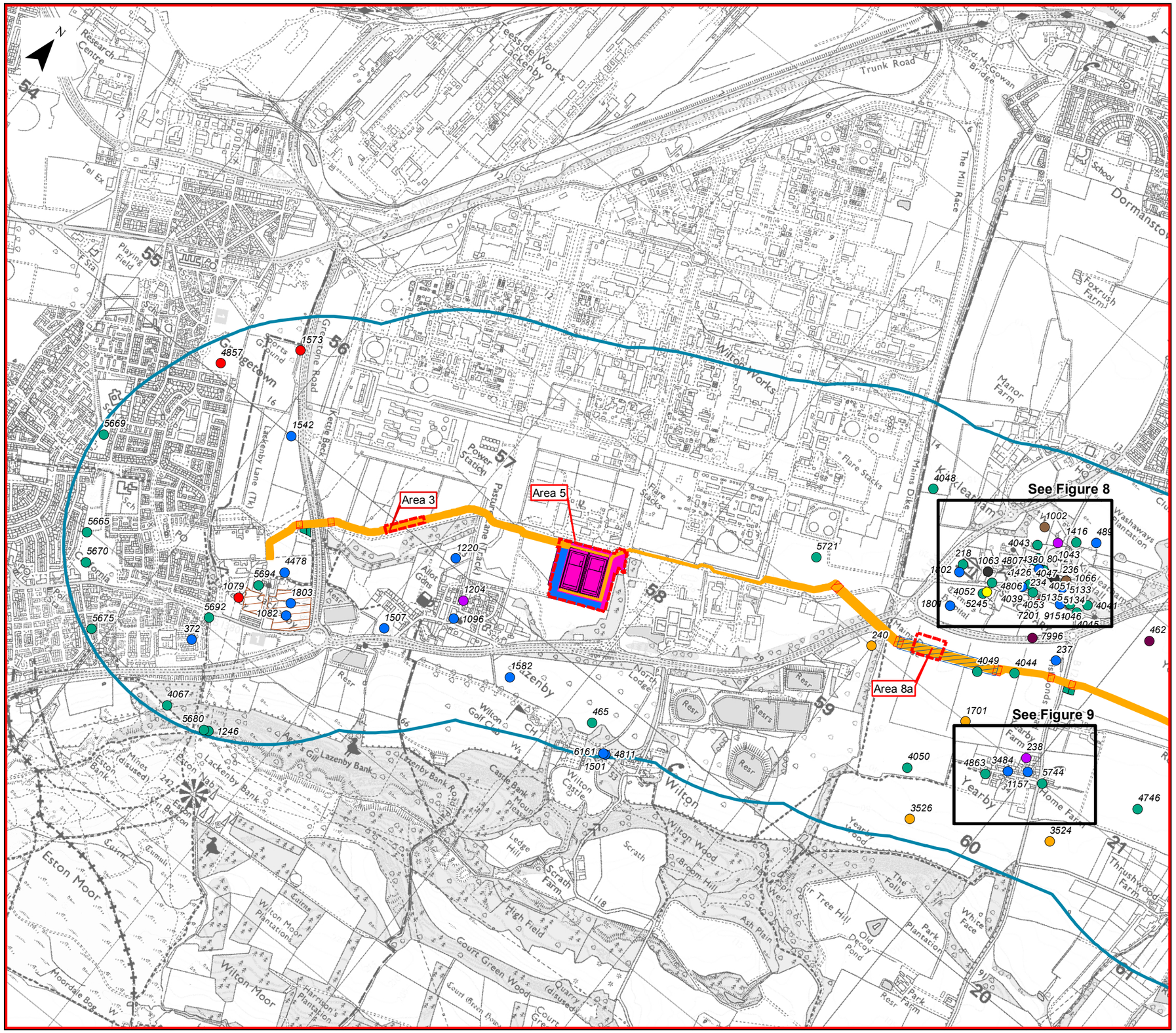
VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	07/02/2014	Minor edits	GB	AC
7	11/02/2014	Final	GB	AC

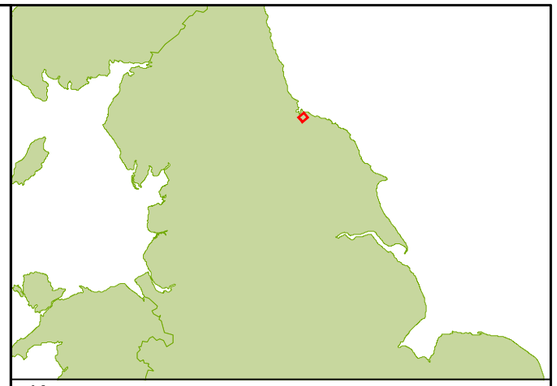
DRAWING NUMBER:

47065276/AR/006

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

FOREWIND





Key

- 1km Study Area
- Geophysical survey site
- Ridge and furrow
- Onshore cable route
- Intermediate compound
- Converter stations site
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

HER Heritage Assets

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

0 0.2 0.4 0.6 0.8 1

Kilometres

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PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 7A
NON-DESIGNATED ASSETS
IN THE 1KM STUDY AREA

VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	07/02/2014	Minor edits	GB	AC
7	11/02/2014	Final	GB	AC

DRAWING NUMBER:

47065276/AR/007

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

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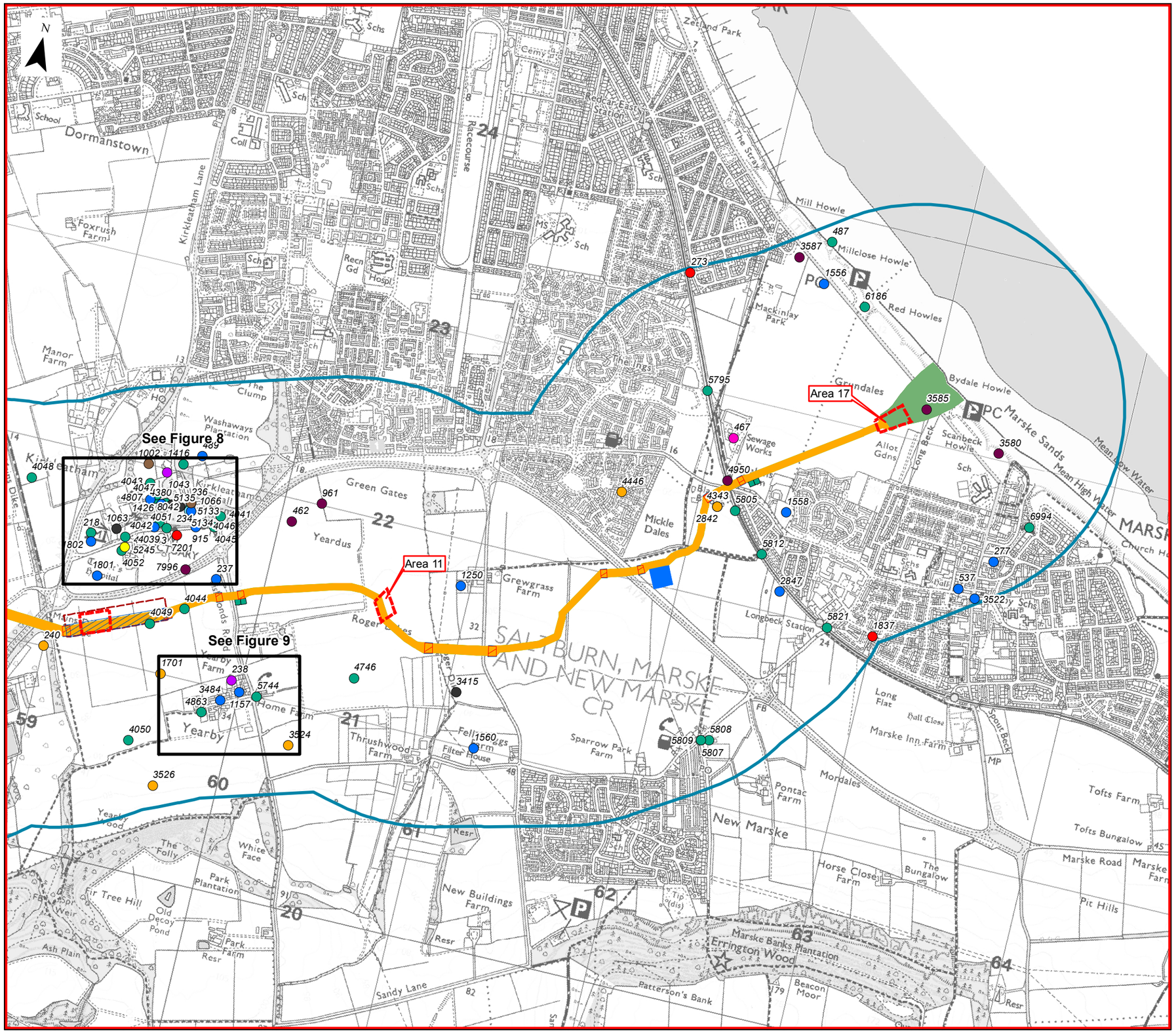

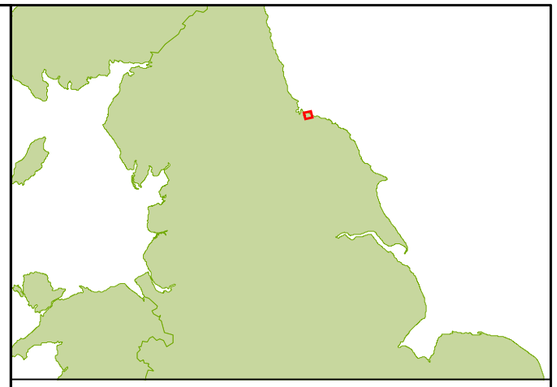

Key

- 1km Study Area
- Geophysical survey site
- Cable landfall envelope
- Onshore cable route
- Primary compound
- Intermediate compound
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

HER Heritage Assets

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

0 0.2 0.4 0.6 0.8 1

Kilometres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 7B
NON-DESIGNATED ASSETS
IN THE 1KM STUDY AREA

VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	07/02/2014	Minor edits	GB	AC
7	11/02/2014	Final	GB	AC

DRAWING NUMBER:

47065276/AR/008

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

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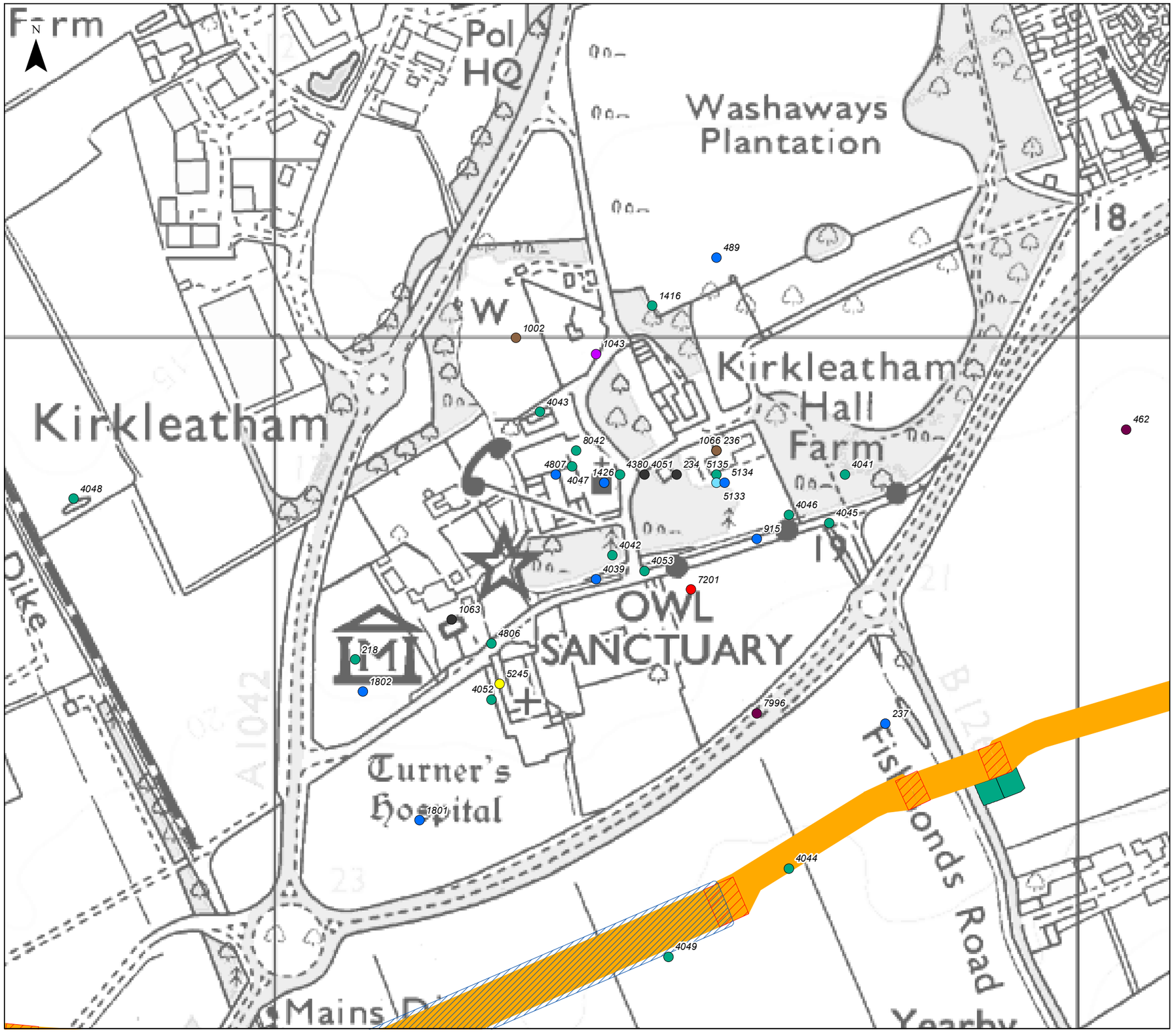

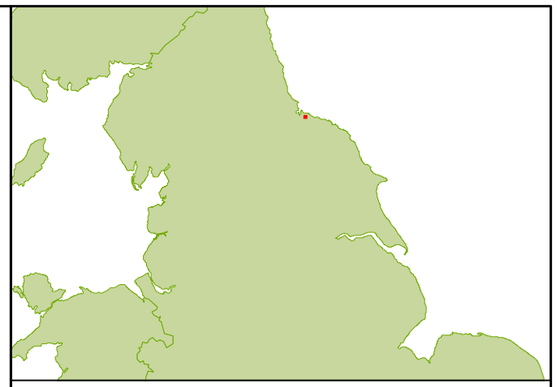

Key

- Onshore cable route
- Intermediate compound
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

HER Heritage Assets

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

0 0.05 0.1 0.15 0.2 0.25

Kilometres

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PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 8
NON-DESIGNATED ASSETS AT KIRKLEATHAM

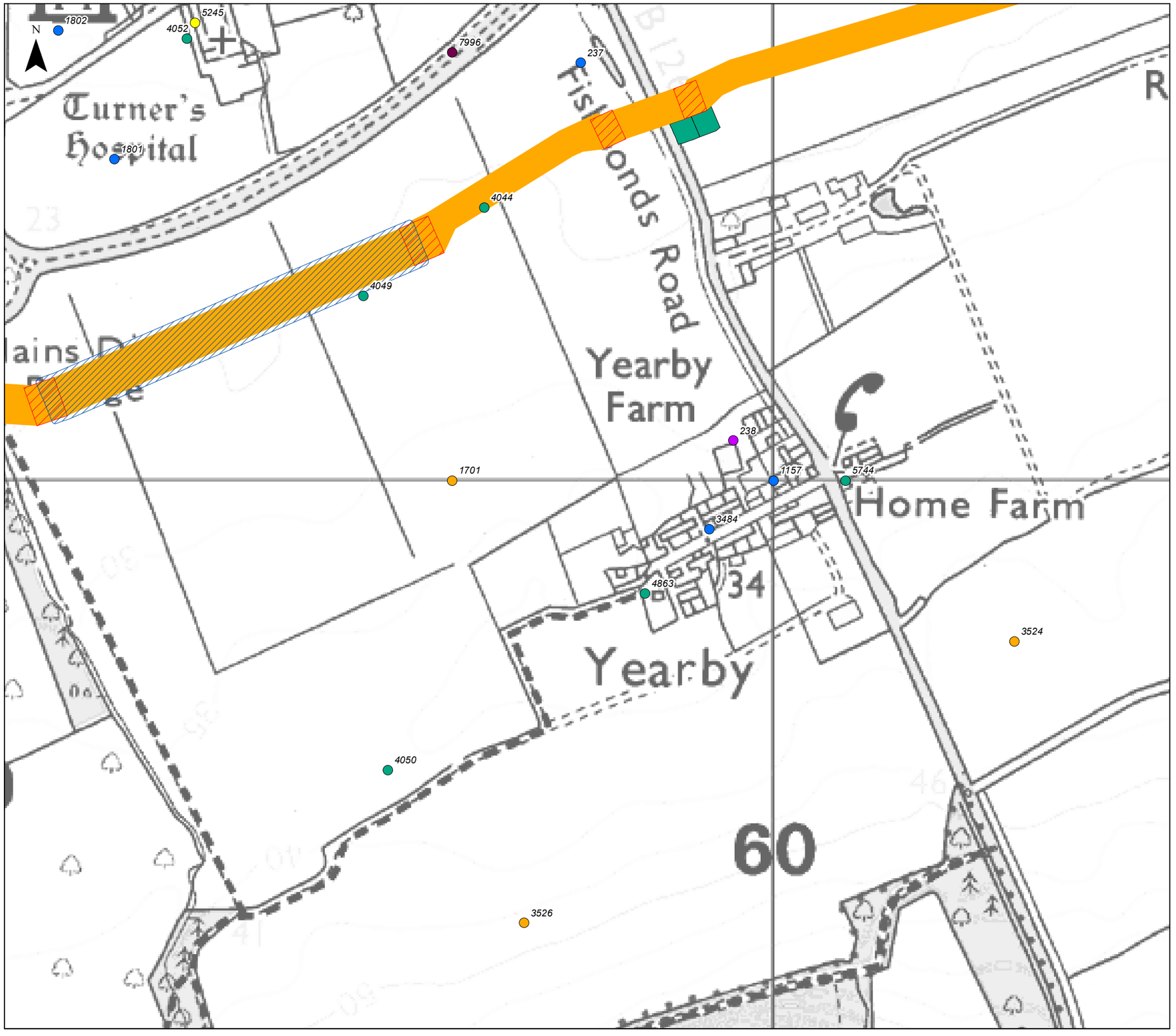
VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	07/02/2014	Minor edits	GB	AC
8	11/02/2014	Final	GB	AC

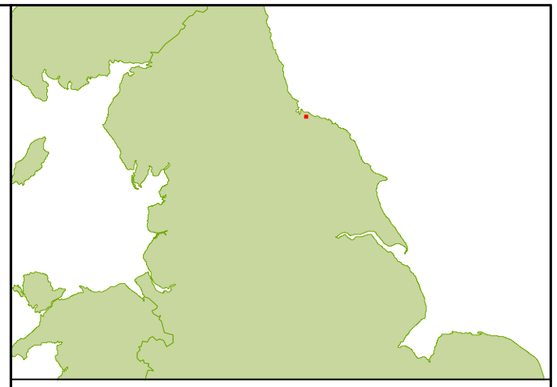
DRAWING NUMBER:

47065276/AR/009

SCALE	1:5,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

FOREWIND





Key

- Onshore cable route
- Intermediate compound
- HDD Entry Exit Pits
- HDD or open trench to be confirmed

HER Heritage Assets

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

0 0.05 0.1 0.15 0.2 0.25

Kilometres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

FIGURE 9
NON-DESIGNATED ASSETS AT YEARBY

VER	DATE	REMARKS	Drawn	Checked
5	14/01/2014	Minor edits	GB	AC
6	07/02/2014	Minor edits	GB	AC
7	07/02/2014	Final	GB	AC

DRAWING NUMBER:

47065276/AR/010

SCALE	1:5,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

FOREWIND

Appendix A

Catalogue of Heritage Assets within the Study Areas

Scheduled Monuments

Monument ID	Name	Description
1011273	ESTON NAB HILLFORT	LATE BRONZE AGE HILLFORT AND 19THC BEACON
1011280	BOWL BARROW	BRONZE AGE BARROW NW OF COURT GREEN FARM
1011283	BOWL BARROWS	2 BRONZE AGE BARROWS NW OF HIGH COURT GREEN
1011272	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH BARNABY FARM
1011274	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH COURT GREEN
1011271	BOWL BARROW	BRONZE AGE BARROW NORTH OF HIGH BARNABY FARM
1011270	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH BARNABY FARM
1011282	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH COURT GREEN
1011281	BOWL BARROW	BRONZE AGE BARROW NW OF COURT GREEN FARM
1011268	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH COURT GREEN
1011285	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH COURT GREEN
1011269	BOWL BARROW	BRONZE AGE BARROW NW OF COURT GREEN FARM
1011284	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH COURT GREEN
1011279	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH BARNABY FARM
1011275	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH BARNABY FARM
1018658	ROUND BARROW	BROANZE AGE BARROW ON UPSALL MOOR
1011276	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH BARNABY FARM
1011277	CAIRN	CAIRN NORTH OF MILL FARM
1011278	BOWL BARROW	BRONZE AGE BARROW NW OF HIGH BARNABY FARM
1018659	ROUND BARROWS	SITE OF 2 ROUND BARROWS ON PATTERSON'S BANK
1020311	ACOUSTIC MIRROR	FIRST WORLD WAR ACOUSTIC MIRROR
1018948	MANOR	MEDIEVAL MANORIAL SETTLEMENT AND FIELD SYSTEM

Listed Buildings

Listed Building ID	Name	Grade
1139638	CHURCH OF ST CUTHBERT	I
1139662	STABLEBLOCK, CIRCA 80 METRES NORTH-EAST OF ORMESBY HALL	I
1159896	TURNER MAUSOLEUM ADJOINING CHURCH OF ST CUTHBERT	I
1250412	STABLE BLOCK, STABLE HOUSE AND COACH HOUSE, 200 METRES SOUTH EAST OF SKELTON CASTLE	I
1262832	SKELTON CASTLE	I
1310744	GATEPIERS AT ENTRANCE TO DRIVE OF KIRKLEATHAM HALL SCHOOL	I
1310786	SIR WILLIAM TURNER'S HOSPITAL	I
1311002	ORMESBY HALL, ADJOINING OUTBUILDINGS AND SCREEN WALLS	I
1329606	ENTRANCE SCREEN LOGGIAS FORTS FLAT AND OUTHOUSES TO SIR WILLIAM TURNERS HOSPITAL	I
1329607	GATEPIERS AT ENTRANCE TO FORECOURT OF KIRKLEATHAM HALL SCHOOL	I
1387553	MARSKE HALL	I
1139613	RED BARNS HOUSE AND RED BARNS HOTEL	II*
1139641	OLD HALL MUSEUM	II*
1139659	OLD HALL FARMHOUSE AND GARDEN WALL	II*
1139759	OLD CHURCH OF ST ANDREW	II*
1160085	KIRKLEATHAM HALL FARM	II*
1160114	GATEHOUSE 120 METRES NORTH EAST OF KIRKLEATHAM HALL FARM	II*
1160124	BASTION 100 METRES NORTH WEST OF KIRKLEATHAM HALL FARM	II*
1160275	LISTENING POST 330 METRES OF WHEATLANDS FARMHOUSE	II*
1160408	BAPTIST CHURCH	II*
1251344	RUSHPOOL HALL	II*
1263246	OLD CHURCH OF ALL SAINTS	II*
1310519	CHURCH OF ST CUTHBERT	II*
1310769	STATUE OF JUSTICE IN COURTYARD OF SIR WILLIAM TURNERS HOSPITAL	II*
1310999	MANOR HOUSE	II*
1329554	TOCKETTS MILL	II*
1329608	BASTION AND ADJOINING HA HA WALL 150 METRES NORTH OF KIRKLEATHAM HALL FARM	II*
1329638	WEST LODGES WITH GATES GATEPIERS AND FLANKING WALLS	II*
1387499	WAR MEMORIAL	II*
1387519	INCLINED TRAMWAY (LOWER BUILDING)	II*
1387523	INCLINED TRAMWAY (UPPER BUILDING)	II*
1387526	SALTBURN PIER	II*
1115786	PROVENDER STORE	II
1115787	POWER HOUSE	II

Listed Building ID	Name	Grade
1115823	FANHOUSE	II
1115824	MAIN WINDING HOUSE AND DOWNCAST SHAFT	II
1115825	SMALL WINDING HOUSE	II
1136586	STERNE'S WELL, CIRCA 100 METRES SOUTH WEST OF BACK LANE FARMHOUSE	II
1136930	57-61, HIGH STREET	II
1139612	BARN SCREEN WALL AND PRIVY ADJOINING NORTH SIDE OF MANOR FARMHOUSE	II
1139614	CHURCH OF ST PETER	II
1139615	WHEATLANDS FARMHOUSE	II
1139616	BARN BYRE RANGE AND FOLDYARD C10 METRES WEST OF WHEATLANDS FARMHOUSE	II
1139617	PAIR OF CART SHEDS CIRCA 40 METRES WEST OF WHEATLANDS FARMHOUSE	II
1139618	RYEHILLS FARMHOUSE	II
1139619	GARDEN WALL SOUTH OF MARSH FARMHOUSE	II
1139620	BARN AND STABLE CIRCA 10 METRES NORTH WEST OF MARSH FARMHOUSE	II
1139621	25, YEARBY ROAD	II
1139622	CHURCH OF ST PETER	II
1139623	NORTH LODGE	II
1139624	RETAINING WALL AND STAIR TO FORECOURT OF WILTON CASTLE	II
1139625	WILTON FARMHOUSE	II
1139626	5, WILTON VILLAGE	II
1139627	IMPERIAL CHEMICAL INDUSTRIES ESTATE WORKSHOPS	II
1139628	CHURCH OF ST CUTHBERT	II
1139629	COFFIN AND HEADSTONE ONE METRE NORTH OF CHURCH OF ST CUTHBERT	II
1139630	BROWN MONUMENT, CIRCA 18 METRES NORTH EAST OF CHURCH OF ST CUTHBERT	II
1139631	STANDING STONE, CIRCA 17 METRES SOUTH OF CHURCH OF ST CUTHBERT	II
1139632	BOUNDARY STONE NORTH, CIRCA 30 METRES NORTH OF NUMBER 9A	II
1139633	BARN AND BYRE RANGES CIRCA 20 METRES WEST OF ORMESBY GRANGE FARMHOUSE	II
1139634	PIGSTY RANGE CIRCA 35 METRES NORTH OF ORMESBY GRANGE FARMHOUSE	II
1139635	SCHOOL HOUSE	II
1139636	TOWN CLOCK	II
1139637	44 AND 46, HIGH STREET WEST	II
1139639	GAUNT TOMBSTONE CIRCA 10 METRES NORTH OF CHURCH OF ST CUTHBERT	II
1139640	CORNEY CHEST TOMB ONE METRE EAST OF CHURCH OF ST CUTHBERT	II
1139642	HA-HA WALL AT ENTRANCE TO SIR WILLIAM TURNERS HOSPITAL	II

Listed Building ID	Name	Grade
1139643	BOUNDARY WALLS AND TRANSVERSE WALL ENCLOSING FORMER KIRKLEATHAM GARDENS	II
1139644	BARN AND STABLE ADJOINING KIRKLEATHAM HALL FARM	II
1139645	BOUNDARY WALL HA-HA WALL GATES AND GATEPIERS TO SOUTH OF KIRKLEATHAM HALL SCHOOL	II
1139646	BARN C.20M NORTH WEST OF FOXRUSH FARMHOUSE	II
1139647	BARN AND STABLE ADJOINING SOUTH OF MANOR FARMHOUSE	II
1139654	POWDER MAGAZINE AND ADJOINING BLAST WALLS	II
1139655	CHURCH OF ST HELEN	II
1139656	BLACKSMITH'S WORKSHOP NORTH OF NUMBER 45	II
1139657	STAPYLTON ARMS PUBLIC HOUSE	II
1139658	82, HIGH STREET	II
1139660	9, CHAPEL STREET	II
1139661	11, CHAPEL STREET	II
1139663	EAST LODGE	II
1139664	BRIDGE, CIRCA 70 METRES SOUTH WEST OF ORMESBY HOUSE	II
1139722	BOUNDARY GARDEN WALLS TO NUMBERS 14 TO 20	II
1139746	WOODHOUSE FARMHOUSE AND ADJOINING FORMER FARM COTTAGE AND OUTBUILDINGS	II
1139747	PAIR OF MARKER STONES, 2 METRES TO SOUTH OF SCUGDALE FARMHOUSE	II
1139748	MILL FARMHOUSE	II
1139754	MARKER STONE, APPROXIMATELY 190 METRES NORTH EAST OF CARLING HOWE FARMHOUSE	II
1139755	GATEPIERS, TO NORTH EAST OF DUNSDALE LODGE	II
1139756	BOUNDARY WALL AND GATEPIERS TO WEST OF DUNSDALE FARMHOUSE	II
1139757	ELLERS BRIDGE	II
1139758	UPSALL HALL, GATEPIERS, SERVICE WING AND LAUNDRY	II
1139760	BOUNDARY WALLS, GATES AND GATEPIERS TO SOUTH OF CHURCH OF ST ANDREW	II
1139761	WAR MEMORIAL, 3 METRES SOUTH EAST OF CHURCH OF ST ANDREW	II
1139762	14 AND 15	II
1139763	17 AND 18	II
1139786	TOCKETTS HOUSE (THE KENNELS) AND EXTENSION	II
1139787	MILL HOUSE ADJOINING EAST SIDE OF TOCKETTS MILL	II
1139788	PLANTATION FARMHOUSE AND REAR (NORTH EAST) WING	II
1139793	BOUNDARY STONE 1010 METRES TO NORTH OF CROSS KEYS INN, AT NGR NZ566167	II
1139804	CHURCH LANE FARMHOUSE AND WEST WING	II
1139805	BARN, STABLES, BYRE, LOOSE BOXES, CART SHED AND HORSE GIN, TO SOUTH WEST OF CHURCH LANE FARMHOUSE	II
1139806	NORTH LODGE	II
1140389	7 AND 8, WILTON VILLAGE	II

Listed Building ID	Name	Grade
1140390	9 AND 10, WILTON VILLAGE	II
1159320	SNOWDON TOMBSTONE CIRCA 8 METRES SOUTH EAST OF CHURCH OF ST HELEN	II
1159328	EVANS MONUMENT, 210 METRES WEST OF CHURCH OF ST HELEN	II
1159349	45, HIGH STREET	II
1159367	74, 76 AND 78, HIGH STREET	II
1159379	CHRIST CHURCH	II
1159399	84 AND 86, HIGH STREET	II
1159428	WAR MEMORIAL AREA RAILINGS AND GATE	II
1159438	STABLE RANGE ADJOINING SOUTH SIDE OF OLD HALL FARMHOUSE	II
1159489	NORMANBY HALL	II
1159518	BOUNDARY STONE, APPROXIMATELY 430 METRES TO NORTH OF UPSALL GRANGE AT NGR NZ551 163	II
1159525	BOUNDARY STONE APPROXIMATELY 680 METRES TO NORTH OF UPSALL HALL AT NGR NZ547 164	II
1159623	QUEEN VICTORIA JUBILEE MEMORIAL	II
1159726	GUIDE POST	II
1159736	FARM COTTAGE, ADJOINING NORTH EAST SIDE OF THORNTON FIELDS FARMHOUSE	II
1159740	DUNSDALE LODGE	II
1159746	DUNSDALE FARMHOUSE AND ADJOINING WINGS	II
1159775	STABLE BLOCK, SCREEN WALLS AND LODGE, 35 METRES NORTH WEST OF UPSALL HALL	II
1159776	CHRIST CHURCH	II
1159780	CHURCH OF ST ANDREW	II
1159784	STONE SHAFT, 2 METRES SOUTH WEST OF TOWER OF CHURCH OF ST ANDREW	II
1159788	UPLEATHAM POST OFFICE	II
1159793	NUMBER 16 AND WEST EXTENSION	II
1159804	NUMBER 20 AND OUTBUILDING ADJOINING EAST SIDE	II
1159818	TURNER'S ARMS FARMHOUSE AND ATTACHED WALL	II
1159826	YEARBY OLD SCHOOL	II
1159837	WESTFIELD HOUSE	II
1159948	THE COTTAGES	II
1159964	THE COTTAGES THE OLD VICARAGE	II
1160171	MANOR FARMHOUSE ADJOINING CART SHED AND OUTHOUSE	II
1160308	MARSH FARMHOUSE AND FARM COTTAGE	II
1160328	REDCAR CENTRAL RAILWAY STATION	II
1160357	27, YEARBY ROAD	II
1160378	WAR MEMORIAL CIRCA 5 METRES SOUTH WEST OF CHURCH OF ST PETER	II
1160528	GARDEN WALL SOUTH EAST OF WILTON CASTLE	II
1160552	THE COTTAGE STABLE COACH HOUSE AND COACH HOUSE CIRCA 14 METRES EAST OF WILTON FARMHOUSE	II
1160582	NUMBERS 3 AND 4 AND WALL ATTACHED	II

Listed Building ID	Name	Grade
1160617	PINE TREES AND WALL ATTACHED	II
1160624	18-21, WILTON VILLAGE	II
1221825	K6 TELEPHONE KIOSK, ON WEST SIDE OF NUMBER 13 (UPLEATHAM POST OFFICE)	II
1221833	K6 TELEPHONE KIOSK 2 METRES WEST OF I.C.I. ESTATE WORKSHOPS	II
1221871	BOUNDARY STONE 1060 METRES TO NORTH OF CROSS KEYS INN AT NGR NZ566 167	II
1250387	1 AND 2, CHURCH LANE	II
1250402	12, HIGH STREET	II
1250409	WORKSHOP AND STABLE ADJOINING SOUTH SIDE OF SAW MILL HOUSE	II
1250410	CASTLE LODGE	II
1250411	GATEPIERS, GATES AND WALLS NORTH EAST OF CASTLE LODGE	II
1250450	GATES, GATEPIERS AND FLANKING WALLS, 10 METRES NORTH OF NUMBER 2	II
1250467	GROUP OF 3 TOMBSTONES, APPROXIMATELY 20 METRES SOUTH WEST OF TOWER OF OLD CHURCH OF ALL SAINTS	II
1250550	BARN, CART SHED AND STABLE CIRCA 15 METRES NORTH OF BARNS FARMHOUSE	II
1251324	SKELTON MILL FARMHOUSE AND REMAINS OF MILL	II
1251330	GROTTO, 120 METRES NORTH WEST OF SKELTON CASTLE	II
1251620	NURSERY SCHOOL AND SCHOOL HOUSE	II
1251718	WEST TERRACE	II
1262821	SAW MILL HOUSE	II
1263233	FARM COTTAGES EAST OF BARNS FARMHOUSE	II
1263263	15, HIGH STREET	II
1263264	SIX TOMBSTONES SOUTH OF GATEHOUSE TO SKELTON CASTLE	II
1263265	STABLE, COACH HOUSE, COACHMAN'S HUT AND SCREEN WALL, ADJOINING EAST END OF RUSHPOOL HALL	II
1263268	17, SOUTH TERRACE	II
1263292	HUTTON TOMBSTONE CIRCA 13 METRES SOUTH WEST OF TOWER OF OLD CHURCH OF ALL SAINTS	II
1263298	4, EAST TERRACE	II
1274939	BOUNDARY STONE 1280 METRES TO NORTH OF CROSS KEYS INN AT NGR NZ565 169	II
1310476	IVY COTTAGE	II
1310567	WILTON CASTLE	II
1310598	1, MILBANK STREET	II
1310615	23, YEARBY ROAD	II
1310671	GARDEN WALL SOUTH OF RYEHILLS FARMHOUSE	II
1310702	FOXRUSH FARMHOUSE AND GARDEN WALL	II
1310767	HOWLBECK MILL FARMHOUSE, AND EAST EXTENSION	II
1310799	BUTTRESS WITH COAT OF ARMS CIRCA 2 METRES EAST OF TURNER MAUSOLEUM	II

Listed Building ID	Name	Grade
1310808	NEWCOMEN TOMBSTONE CIRCA 8 METRES NORTH WEST OF CHURCH OF ST CUTHBERT	II
1310839	NO 151 (CLARENDON HOUSE) AND AREA RAILINGS	II
1310858	METHODIST CHAPEL	II
1310859	1-20, DORMANS CRESCENT	II
1310886	UPLEATHAM BRIDGE	II
1310924	STABLES, BARN, LOOSE BOXES AND BYRE, 20 METRES NORTH OF MILL FARMHOUSE	II
1310931	LOVELL DRIFT FAN HOUSE	II
1310950	OUTBUILDINGS, WALL AND MOUNTING BLOCK CIRCA 130 METRES NORTH-EAST OF ORMESBY HALL	II
1311016	VILLAGE HALL AND GATEPIERS	II
1311050	BOUNDARY WALLS ADJOINING EAST AND WEST SIDES OF CHURCH LANE FARMHOUSE	II
1311055	BOUNDARY WALLS, GATES AND GATEPIERS ADJOINING NORTH LODGE	II
1311097	BOUNDARY STONE, APPROXIMATELY 870 METRES TO NORTH OF CROSS KEYS INN, AT NGR NZ566165	II
1320278	WORKSHOPS	II
1329259	16 AND 17, WILTON VILLAGE	II
1329509	33-55, HIGH STREET	II
1329540	THORNTON FIELDS FARMHOUSE	II
1329541	VILLAGE HALL	II
1329542	NUMBER 19 AND OUTBUILDINGS ADJOINING REAR (SOUTH) ELEVATION	II
1329549	BOUNDARY STONE, APPROXIMATELY 560 METRES TO NORTH OF UPSALL GRANGE AT NGR NZ550 163	II
1329555	BARN, STABLES, CART SHED, FOLD YARD AND HORSE GIN, TO EAST OF PLANTATION FARMHOUSE	II
1329574	HAY BARN, 100 METRES NORTH EAST OF WOODHOUSE FARMHOUSE	II
1329597	BOUNDARY STONE APPROXIMATELY 250 METRES TO SOUTH WEST OF COURT GREEN FARMHOUSE	II
1329599	STABLE, CIRCA 10 METRES NORTH WEST OF ORMESBY GRANGE FARMHOUSE	II
1329600	LYCHGATE AND BOUNDARY WALL CIRCA 35 METRES NORTH OF CHRIST CHURCH	II
1329601	ROYAL NATIONAL LIFEBOAT INSTITUTE ZETLAND LIFEBOAT MUSEUM AND ATTACHED WALL	II
1329602	TUDOR COTTAGE	II
1329603	48 AND 50, HIGH STREET WEST	II
1329604	GATES, GATEPIERS, WALL STEPS AND MOUNTING BLOCK EAST OF CHURCH OF ST CUTHBERT	II
1329605	THE COTTAGES NO 8 (THE DOWER HOUSE) AND NOS 9 AND 10	II
1329610	APPLETON TOMBSTONE CIRCA IO METRES SOUTH OF CHURCH OF ST HELEN	II
1329611	NUMBERS 47 AND 49 AND AREA/RETAINING WALLS	II

Listed Building ID	Name	Grade
1329612	THE SHIP INN	II
1329613	STABLES BYRE BARN AND FOLD-YARD, CIRCA 10 METRES WEST OF OLD HALL FARMHOUSE	II
1329614	GRANGE FARMHOUSE AND FARM COTTAGE	II
1329615	BRIDGE, CIRCA 170 METRES NORTH EAST OF ORMESBY HALL	II
1329628	BYRE RANGE AND FOLDYARD C15 METRES WEST OF MANOR FARMHOUSE	II
1329629	WAR MEMORIAL IN GROUNDS OF SIR WILLIAM TURNERS SIXTH FORM COLLEGE	II
1329630	GARDEN WALL SOUTH OF WHEATLANDS FARMHOUSE	II
1329631	STABLE CIRCA 10 METRES NORTH WEST OF WHEATLANDS FARMHOUSE	II
1329632	FARM BUILDINGS AND TWO HOUSES CIRCA 50 METRES NORTH OF RYEHILLS FARMHOUSE	II
1329633	GLADWINGS' WAREHOUSE TO WEST OF REDCAR RAILWAY STATION	II
1329634	WAR MEMORIAL	II
1329635	CHURCH OF ST JOHN THE EVANGELIST	II
1329636	STABLE BLOCK CIRCA 10 METRES WEST OF WILTON CASTLE	II
1329637	1 AND 2, WILTON VILLAGE	II
1387286	RAILWAY VIADUCT (THAT PART IN SKELTON AND BROTTON)	II
1387482	BARDENCROFT	II
1387485	2, CHURCH STREET	II
1387487	CLIFF HOUSE	II
1387488	3, DIAMOND STREET	II
1387490	VICTORIA PUBLIC HOUSE	II
1387491	SIGNALS COFFEE SHOP	II
1387493	BALMORAL TERRACE	II
1387495	BRIDGE END	II
1387496	WALL, PIERS AND RAILINGS IN FRONT OF BRIDGE END	II
1387497	THE ZETLAND WITH TERRACE WALLS AND STEPS	II
1387498	TOWER COURT	II
1387500	FELL BRIGGS FARMHOUSE	II
1387501	48, HIGH STREET	II
1387503	53, HIGH STREET	II
1387504	62 AND 64, HIGH STREET	II
1387505	91A, HIGH STREET	II
1387507	145 AND 145B, HIGH STREET	II
1387508	145A, HIGH STREET	II
1387509	NUMBERS 151-157 AND ATTACHED WALLS	II
1387510	158, HIGH STREET	II
1387511	162, HIGH STREET	II
1387512	THE SHIP INN	II
1387513	GARAGE TO NORTH EAST OF THE SHIP INN	II
1387514	K6 TELEPHONE KIOSK ADJACENT TO GARAGE TO NORTH EAST OF THE SHIP INN	II

Listed Building ID	Name	Grade
1387516	TITHE BARN	II
1387517	BEACH HUTS	II
1387527	SALTBURN PIER ENTRANCE BUILDING	II
1387528	BRITANNIA MANSIONS AND ATTACHED RAILINGS	II
1387529	KINGSLEY HOUSE, EDWARD HOUSE AND ATTACHED RAILINGS	II
1387530	ALEXANDRA HOUSE AND ATTACHED RAILINGS	II
1387531	THE MARINE HOTEL, THE MASONIC HALL, RED GABLES PUBLIC HOUSE AND ATTACHED WALL	II
1387532	RAILWAY VIADUCT (THAT PART IN SALTBURN, MARSKE AND NEW MARSKE CIVIL PARISH)	II
1387535	MANESTY	II
1387536	GARDEN WALLS TO EAST, NORTH AND WEST OF MANESTY (NUMBER 40)	II
1387537	GREENHOUSE 70 METRES WEST OF MANESTY (NUMBER 40)	II
1387538	SUMMERHOUSE 20 METRES TO REAR OF MANESTY (NUMBER 40)	II
1387539	TOFTS FARMHOUSE AND ATTACHED GARDEN WALLS	II
1387540	TOFTS FARM: BUILDING NORTH WEST OF FARMHOUSE	II
1387541	TOFTS FARM: BUILDING WEST OF FARMHOUSE	II
1387542	MILTON STREET METHODIST CHURCH AND ATTACHED RAILINGS AND WALLS	II
1387543	MILTON STREET METHODIST CHURCH HALL	II
1387544	ZETLAND MEWS	II
1387545	ZETLAND ESTATE OFFICE	II
1387546	CHURCH OF ST MARK	II
1387548	WALLS AROUND GROUNDS OF CHURCH OF ST MARK	II
1387550	WAR MEMORIAL OF CHURCH OF ST MARK WITH ATTACHED PIERS AND LINKING CHAINS	II
1387555	DOVECOTE REAR OF NUMBER 26 WITH WALL ATTACHED TO GARDENS OF NUMBERS 26 AND 28 (NOT INCLUDED)	II
1387561	GARDEN WALLS IN FRONT OF MARSKE HALL	II
1387564	NUMBERS 1 AND 2 MARSKE HALL COTTAGES AND ATTACHED STABLES	II
1387565	STORAGE BUILDING NORTH WEST OF MARSKE HALL	II
1387566	OLD CHURCH OF ST GERMAIN	II
1387567	GROUP OF 3 HEADSTONES 10 METRES SOUTH SOUTH WEST OF OLD CHURCH OF ST GERMAIN	II
1387568	MORTUARY	II
1387569	SHIP HOUSE	II
1387570	THE SHIP PUBLIC HOUSE	II
1387572	RAILWAY STATION	II
1387577	GAZEBO AND GARDEN WALL	II
1387584	ALBERT MEMORIAL	II
1387592	RIFTSWOOD	II
1387613	CHURCH OF EMMANUEL	II

Listed Building ID	Name	Grade
1387624	WALLS AROUND GROUNDS OF CHURCH OF EMMANUEL INCLUDING GATES	II
1387628	QUEEN HOTEL	II
1387632	SALTBURN COMMUNITY CENTRE AND THEATRE WITH FORMER CHURCH HALL	II
1387635	SALTBURN PRIMARY SCHOOL (MARSKE MILL BASE)	II
1387638	WINDSOR COURT	II
1392585	WAR MEMORIAL IN THE CHURCHYARD OF ST CUTHBERT	II
1387558	GARDEN WALLS AND ATTACHED STORAGE BUILDINGS TO THE REAR OF MARSKE HALL	II
1387637	WARRIOR TERRACE	II
1250414	WHITE HOUSE	II
1250403	15A AND 17, HIGH STREET	II
1250405	35, HIGH STREET	II
1250404	31, HIGH STREET	II
1250406	37, HIGH STREET	II
1250666	45 AND 47, HIGH STREET	II
1251358	FARM COTTAGES, CIRCA 100 METRES EAST OF SALTBURN GRANGE FARMHOUSE	II

Conservation Areas

Name
KIRKLEATHAM CONSERVATION AREA
YEARBY CONSERVATION AREA
MARSKE CONSERVATION AREA
WILTON CONSERVATION AREA
ORMESBY HALL CONSERVATION AREA
COATHAM CONSERVATION AREA
SALTBURN CONSERVATION AREA
UPLEATHAM CONSERVATION AREA
SKELTON CONSERVATION AREA

Registered Parks and Gardens

Name	Designation
VALLEY GARDENS, SALTBURN	GRADE II

Designated Historic Landscape

Name
ESTON HILLS HISTORIC LANDSCAPE

Non-designated Assets

HER Number	Site Name	Type	Parish	Period
159	FOXRUSH FARM	ENCLOSURE	KIRKLEATHAM	IRON AGE
218	MUSEUM CAR PARK	QUARRY	KIRKLEATHAM	19TH CENTURY
237	GARDEN FIELD POND	COIN HOARD	KIRKLEATHAM	16TH CENTURY
238	YEARBY FARM	BRACELET	KIRKLEATHAM	IRON AGE
239	WARRENBY	SPEAR	KIRKLEATHAM	MEDIEVAL
240	YEARBY	BEAKER	KIRKLEATHAM	BRONZE AGE
273	NORWICH ROAD	COIN	MARSKE	ROMAN
276	NEW MARSKE	COIN	KIRKLEATHAM	ROMAN
277	MARSKE	COIN HOARD	KIRKLEATHAM	16TH CENTURY
462	YEARDUS I	PILLBOX	KIRKLEATHAM	WORLD WAR II
463	WILTON ICE HOUSE	COIN HOARD	KIRKLEATHAM	ROMAN
465	ST ELLENS CHAPEL	CHAPEL	KIRKLEATHAM	POST MEDIEVAL
467	ROYAL FLYING CORPS, MARSKE	AIRFIELD	MARSKE	FIRST WORLD WAR
487	EAST OF REDCAR	HUMAN BURIAL	MARSKE	POST MEDIEVAL
489	KIRKLEATHAM HALL FM	FIELD SYSTEM	KIRKLEATHAM	MEDIEVAL
537	ST. MARK'S CHURCH	CROSS	MARSKE	MEDIEVAL
961	YEARDUS II	PILLBOX	KIRKLEATHAM	WORLD WAR II
1002	PADDOCK PLANTATION	AXEHEAD - STONE	KIRKLEATHAM	NEOLITHIC
1043	KIRKLEATHAM	BEEHIVE QUERN	KIRKLEATHAM	IRON AGE
1063	OLD HALL	LOOMWEIGHT	KIRKLEATHAM	UNKNOWN
1066	KIRKLEATHAM	AXEHEAD - STONE	KIRKLEATHAM	NEOLITHIC
1079	LACKENBY	POTTERY	KIRKLEATHAM	ROMAN
1082	LACKENBY	FIELD SYSTEM	KIRKLEATHAM	MEDIEVAL
1096	LAZENBY VILLAGE	VILLAGE	KIRKLEATHAM	MEDIEVAL
1157	YEARBY	GRANGE	KIRKLEATHAM	MEDIEVAL
1204	LAZENBY	CELTIC HEAD	KIRKLEATHAM	IRON AGE
1220	LAZENBY FARM	FIELD SYSTEM	KIRKLEATHAM	MEDIEVAL
1246	ESTON NEW BANK	IRONSTONE MINE	KIRKLEATHAM	19TH CENTURY
1250	GREWGRASS FARM	FIELD SYSTEM	MARSKE	MEDIEVAL
1252	TOFTS FARM	FIELD SYSTEM	MARSKE	MEDIEVAL
1416	KIRKLEATHAM HALL FM	HA HA	KIRKLEATHAM	18TH CENTURY
1426	ST CUTHBERT'S	SCULPTURE	KIRKLEATHAM	MEDIEVAL
1501	ST CUTHBERT'S	SCULPTURE	KIRKLEATHAM	MEDIEVAL
1507	LAZENBY RESERVOIR	FIELD SYSTEM	KIRKLEATHAM	MEDIEVAL
1542	OLD HALL FARM	POTTERY SCATTER	KIRKLEATHAM	MEDIEVAL
1556	THE STRAY	FIELD SYSTEM	MARSKE	MEDIEVAL
1558	RYEHILLS FARM	FIELD SYSTEM	MARSKE	MEDIEVAL
1560	FELL BRIGGS FARM	FIELD SYSTEM	MARSKE	MEDIEVAL
1573	GREYSTONE ROAD	POTTERY SCATTER	KIRKLEATHAM	ROMAN
1582	LAZENBY BANK	FIELD SYSTEM	KIRKLEATHAM	MEDIEVAL
1588	LOWCROSS FARM	FIELD SYSTEM	GUISBOROUGH	UNKNOWN

HER Number	Site Name	Type	Parish	Period
1701	YEARBY FARM FIELD	LITHIC SCATTER	KIRKLEATHAM	PREHISTORIC
1802	KIRKLEATHAM VILLAGE.	POTTERY SCATTER	KIRKLEATHAM	MEDIEVAL
1803	OLD HALL FARM FIELD	POTTERY SCATTER	KIRKLEATHAM	MEDIEVAL
1837	WHEATLANDS PARK	COIN	MARSKE	ROMAN
2842	BLACKS BRIDGE	FIELD SYSTEM	MARSKE	MEDIEVAL
2847	CAT FLATS	FIELD SYSTEM	MARSKE	MEDIEVAL
3415	ROGER DIKE	ENCLOSURE	MARSKE	UNKNOWN
3522	MARSKE	MEDIEVAL VILLAGE	MARSKE	MEDIEVAL
3524	HOME FARM, YEARBY	ENCLOSURE	KIRKLEATHAM	PREHISTORIC
3526	SOUTH OF YEARBY	ENCLOSURE	KIRKLEATHAM	PREHISTORIC
3562	GUN EMPLACEMENT	BATTERY	KIRKLEATHAM	19TH CENTURY
3580	MARSKE BEACHLIGHT	AIR DEFENCE	MARSKE	WORLD WAR II
3585	GUN EMPLACEMENT COMPLEX	DEFENCE	MARSKE	WORLD WAR II
3587	GUN EMPLACEMENT COMPLEX	DEFENCE	MARSKE	WORLD WAR II
4024	COATHAM MARSH	DEFENCE	KIRKLEATHAM	WORLD WAR II
4025	SOUTH GARE	DEFENCE	KIRKLEATHAM	FIRST WORLD WAR
4044	PIGEON COTE	DOVECOTE	KIRKLEATHAM	19TH CENTURY
4045	KIRKLEATHAM	FISHPOND	KIRKLEATHAM	17TH CENTURY
4048	ISSAC'S POND	BRICKEARTH PIT	KIRKLEATHAM	19TH CENTURY
4049	GARDEN FIELD POND	BRICKEARTH PIT	KIRKLEATHAM	19TH CENTURY
4050	STONE CLOSE POND	BRICKEARTH PIT	KIRKLEATHAM	19TH CENTURY
4067	THE NEW INCLINE	RAILWAY INCLINED PLANE	ORMESBY	19TH CENTURY
4068	TRUSTEE INCLINE	RAILWAY INCLINED PLANE	ORMESBY	19TH CENTURY
4343	BLACKS BRIDGE	ENCLOSURE	MARSKE	PREHISTORIC
4380	KIRKLEATHAM HALL	SCULPTURE	KIRKLEATHAM	17TH CENTURY
4446	WHEATLANDS FARM	LITHIC SCATTER	MARSKE	PREHISTORIC
4478	LACKENBY	VILLAGE	KIRKLEATHAM	MEDIEVAL
4703	WILTON PARK	DEER PARK	KIRKLEATHAM	MEDIEVAL
4746	YEARBY WINDMILL	WINDMILL	KIRKLEATHAM	18TH CENTURY
4806	SIR WILLIAM TURNERS	DRAIN	KIRKLEATHAM	18TH CENTURY
4807	9 THE COTTAGES	SCULPTURE	KIRKLEATHAM	MEDIEVAL
4811	WILTON	ARTEFACT	KIRKLEATHAM	ANGLO-SAXON
4857	10 EAST CRESCENT	BROOCH	ORMESBY	ROMAN
4863	YEARBY	POUND	KIRKLEATHAM	19TH CENTURY
4950	PILLBOX	WWII PILLBOX		MODERN
5133	KIRKLEATHAM SCHOOL	POTTERY	KIRKLEATHAM	ANGLO-SAXON
5134	KIRKLEATHAM SCHOOL	BOUNDARY DITCH	KIRKLEATHAM	MEDIEVAL
5135	KIRKLEATHAM SCHOOL	CULVERT	KIRKLEATHAM	18TH CENTURY
5245	SIR WILLIAM TURNER'S HOSPITAL	ANIMAL REMAINS	KIRKLEATHAM	20TH CENTURY
5360	MANOR FARM,	SEARCHLIGHT	KIRKLEATHAM	WORLD WAR II

HER Number	Site Name	Type	Parish	Period
	KIRKLEATHAM	BATTERY		
5361	MANOR FARM, KIRKLEATHAM	PRISONER OF WAR CAMP	KIRKLEATHAM	WORLD WAR II
5659	LACKENBY IRON WORKS	IRON WORKING SITE	KIRKLEATHAM	19TH CENTURY
5665	RESERVOIR	RESERVOIR	ORMESBY	19TH CENTURY
5669	RESERVOIR	RESERVOIR	ORMESBY	19TH CENTURY
5670	ESTON MINES YARD	INDUSTRIAL SITE	ORMESBY	19TH CENTURY
5675	MINES COTTAGES	WORKERS VILLAGE	KIRKLEATHAM	19TH CENTURY
5680	TRAM ROAD	TRAMWAY	KIRKLEATHAM	19TH CENTURY
5692	MAGAZINE	MAGAZINE	KIRKLEATHAM	19TH CENTURY
5693	SANDSTONE QUARRY	QUARRY	KIRKLEATHAM	19TH CENTURY
5694	GRAVEL PIT	GRAVEL PIT	KIRKLEATHAM	19TH CENTURY
5721	SAND PITS FARM	FARMSTEAD	KIRKLEATHAM	19TH CENTURY
5744	SMITHY	BLACKSMITHS WORKSHOP	KIRKLEATHAM	19TH CENTURY
5787	OLD BRICK FIELD	BRICKFIELD	MARSKE	19TH CENTURY
5805	UPLEATHAM BRANCH RAILWAY	RAILWAY	UPLEATHAM	19TH CENTURY
5807	ENGINE TUNNEL	TUNNEL	MARSKE	19TH CENTURY
5808	STATIONARY ENGINE	STATIONARY ENGINE	MARSKE	19TH CENTURY
5809	INCLINE PLANE	INCLINED PLANE	MARSKE	19TH CENTURY
5812	CAT FLAT CROSSING	LEVEL CROSSING	MARSKE	19TH CENTURY
5821	LONG BECK CROSSING	LEVEL CROSSING	MARSKE	19TH CENTURY
6161	PIT AT ST CUTHBERT'S CHURCH, WILTON	PIT		MEDIEVAL
6186	THE STRAY	FIELD SYSTEM	REDCAR	POST MEDIEVAL
6215	WEST OF BOUSDALE WOODS	FIELD SYSTEM	GUISBOROUGH	MEDIEVAL
6994	THE VICAR'S TROD, MARSKE	TRACKWAY	MARSKE	18TH CENTURY
7201	LAND E OF KIRKLEATHAM WALLED GARDEN	POTTERY	KIRKLEATHAM	ROMAN
7210	REDCAR AIRFIELD	AIRFIELD	MARSKE	FIRST WORLD WAR
7996	KIRKLEATHAM DEFENCE AREA 57	ANTI TANK DITCH	KIRKLEATHAM	WORLD WAR II
8042	KIRKLEATHAM	ICEHOUSE	KIRKLEATHAM	19TH CENTURY

Appendix B

Geophysical Survey Report

ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

for

URS

on behalf of

FOREWIND

Dogger Bank Teesside Offshore Wind Farm
Onshore geophysical surveys
Projects A & B and C & D

report 3144
May 2013

Durham University

Contents

Figures

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1. Summary

The project

1.1 This report presents the results of geophysical surveys conducted in advance of proposed development relating to Dogger Bank Teesside Offshore Wind Farm. The works comprised approximately 79ha of geomagnetic survey for proposed onshore cable routes and infrastructure including converter station sites ('Projects A & B and C & D').

1.2 The works were commissioned by URS Infrastructure & Environment UK Limited (URS) on behalf of Forewind Limited and conducted by Archaeological Services Durham University.

Results

1.3 Potential archaeological features have been identified in the majority of survey areas (2, 3, 5, 6a, 8a, 8, 10, 11, 12a-c, 16, 17, 18, 22 & 23), however, these range in likely significance from occasional, possible ditches to more complex curvilinear and rectilinear enclosures. Possible ditched enclosures have been detected in Areas 3, 5, 8a and 11. Probable double-ditched tracks or droveways have been identified in Areas 2 and 10.

1.4 Post-medieval and recent features, some of which are depicted on early Ordnance Survey editions, include several former field boundaries, a former pond, a farm track, a plantation, a railway siding and World War Two practice trenches.

1.5 Probable local geological variation was recorded in some areas. Other geological features include palaeochannels and a probable dyke.

1.6 Land drains, service pipes and cables were detected in many of the surveys.

2. Project background

Location (Figure 1)

2.1 The proposed development scheme was located west and south of Redcar and north of Marske-by-the-Sea, Teesside. The surveyed areas comprised proposed route corridors for onshore cables and associated infrastructure, from Lackenby Electricity Substation (NGR NZ 56332 19508) eastward to the A1085 Coast Road (NZ 63015 23191 for Projects A & B, and NZ 62311 23714 for Projects C & D).

2.2 A 50m-wide corridor was surveyed from the Lackenby Substation eastwards into the Wilton International Complex (Projects A & B HVAC proposed cable route). Within the Wilton complex two larger areas were surveyed for the proposed sites of converter stations and construction compounds (Projects A & B and C & D). Between Wilton and immediately north of the A174 at Mickle Dales (NZ 61798 22079), a 100m-wide corridor was surveyed to accommodate proposed parallel cables routes (Projects A & B and C & D HVDC). From here the proposed cable routes divide and two 50m-wide corridors were surveyed: Projects A & B heading north-east to the coast and Projects C & D heading north to the coast.

2.3 The works comprised 28 surveys, totalling approximately 79ha, through open farmland along the proposed development route.

Development proposal

2.4 Dogger Bank Teesside is associated with the second stage of development of the Dogger Bank Offshore Wind Farm. This stage will comprise four wind farms, each with a maximum installed capacity of 1.2GW. The cables will come onshore north of Marske-by-the-Sea and travel inland to connect into the existing National Grid Lackenby substation near Eston.

Objective

2.5 The principal aim of the surveys was to assess the nature and extent of any sub-surface features of potential archaeological significance within the proposed development area, so that an informed decision may be made regarding the nature and scope of any further scheme of archaeological works that may be required in relation to the development.

Methods statement

2.6 The surveys have been undertaken in accordance with a Written Scheme of Investigation (WSI) provided by URS Infrastructure & Environment UK Limited (URS), and with national standards and guidance (para. 5.1, below).

Dates

2.7 Fieldwork was undertaken between 18th February and 6th March 2013 and on 16th April 2013. This report was prepared for 3rd May 2013.

Personnel

2.8 Fieldwork was conducted by Patricia Edwards, Duncan Hale (the Project Manager), Ashley Hayes, Andy Platell, Natalie Swann (Supervisor), Nathan Thomas and Richie Villis. The geophysical data were processed by Duncan Hale and Natalie Swann. This report was prepared by Natalie Swann and Duncan Hale, with illustrations by Ashley Hayes and David Graham, and edited by Duncan Hale.

Archive/OASIS

2.9 The site code is **TDB13**, for **T**eesside **D**ogger **B**ank 20**13**. The survey archive will be supplied on CD to the client for deposition with the project archive in due course. Archaeological Services Durham University is registered with the **O**nline **A**cces**S** to the **I**ndex of archaeological investigation**S** project (**OASIS**). The OASIS ID number for this project is **archaeol3-149537**.

3. Historical and archaeological background

3.1 The information below is taken from desk-based research conducted by URS, presented with only minor amendments.

The prehistoric period (up to AD 70)

3.2 A single Palaeolithic artefact has been recovered from the 1km study area, comprising a flint tool recovered from South Gare at Redcar. Three Neolithic stone axe-heads have been recorded within Kirkleatham parish and further evidence of Neolithic activity has been recorded at Marske Sands.

3.3 Eleven cairn sites and 13 burial mounds dating to the Bronze Age are present within the study area, all recorded in the parish of Kirkleatham. There are also two sites of cup-marked stones, which are often associated with funerary monuments. Despite various levels of disturbance, the Bronze Age barrows on Eston Moor and Upleatham Hills survive relatively well.

3.4 Iron Age pottery scatters, associated with settlement activity, have been recorded on Wilton Moor and an enclosure has been recorded on Eston Moor. Evidence for Iron Age industry has been recorded at Foxrush Farm, Dormanstown. Furnace and mould fragments were recorded which represent the smelting of iron ore and the manufacture of iron objects.

The Roman period (AD 70 to 5th century)

3.5 There is very little evidence for Roman activity in the area. Finds include a pottery scatter and a beehive quernstone fragment found at Kirkleatham and a bracelet found near Yearby Farm. In addition a collection of Roman coins ranging in date from the 1st-3rd century were found in Eston parish and another coin hoard was recorded in the vicinity of Wilton Ice House. The lack of evidence for Roman settlement is unusual given the known earlier activity in the area; however the presence of these finds does at least indicate some level of activity.

The medieval period (5th century to 1540)

3.6 Tees Archaeology Historic Environment Record cites the location of medieval landscape features near the landfall at the southern edge of Redcar and at the point where the proposed HVDC cable route crosses the railway line.

3.7 Kirkleatham is first recorded in the Domesday survey (dated 1086) with lands belonging to William de Percy, which continued through various lineages until 1608. The location of the Domesday settlement is unknown, although it is suggested that the later settlement took the traditional pattern of a two row green village, laid out along the course of the old A174 (Rowe 1998).

3.8 A geophysical survey and archaeological evaluation was conducted adjacent to the walled garden of Turners Hospital, which revealed ditches and pits dating to the medieval period (Noakes 2011).

3.9 The settlement at Yearby is likely to be represented by the 'manor' and 9 carucates in Kirkleatham held in 1086 by the Count of Mortain, and later by the Brus family. In around 1119–24 Robert de Brus granted to Guisborough Priory 'all Lyum', 9 carucates of land and tithe of his lordship of 'Lyum'. The gift was confirmed to the priory by Henry I and Henry II, and in 1284–5 the prior claimed to hold the 9 carucates in frankalmoign (a form of tenure) with soke (the right of local jurisdiction), and toll and team.

3.10 In 1365 Edward III granted the convent free warren in their demesne lands in 'Ureby', and in 1539 the priory manor to which rights in Coatham were attached was called 'Uverby'. After the Dissolution the manor was given by Henry VIII to Sir Charles Brandon and his wife Elizabeth for their lives, and in 1563 Queen Elizabeth sold the reversion of the manor and courts, and lands pertaining to the manor to Richard and Thomas Osborne of London and their heirs. In November 1613 the manor was sold for £3,200 to Sir Warwick Hele. His nephew John Hele inherited it in 1626, and made it over in 1635 to John Turner, and from that time the manor of Yearby has followed the descent of Kirkleatham.

The post-medieval period (1541 to 1899)

3.11 The earliest known plan of Kirkleatham settlement is an engraved view of the estate from the north produced around 1700. At the time of the engraving it appears that parts of the village were being cleared to make way for Sir William Turner Hospital and the kitchen gardens of Kirkleatham Hall. The engraving also depicts fields either side of Fish Ponds Road and the settlement at Yearby.

3.12 A 'Plan of the Manor of Kirkleatham' drawn from a survey of 1774 by Thomas Atkinson represents the earliest known map of the estate (Rowe 1998). The main buildings portrayed comprise the remodelled Kirkleatham Hall, the Free School (Old Hall), St Cuthbert's Church and Turner's Hospital. The map shows Fishponds Road leading up to the east-west aligned main route through Kirkleatham village. Turner Hospital and the Kitching (sic) Garden are shown, but the rows of cottages either side of the main route and the pattern of enclosure to the south of Kirkleatham Hall, depicted by the earlier engraving, are no longer present.

The modern period (1900 to present)

3.13 The Borough of Redcar and Cleveland has abundant mineral wealth and an industry developed specifically for the extraction of minerals such as alum and ironstone. In addition, the area has numerous quarries relating to sand, gravel and stone extraction as well as brickworks developed at local clay pits in response to the demand for building materials in the 19th century.

3.14 The processing of alum is considered to be one of the earliest chemical industries in the British Isles (Rowe & Green 2007). Post-medieval alum works are visible in the Redcar & Cleveland parishes. The most impressive example is Boulby Alum Quarry (612070). This extends about 1km along the coastline with the quarry face up to 200m inland from the current cliff edge.

3.15 The use of aircraft as offensive weapons was a significant 20th-century development in the history of warfare, and provoked new systems of strategic air defence. Experiments in early warning systems started before 1920 with the new possibility of attacks by airships. Early warning was initially based on visual spotting, but acoustic detection devices were soon developed. The First World War early warning acoustic mirror 650m north-west of Bridge Farm (Scheduled Monument 1020311), is only one of four known surviving examples in the north-east of England.

3.16 The First World War has left very little evidence on the north-east coast, but the few features which are still present, either as earthworks or cropmarks, are those of practice trenches. An example of practice trenches, displaying the classic layout of a front line trench, reserve trenches and communication trenches with saps in-between, has been observed previously during an assessment of aerial photography for the area (English Heritage 2008). The location of the practice trenches noted on the aerial photograph is partly within the proposed development area.

3.17 Due to the strategic importance of the north-east coast in wartime home defence, World War II military remains are well represented in the area. One locally listed structure represents a World War II pillbox which is located beneath a road bridge adjacent to the railway line; this structure is located within the maximum construction corridor for the proposed development. There is another locally listed pillbox located within the 1km study area, and numerous other structures which do not appear on the local list, including two pillboxes at Yeardus which are located 150m and 200m north of the proposed cable route respectively.

3.18 From June 1940, Kirkleatham formed a 'rearward defended locality' of the Left Sub-Sector, Central Zone of the North Riding Coastal Area defended by the 176th Infantry Brigade of 59 Division. This Central Zone was occupied by the 'Kirkleatham Battalion', which in August 1940 was the 1/6th Bn. South Staffordshire Regiment. In September, it was replaced by the 6th Bn. North Staffordshire Regiment, and in October, by the 12th Bn. Green Howards. Battalion headquarters were at Kirkleatham Hall.

3.19 The defence of Kirkleatham was based on nine pillboxes or infantry posts, four roadblocks and an anti-tank ditch. The defences were constructed from the beginning of July 1940 by the 509th Field Company Royal Engineers, and the pillboxes and roadblocks had been largely completed by the end of that month, although some additional machine gun emplacements were asked for and built in August. The buildings associated with Turner’s Hospital formed the southern perimeter defences, and 2.75 miles of anti-tank ditch, forming the perimeter defences north, east and south of Kirkleatham, were dug during August. The line of an anti-tank ditch is still visible to the south of the village and appears to lie just to the north of the survey areas. The two pillboxes at Yeardus would have been positioned either side of the anti-tank ditch, and their position within the field is a visual indication of the course of the in-filled ditch.

4. Landuse, topography and geology

4.1 Landuse along the length of the cable route is generally arable with two areas of playing fields. The table below gives details of landuse and topography for all the areas surveyed.

4.2 No geophysical survey was possible in Area 4, within the Wilton complex, as this area now houses large sheds, yards, roads and a logpile.

Area	Landuse	Topography	NGR
1	Arable – seeded	Sloping 25m OD to 20m OD	NZ 5649 1955
2	Arable – seeded	Flat, 20m OD	NZ 5673 1990
3	Arable – seeded	Flat, 20m OD	NZ 5687 2011
5	Arable – seeded	Gentle slope, 25m to 20m OD	NZ 5760 2037
6a/b	Arable – seeded	Flat, 25m OD	NZ 5868 2888
7	Arable – seeded	Flat, 25m OD	NZ 5911 2114
8a/b	Arable – seeded	Flat, 25m OD	NZ 5950 2137
9	Arable – seeded	Flat, 25m OD	NZ 5974 2143
10	Arable – seeded	Flat, 23m OD	NZ 6021 2166
11	Arable – seeded	Slight Slope, 30m to 28m OD	NZ 6070 2149
12a/b/c	Arable – ploughed	Slight slope, 35m to 32m OD	NZ 6154 2165
13	Arable – ploughed	Gentle slope, 35m to 30m OD	NZ 6189 2171
14	Arable – seeded	Sloping 35m to 25m OD	NZ 6160 2194
15	Arable – seeded	Slight slope, 24m to 22m OD	NZ 6189 2214
16	Arable	Slight slope, 22m to 20m OD	NZ 6209 2238
17	Arable – stubble/seeded	Gentle slope, 18m to 14m OD	NZ 6266 2294
18	Arable – ploughed	Slight slope, 22m to 20m OD	NZ 6185 2238
19	Playing field	Flat, 18m OD	NZ 6188 2278
20/20a	Arable/Playing field	Flat 16m OD	NZ 6197 2292
21	Arable – stubble	Flat 13m OD	NZ 6209 2309
22a/b	Arable – stubble	Flat 13m OD	NZ 6223 2324
23	Arable – stubble	Flat 12m OD	NZ 6229 2350

4.3 The underlying solid geology of the area comprises Early Jurassic mudstone of the Redcar Mudstone Formation, which is typically overlain here by Devensian till.

5. Geophysical survey

Standards

5.1 The surveys and reporting were conducted in accordance with English Heritage guidelines, *Geophysical survey in archaeological field evaluation* (David, Linford & Linford 2008); the Institute for Archaeologists (IfA) *Standard and Guidance for archaeological geophysical survey* (2011); the IfA Technical Paper No.6, *The use of geophysical techniques in archaeological evaluations* (Gaffney, Gater & Ovenden 2002); and the Archaeology Data Service *Guide to Good Practice: Geophysical Data in Archaeology* (Schmidt & Ernenwein 2011).

Technique selection

5.2 Geophysical survey enables the relatively rapid and non-invasive identification of sub-surface features of potential archaeological significance and can involve a suite of complementary techniques such as magnetometry, earth electrical resistance, ground-penetrating radar, electromagnetic survey and topsoil magnetic susceptibility survey. Some techniques are more suitable than others in particular

situations, depending on site-specific factors including the nature of likely targets; depth of likely targets; ground conditions; proximity of buildings, fences or services and the local geology and drift.

5.3 In this instance, based on previous work, it was considered likely that cut features such as ditches and pits might be present on the site, and that other types of feature such as trackways, wall foundations and fired structures (for example kilns and hearths) might also be present.

5.4 Given the anticipated shallowness of targets and the non-igneous geological environment of the study area a geomagnetic technique, fluxgate gradiometry, was considered appropriate for detecting the types of feature mentioned above. This technique involves the use of hand-held magnetometers to detect and record anomalies in the vertical component of the Earth's magnetic field caused by variations in soil magnetic susceptibility or permanent magnetisation; such anomalies can reflect archaeological features.

Field methods

5.5 A 30m grid was established across each survey area and related to the Ordnance Survey National Grid using a Leica GS15 global navigation satellite system (GNSS) with real-time kinematic (RTK) corrections typically providing 10mm accuracy.

5.6 Measurements of vertical geomagnetic field gradient were determined using Bartington Grad601-2 dual fluxgate gradiometers. A zig-zag traverse scheme was employed and data were logged in 30m grid units. The instrument sensitivity was nominally 0.03nT, the sample interval was 0.25m and the traverse interval was 1m, thus providing 3,600 sample measurements per 30m grid unit.

5.7 Data were downloaded on site into a laptop computer for initial processing and storage and subsequently transferred to a desktop computer for processing, interpretation and archiving.

Data processing

5.8 Geoplot v.3 software was used to process the geophysical data and to produce both continuous tone greyscale images and trace plots of the raw (minimally processed) data. The greyscale images and interpretations are presented in Figures 3-23; trace plots of selected areas are provided in Figure 24-25. In the greyscale images, positive magnetic anomalies are displayed as dark grey and negative magnetic anomalies as light grey. Palette bars relate the greyscale intensities to anomaly values in nanoTesla.

5.9 The following basic processing functions have been applied to each dataset:

clip	clips data to specified maximum or minimum values; to eliminate large noise spikes; also generally makes statistical calculations more realistic
zero mean traverse	sets the background mean of each traverse within a grid to zero; for removing striping effects in the traverse direction and removing grid edge discontinuities

destagger	corrects for displacement of geomagnetic anomalies caused by alternate zig-zag traverses
interpolate	increases the number of data points in a survey to match sample and traverse intervals; in this instance the data have been interpolated to 0.25m x 0.25m intervals

Interpretation: anomaly types

5.10 Colour-coded geophysical interpretation plans are provided. Three types of geomagnetic anomaly have been distinguished in the data:

positive magnetic	regions of anomalously high or positive magnetic field gradient, which may be associated with high magnetic susceptibility soil-filled structures such as pits and ditches
negative magnetic	regions of anomalously low or negative magnetic field gradient, which may correspond to features of low magnetic susceptibility such as wall footings and other concentrations of sedimentary rock or voids
dipolar magnetic	paired positive-negative magnetic anomalies, which typically reflect ferrous or fired materials (including fences and service pipes) and/or fired structures such as kilns or hearths

Interpretation: features

General comments

5.11 Colour-coded archaeological interpretation plans are provided. Potential archaeological features have been identified in a number of areas; these are discussed by area, from west to east, below.

5.12 Except where stated otherwise in the text below, positive magnetic anomalies are taken to reflect relatively high magnetic susceptibility materials, often sediments in cut archaeological features (such as ditches or pits) whose magnetic susceptibility has been enhanced by decomposed organic matter or by burning.

5.13 Weak, diffuse, positive magnetic anomalies detected in some areas are unlikely to be anthropogenic and probably reflect geological features such as scours or solution hollows in the underlying strata. Such anomalies were detected in Areas 2, 5, 9, 12c, 22 and 23. Other geological features almost certainly include palaeochannels or precursors of the Roger Dike in Area 11 and a narrow igneous dyke in Area 22.

5.14 Linear geomagnetic anomalies detected in Areas 5, 8b, 10, 11, 13, 15, and 17 correspond to former field boundaries shown on historic Ordnance Survey (OS) maps.

5.15 Series of linear positive magnetic anomalies detected in Areas 3, 9, 12, 14, 15, 17, 21, 22 and 23 almost certainly reflect former plough regimes. In Areas 1, 5, 10, 11 14, 16, 18 and 21 parallel, alternate positive and negative magnetic anomalies are likely to reflect former ridge and furrow cultivation.

5.16 Narrow, straight, parallel positive magnetic anomalies have been detected in Areas 3, 6b, 7, 9 and 12b/c; these are likely to reflect land drains.

5.17 Chains of dipolar magnetic anomalies have been detected in Areas 1, 5, 6, 7, 8b, 9, 10, 12a, 16, 17, 20, 21 and 23. These almost certainly reflect existing service pipes and cables.

5.18 Small, discrete dipolar magnetic anomalies have been detected in all of the survey areas. These almost certainly reflect items of near-surface ferrous and/or fired debris, such as horseshoes and brick fragments, and in most cases have little or no archaeological significance. A sample of these is shown on the geophysical interpretation plans, however, they have been omitted from the archaeological interpretation plans and the following discussion.

Area 1

5.19 Geomagnetic data in this area are characterised be very high values. A concentration of small, intense dipolar magnetic anomalies at the southern end of the area almost certainly reflects ferrous/fired materials, which may be associated with the construction of the adjacent Lackenby sub-station.

5.20 Immediately north of this disturbed area are two parallel chains of intense anomalies; these almost certainly reflect electricity cables or service pipes. Three further pipes and cables have been detected in the north of the area, at the foot of the embankment for Greystone Road.

5.21 Slightly curving parallel anomalies in this area could reflect former ridge and furrow cultivation.

Area 2

5.22 Curvilinear positive magnetic anomalies detected at the west end of this area could reflect the remains of soil-filled ditches.

5.23 Two parallel positive magnetic anomalies detected near the east end of Area 2 may also reflect soil-filled ditches, in this instance possibly flanking a former track.

Area 3

5.24 A series of linear positive magnetic anomalies were detected in the southern part of this area, which are likely to reflect soil-filled ditches and appear to form a rectilinear enclosure, possibly with internal and other associated features.

5.25 A positive magnetic anomaly was detected aligned approximately east-west across the centre of the survey area, which could reflect a soil-filled ditch.

Area 5

5.26 A large weak curvilinear positive magnetic anomaly has been detected in this area which may reflect the remains of a soil-filled ditch forming a large enclosure. Additional positive magnetic anomalies in this area could reflect further soil-filled features, both within and outside the possible enclosure.

5.27 Two former field boundaries and former ridge and furrow cultivation have also been detected across this field.

5.28 The most striking anomalies here reflect three cables or pipes, which converge in the north-east corner of the field. Further intense anomalies along the eastern boundary of the field reflect one, or possibly two, ferrous pipes.

Areas 6a-b

5.29 Geomagnetic anomalies in these areas generally reflect service pipes, land drains and a former metalled track to a now demolished farm.

5.30 A linear positive magnetic anomaly was detected in the north-east corner of Area 6a, aligned approximately north-east/south-west, which could reflect a soil-filled ditch.

5.31 Other weak and diffuse positive magnetic anomalies, particularly in 6a, may reflect subtle local geological variation.

Area 7

5.32 The only significant anomalies detected in this area comprised three ferrous pipes and several probable land drains.

Areas 8a-b

5.33 A series of linear and rectilinear positive magnetic anomalies has been detected in Area 8a, which appears to represent a series of rectangular ditched enclosures. Several curvilinear positive magnetic anomalies were also detected in the same area. Some of these probably also reflect ditches, though the more diffuse anomalies may be due to underlying geological variation.

5.34 A concentration of small dipolar magnetic anomalies in the south-west of Area 8b almost certainly reflects a dump of ferrous and/or fired materials. These anomalies almost certainly reflect the infill of the former 'Garden Field Pond' which is last shown on OS maps at this location in 1953. To the east of the former pond is a service pipe or cable, then east again a linear positive magnetic anomaly reflects a former field boundary. Slightly more disturbed ground on the east side of this former boundary corresponds to the former 'Pigeon Cote Plantation', which is also shown on OS maps up to and including the 1953 edition.

Area 9

5.35 Two sets of parallel magnetic lineations in this area probably reflect former ploughing. Land drains may also be present aligned north-east/south-west.

5.36 The mottled nature of the data in the east of this survey area probably reflects local geological variation, however, the remains of one or two soil-filled ditches may also be present.

5.37 An anti-tank ditch excavated as part of the defences of Kirkleatham in August 1940 lies just to the north, outside the survey corridor.

5.38 Two ferrous pipes were detected in the east of this area.

Area 10

5.39 Two parallel positive magnetic anomalies were detected at the west end of this area aligned approximately north-west/south-east. These anomalies probably reflect soil-filled ditches which flanked a former track or droveway.

5.40 A curvilinear positive magnetic anomaly was also detected in this area which may reflect a soil-filled ditch.

5.41 Former field boundaries were detected in the east of the survey.

5.42 One ferrous pipe was detected in the west of this area, possibly a continuation of a pipe detected in Area 9 to the west.

Area 11

5.43 Rectilinear and curvilinear positive magnetic anomalies have been detected here, south of a former field boundary. These anomalies probably reflect soil-filled ditches forming a rectangular enclosure, with parts of a second enclosure ditch detected to the north and east. Further associated ditches also appear to be present.

5.44 North of the former field boundary a second rectilinear positive magnetic anomaly was detected which again may reflect a soil-filled ditch. This anomaly appears to be connected to the former field boundary and may be associated with it.

5.45 Broad, irregular bands of anomalies detected near the south-eastern limit of this area almost certainly reflect palaeochannel deposits, former courses of (or precursors to) Roger Dike.

Areas 12a-c

5.46 Two linear positive magnetic anomalies were detected in the east of Area 12a which probably reflect soil-filled ditches. A manure heap prevented survey in part of this area. Occasional other linear and curvilinear positive magnetic anomalies were detected in Areas 12b and 12c which may also reflect soil-filled ditches.

5.47 Well-defined, narrow, parallel positive magnetic lineations have been detected aligned north/south across both 12b and 12c. These almost certainly reflect land drains.

5.48 A service pipe or cable has been detected in the west of Area 12a.

5.49 A broad swathe of small anomalous areas has been detected in the north-east of Area 12c and continuing north into Area 13. These anomalies almost certainly reflect a band of local geological variation.

Areas 13-14

5.50 With the exception of the geological variation mentioned above, and a former field boundary in Area 13, the only other anomalies detected in these areas reflect former ploughing.

Area 15

5.51 Two former field boundaries detected here divided the area into three former fields. Former ploughing has been detected in the western field and land drains have been detected in the central field.

Area 16

5.52 Three service pipes and cables have been detected in this area. Two inspection covers were also noted on the ground, though these do not appear to be associated with any of the services detected.

5.53 A number of anomalies associated with former ploughing have been detected, and possible occasional ditch remains.

Area 17

5.54 The south-western end of this survey area was occupied by a construction compound for a sewage pipe installation; the fenced pipe trench corridor cut through Area 22, just to the north.

5.55 A broad band of small dipolar magnetic anomalies aligned approximately east/west in the south of the area corresponds to a former railway siding, which connected a former engineering depot to the Darlington & Saltburn Branch of the LNER main line just west of the survey area.

5.56 Several pipes and cables have been detected crossing the southern half of the survey corridor. A negative magnetic lineation just north of the former railway siding almost certainly reflects a non-ferrous pipe associated with a brick inspection chamber noted on the ground.

5.57 At the east end of this area one linear and two curvilinear positive magnetic anomalies were detected, which reflect First World War practice trenches as identified on aerial photographs. The southern, linear anomaly corresponds to the 'support trench' and the curvilinear anomalies to the north reflect 'communication trenches'. The 'fire trench' should lie immediately north of the surveyed corridor.

5.58 Occasional weaker positive magnetic anomalies detected near the eastern end of this corridor could possibly reflect soil-filled ditch remains.

Area 18

5.59 Anomalies associated with former ploughing, possibly ridge and furrow, have been detected across this area.

5.60 One positive magnetic anomaly here could reflect the remains of a ditch.

5.61 Areas of tree plantation across the north and south of this field prevented data collection in those areas.

Areas 19-20a

5.62 These surveys on playing fields are characterised by high concentrations of intense dipolar magnetic anomalies which almost certainly reflect ferrous and fired materials. Such concentrations often indicate disturbed or made-ground and are probably associated with ground-levelling activities and drainage for the sports pitches.

5.63 The larger intense magnetic anomalies reflect goal posts, benches, lamp posts and metalled tracks.

Areas 20-21

5.64 A rectangular cluster of strong dipolar magnetic anomalies was detected in the south of the survey adjacent to Green Lane; these almost certainly reflect fired and/or ferrous materials.

5.65 Three service pipes and cables have been detected crossing these areas.

Areas 22a-b-23

5.66 A new sewage pipe was being installed during the survey of these areas; the pipe corridor passes through Area 22.

5.67 The most notable anomaly in these areas is a broad, strong positive anomaly aligned east/west through Area 22. The anomaly probably reflects a geological fault with subsequent igneous intrusion. Similar anomalies have previously been recorded over known dykes elsewhere and faults have previously been recorded on this alignment to the west of the study area.

5.68 An irregular pattern of positive magnetic anomalies has been detected across the northern part of the survey corridor. Whilst some of these could be anthropogenic features, the overall impression is one of near-surface geological fracturing or other phenomenon.

6. Conclusions

6.1 Approximately 79ha of detailed geomagnetic survey was undertaken near Redcar in Teesside for proposed onshore cable routes and infrastructure associated with the Dogger Bank Offshore Wind Farm ('Projects A & B and C & D').

6.2 Potential archaeological features have been identified in the majority of survey areas (2, 3, 5, 6a, 8a, 8, 10, 11, 12a-c, 16, 17, 18, 22 & 23), however, these range in likely significance from occasional possible ditches to more complex curvilinear and rectilinear enclosures. Possible ditched enclosures have been detected in Areas 3, 5, 8a and 11. Probable double-ditched tracks or droveways have been identified in Areas 2 and 10.

6.3 Post-medieval and recent features, some of which are depicted on early OS editions, include several former field boundaries, a former pond, a farm track, a plantation, a railway siding and World War Two practice trenches.

6.4 Probable local geological variation was recorded in some areas. Other geological features include palaeochannels and a probable dyke.

6.5 Land drains, service pipes and cables were detected in many of the surveys.

7. Sources

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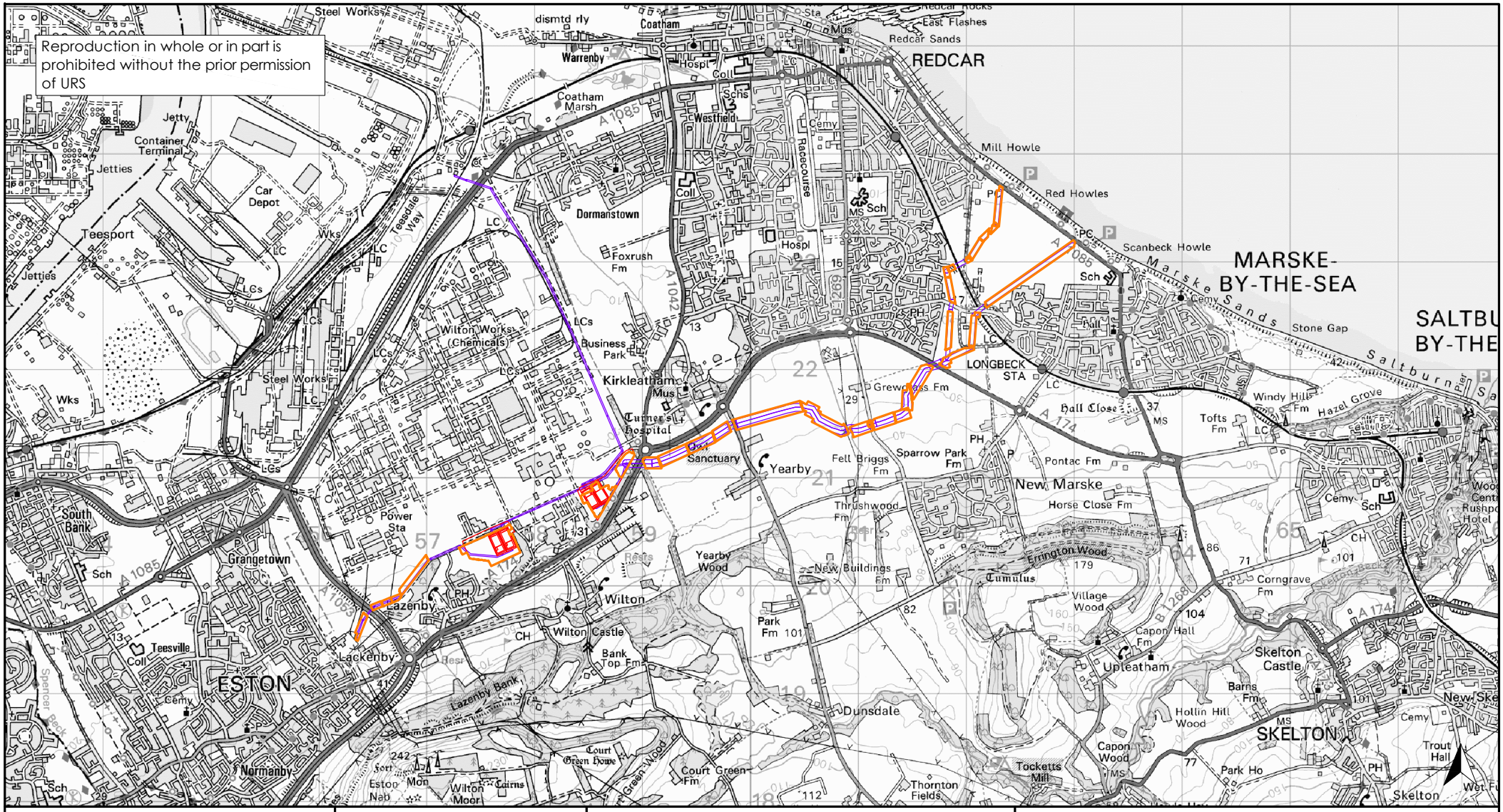

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on behalf of FOREWIND

Dogger Bank Teesside Offshore Wind Farm
Onshore geophysical surveys
Projects A&B and C&D

report 3144

Figure 1: Site location

survey outline

converter station

cable route

0 2.5km

scale 1:50 000 for A4 plot

ARCHAEOLOGICAL SERVICES
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magnetic survey

cable route

figure layout

0 1km

scale 1:25 000 for A3 plot

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Figure 2: Geophysical survey overview

Fig 23
Fig 22
Fig 21
Fig 20
Fig 19
Fig 16-18
Fig 15
Fig 14
Fig 13
Fig 12
Fig 11
Fig 8-10
Fig 5-7
Fig 4
Fig 3

Dormanstown
Teesside Works Lackenby
Teesside Works Cleveland
Wilton Works
Kirkleatham
Yearby
Wilton
Lazenby
Lackenby
Whale Hill
Estor
Dunsdale
Upleatham
New Marske
SALTBURN, MARSKE AND NEW MARSKE CP
Redcar Sands
Marske Sands
Grundales
Sand
Long Flat
Mordales
Beacon Moor

24 23 22 21 20 19

55 56 57 58 59 60 61 62 63 64