

Viking CCS Pipeline

**Environmental
Statement Volume II -
Chapter 8: Historic
Environment**

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8 Historic Environment

8.1 Introduction

8.1.1 This chapter of the Environmental Statement (ES) presents the assessment of the likely significant effects of the Viking CCS Pipeline (hereafter referred to as the Proposed Development) on the historic environment during construction, operation and decommissioning. The assessment includes consideration of impacts on archaeological remains, historic buildings and the historic landscape character.

8.1.1 Consultation was undertaken with each of the relevant Local Planning Authorities (LPAs) including North Lincolnshire Council, North East Lincolnshire Council, East Lindsey District Council, West Lindsey District Council along with Lincolnshire County Council, giving each of them the opportunity to review and comment on the scope of the assessment and the proposed baseline surveys and mitigation approaches which have been identified.

8.1.2 The Historic Environment is interrelated with other environmental effects and so this chapter should be read in conjunction with:

- *ES Volume II, Chapter 7: Landscape and Visual;* and
- *ES Volume II, Chapter 13: Noise and Vibration.*

8.1.3 This chapter is supported by *Figures 8-1 and 8-2* and additional information contained in the following appendices within ES Volume IV (Application Document 6.4):

- *Appendix 8.1: Historic Environment Desk-based Assessment;*
- *Appendix 8.2: Aerial Photographic Assessment and LiDAR Analysis;* and
- *Appendix 8.3: Written Scheme of Investigation – Archaeological Evaluation.*

8.2 Legislation, Policy and Guidance

Introduction

8.2.1 The Legislation, Policy and Guidance section of this chapter provides an overview of the legislation, planning policy and technical guidance relevant to the historic environment assessment.

Legislation

The Ancient Monuments and Archaeological Areas Act 1979

8.2.2 The Ancient Monuments and Archaeological Areas Act 1979 (Ref 8-1) (the 1979 Act) is the central piece of legislation that protects the archaeological resource. Scheduled monuments are protected under the 1979 Act, which imposes the requirement to obtain consent from the relevant authority for any demolition, repair or alteration works that might affect these nationally important heritage assets.

8.2.3 The first section of the 1979 Act requires the Secretary of State for Digital, Culture, Media and Sport to maintain a schedule of nationally important sites. For the purposes of the 1979 Act, a monument is defined as (Section 61 (7)):

“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”

8.2.4 The 1979 Act further defines an ancient monument as (Section 61 (12)):

“any Scheduled Monument; and any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attaching to it”

8.2.5 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 an asset is deemed of national importance and best managed by scheduling.

The Planning (Listed Buildings and Conservation Areas) Act 1990

8.2.6 The Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref 8-2) (the 1990 Act) sets out the principal statutory provisions which must be considered in the determination of any application affecting either listed buildings or conservation areas.

8.2.7 Section 66 of the 1990 Act states that in considering whether to grant planning permission for development which affects a listed building or its setting, the determining authority shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. By virtue of Section 1(5) of the 1990 Act a listed building includes any object or structure within its curtilage.

8.2.8 Section 72 of the 1990 Act states that special attention shall be paid to the desirability of preserving or enhancing the character or appearance of conservation areas.

The Hedgerows Regulations 1997

8.2.9 The Hedgerows Regulations 1997 (Ref 8-3) (the 1997 Regulations), made under section 97 of the Environment Act 1995, set out requirements for the protection of 'important' hedgerows through legislative mechanisms of the NPPF 2023 and local planning authorities. The 1997 Regulations define a hedgerow as 'important' if it has existed for at least 30 years and, for the purposes of this assessment, if it, or the hedgerows with which it forms a stretch, satisfies at least one other criterion identified in Schedule 1 Part II pertaining to archaeology and history. These criteria include the following:

- The hedgerow marks the boundary, or part of the boundary, of at least one historic parish or township predating 1850; or
- The hedgerow incorporates an archaeological feature which is either under scheduled protection as per the 1979 Act already discussed, or which has been recorded as a historic monument prior to the 1997 Regulations taking effect on 27 March 1997; or
- The hedgerow marks the boundary of a pre-1600 AD estate or manor recorded prior to 27 March 1997 or is visibly related to any building or other feature of such an estate or manor; or
- The hedgerow is recorded in a document held at a Record Office on 27 March 1997 as an integral part of a field system pre-dating the Enclosure Acts; or
- The hedgerow is part of, or visibly related to, any building or other feature associated with such a system, and that system is either substantially complete or recorded as being a key landscape characteristic by the local planning authority prior to 27 March 1997.

8.2.10 Other criteria relating to wildlife and landscape are set out in Schedule 1 Part II of the regulation, but these are not within the scope of this historic environment assessment.

National Planning Policy

8.2.11 National Planning Policy relevant to the historic environment is detailed in **Table 8-1**. An overview of how relevant national planning policy has been complied with is provided within the *Planning Statement (Application Document 7.1)*.

Table 8-1: National Planning Policy Relevant to Historic Environment

Policy Reference	Policy Context
Overarching National Policy Statement for Energy (EN-1) (2011) (Ref 8-4)	
5.8.8	<ul style="list-style-type: none"> States that an ‘applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset’.
5.8.9	<ul style="list-style-type: none"> States that ‘Where a development site includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation. Where proposed development will affect the setting of a heritage asset, representative visualisations may be necessary to explain the impact’.
5.8.12	<ul style="list-style-type: none"> States that ‘In considering the impact of a proposed development on any heritage assets, the IPC should take into account the particular nature of the significance of the heritage assets and the value that they hold for this and future generations. This understanding should be used to avoid or minimise conflict between conservation of that significance and proposals for development’.
5.8.12	<ul style="list-style-type: none"> States that ‘The IPC should take into account the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets...’..Paragraph 5.8.14 states that ‘There should be a presumption in favour of the conservation of designated heritage assets and the more significant the designated heritage asset, the greater the presumption in favour of its conservation should be..... Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Loss affecting any designated heritage asset should require clear and convincing justification’.
5.8.15	<ul style="list-style-type: none"> States that ‘Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset the greater the justification will be needed for any loss’. Paragraph 5.8.18 states ‘When considering applications for development affecting the setting of a designated heritage asset, the IPC should treat favourably applications that preserve those elements of the setting that make a positive contribution to, or

Policy Reference	Policy Context
	<p>better reveal the significance of, the asset. When considering applications that do not do this, the IPC should weigh any negative effects against the wider benefits of the application. The greater the negative impact on the significance of the designated heritage asset, the greater the benefits that will be needed to justify approval’.</p>
5.8.20	<ul style="list-style-type: none"> States that ‘Where the loss of the whole or a material part of a heritage asset’s significance is justified, the IPC should require the developer to record and advance understanding of the significance of the heritage asset before it is lost’. Paragraph 5.8.21 states that this should be secured through the imposition of ‘..requirements on a consent that such work is carried out in a timely manner in accordance with a written scheme of investigation...’, though paragraph 5.8.19 states that ‘A documentary record of our past is not as valuable as retaining the heritage asset and therefore the ability to record evidence of the asset should not be a factor in deciding whether consent should be given’.
Draft Overarching National Policy Statement for Energy (EN-1) (2023) (Ref 8-5)	
5.9.9	<p>The applicant should undertake an assessment of any likely significant heritage impacts of the proposed development as part of the EIA and describe these in the ES. This should include consideration of heritage assets above, at, and below the surface of the ground. Consideration will also need to be given to the possible impacts, including cumulative, on the wider historic environment. The assessment should include reference to any historic landscape or seascape character assessment and associated studies as a means of assessing impacts relevant to the proposed project.</p>
5.9.10	<p>As part of the ES the applicant should provide a description of the significance of the heritage assets affected by the proposed development, including any contribution made by their setting. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum, the applicant should have consulted the relevant Historic Environment Record²³² (or, where the development is in English or Welsh waters, Historic England or Cadw) and assessed the heritage assets themselves using expertise where necessary according to the proposed development’s impact.</p>
5.9.11	<p>Where a site on which development is proposed includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation. Where proposed development will affect the setting of a heritage asset, accurate representative visualisations may be necessary to explain the impact.</p>
5.9.12	<p>The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets</p>

Policy Reference	Policy Context
	<p>affected can be adequately understood from the application and supporting documents. Studies will be required on those heritage assets affected by noise, vibration, light and indirect impacts, the extent and detail of these studies will be proportionate to the significance of the heritage asset affected.</p>
5.9.13	<p>The applicant is encouraged, where opportunities exist, to prepare proposals which can make a positive contribution to the historic environment, and to consider how their scheme takes account of the significance of heritage assets affected. This can include, where possible:</p> <ul style="list-style-type: none"> • enhancing, through a range of measures such a sensitive design, the significance of heritage assets or setting affected • considering where required the development of archive capacity which could deliver significant public benefits considering how visual or noise impacts can affect heritage assets, and • whether there may be opportunities to enhance access to, or interpretation, understanding and appreciation of, the heritage assets affected by the scheme
5.9.14	<p>Careful consideration in preparing the scheme will be required on whether the impacts on the historic environment will be direct or indirect, temporary, or permanent.</p>
5.9.15	<p>Applicants should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably.</p>
5.9.16	<p>A documentary record of our past is not as valuable as retaining the heritage asset, and therefore the ability to record evidence of the asset should not be a factor in deciding whether such loss should be permitted, and whether or not consent should be given.</p>
5.9.17	<p>Where the loss of the whole or part of a heritage asset's significance is justified, the Secretary of State will require the applicant to record and advance understanding of the significance of the heritage asset before it is lost (wholly or in part). The extent of the requirement should be proportionate to the asset's importance and significance and the impact. The applicant should be required to publish this evidence and to deposit copies of the reports with the relevant Historic Environmental Record. They should also be required to deposit the archive generated in a local museum or other public repository willing to receive it.</p>
5.9.18	<p>Where appropriate, the Secretary of State will impose requirements on the Development Consent Order to ensure that the work is undertaken in a timely manner, in accordance with a written scheme of investigation that complies with the policy in this NPS and which has been agreed in writing with the relevant</p>

Policy Reference	Policy Context
	local authority, and to ensure that the completion of the exercise is properly secured
5.9.19	Where there is a high probability (based on an adequate assessment) that a development site may include, as yet undiscovered heritage assets with archaeological interest, the Secretary of State will consider requirements to ensure appropriate procedures are in place for the identification and treatment of such assets discovered during construction.
National Policy Statement for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (2011) (Ref 8-6)	
Para 2.21.6	<ul style="list-style-type: none"> Notes that consideration should be given to whether it would be feasible to use horizontal direct drilling under ancient woodland or thrust bore under hedgerows subject to the Hedgerows Regulations 1997.
Para 2.21.5	<ul style="list-style-type: none"> Notes that mitigation could include reducing the working width required for the installation of the pipeline in order to reduce the impact on the landscape where it will not be possible to fully reinstate the route.
Draft National Policy Statement for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (2023) (Ref 8-7)	
Para 2.21.48	<ul style="list-style-type: none"> Notes that the applicant should consider whether it would be feasible to use HDD under ancient woodland or thrust bore under protected trees or hedgerows and the Secretary of State should consider requiring this, where not included in the proposal.
Para 2.22.6	<ul style="list-style-type: none"> Notes that mitigation could include reducing the working width required for the installation of the pipeline in order to reduce the impact on the landscape where it will not be possible to fully reinstate the route.
National Planning Policy Framework (NPPF) (2023) (Ref 8-8)	
Section 16	<p>Conserving and Enhancing the Historic Environment</p> <ul style="list-style-type: none"> Requires that the significance of designated and non-designated heritage assets and the contribution made by their setting to that significance should be considered, with the view taken by the decision maker on whether impacts constitute substantial harm on heritage assets.
Paragraph 194	<p>In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an</p>

Policy Reference	Policy Context
	appropriate desk-based assessment and, where necessary, a field evaluation.
Paragraph 199	When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.
Paragraph 200	Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of: <ol style="list-style-type: none"> a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional; b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.
Paragraph 201	Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply: <ol style="list-style-type: none"> a) the nature of the heritage asset prevents all reasonable uses of the site; and b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and c) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and d) the harm or loss is outweighed by the benefit of bringing the site back into use.
Paragraph 202	Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.
Paragraph 203	The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.
Planning Practice Guidance (PPG) Historic Environment (2019) (Ref 8-9)	
Historic Environment	<ul style="list-style-type: none"> • Provides further advice and guidance on enhancing and conserving the historic environment and the application of the policies as set out in the NPPF.

Local Planning Policies

8.2.12 Local Planning Policies relevant to the historic environment are detailed in **Table 8-2**. An overview of how relevant local planning policy has been complied with is provided within the *Planning Statement (Application Document 7.1)*.

Table 8-2: Local Planning Policies Relevant to Historic Environment

Policy Reference	Policy Context
North Lincolnshire Core Strategy (Ref 8-10):	
Policy CS1	<p>Spatial Strategy:</p> <ul style="list-style-type: none"> The rich archaeological heritage of North Lincolnshire will be preserved and enhanced.
Policy CS6	<p>Historic Environment:</p> <ul style="list-style-type: none"> The council will seek to protect, conserve and enhance North Lincolnshire’s historic environment.
Saved Policies of the North Lincolnshire Local Plan (Ref 8-11):	
Policy HE5	<p>Development affecting Listed Buildings:</p> <ul style="list-style-type: none"> Proposals which damage the setting of a listed building will be resisted.
Policy HE8	<p>Ancient Monuments:</p> <ul style="list-style-type: none"> Proposals that would result in an adverse effect on the setting of a Scheduled Ancient Monument will not be permitted.
Policy HE9	<p>Archaeological Excavation:</p> <ul style="list-style-type: none"> Where development proposals affect sites of known or suspected archaeological importance, an archaeological assessment to be submitted prior to the determination of a planning application will be required. Sites of known archaeological importance will be protected. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before and during development.
North Lincolnshire Council New Local Plan for North Lincolnshire (Ref 8-12):	
Policy HE1p	<p>Conserving and enhancing the Historic Environment:</p> <ul style="list-style-type: none"> Development proposals affecting archaeological remains, whether known or potential, designated or undesignated, should take every practical and reasonable step to protect and, where possible, enhance their significance. Planning applications for such development must be accompanied by an appropriate and proportionate desk-based assessment to understand the potential for and significance of remains, and the impact of development upon them. If desk-based assessment does not provide sufficient information, developers will be required to undertake field evaluation in advance of determination of the application. Wherever possible and appropriate, mitigation strategies should ensure the preservation of archaeological remains in-situ. Where this is either not possible or not desirable, the developer will be required to make adequate provision for preservation by record

Policy Reference	Policy Context
	<p>according to a written scheme of investigation submitted by the developer and approved by the planning authority.</p> <ul style="list-style-type: none"> Any work undertaken as part of the planning process must be appropriately archived in a way agreed with the local planning authority. The written scheme of investigation should be submitted in advance of determination of the application and its implementation will be secured by condition.
North East Lincolnshire Local Plan 2013 to 2032 (Adopted 2018) (Ref 8-13):	
Policy 39:	<p>Conserving and enhancing the historic environment:</p> <ul style="list-style-type: none"> Proposals for development will be permitted where they would sustain the cultural distinctiveness and significance of North East Lincolnshire’s historic urban, rural and coastal environment by protecting, preserving and, where appropriate, enhancing the character, appearance, significance and historic value of designated and non-designated heritage assets and their settings. Where a development proposal would affect the significance of a heritage asset (whether designated or non-designated), including any contribution made to its setting, it should be informed by proportionate historic environment assessments and evaluations (such as heritage impact assessments, desk-based appraisals, field evaluation and historic building reports).
East Lindsey Local Plan Core Strategy Adopted July 2018 (Ref 8-14)	
SP11	<p>Historic Environment – development proposals will be supported [that]:</p> <ul style="list-style-type: none"> Preserve or enhance heritage assets and their setting; Preserve or enhance the special character, appearance and setting of the District’s Conservation Areas; Have particular regard to the special architectural or historic interest and setting of the District’s Listed Buildings; Do not harm the site or setting of a Scheduled Monument [or] any unscheduled nationally important or locally significant archaeological site. Appropriate evaluation, recording or preservation in situ is required; Preserve or enhance the quality and experience of the historic landscapes and woodland of the District and their setting; Are compatible with the significance of non-designated heritage assets in East Lindsey; [and] Do not have a harmful cumulative impact on heritage assets.
SP27	<p>Renewable and Low Carbon Energy:</p> <ul style="list-style-type: none"> [Proposals] will be supported where [their] individual or cumulative impact is considered to be acceptable in relation to [inter alia] the significance (including the setting) of a historic garden, park, battlefield, building, conservation area, archaeological site or other heritage asset.

Policy Reference	Policy Context
Central Lincolnshire Local Plan (West Lindsey District Council) (Ref 8-15)	
Policy S57:	<p>Historic Environment:</p> <ul style="list-style-type: none"> • Provides guidance to developers on how to safeguard and respond to the historic environment, recognising designated and non-designated heritage assets. It has the stated aim to protect, conserve and seek opportunities to enhance the historic environment of Central Lincolnshire. • Developers are required to adequately assess the significance of assets likely to experience an impact from a proposed development, identify that impact and justify any harm to assets against public benefit. • The results of this assessment should be presented with a planning application. • Where desk-based research is considered insufficient to assess the significance of assets and to develop an appropriate mitigation strategy for further field evaluations will be required.

Guidance

8.2.13 The historic environment assessment has been carried out in accordance with the following:

- Planning Practice Guidance, historic environment (2019) (Ref 8-16);
- Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment. Historic England (2015) (Ref 8-17);
- Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets. Historic England (2017) (Ref 8-18);
- Statements of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12 (2019) (Ref 8-19);
- Commercial Renewable Energy Development and the Historic Environment. Historic England Advice Note 15 (2021) (Ref 8-20);
- Chartered Institute for Archaeologists (CIfA) Code of Conduct: professional ethics in archaeology (2022) (Ref 8-21);
- CIfA Standard and Guidance for Historic Environment Desk-Based Assessment (2020) (Ref 8-22);
- IEMA Principles of Cultural Heritage Impact Assessment in the UK (2021) (Ref 8-23); and
- Lincolnshire County Council Archaeology Handbook (2019) (Ref 8-24).

8.3 Scope of Assessment and Consultation

Introduction

8.3.1 This chapter of the ES presents the results of baseline studies and the assessment of the potential impacts on the historic environment. The chapter summarises the regulatory and policy framework related to the historic environment, the methodology followed for the assessment, and provides an overview of the existing baseline conditions.

- 8.3.2 The assessment has identified the likely significant effects to arise during construction, operation and decommissioning of the Proposed Development, and identifies any mitigation necessary to avoid or reduce these effects where possible.

Scoping Report and Scoping Opinion

- 8.3.3 A summary of stakeholder engagement specific to the historic environment Scoping Report and Scoping Opinion has been provided in **Table 8-3**. An overview of the complete comments received and our responses is included in *ES Volume IV: Appendix 5.3 (Application Document 6.4.5.3)*.

Feedback on the Preliminary Environmental Information Report

- 8.3.4 A summary of stakeholder engagement specific to the historic environment PEIR has been provided in **Table 8-4**.

Table 8-3: Historic Environment Scoping Opinion

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
<p>Planning Inspectorate Table 8-3</p>	<p>Effects during decommissioning</p>	<p>The Applicant intends to scope out effects on all heritage assets during decommissioning of the Proposed Development. The Scoping Report states that decommissioning is unlikely to result in additional temporary or permanent impacts on heritage assets.</p> <p>In the absence of more detailed information relating to the decommissioning phase of the Proposed Development, the Inspectorate does not agree to scope these matters from the assessment. Therefore, the ES should include an assessment of decommissioning effects on heritage assets or provide information to demonstrate the absence of any likely significant effects.</p>	<p>The ES considers decommissioning effects on heritage assets at paragraph in section 8.7, Potential Impacts and Effects.</p>
<p>Planning Inspectorate Paragraph 2.15.19; Paragraph 8.4.1; Paragraphs 8.4.6 and 8.4.7.</p>	<p>Historic environment surveys</p>	<p>The Scoping report states that a Desk-Based Assessment (DBA) will be prepared to inform the archaeology and cultural heritage ES chapter and will also be used to “confirm whether any additional survey work is required to better determine the nature, extent and origin of buried archaeological remains...within the construction footprint of the Proposed Development”.</p> <p>As noted in Paragraph 2.15.19, mechanical excavators will be used to dig the pipeline trench down to a minimum depth of 1.8 metres and as the extent of archaeological remains is unknown at this stage the Inspectorate is of the opinion that should the DBA identify the need for further investigation, such as geophysical survey, hand auger survey, monitoring of geotechnical ground investigations</p>	<p>The scope of ongoing geophysical surveys has been agreed with the relevant local authority archaeologists at North Lincolnshire Council, North East Lincolnshire Council and Lincolnshire County Council. A WSI for archaeological evaluation is included at <i>ES Volume IV Appendix 8.3 (Application Document 6.4.8.3)</i>; this will also be agreed with the relevant local authority archaeologists.</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
		and / or trial trenching, effort should be made to agree the scope of such activities with the relevant local authority archaeologists.	
<p>Planning Inspectorate Paragraphs 8.4.2 and 8.4.3</p>	<p>Study Area</p>	<p>The Scoping Report states that a general study area of 1 km from the Scoping Boundary for non-designated assets and 2 km for designated assets will be used to collect detailed information on the cultural heritage baseline to be used in the assessment. However, Paragraph 8.4.3 notes that a wider study area may be used to identify assets whose setting may change as a result of the construction and / or operation of the Proposed Development and this will be informed by the site walkover, setting assessment, and the Zone of Theoretical Visibility (ZTV).</p> <p>The study area applied in the ES to assess the potential effects to the setting of all designated heritage assets should also be discussed with the relevant stakeholders, in particular the Local Planning Authority experts, to ensure it is appropriate to the construction, operation and decommissioning of the Proposed Development.</p>	<p>Consultation with the relevant heritage stakeholders has been undertaken to agree the Study Area for the full assessment.</p>
<p>Planning Inspectorate Section 8.6</p>	<p>Potential effects during construction</p>	<p>Physical impacts to buried archaeological assets could include compaction during construction, which is not explicitly identified in the Scoping Report. The ES should consider the potential for construction works to give rise to likely significant effects from compaction.</p>	<p>Compaction is considered in the assessment of potential impacts and effects in section 8.7 of this ES chapter.</p>
<p>East Lindsey District Council</p>	<p>Value of heritage assets</p>	<p>In table 8.1 in Section 8 - Historic Environment all designated heritage assets should be considered of high value to avoid double counting when considering the significance of effects.</p>	<p>Designated heritage assets of the highest significance (including scheduled monuments, Grade I and Grade II* listed buildings) have been assigned a High value. Other</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
			<p>designated heritage assets, including Grade II listed buildings and conservation areas, have been assigned a Medium value. This reflects the distinction in NPPF para. 200 where Grade I and II* LBs etc and scheduled monuments etc are referred to as 'assets of the highest significance'.</p> <p>In order to avoid double counting when considering the significance of effects, where designated heritage assets have multiple designations, such as, e.g., scheduled monuments including listed structures, these are considered in the baseline (section 8.5 of this ES chapter) as single designated heritage assets of high value,</p>
Historic England	Approach to setting assessment	<p>The approach to setting assessment should we advise follow the structured approach set out in our GPA3 Setting of Heritage Assets, the distance of search should be adaptive to the significance and sensitivity of the assets which the scheme interacts and the materiality of the works proposed, in particular in the case designed landscapes. Views across particularly sensitive landscape zones such as those where multiple assets such as church spires articulate with a common topographic space may require particular consideration both in terms of fixed point and kinetic views. Where pipelines bisect features such as parish boundaries banks or areas of well preserved ridge and furrow reinstatement include the earthwork form rather than introducing a flattened strip</p>	<p>The setting assessment presented in the baseline assessment (<i>ES Volume IV Appendix 8.1 (Application Document 6.4.8.1)</i>) has applied the approach set out in GPA3 Setting of Heritage Assets (paragraphs 2.4.3 and 3.4.2).</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
	Significance / character / importance of assets	<p>The significance / character / importance of assets on the pipeline routes will need to be well understood from an early stage such that route options can effectively be weighed and risks managed. It is important both that opportunities for reduction in harm are realised and that the time required for archaeological evaluation and reporting is allowed for. Ancillary works for access, storage and compounds should be fully attended to within the EIA. Areas of heightened risk (burial sites / wet deposits / former water courses etc) should be afforded early attention as should resources requiring particular methodological approaches such for instance as battlefields or air crash. See our https://historicengland.org.uk/images-books/publications/deposit-modelling-and-archaeology/ and other publications</p>	<p>The significance / character / importance of assets on the pipeline routes is fully considered in the baseline assessment (<i>ES Volume IV Appendix 8.1 (Application Document 6.4.8.1)</i>), including areas of heightened risk and resources requiring particular methodological approaches, such as burials and battlefields. Assets within areas for access, storage and compound areas are fully considered in the baseline assessment and in this ES Chapter.</p>
	Localised archaeological interventions	<p>Given the landscape scale of this and associated projects the schemes should seek to address structures research questions about this landscape to ensure that localised archaeological interventions contribute to a whole (in terms of public value) which is more than the sum of their parts.</p>	<p>The assessment of archaeological potential included in the baseline (<i>ES Volume IV Appendix 8-1 (Application Document 6.4.8.1)</i>) has considered Research Objectives and agenda topics described in the Updated Research Agenda and Strategy for the East Midlands. These will also inform development of the archaeological mitigation strategy.</p>
Lincolnshire County Council	Study Area	<p>HER data should be considered for a 2km radius from the Draft Order Limits.</p>	<p>The impact assessment (section 8.7 of this ES chapter) has considered baseline data up to 500m from the Order Limits. This is considered to provide a proportionate study area, given that within the DCO Site Boundary</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
			<p>the pipeline impact will be limited to 30m (and further reduced in highly sensitive areas). Sites beyond the 500m study area have also been considered in the impact assessment where these provide appropriate context and explanation for the heritage assets encountered within the 500m study area.</p>
	Study Area	<p>All designated assets (i.e., scheduled monuments and listed buildings) within a 5km radius should be taken into account for the setting assessment.</p>	<p>The setting assessment in <i>ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)</i> has considered designated potential impacts on the settings of heritage assets up to 5km from the DCO Site Boundary. No potential impacts on the settings of designated heritage assets beyond 2km were identified and therefore designated heritage assets between 2km and 5km were scoped out of the assessment. Considering the nature of the Proposed Development and its likely visibility level within the landscape, the 2km study area is considered to be sufficient for identifying designated assets that may experience temporary or permanent changes to their setting.</p>
	LiDAR	<p>Full LiDAR coverage and assessment must be included.</p>	<p>A specialist review of aerial photographs and full LiDAR coverage is included as <i>ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)</i>. Full open data LiDAR coverage from the Environment Agency National LiDAR</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
			Programme was assessed as part of this specialist review.
	Scope	Potential archaeological impacts from all project impacts must be adequately investigated, not just the construction footprint, e.g., compaction impacts from temporary site compounds	Potential archaeological impacts from all project impacts have been considered in the assessment. All areas within the DCO Site Boundary where potential archaeological impacts could arise, including the construction footprint of the Proposed Development and temporary site compounds, have been included in the site walkover survey undertaken to inform the desk-based assessment (<i>ES Volume IV, Appendix 8.1 to Appendix 8.3</i>), (<i>Application Document 6.4</i>). Compaction impacts from temporary site compounds are considered in section 8.7 of this ES, Potential Impacts and Assessment of Effects.
	Geophysical Survey	Geophysical survey will be required across the total extent of potential impact including potential compaction issues – movement of construction plant and construction compounds.	Detailed geophysical (magnetometer) surveys are ongoing on accessible land suitable for survey across the full DCO Site boundary.
	Trial Trenching	Trial trenching – full extent of proposed impact. Trial trenching will be required to confirm geophysical survey results but as an evaluation process in itself to investigate blank areas [...] A programme of trial trenching is required to inform a robust mitigation strategy.	Following detailed geophysical (magnetometer) survey a programme of trial trenching is proposed (see <i>ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)</i>). The results of the trial trenching programme

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
			will inform the development of a detailed archaeological mitigation strategy.
	Scope	The mitigation strategy will need to be agreed by the time the ES is produced and submitted.	Proposed mitigation measures are outlined in section 8.8 of this ES chapter. A detailed archaeological mitigation strategy will be developed and agreed during the course of Examination.
	Scope	Decommissioning should be scoped in.	The ES considers decommissioning effects on heritage assets in section 8.7, Potential Impacts and Effects.
North East Lincolnshire Council	General	The scoping is comprehensive in its content and identification of matters to be scoped.	This is noted.
	Sufficient evidence	The information in the EIA needs to provide sufficient evidence to understand the impact of the proposal on the significance of any heritage assets and their settings.	The information provided in this ES Chapter 8 and associated Figures (<i>ES Volume III, Figures 8-1 to 8-2</i>) and Appendices (<i>ES Volume IV, Appendix 8-1 to Appendix 8.3 (Application Document 6.4)</i>) is proportionate to the likely impacts from the construction, operation and decommissioning of the Proposed Development and the significance of the assets.
	Archaeological evaluation report	Expect EIA to contain a full archaeological evaluation report (non-intrusive evaluation of the site and if this suggests further information is required we would expect intrusive evaluation in the form of trial trenching to further inform the EIA and a suitable mitigation strategy).	See response to LCC scoping comment regarding trial trenching.

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
	Report on the potential impact on the historic landscape	Expect a report on the potential impact on Historic Landscape Character.	An assessment of the potential impact on Historic Landscape Character is included in the historic environment desk-based assessment (<i>ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)</i>). The results of this assessment are considered in paragraphs 8.5.16 and 8.5.17 and Table 8-9 of this ES chapter.
	Viewpoints	Setting – where heritage assets would experience visual change potential impacts should be evidenced through accurate visual representations – viewpoints, including views of, from and across asset receptors as well as general intervisibility need to be assessed properly.	Effects on the setting of heritage assets are assessed in this ES chapter, section 8.7, Potential Impacts and Assessment of Effects. The assessment takes into account the level of temporary impact from the construction of the pipeline, which will employ relatively small numbers of mobile plant over a relatively short period in any given section of the scheme, and the scale of the permanent above ground installations (Block Valve Stations, Immingham and Theddlethorpe Facilities). Viewpoints have been identified in collaboration with the LVIA team.
North Lincolnshire Council	Scope	Scope and method of the desk-based assessment is acceptable.	This is noted.
	Surveys	Welcome pre-application discussion regarding scope of pre-application surveys.	This is noted and discussions have taken place approximately on a monthly basis relating to the scope of surveys and their progress.

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
	Scope	Pre-application archaeological evaluations are likely to be required – to identify currently unknown archaeological remains and to adequately assess significance of identified heritage assets and to assess the impacts of the proposals.	See responses to LCC comments regarding geophysical surveys and trial trenching.
	Scope	Mitigation strategies should be submitted with the DCO application, and the archaeology works detailed in a WSI.	See response to LCC comment regarding mitigation.
	CEMP	CEMP should refer to any archaeological exclusion zones and sensitive areas and make provision for appropriate protection measures.	Noted and agreed.
	WSI and DBA	WSIs to be appended to the CEMP.	Noted and agreed.
Detailed heritage assessment including field evaluation would be required. Heritage assessment should contain ALL of the following stages (1) DBA (minimum 2km from the site boundary for designated heritage assets and 1km for non-designated heritage assets); (2) Pre-application Archaeological Field Evaluation (Monitoring and Recording of GI; hand auger / machine drilled cores for geoarchaeology and palaeo-environmental assessment; geophysical survey and excavation of sample trial trenching) (3) Assessment of significance and setting of assets (4) Assessment of impacts of the proposed development on the significance of heritage assets; (5) Mitigation – design measures (avoid, minimise, or mitigate, off-set harm through archaeological investigations and recording (WSI needed). Assessment of value of assets and magnitude if change should take place on completion of ALL stages if the field evaluation		A comprehensive DBA (desk-based assessment) has been undertaken (<i>ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)</i>). See responses to LCC comments regarding search areas for HER assets and designated assets. Detailed geophysical (magnetometer) surveys are ongoing. A programme of archaeological evaluation is proposed (<i>ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)</i>). See responses to LCC comments on geophysical survey and trial trenching. Assessment of significance and setting of heritage assets are included in the desk-based assessment at <i>ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)</i> : assets scoped	

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate	Response
		<p>and ES should include results of all historic archaeological fieldwork reports.</p>	<p>in to the assessment are then considered in the ES.</p> <p>Assessment of impacts of the Proposed Development on the significance of heritage assets scoped in to the assessment are addressed in this ES chapter, section 8.7, Potential Impacts and Assessment of Effects. See response to LCC comment regarding mitigation.</p> <p>The results of historic fieldwork are taken into account in the assessments of the value of assets and magnitude of change presented in this ES Chapter 8 and <i>ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)</i>.</p>

Table 8-4: Historic Environment Feedback on PEIR

Stakeholder	Summary of comment	How and where addressed
<p>Lincolnshire County Council</p>	<p>Full extent of redline boundary will require standard archaeological phased evaluation – DBA, geophysical survey, trial trenching – in order to provide an evidence base sufficient to determine the archaeological potential.</p>	<p>The full extent of the DCO Site Boundary has been considered in the (<i>ES Volume IV, Appendix 8.1 to Appendix 8.3 (Application Document 6.4.8.3)</i>),</p>
	<p>Reiterate that the full width of the redline boundary is recommended for geophysical survey – LCC have not approved the WSI.</p>	<p>Detailed geophysical (magnetometer) surveys are ongoing on accessible land suitable for survey across the full DCO Site Boundary. Initially, a 50m transect following the pipeline route was proposed for survey, widened locally to the full DCO Site Boundary where archaeology was encountered: approximately 5% of the total potential survey area of 467 ha was surveyed using this approach. Following feedback on the Scoping Report and PEIR, ongoing survey has been widened to cover the full DCO Site Boundary. Following review of the results from the 5% surveyed using a 50m transect, it is not considered that this presents a substantive deficiency in survey coverage and therefore it has not been considered necessary to re-access these areas to extend survey coverage.</p>
	<p>Concern that insufficient evaluation will be undertaken as sufficient levels of work have not been identified or proposed – full suite required (DBA, geophysical survey, trial trenching).</p>	<p>A comprehensive desk-based assessment has been carried out (<i>ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)</i>), including cartographic analysis and a site walkover of the pipeline route. The desk-based assessment has been informed by a specialist review of aerial photographs and LiDAR coverage (<i>ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)</i>). Detailed geophysical (magnetometer) surveys are ongoing and a programme of trial trenching is proposed (<i>ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)</i>).</p>

Stakeholder	Summary of comment	How and where addressed
	<p>Evaluation must be completed in time to inform the archaeological mitigation strategy which will need to be submitted as part of the EIA.</p>	<p>Detailed geophysical (magnetometer) surveys are ongoing. Following completion of the geophysical survey programme, a programme of archaeological evaluation comprising trial trenching and geoarchaeological assessment is proposed (<i>ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)</i>); this is anticipated to commence in late 2023. Proposed mitigation measures are outlined in this ES chapter at section 8.8, Additional Mitigation and Enhancement Measures. A detailed archaeological mitigation strategy will be developed for agreement during the course of Examination. This will take account of the results of the ongoing geophysical surveys and the proposed programme of archaeological evaluation.</p>
	<p>A full competent air photo and LiDAR assessment of the full red line boundary is required</p>	<p>A specialist Aerial Photographic Assessment and LiDAR Analysis is provided as <i>ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)</i>.</p>
	<p>Map regression should include all available maps to provide a reasonable understanding of the development and time depth of the sites.</p>	<p>A comprehensive desk-based assessment has been carried out (<i>ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)</i>), including cartographic analysis and a site walkover of the pipeline route.</p>
<p>North East Lincolnshire Council</p>	<p>The Heritage Officer scoping comments dated 26 April 2022 remain applicable and it is acknowledged that there has been dialogue on these matters. It is advised that this work continues to ensure heritage and archaeological issues are satisfactorily addressed.</p>	<p>Engagement with heritage consultees continued up to the submission of the application – see Table 8-5, Historic Environment Additional Consultation.</p>
<p>North Lincolnshire Council</p>	<p>Support the approach taken to the Historic Environment preliminary assessment in the PEIR and for further EIA.</p>	<p>This is noted.</p>
	<p>Pre-application archaeological field evaluation to identify unrecorded remains is required in North Lincolnshire comprising ALL following surveys: Measured survey of upstanding historic landscape features; geo-archaeological assessment and purposive</p>	<p>See response above to LCC PEIR comments re. sufficiency of evaluation.</p>

Stakeholder	Summary of comment	How and where addressed
	boreholes; geophysical survey (ongoing as of November 2022); excavation of trial trenches.	
	The EIA and subsequent programme of any post-consent archaeological mitigation must be informed by the results of the completed field evaluation	The assessment takes account of the desk-based assessment (<i>ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)</i>) and aerial photographic assessment and LiDAR analysis (<i>ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)</i>). Detailed geophysical (magnetometer) surveys are ongoing. A programme of archaeological evaluation including a programme of trial trenching is proposed (<i>ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)</i>). The results of the archaeological evaluation will inform the development of a detailed archaeological mitigation strategy, to be agreed during Examination.
	Potential physical impacts have been satisfactorily identified and assessed against the current known baseline evidence in the PEIR	This is noted.
	Indirect operational impacts on heritage assets arising from the proposed 25m stack at Immingham Facility should be assessed in the EIA.	Operational impacts on heritage assets arising from the proposed 25m high stack at Immingham Facility are assessed at paragraphs 8.7.136 to 8.7.137.
	Decommissioning effects of pipe removal on any in situ archaeological remains preserved within the working width at construction should be assessed in the EIA.	The effects of decommissioning are assessed at paragraph 8.7.147. Following decommissioning, above ground installations will be removed; however, the pipeline will be left in situ.
	Welcome the approach to include the archaeological mitigation strategies and final WSIs in the Draft and final CEMP.	This is noted.
	Support measures to enhance and/or interpret heritage assets on or off-site, and for community participation through training opportunities, events, exhibitions and publications.	Measures to enhance and/or interpret heritage assets on or off-site, and for community participation through training opportunities, events, exhibitions and publications will be considered as part of the detailed archaeological mitigation strategy (see section 8.8 Additional Mitigation and Enhancement Measures).

Stakeholder	Summary of comment	How and where addressed
West Lindsey District Council	<p>The heritage assets identified within this section and those that lie within the WLDC boundary are noted. The proposed pipeline route would run close to those identified heritage assets within Riby.</p>	<p>This is noted.</p>
	<p>Agree that the proposed Block Valve Station (location 1) is unlikely to introduce noticeable changes to the setting of heritage assets.</p>	<p>This is noted.</p>
	<p>Agree that impacts arising from the operational project must be included in the EIA.</p>	<p>This is noted.</p>
Historic England	<p>A risk-based approach in which areas of greatest archaeological risk and engineering pressure are brought as far forwards for investigation as possible will maximise the scope for design solution and time critical mitigation. Deposit modelling in this complex sub-surface environment is crucial to managing risk, as is preservation assessment.</p>	<p>This is noted. Archaeological risk areas have been identified along the route based on understanding of the topography, sub-surface geology, the results of ongoing geophysical surveys, aerial photographic analysis and LiDAR assessment. A programme of archaeological evaluation comprising trial trenching and geoarchaeological assessment is proposed (<i>ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)</i>) which will inform development of a deposit model and preservation assessment. Ongoing engagement with heritage consultees will aim to refine the model.</p>

Additional Consultation

8.3.5 Additional consultation has been undertaken with key stakeholders with specific focus on the historic environment, including Historic England and the archaeological advisors to East Lindsey District Council, Lincolnshire County Council, North Lincolnshire Council and North East Lincolnshire Council. A summary of stakeholder engagement specific to the historic environment has been provided in **Table 8-5**.

Table 8-5: Historic Environment Additional Consultation

Stakeholder	Date	Summary of discussions
Historic England	16 May 2022	A general introduction about the Proposed Development and discussion on our approach to the assessment.
Historic England, East Lindsey District Council, Lincolnshire County Council, North Lincolnshire Council, North East Lincolnshire Council – collectively called the Viking CCS Heritage Consultees	08 February 2023	Information shared on the approach to the EIA, construction methods for the pipeline and the above ground infrastructure, including locations of temporary compounds.
		Work to date on the cultural heritage baseline – specialist study of aerial photographs and LiDAR data recommended.
		Study areas for designated and non-designated assets – differing views on study area for designated heritage assets, further discussion required to reach a compromise position.
		Scope and timing of geophysical survey and trial trenching in relation to submission of the DCO – risk-based approach recommended, as much evaluation as possible as early as possible. Following discussion with consultees, the scope of the geophysical survey was expanded from a 50m wide corridor focussed on the centre line of the pipeline corridor to the full draft order limits (c.100m width).
Viking CCS Heritage Consultees	08 March 2023	Options for routing through the Phillips66 site – option to route through the industrial land above ground via a pipe racking system, further work on the alternative routes in Phillips66 to be shared in due course.
		Heritage work progress – walkover survey completed and specialist study of aerial photographs and LiDAR data to be progressed.
		Latest geophysical survey results presented and discussed. Areas of 50m width survey undertaken to date to be reviewed based on geophysical survey results and timescales, to see whether re-accessing would be beneficial.
		Further evaluation – predictive model and areas of risk to be developed in GIS. A staged approach to trial trenching would be acceptable, subject to an

Stakeholder	Date	Summary of discussions
		overarching WSI with areas agreed with individual LPA archaeologists.
Viking CCS Heritage Consultees	19 April 2023	Latest design refinements and changes, currently the subject of a targeted four-week consultation. The latest alignment shared as a GIS shape file post-meeting.
		Heritage work progress – AirPhoto Services work ongoing.
		Latest geophysical survey results presented and discussed.
		Further evaluation – trial trench evaluation strategy in development.
Viking CCS Heritage Consultees	17 May 2023	Heritage work progress – drawings, accompanying shapefiles and a gazetteer received from AirPhoto Services, draft report expected by end May. Project to consider when this can be shared with consultees.
		Latest geophysical survey results presented and discussed, including percentage of land covered to date and forward programme. Potential to survey Phillips66 operational land to be reviewed by project including previous ground disturbance / contamination.
		Further evaluation – proposed trial trenching approach discussed. The need to include areas with no geophysical survey was noted.
		ES progress – the work being undertaken for the baseline for the ES, and what would be included as appendices was outlined. Regarding the EIA Methodology, heritage consultees advised that the ability to record archaeological remains should not be used to reduce the level of impact in the assessment.
Viking CCS Heritage Consultees	28 June 2023	Heritage work progress - Air Photo Services Ltd had delivered a first draft of their report. AECOM had provided comments and sent the report back to the sub-consultant so that it could be amended and updated.
		The latest geophysical survey results were discussed, highlighting new archaeological anomalies identified. A total of 81ha had been surveyed between the end of April and the end of May 2023.
		Further evaluation – comments have been received from stakeholders on a draft WSI. Trenching layouts were being worked on; as well as geophysics, other data would be used including data from the HERs

Stakeholder	Date	Summary of discussions
		<p>and data from the Aerial Photographic and LiDAR Assessment.</p> <p>Areas for potential geoarchaeological assessment were discussed. The shoreline at the northern end of the route was thought to be a suitable target.</p>

Scope of Assessment

8.3.6 The historic environment assessment considers the likely significant impacts on archaeological remains, historic buildings and the historic landscape character within a study area relevant to the nature of the impacts and the heritage assets likely to be affected.

Aspects scoped into the assessment

8.3.7 Following the Scoping Report and Scoping Opinion and considering comments received from statutory consultees, temporary and permanent likely significant effects arising from impacts during construction, operation and decommissioning of the Proposed Development have been scoped into the assessment.

Construction Phase

8.3.8 Temporary construction impacts that would last for all or part of the construction phase of the Proposed Development are likely to arise as a result of:

- The presence and movement of construction plant and equipment, which may impact on the significance of heritage assets caused by changes to their setting;
- The siting of construction compounds and activities within working areas, including associated construction noise and lighting, which may impact on the significance of heritage assets caused by changes to their setting; and
- The use of traffic management and increased volumes of traffic travelling on the local road network, which may impact on the significance of heritage assets caused by changes to their setting.

8.3.9 Permanent construction impacts that would last beyond the construction phase are likely to include:

- Physical impacts on known heritage assets arising from construction activities such as earthworks excavation, the formation of construction compounds and the installation of drainage infrastructure;
- Physical impacts on landscapes of historical, cultural or archaeological significance as a consequence of construction, such as the loss of important elements of the landscape as a result of site clearance; and
- The disturbance, compaction or removal of previously unrecorded subsurface archaeological deposits through construction activities.

8.3.10 The construction of the Proposed Development has the potential to result in significant effects to non-designated heritage assets within the DCO Site Boundary. This includes potential permanent impacts to buried archaeological remains associated with prehistoric and Roman activity recorded at the Immingham Facility and in pipeline section 1; Roman activity and medieval settlement in section 2; prehistoric and medieval settlement in section 3; prehistoric, Early Medieval, and medieval settlement in sections 4 and 5, as well as World War 2 defensive features; and historic hedgerows and roads.

8.3.11 The construction of the Proposed Development has the potential to result in temporary changes to the settings of designated heritage assets up to 5km from the Proposed Development, and of non-designated heritage assets up to 500m from the Proposed Development. No potential impacts on the settings of designated heritage assets beyond 2km were identified and therefore designated heritage assets between 2km and 5km were scoped out of the assessment (see 8.3.18 below). Assets scoped in to the assessment include in pipeline section 1, the locally listed Habrough School [052] and Luxmore Farm [055]; in section 2, the grade II* listed Church of St Edmund at Riby [129] and a non-designated farmstead; in section 3, the Scheduled Civil War fort [303], the grade II listed Manor House [270] and grade I listed Church of St Helen [266] at Barnoldby le Beck, and three non-designated farmsteads; in section 4, a non-designated mill mound at North Cockerington [453], seven non-designated farmsteads and a non-designated inn and post office; and in section 5, the grade II listed Ashleigh Farm [580] and five non-designated farmsteads. Construction of the Theddlethorpe Facility and the Dune Isolation Valve could result in temporary changes to the settings of three non-designated farmsteads.

Operational Phase

8.3.12 The pipeline will be operated and maintained via the Immingham and Theddlethorpe Facilities and the three Block Valve Stations. The operational pipeline would tie-in to existing infrastructure at Theddlethorpe. Above ground components of the Proposed Development, comprise the offshore pipeline tie-in and outlet at either the former Theddlethorpe Gas Terminal site (Option 1) or close by (Option 2). The Theddlethorpe Facility will be unmanned, and routine checks and maintenance are anticipated to be minimal and largely unintrusive; nevertheless, there would be potential for limited noise and visual intrusion including traffic movement associated with general operation where the facility is located within the settings of heritage assets. During operation the Dune Isolation Valve will require minimal intervention with occasional light traffic associated with visual inspections that are currently premised to be on a monthly basis.

8.3.13 Assets scoped into the assessment of the operational effects of the Theddlethorpe Facility and the Dune Isolation Valve include one grade II listed building and six non-designated farmsteads.

8.3.14 Assets scoped into the assessment of the operational effects of the Immingham Facility within the existing industrial site at VPI Immingham include two grade I listed buildings.

8.3.15 The presence of new Block Valve Stations with associated electrical and instrumentation kiosk and perimeter security fencing proposed in three locations also have the potential to result in changes to the settings of heritage assets. However, no assets have been identified that could be affected in such a way.

Decommissioning Phase

8.3.16 Following feedback from The Planning Inspectorate, impacts arising during decommissioning of the Proposed Development are also scoped into the assessment. The scale and nature of activities undertaken during decommissioning would be no greater than described previously for construction, and they would be temporary during the period of decommissioning activities on site. However, decommissioning activities will take place in relation to the above ground installations only, as the below-ground pipeline infrastructure would be left *in situ* once operation ceases. As such there would be no further impacts on archaeology and heritage receptors in relation to decommissioning of the pipeline element of the Proposed Development.

8.3.17 The above ground installations at the Immingham and Theddlethorpe Facilities, including above ground pipework and the vent stacks, would be removed. The above ground installations at the three block valve locations would also be removed, including access roads, fencing and hardstanding, and the land would be returned to agriculture. Following

the removal of the structures and the reinstatement of the land there would be no further potential effects on archaeology and heritage receptors. The potential effects from decommissioning of the above ground installations should therefore be regarded as no greater than construction.

Aspects scoped out of the assessment

8.3.18 Following on from the development of the Scoping Report and receipt of the Scoping Opinion as well as considering comments received, impacts on the settings of designated heritage assets at distances up to 5km from the DCO Site Boundary arising during construction, operation and decommissioning of the Proposed Development have been considered in this ES (see section 8.5, Baseline Conditions and Study Area). Where no potential for significant effects to arise has been identified, impacts on the settings of designated assets at distances greater than 2km have been scoped out of the assessment.

8.4 Assessment Methodology

Overview

8.4.1 The assessment methodology used in the preparation of this chapter follows the guidance that is described in *ES Volume II Chapter 5: EIA Methodology*.

Receptor Sensitivity/Value

8.4.2 Relevant historic environment receptors – referred to as heritage assets in line with the terminology applied in the NPPF (NPPF Annex 2, Glossary) – have been identified based on the baseline data gathering exercise undertaken to date from both secondary and primary sources.

8.4.3 The value of a heritage asset (its heritage significance) is guided by its designated status but is derived also from its heritage interest which may be archaeological, architectural, artistic or historic (NPPF Annex 2, Glossary). Using professional judgement and the results of consultation, heritage assets are also assessed on an individual basis and regional variations and individual qualities are taken into account where applicable.

8.4.4 Each heritage asset relevant to the assessment is assigned a value in accordance with the criteria in **Table 8-6**. For the purposes of this assessment value and sensitivity are largely equivalent. This table provides guidance, but professional judgment will be applied in all cases regarding the appropriate category for individual heritage assets. Where it is assessed that an asset is of greater or lower value than noted in the guidance table, justification is provided.

Table 8-6: Criteria for determining the value of heritage assets

Value	Criteria
High	World Heritage Sites. Scheduled Monuments. Grade I and II* listed buildings. Registered battlefields. Grade I and II* registered parks and gardens. Conservation areas of demonstrable high value. Non-designated heritage assets (archaeological sites, historic buildings, monuments, parks, gardens or landscapes) that can be shown to have demonstrable national or international importance. Well preserved historic landscape character areas, exhibiting considerable coherence, time-depth or other critical factor(s).

Value	Criteria
Medium	<p>Grade II listed buildings.</p> <p>Conservation areas.</p> <p>Grade II registered parks and gardens.</p> <p>Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable regional importance.</p> <p>Averagely preserved historic landscape character areas, exhibiting reasonable coherence, time-depth or other critical factor(s).</p> <p>Historic townscapes with historic integrity in that the assets that constitute their make-up are clearly legible.</p>
Low	<p>Locally listed buildings.</p> <p>Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable local importance.</p> <p>Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade.</p> <p>Historic landscape character areas whose value is limited by poor preservation and/ or poor survival of contextual associations.</p>
Very Low	<p>Assets identified on national or regional databases, but which have no archaeological, architectural, artistic or historic value.</p> <p>Landscape with no or little significant historical merit.</p>

Magnitude

8.4.5 Having identified the value of the heritage asset, the next stage in the assessment is to identify the level and degree of impact to an asset arising from the development. Impacts may arise during construction or operation and can be temporary or permanent. Impacts can occur to the physical fabric of the asset or may arise from changes within its setting.

Table 8-7: Criteria for Determining the Magnitude of Impact

Magnitude of impact	Description of impact
High	<p>Changes such that the heritage value of the asset is totally altered or destroyed.</p> <p>Comprehensive change to elements of setting that would result in harm to the asset and our ability to understand and appreciate its heritage significance.</p>
Medium	<p>Change such that the heritage value of the asset is significantly altered or modified.</p> <p>Changes such that the setting of the asset is noticeably different, affecting significance and resulting in changes in our ability to understand and appreciate the heritage value of the asset.</p>
Low	<p>Changes such that the heritage value of the asset is slightly affected.</p> <p>Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the heritage value of the asset.</p>

Magnitude of impact	Description of impact
Very Low	Changes to the asset that hardly affect heritage value. 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 heritage value of the asset.

Significance Criteria

8.4.6 The significance of environmental effect is typically a function of the value (**Table 8-6**) of a receptor and the magnitude (**Table 8-7**) of an impact. An indicative matrix for the determination of significance is provided in **Table 8-8**. Effects can be neutral, adverse or beneficial.

Table 8-8: Significance Matrix

		Magnitude of Change			
		Very Low	Low	Medium	High
Sensitivity (value) of Receptor	High	Negligible/ Minor	Moderate	Major	Major
	Medium	Negligible	Minor	Moderate	Major
	Low	Negligible	Negligible	Minor	Moderate
	Very Low	Negligible	Negligible	Negligible	Negligible/ Minor

8.4.7 Within the NPPF, impacts affecting the value of designated heritage assets are considered in terms of harm and there is a requirement to determine whether the level of harm to designated assets amounts to ‘substantial harm’ or ‘less than substantial harm’. There is no direct correlation between the significance of effect as reported in the ES and the level of harm caused to heritage significance; this is because the NPPF introduces its own framework for understanding harm which is separate from the EIA process.

8.4.8 A major (significant) effect on a heritage asset will, however, more often be the basis by which to determine that the level of harm to the significance of the asset will be substantial. A moderate (significant) effect is unlikely to meet the test of substantial harm and will therefore more often be the basis by which to determine that the level of harm to the significance of the asset will be less than substantial. A minor or negligible (not significant) effect will still amount to less than substantial harm, which triggers the statutory presumptions against development within NPPF; however, a neutral effect is classified as no harm. In all cases determining the level of harm to the significance of the asset arising from development impact is a matter of professional judgement.

8.4.9 An assessment of the predicted effect will be made both prior to the implementation of mitigation and after the implementation of mitigation. The first highlights where specific mitigation may be appropriate. The second highlights where the mitigation has been effective in reducing effects to enable an overall residual effect of the Proposed Development as a whole. It is important to note that mitigation does not automatically reduce an effect but may be used to offset an adverse impact.

Assumptions and Limitations

8.4.10 Heritage data have been obtained from third party sources and the assessment of effects is based on the accuracy of this information. Although data from the Historic Environment Records (HERs) and the National Heritage List for England (NHLE) are generally reliable, on occasion asset data may be omitted, incorrectly named, have incorrect coordinate data, or be out of date.

- 8.4.11 The impact assessment assumes that construction would result in the permanent and total loss of any heritage assets contained within the Proposed Development's construction footprint.
- 8.4.12 The assessment presented in this ES chapter is based on desk-based research, including consideration of aerial photography and LiDAR. This assessment is in line with national guidance (i.e., paragraph 5.8.9 of EN-1 and paragraph 194 of the NPPF) and is considered sufficient to assess the affected interests and inform the necessary scope of mitigation measures, including pre-commencement surveys and a written scheme of investigation. Requirement 10 of the draft DCO (*Application Document 2.1*) requires that prior to commencement of any stage of the Proposed Development with the potential to affect buried archaeological assets, an archaeological written scheme of investigation must be submitted to and approved by the relevant planning authority following consultation with Historic England. The Proposed Development must be undertaken in accordance with the approved scheme. The written scheme of investigation will be based on the outline written scheme of investigation submitted with the DCO application (*ES Volume IV Appendix 8.3 (Application Document 6.4.8.3)*).
- 8.4.13 Further archaeological evaluation, including geophysical survey and a programme of archaeological trial trenching is proposed (*ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)*). This supplementary information will be submitted post-DCO application and is intended to enhance the baseline study and confirm the impact assessment.
- 8.4.14 Detailed geophysical (magnetometer) surveys are ongoing on accessible land suitable for survey across the full Order Limits. The scope of these surveys has been agreed with the relevant local authority archaeologists at East Lindsey District Council, North Lincolnshire Council, North East Lincolnshire Council and Lincolnshire County Council. Following completion of the geophysical survey programme, a programme of archaeological evaluation comprising trial trenching and geoarchaeological assessment is proposed (*ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)*); this is anticipated to commence in late 2023.
- 8.4.15 The results of the further archaeological evaluation will be submitted prior to Examination of this application commencing and where necessary, updates to this assessment and mitigation requirements will be provided. The results will also inform the detailed mitigation measures to be included within the WSI to be submitted to relevant planning authorities in accordance with Requirement 10 of the draft DCO (*Application Document 2.1*).
- 8.4.16 The exact route of the Proposed Development within the DCO Site Boundary will be determined at Detailed Design. For the purposes of this assessment, a reasonable worst-case scenario has been assumed to inform this impact assessment and mitigation requirements.

8.5 Baseline Conditions and Study Area

Study Area

- 8.5.1 The following study areas were defined to include all designated and non-designated heritage assets with the potential to be affected by the Proposed Development, and to provide information on the archaeological potential of the land within the DCO Site Boundary. This ensures that the assessment is proportionate, in accordance with the requirements of the NPS EN-1 paragraph 5.8.8 (Ref 8-4) and in line with the NPPF paragraph 194 (Ref 8-8), and draft NPS-EN1 paragraphs 5.9.10-5.9.11 (Ref 8-5).
- 8.5.2 The study areas set out below were proposed in the Scoping report and agreed through consultation with relevant historic environment stakeholders. The study areas have been

reviewed against the Zone of Theoretical Visibility (ZTV) developed for the Proposed Development (see *ES Volume II, Chapter 07, Landscape and Visual Impacts*).

8.5.3 The purpose of the study areas is to ensure comprehensive data capture, encompassing all heritage assets, both designated and non-designated, including archaeological sites, historic buildings, conservation areas and registered parks and gardens, together with the relevant historic landscape characterisation. All of the captured data is reviewed in *ES Volume IV Appendix 8.1 (Application Document 6.4.8.1)*, and those assets potentially affected by the Proposed Development have been taken forward for assessment in this ES chapter.

Designated heritage assets

8.5.4 Potential impacts on the setting of designated heritage assets up to 5km from the DCO Site Boundary have been considered. No potential impacts on the settings of designated heritage assets beyond 2km were identified and therefore designated heritage assets between 2km and 5km were scoped out of the assessment. Considering the nature of the Proposed Development and its likely visibility level within the landscape, the 2km study area is considered to be sufficient for identifying designated assets that may experience temporary or permanent changes to their setting.

Non-designated heritage assets

8.5.5 The study area for the collation of information on non-designated heritage assets has been defined as 500m from the DCO Site Boundary. The 500m study area has been defined in order to capture detail about known heritage assets and will allow proportionate and sufficient archaeological context to be gathered to understand the potential for previously unknown heritage assets to be present. Non-designated heritage assets outside of the 500m study area and up to 1km have been considered where these provide context and inform the potential for unknown archaeology within the DCO Site Boundary.

8.5.6 A study area of 1km has been used to identify any historic landscape features (such as parish boundaries, historic hedgerows, watercourses, canals, historic roads, relict parkland landscape features, and ridge and furrow earthworks) likely to be impacted by the Proposed Development.

8.5.7 Inclusion of assets outside of the defined study areas is based on research and professional judgment. Such assets are only discussed where the wider landscape forms a key contributing factor in their heritage value, in accordance with Historic England guidance, and where this has the potential to be affected by the Proposed Development.

Data Sources

8.5.8 Several data sources have been consulted during the preparation of this ES chapter and the historic environment desk-based assessment (*ES Volume IV Appendix 8.1 (Application Document 6.4.8.1)*) to define the baseline conditions for heritage assets:

- NHLE for information relating to designated heritage assets and local authority Conservation Areas;
- North Lincolnshire Council HER for information relating to non-designated heritage assets, archaeological interventions (events) and fieldwork reports;
- North East Lincolnshire Council HER for information relating to non-designated heritage assets, archaeological interventions (events) and fieldwork reports;
- Lincolnshire County Council HER for information relating to non-designated heritage assets, archaeological interventions (events) and fieldwork reports within the administrative boundaries of West Lindsey District Council and East Lindsey District Council;

- Portable Antiquities Scheme for records of archaeological finds discovered by the public, mostly through metal detecting;
- Heritage Gateway for information relating to non-designated heritage assets;
- Archaeology Data Service, for information relating to heritage assets and previous fieldwork events;
- The National Mapping Programme;
- The Rapid Coastal Assessment Survey of the Inner Humber Estuary;
- Local lists from all three relevant Local Planning Authorities covering locally listed heritage assets and Archaeological Consulting Areas;
- The British Geological Survey Geo-Index online resources (Ref 8-25);
- Published and unpublished primary sources and archaeological reports;
- LiDAR open-source datasets from the Environment Agency; and
- Aerial photographs from relevant archives and online repositories.

Walkover survey

8.5.9 A walkover survey and setting assessment of heritage assets within the DCO Site Boundary and study areas was undertaken in February 2023. The walkover survey aimed to:

- Identify known archaeological sites within the DCO Site Boundary;
- Identify areas within the DCO Site Boundary with the potential to contain any previously unidentified archaeological or historical remains;
- Identify previously unidentified non-designated buildings;
- Identify and assess the setting of heritage assets within the study area;
- Identify the location, extent and severity of modern ground disturbance and previous construction impacts; and
- Assess ground conditions and the suitability of the site for further evaluation.

8.5.10 The results of the walkover survey have been integrated into the desk-based assessment presented in *ES Volume IV Appendix 8.1 (Application Document 6.4.8.1)*.

Aerial photographs and LiDAR

8.5.11 Following scoping and taking into account comments received from statutory consultees (see section 8.3, Scope of Assessment and Consultation), a specialist aerial photographic assessment and LiDAR analysis using the Historic England Archives and more recent LiDAR data was commissioned (*ES Volume IV Appendix 8.2 (Application Document 6.4.8.2)*). The results of the expert assessments have been integrated into the desk-based assessment presented in *ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*.

Geophysical survey

8.5.12 Following scoping and taking into account comments received from statutory consultees (see section 8.3, Scope of Assessment and Consultation), a geophysical (magnetometer) survey of all available land suitable for survey within the DCO Site Boundary was commissioned to enhance the baseline and confirm the impact assessment. At the time of compilation of this ES chapter, geophysical survey of available land suitable for survey is ongoing; survey has been completed in most of sections 1 and 3 of the pipeline route and in parts of section 2; only limited areas in sections 4 and 5 of the pipeline route have been

available for survey, due largely to adverse weather conditions in Winter 2022, Spring and Summer 2023 and a resultant late harvest.

Trial trenching and geoarchaeological investigation

8.5.13 Following scoping and taking into account comments received from statutory consultees (see section 8.3, Scope of Assessment and Consultation), a programme of archaeological evaluation, including targeted intrusive archaeological evaluations (trial trenching) and geoarchaeological investigations, has been developed. This will prioritise evaluation of areas within the DCO Site Boundary of increased archaeological risk based on understanding of the topography, sub-surface geology, the results of ongoing geophysical surveys and aerial photographic analysis and LiDAR assessment, where land access is possible. This is expected to commence in late 2023. A written scheme of investigation for the proposed evaluation programme is included at *ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)*.

Sensitive receptors

8.5.14 The Historic Environment Desk-based Assessment (DBA) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has identified 175 designated heritage assets up to 2km from the Proposed Development. Where scheduled monuments include elements that are also designated as listed structures, these are treated as single designated assets so as to avoid double-counting impacts: this gives a total of 166 designated assets within the 2km study area. The designated heritage assets include 15 scheduled monuments, and listed buildings that are designated grade I (17 no.), grade II* (22 no.) and grade II (115 no.). There are also three local authority identified Conservation Areas; the Irby upon Humber Conservation Area within the 500m study area, and the Laceby and North Thoresby Conservation Areas within the 2km study area.

8.5.15 The DBA presents a detailed assessment of the archaeological and cultural heritage baseline. The DBA provides a full overview of the designated and non-designated cultural heritage assets located within 500m either side of the DCO Site Boundary, and those designated assets within the 2km study area which were identified as sensitive receptors or likely to experience changes within their setting. The DBA also provides an assessment of the baseline in which the significance and contribution of setting to significance of the assets are described. This discussion has enabled assets which are not considered likely to experience any significant impacts or effects as a result of the Proposed Development to be identified and scoped out of the assessment within this ES chapter.

Historic Landscape Character

8.5.16 The pipeline route passes through two of Lincolnshire's historic landscape character (HLC) areas, HLC Area 3, The Northern Marshes, and HLC Area 8, The Grazing Marshes. These HLC areas are divided into five separate character zones. Each zone comprises a number of historic features, and while each retains settlement patterns and remnant features of medieval date, all five zones are firmly rooted in the 18th to 20th centuries. The DBA (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) assessed the sensitivity to change of each zone as shown in **Table 8-9**.

Table 8-9: Historic Landscape Character Zones – Sensitivity to Change

Historic Landscape Character	Historic Landscape Zones	Sensitivity to Change
Area 3 Northern Marshes	NOM1 Humber Bank	Low
Area 3 Northern Marshes	NOM2 Immingham Coastal Marsh	Very Low
Area 3 Northern Marshes	NOM3 Grimsby Commuter Belt	Low
Area 8 Grazing Marshes	GRM1 Middle Marsh	Low
Area 8 Grazing Marshes	GRM3 Mablethorpe Outmarsh	Low

8.5.17 The DBA (*ES Volume IV Appendix 8.1 (Application Document 6.4.8.1)*) concluded that, given the low to very low sensitivity to change and the limited above ground aspects of the Proposed Development, proposals to minimise impacts on historic landscape features and reinstate impacted hedgerows and earthworks, it is considered unlikely that the character of any of these historic landscapes will be significantly impacted by the Proposed Development. As such, impacts on historic landscape character will not be further assessed in this ES chapter. Impacts on individual historic landscape features such as historically important hedgerows and historic roads and routeways are assessed in section 8.7 below.

Baseline Structure

8.5.18 For ease of reporting the Proposed Development has been split into five sections (sections 1 to 5) running from north to south to ensure that the baseline descriptions are relevant to the areas that the pipeline crosses. The section splits are based upon a combination of factors including geography, geology and topography which will have influenced prehistoric and historic settlement / activity patterns and the historic landscape character.

8.5.19 The five sections of the Proposed Development between the Immingham Facility and the Mean Low Water Springs (MLWS), near the former Theddlethorpe Gas Terminal (TGT) are as follows (north to south):

- Section 1 – Rosper Road (Immingham) to A180 road;
- Section 2 – A180 road to A46 road;
- Section 3 – A46 road to Pear Tree Lane;
- Section 4 – Pear Tree Lane to Manby Middlegate (B1200); and
- Section 5 – Manby Middlegate (B1200), to Theddlethorpe and down to MLWS.

8.5.20 The following sections identify for each section of the pipeline all designated assets within the 2km study area. Designated and non-designated assets identified within the DBA (*ES Volume IV Appendix 8.1, Application Document 6.4.8.1*) as having the potential to experience impacts of a magnitude that may result in significant effects and scoped into the assessment are identified; the potential impacts and effects on these designated and non-designated heritage assets are considered in section 8.7 below.

Section 1 – Rosper Road (Immingham) to A180 Road

Designated heritage assets

- 8.5.21 There are no designated heritage assets located within the DCO Site Boundary in section 1 of the pipeline route.
- 8.5.22 There are no World Heritage Sites, conservation areas, registered parks and gardens or registered battlefields within the 2km study area of section 1 of the pipeline route.
- 8.5.23 There are 18 designated heritage assets within the 2km study area:

Scheduled Monuments

- Manor Farm moated site, North Killingholme [027], which also contains the listed grade II* Manor Farmhouse, North Killingholme and the listed grade II Stables / granary approximately 50 metres east of Manor Farmhouse.

Grade I listed buildings

- Church of St Denys, North Killingholme [036]; and
- Church of St Andrew, Immingham [035].

Grade II listed buildings*

- Manor Farmhouse, North Killingholme [027], which lies within Manor Farmhouse scheduled monument.

Grade II listed buildings

- The Old Vicarage, North Killingholme [046];
- Stables/granary approximately 50 metres east of Manor Farmhouse, North Killingholme [027], which is within Manor Farm scheduled monument;
- Killingholme High Lighthouse, South Killingholme [043];
- Killingholme North Low Lighthouse, South Killingholme [050];
- Killingholme South Low Lighthouse, South Killingholme [044];
- The Nook, South Killingholme [048];
- Baptist chapel, South Killingholme [049];
- Cross base approximately 8 metres south of Church of St Andrew, Immingham [024];
- Churchfield Manor, Immingham [051];
- Belmont Cottage, Immingham [047];
- The Iron Bungalow, Immingham [072];
- Immingham War Memorial, Immingham [073];
- Appletree Cottage, Habrough [045]; and
- Church of St Margaret, Habrough [033].

Designated Heritage Assets Scoped in to the Assessment

- 8.5.24 Of these 18 designated heritage assets, the DBA (Section 4.8; Table 13) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has identified two that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

Grade I listed buildings

- Church of St Denys, North Killingholme [036]; and

- Church of St Andrew, Immingham [035].

8.5.25 Potential impacts and assessment of effects on these designated heritage assets are considered in section 8.7 below.

Non-designated heritage assets scoped into ES assessment:

8.5.26 The DBA (Section 4.8; Table 10 and Table 14) (*ES Volume IV Appendix 8.1 (Application Document 6.4.8.1)*) has identified the following non-designated heritage assets within the DCO Site Boundary that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

- Ridge and furrow and circular feature south of Ulceby Road, South Killingholme [026];
- Iron Age and Romano-British settlement, west of Rosper Road [009];
- Chapel, West Side, Rosper Road [084];
- Former shoreline, east of Rosper Road [098];
- Historically important hedgerows (pre-1840), South Killingholme parish [038];
- Geophysical anomaly, west of Rosper Road [087];
- Open field system, South Killingholme [022];
- Late Iron Age ditches, west of Rosper Road [010];
- The Humber Commercial Railway [080];
- Possible medieval farmstead, northeast of Houlton's Covert [025];
- Parish boundary between South Killingholme CP and Immingham CP [628];
- Roman pottery in Immingham [017];
- Ridge and furrow in Immingham [030] (extending across Sections 1 and 2);
- Parish boundary between Immingham CP and Habrough CP [629];
- Undated ditch visible on historic aerial photographs, but no longer present on satellite imagery or LiDAR data, west of Manby Road (A1173) [APS_50];
- Former line of a road visible as cropmark, now beneath the A180 Immingham Bypass [APS_46].
- Habrough School, Immingham Road, Habrough [052]; and
- Luxmore Farm, Habrough Road, Immingham [055].

8.5.27 Potential impacts and assessment of effects on these non-designated heritage assets are considered in section 8.7 below.

Section 2 A180 Road to A46 Road

Designated heritage assets

8.5.28 There are no designated heritage assets located within the DCO Site Boundary in section 2 of the pipeline route.

8.5.29 There are no World Heritage Sites, registered parks and gardens or registered battlefields within the 2km study area in section 2 of the pipeline route.

8.5.30 There are 29 designated heritage assets within the 2km study area in section 2 of the pipeline route (note that assets with multiple designations, such as e.g., scheduled monuments including listed structures, are counted in this total as single designated heritage assets):

Conservation Areas

- Laceby Conservation Area [116].

Scheduled Monuments

- Stallingborough medieval settlement, post-medieval manor house and formal gardens, Stallingborough, [128];
- Churchyard cross 20m south of St Peter and St Paul's Church, Stallingborough [133] (also grade II listed);
- Site of medieval nunnery and post-Dissolution house, Nun Cotham [130]; and
- Cross in St Bartholomew's churchyard, Keelby [120] (also grade II listed).

Grade I listed buildings

- Church of St Bartholomew, Keelby [134];
- No 9 shop and Church End Farm, Keelby [135];
- Church of St Lawrence, Aylesby [132]; and
- Church of St Margaret, Laceby [131] which is within Laceby Conservation Area.

Grade II listed buildings*

- Church of St Peter and St Paul, Stallingborough [178];
- Former heavy anti-aircraft gun site, Stallingborough [189]; and
- Church of St Edmund, Riby [129].

Grade II listed buildings

- Daisy Cottage, Stallingborough [179];
- The Mill, Stallingborough [150];
- Cross approximately 20 metres south of Church of St Peter and St Paul, Stallingborough [133] (also a scheduled monument);
- Gravestone approximately 0.5 metres south-west corner of nave of Church of St Peter and St Paul, Stallingborough [121];
- Royal Observer Corps Monitoring Post, Stallingborough [190];
- Farm range on north side of Healing Wells Farm, Healing [149];
- Village hall, Keelby [157];
- Manor House, Keelby [158];
- No 1 and outbuildings and railings, Keelby [159];
- Churchyard cross at Church of St Bartholomew, Keelby [120] (also a scheduled monument);
- Rifle range, Keelby [160];
- F W Mcaulay Cottages, Aylesby [193];
- Barn at Church Farm, Riby [153];
- Church Farmhouse, Riby [154];
- 6 Caistor Road, Laceby [151] which is within Laceby Conservation Area;

- Rookery House, Laceby [180];
- College Farmhouse, Laceby [152] which is within Laceby Conservation Area;
- The Cottage, Laceby [672]; and
- Haagensen Memorial and vault, Laceby Cemetery, Laceby [156].

Designated heritage assets scoped into the assessment

8.5.31 Of these 29 designated heritage assets, the DBA (Section 4.9; Table 13) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has identified one that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

Grade II* listed buildings

- Church of St Edmund, Riby [129].

8.5.32 Potential impacts and assessment of effects on this designated heritage asset is considered in section 8.7 below.

Non-designated heritage assets scoped into the assessment

8.5.33 The DBA (Section 4.9; Table 10 and Table 14) (*ES Volume IV Appendix 8.1 (Application Document 6.4.8.1)*) has identified the following non-designated heritage assets within the DCO Site Boundary that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

- Ridge and furrow in Immingham [030] (extending across Sections 1 and 2);
- Roxton Road, Immingham [59];
- Roman pottery in Immingham [109];
- Manchester, Sheffield and Lincoln Railway – Cleethorpes to Barton [138];
- Historic settlement of Roxton [125];
- Prehistoric flintwork, east of Roxton Farm [723];
- Parish boundary between Immingham CP and Stallingborough CP [630];
- Cropmark 300m to 700m south of Gatehouse Farm, Stallingborough [198];
- Ridge and furrow in Stallingborough (Greenlands Farm) [124];
- Roman enclosures south east of Greenlands Farm, Stallingborough [105];
- North Beck Drain, formerly Stallingborough Beck [161];
- Possible ditches, pits and a paleochannel in Stallingborough identified by geophysical survey [194];
- Caistor Road, Laceby [168];
- Riby Road, Stallingborough [174];
- Keelby Road, Stallingborough [175];
- Parish boundary between Stallingborough CP and Riby CP [631];
- Parish boundary between Riby CP and Aylesby CP east of The Lindens [632];
- Barton Street [104] (asset also partly within Section 3);
- Riby Park [177];
- Cropmark boundaries and enclosure 200m south west of Barton Street, Aylesby [197];

- A post-medieval or modern extraction pit [139] and a modern landfill site [187] in Laceby;
- Ridge and furrow in Aylesby [123];
- Parish boundary between Aylesby CP and Laceby CP [633];
- Possible extraction pit west of The Crofts, Laceby [658];
- Parish boundary Laceby CP and Irby upon Humber CP [634];
- Old Main Road, Irby upon Humber [347];
- Medieval / post-medieval ridge and furrow visible as earthworks on historic aerial photographs, now levelled. Riby Gap, Stallingborough parish. [APS_40];
- A possible leat associated with an undated possible moated site visible on aerial photographs East of The Lindens, Riby parish [APS_037]; and
- Greenland's Farm, Keelby Road [147].

8.5.34 Potential impacts and assessment of effects on these non-designated heritage assets are considered in section 8.7 below.

Section 3 A46 road to Pear Tree Lane, Covenham St Bartholomew

Designated Heritage Assets

8.5.35 There are no designated heritage assets located within the DCO Site Boundary in section 3 of the pipeline route.

8.5.36 There are no World Heritage Sites, registered parks and gardens or registered battlefields within the 2km study area of section 3 of the pipeline route.

8.5.37 There are 43 designated heritage assets within the 2km study area in section 3 of the pipeline route:

Conservation areas

- Irby upon Humber [237]; and
- North Thoresby [236].

Scheduled Monuments:

- Civil War earthwork fort 350m north-east of Walk Farm, Irby upon Humber [303];
- Deserted medieval village of Beesby, Hawerby cum Beesby [240]
- Deserted village of North Cadeby (site of) E of Cadeby Hall, Wyham cum Cadeby [241]; and
- The Manor moated site and fishpond complex, Ludborough [673].

Grade I listed buildings:

- Church of St Andrew, Irby upon Humber [257] which is within Irby upon Humber Conservation Area.
- Church of St Helen, Barnoldby Le Beck [266]; and
- Church of St Mary, Ludborough [265].

Grade II* listed buildings:

- Waltham Windmill, Waltham [369];
- Church of St Helen, Brigsley [259];
- Church of St Peter, Ashby cum Fenby [261];

- Church of St Nicholas, Grainsby [262];
- The Farmhouse, North Thoresby [371] which is within North Thoresby Conservation Area;
- Church of St Helen, North Thoresby [264];
- Church of St Margaret, Hawerby cum Beesby [258];
- Cadeby Hall, Wyham cum Cadeby [314]; and
- The Manor House, Ludborough [370].

Grade II listed buildings:

- The Lodge, Laceby [337];
- Irby upon Humber War Memorial, Irby upon Humber [414] which is within Irby upon Humber Conservation Area;
- Dovecote at Irby Dales Farm approximately 150 metres west of Irby Dales Farmhouse, Irby upon Humber [306] which is within Irby upon Humber Conservation Area;
- Water pump house approximately 10 metres east of Blacksmiths Cottage, Irby upon Humber [375] which is within Irby upon Humber Conservation Area;
- The Old Rectory, Irby upon Humber [377] which is within Irby upon Humber Conservation Area;
- Manor House, Barnoldby Le Beck [270];
- Pelham House, Barnoldby Le Beck [372];
- Huntsman's Obelisk and railed enclosure approximately 30 metres north east of Church of St Helen, Barnoldby Le Beck [313];
- Woodlands, Barnoldby Le Beck [378];
- Church of St Andrew, Beelsby [268];
- Churchyard cross approximately 12 metres south of Church of St Helen, Brigsley [260];
- The Thatch, Brigsley [326];
- Hatcliffe Mill, Hatcliffe [331];
- Hall Farmhouse, Ashby cum Fenby [297];
- Homefield Farmhouse, Ashby cum Fenby [307];
- Well approximately 50 metres south east of Hall Farmhouse, Ashby cum Fenby [356];
- Front gate and railings approximately 5 metres south of Homefield Farmhouse, Ashby cum Fenby [312];
- The Thatched Cottages, College Farmhouse, East Ravensdale [381];
- Old Rectory, Grainsby [364];
- Stable block to former Grainsby Hall, Grainsby [363];
- Walnut Cottage and adjacent cottage, North Thoresby [310];
- Westbrook House, North Thoresby [311];
- Hawerby Hall, Hawerby cum Beesby [373];
- Glebe Farm House, Ludborough [376]; and

- White House, Ludborough [379].

Designated heritage assets scoped into the assessment

8.5.38 Of these 43 designated heritage assets, the DBA (Section 4.10; Tables 11 and 12) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has identified three that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

Scheduled monuments

- Civil War earthwork fort 350m north-east of Walk Farm, Irby upon Humber [303].

Grade I listed buildings

- Church of St Helen, Barnoldby Le Beck [266].

Grade II listed buildings

- Manor House, Barnoldby Le Beck [270].

8.5.39 Potential impacts and assessment of effects on these assets are considered in section 8.7 below.

Non-designated heritage assets scoped into the assessment

8.5.40 The DBA (Section 4.10; Table 10 and Table 14) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has identified the following non-designated heritage assets within the DCO Site Boundary that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

- Old Main Road, Irby upon Humber [347];
- Ridge and furrow in Irby upon Humber (Welbeck Hill) [248];
- Laceby Beck [204];
- Historic Landscape elements of Barnoldby le Beck Park [282];
- Ridge and furrow in Barnoldby le Beck [251] [APS_31, APS_30, APS_29];
- Ridge and furrow in Ashby cum Fenby [250];
- Main Road, Barnoldby le Beck [341];
- Waithe Beck [205];
- Brigsley Road, Ashby cum Fenby [342];
- Thoroughfare Lane, Ashby cum Fenby [346];
- Possible pump, Thoroughfare Lane, Ashby cum Fenby [659];
- Prehistoric flintwork, south of Ashby cum Fenby [724];
- Historic Settlement of Fenby [232];
- Pond / extraction pit south of demolished Fenby Farm [660];
- Prehistoric burnt flint, south of Ashby cum Fenby [725];
- Parish boundary between Ashby cum Fenby CP and Grainsby CP [635];
- Prehistoric flintwork, south of Ashby cum Fenby [726];
- Medieval ridge and furrow west of Grainsby Grange [244];
- Parish boundary between Grainsby CP and North Thoresby CP [636];

- Romano-British field system and possible vineyard, North Thoresby [215];
- The medieval village of Autby [239];
- Autby House and Autby Park [361];
- Parish boundary between North Thoresby CP and Ludborough CP [637];
- Dismantled East Lincolnshire Railway Line at Ludborough [661];
- Parish boundary between Ludborough CP and Utterby CP [638];
- Medieval / post-medieval ridge and furrow visible as earthworks on historic aerial photographs and cropmarks on satellite imagery. Ashby cum Fenby. [APS_25]
- Undated (possibly prehistoric) cropmarked enclosure east of Autby House [APS_21];
- Undated (possibly prehistoric) cropmarked enclosures and medieval / post-medieval field boundaries visible on aerial photographs at Damwells Farm [APS_20];
- Undated (possibly prehistoric) cropmarked enclosure visible on aerial photographs at Cold Harbour Farm [APS_19];
- Medieval / post-medieval ridge and furrow visible as earthworks on historic aerial photographs and as cropmarks on satellite imagery at Cold Harbour Farm [APS_18];
- Moorhouse Farm, Brigsley [277];
- Westfield Farm, North Thoresby [389];
- Chestnut Farm, Ashby cum Fenby [294]; and
- Moorhouse, Ashby Hill, Brigsley [278].

8.5.41 Potential impacts and assessment of effects on these non-designated heritage assets are considered in section 8.7 below.

Section 4 Pear Tree Lane to B1200 road, Grimoldby

Designated heritage assets

8.5.42 There are no designated heritage assets located within the DCO Site Boundary in section 4 of the pipeline route.

8.5.43 There are no World Heritage Sites, conservation areas, registered parks and gardens or registered battlefields within the 2km study area in section 4 of the pipeline route.

8.5.44 There are 61 designated heritage assets within the 2km study area in section 4 of the pipeline route (note that assets with multiple designations, such as e.g., scheduled monuments including listed structures, are counted in this total as single designated heritage assets):

Scheduled Monuments

- Packhorse bridge, Utterby [431] (also grade II* listed);
- Cross in St Andrew's churchyard, Utterby [432] (also grade II listed);
- Deserted village, Brackenborough with Little Grimsby [437];
- North Cockerington Hall moated site, North Cockerington [421];
- Louth Park Abbey, Keddington [430] (the ruins are also grade I listed); and
- Cross in St Edith's churchyard, Grimoldby [446] (also grade II listed).

Grade I listed buildings

- Church of St John the Baptist, Yarburgh [443];
- Church of St Adelwold, Alvingham [448];
- Church of St Mary, Alvingham [449];
- Little Grimsby Hall, Brackenborough with Little Grimsby [464];
- Louth Abbey Ruins, Keddington [430] (also a scheduled monument);
- Church of St Leonard, South Cockerington [535]; and
- Church of St Edith, Grimoldby [450].

Grade II listed buildings*

- Packhorse bridge, Utterby [431] (also a scheduled monument);
- Church of St Andrew, Utterby [441];
- Church of St Bartholomew, Covenham St Bartholomew [447];
- Church of St Mary, Covenham St Mary [445];
- Watermill, Alvingham [515];
- Brackenborough Hall, Brackenborough with Little Grimsby [514]
- Church of St Margaret, Keddington [452]; and
- Church of St Peter, Saltfleetby St Peter [454].

Grade II listed buildings

- Stable range at Utterby House, Utterby [518];
- Arbour in garden wall to S.E. of Utterby House, Utterby [457];
- Utterby House, Utterby [458];
- Manor House, Utterby [460];
- Cross base on south side of Church of St Andrew, Utterby [432] (also a scheduled monument);
- The Old Rectory, Utterby [461];
- Mill House, Covenham St Bartholomew [521];
- Haith's Farm House, Covenham St Bartholomew [522];
- Covenham St Bartholomew War Memorial, Covenham St Bartholomew [529];
- Westfield House, Yarburgh [480];
- Coach house at Westfield House, Yarburgh [482];
- Allenby Almshouses, Fotherby [465];
- Church of St Mary, Fotherby [439];
- Sunday school, Fotherby [466];
- Mawers Farm, Fotherby [467];
- Abbey Farmhouse and garden wall, Alvingham [517];
- High Street Farmhouse, Alvingham [478];

- Carriage house and stables at High Street Farmhouse, Alvingham [479];
- Alvingham Lock and Inverted Syphon TF 365909, Alvingham [471];
- Salter Fen Lock TF 356902, Alvingham [472];
- Barn with pigeoncote at Grange Farmhouse, Alvingham [473];
- Mill owners house, Alvingham [459];
- Grange Farmhouse, Alvingham [481];
- Folly at Brackenborough Hall, Brackenborough [468];
- Church of St Edith, Brackenborough with Little Grimsby [438];
- Urn at west end of Church of St Edith, Brackenborough with Little Grimsby [469];
- Gardener's Cottage and Hall Cottage, Brackenborough with Little Grimsby [674];
- Stable block at Brackenborough Hall, Brackenborough with Little Grimsby [470];
- Oak Cottage, North Cockerington [520];
- Home Farmhouse, North Cockerington [451];
- Ticklepenny Lock TF 351889, Keddington [455];
- Willows Lock TF 352892, Keddington [456];
- Baines Flour Mill, Thames Street, Louth [716];
- Abbey Farmhouse, Keddington [519];
- Stable block at Abbey Farmhouse, Keddington [463];
- Outhouse to rear of South Cockerington Hall, South Cockerington [516];
- The Almshouses, South Cockerington [462];
- Eastfield Farmhouse, Grimoldby [474];
- The Gables, Grimoldby [475];
- Ivy House Farmhouse, Grimoldby [476];
- Cross, Grimoldby [446] (also a scheduled monument);
- Eastfields, Grimoldby [523];
- Grimoldby War Memorial, Grimoldby [528]; and
- Tumbleydown Cottage, Saltfleetby St Peter [524].

Designated heritage assets scoped into the assessment

8.5.45 Of these 61 designated heritage assets, the DBA (Section 4.11) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has not identified any that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

Non-designated heritage assets scoped into the assessment

8.5.46 The DBA (Section 4.11; Table 10 and Table 14) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has identified the following non-designated heritage assets within the DCO Site boundary that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

- Pond / extraction pit northeast of Pear Tree Farm [662];

- Features northeast of Pear Tree Farm [663];
- Possible pond / building northwest of Gowt Farm [664];
- Prehistoric flintwork, north of Ings Lane (Covenham St Mary) [727];
- Parish boundary between Utterby CP and Brackenborough with Little Grimsby CP [639];
- Prehistoric flintwork, north of Ings Lane (Covenham St Mary) [728];
- Prehistoric flintwork, south of Ings Lane (Covenham St Mary) [729];
- Parish boundary between Brackenborough with Little Grimsby CP and Alvingham CP [640];
- Louth Navigation [525];
- Parish boundary between Alvingham CP and North Cockerington CP [641];
- Ridge and furrow field system, North Cockerington [424];
- Brick kiln close, North Cockerington [669];
- Parish boundary between North Cockerington CP and South Cockerington [642];
- Ridge and furrow at South Cockerington [426];
- (Glebe Farm), South Cockerington [492];
- Parish boundary between South Cockerington and Grimoldby CP [643];
- Site of a demolished railway line at Grimoldby and Theddlethorpe (Great North Railway, Mablethorpe Branch line) [608];
- Medieval / post-medieval ridge and furrow visible as earthworks on historic aerial photographs and cropmarks on satellite imagery. Grove Farm, Utterby parish. [APS_16];
- Two areas of medieval / post-medieval ridge and furrow visible as earthworks on historic aerial photographs and cropmarks on satellite imagery. Grange Farm, Yarburgh, Brackenborough with Little Grimsby parish. [APS_15];
- Post-medieval field boundary visible on historic aerial photographs and as cropmarks on satellite imagery. Brackenborough Road. [APS_14];
- Undated (possible prehistoric) rectilinear enclosure visible as cropmarks on aerial photographs. Immediately north of Louth Canal. [APS_13];
- Possible Iron Age 'Banjo' enclosure feature visible as cropmarks on oblique aerial photographs. Immediately south of Louth Canal. North Cockerington parish [APS_11];
- Parish boundary between Grimoldby CP and Manby CP [644] (asset also within Section 5);
- Pear Tree Farm, Utterby [487];
- Chequers Farm, Utterby [486];
- Yew Tree Cottage, Utterby [506];
- Woodhouse Farm, Brackenborough with Little Grimsby [507];
- Highfield House, North Cockerington [498];
- Corner Farm, Grimoldby [512];
- Pick Hill Farm, Grimoldby [502];

- Hedge Ends, Grimoldby [503]; and
- White Hart Inn and post office, North Cockerington [666].

8.5.47 Potential impacts and assessment of effects on these non-designated assets are considered in section 8.7 below.

Section 5 B1200 road, Grimoldby to MLWS, near the former Theddlethorpe Gas Terminal (TGT)

Designated heritage assets

8.5.48 There are no designated heritage assets located within the DCO Site Boundary in section 5 of the pipeline route.

8.5.49 There are no World Heritage Sites, scheduled monuments, conservation areas, registered parks and gardens or registered battlefields within the 2km study area in section 5 of the pipeline route.

8.5.50 There are 15 designated heritage assets within the 2km study area in section 5 of the pipeline route:

Grade I listed buildings

- Church of All Saints, Theddlethorpe All Saints [565].

Grade II* listed buildings

- Church of St Helen, Theddlethorpe St Helen [564].

Grade II listed buildings:

- 16, Chapel Lane, Manby [605];
- Pear Trees Cottage, Manby [570];
- Sunnyside, Manby [606];
- Manby Hall, Manby [572];
- Gayton Engine Pumping House, Gayton Le Marsh [568];
- Neves Farm House, Theddlethorpe All Saints [579];
- The Grove, Theddlethorpe All Saints [581];
- Hall Farmhouse, Theddlethorpe All Saints [571];
- Ashleigh Farm, Theddlethorpe St Helen [580];
- Stable block at The Hall, Theddlethorpe St Helen [567];
- The Hall, Theddlethorpe St Helen [569];
- Tennysons Cottage, Mablethorpe [721]; and
- Pump at Tennysons Cottage, Mablethorpe [722].

Designated heritage assets scoped into the assessment

8.5.51 Of these 15 designated heritage assets, the DBA (Section 4.12; Tables 12 and 13) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has identified two that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

Grade I listed buildings

- Church of All Saints, Theddlethorpe All Saints [565].

Grade II listed buildings

- Ashleigh Farm, Theddlethorpe St Helen [580].

8.5.52 Potential impacts and assessment of effects on these assets are considered in section 8.7 below.

Non-designated heritage assets scoped into the assessment

8.5.53 The DBA (Section 4.12; Table 10 and Table 14) (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) has identified the following non-designated heritage assets that could be affected by construction, operation or decommissioning of the Proposed Development in this section:

- Parish boundary between Manby CP and Saltfleetby CP [645];
- Parish boundary between Saltfleetby CP and Great Carlton CP [646];
- Field system and settlement near Walk Far, Great Carlton [548];
- A probable medieval salters' route (Two Mile Bank) [561];
- Parish boundary between Gayton le Marsh CP and Theddlethorpe All Saints CP [647];
- Toft earthworks and cropmarks, Theddlethorpe All Saints [544];
- Aircraft obstructions at Theddlethorpe All Saints [612];
- Parish boundary between Theddlethorpe All Saints CP and Theddlethorpe St Helen CP [648];
- Undated pit features, Theddlethorpe All Saints [616];
- Scatter of fired clay fragments and medieval potsherds, Railway Farm, Theddlethorpe All Saints [541];
- Ridge and furrow, west of Mablethorpe Road, Theddlethorpe All Saints [549];
- Undated enclosure, Theddlethorpe St Helen [622];
- Parish boundary between Theddlethorpe St Helen CP and Mablethorpe and Sutton CP [649];
- Lordship Farm, Great Carlton [596];
- Grange Farm, Theddlethorpe All Saints [575];
- Little Dams, Theddlethorpe All Saints [587];
- Dicote House, Theddlethorpe St Helen [590];
- North End Farm, Theddlethorpe St Helen [591];
- The Poplars, Theddlethorpe St Helen [593];
- Sand Hills Farm, Mablethorpe and Sutton [600]; and
- Bleak House, Mablethorpe and Sutton [601].

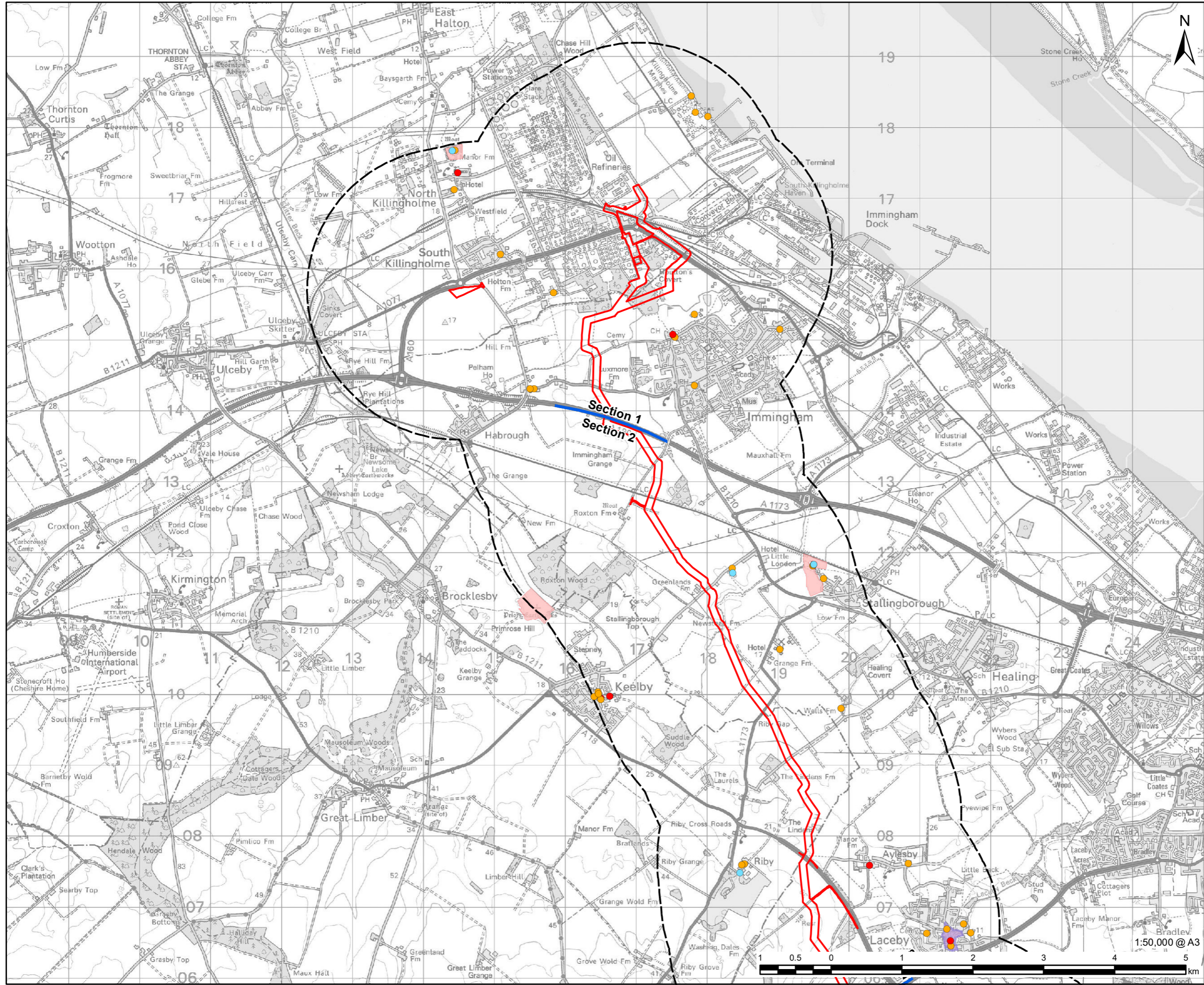
8.5.54 Potential impacts and assessment of effects on these non-designated heritage assets are considered in section 8.7 below.

Future baseline

8.5.55 This section considers those changes to the baseline conditions described above that might occur during the time period over which the Proposed Development will be in place. It

considers changes that might occur in the absence of the Proposed Development being constructed.

- 8.5.56 Changes to buried archaeological assets which might occur during the lifespan of the Proposed Development in the absence of the Proposed Development are minimal. They would be limited to typical taphonomic (i.e., erosion, degradation, corrosion, etc.) processes on buried archaeological assemblages. This would be unlikely to significantly alter the current baseline scenario.
- 8.5.57 It is not considered likely that significant numbers of designated built heritage assets will be added to the baseline in the future. The built heritage baseline is unlikely therefore to undergo significant change and the current baseline is therefore considered representative for the assessment.



VikingCCS

AECOM

PROJECT
Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Route Section Break
- 2km Wider Study Area
- Grade I Listed Building
- Grade II Listed Building
- Grade II* Listed Building
- Scheduled Monument
- Conservation Area

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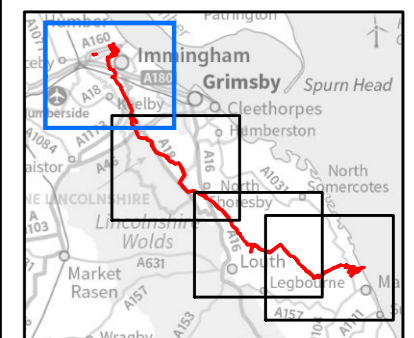
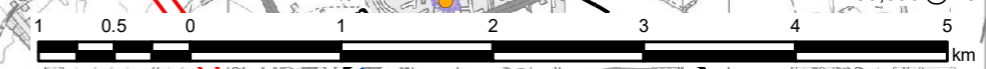


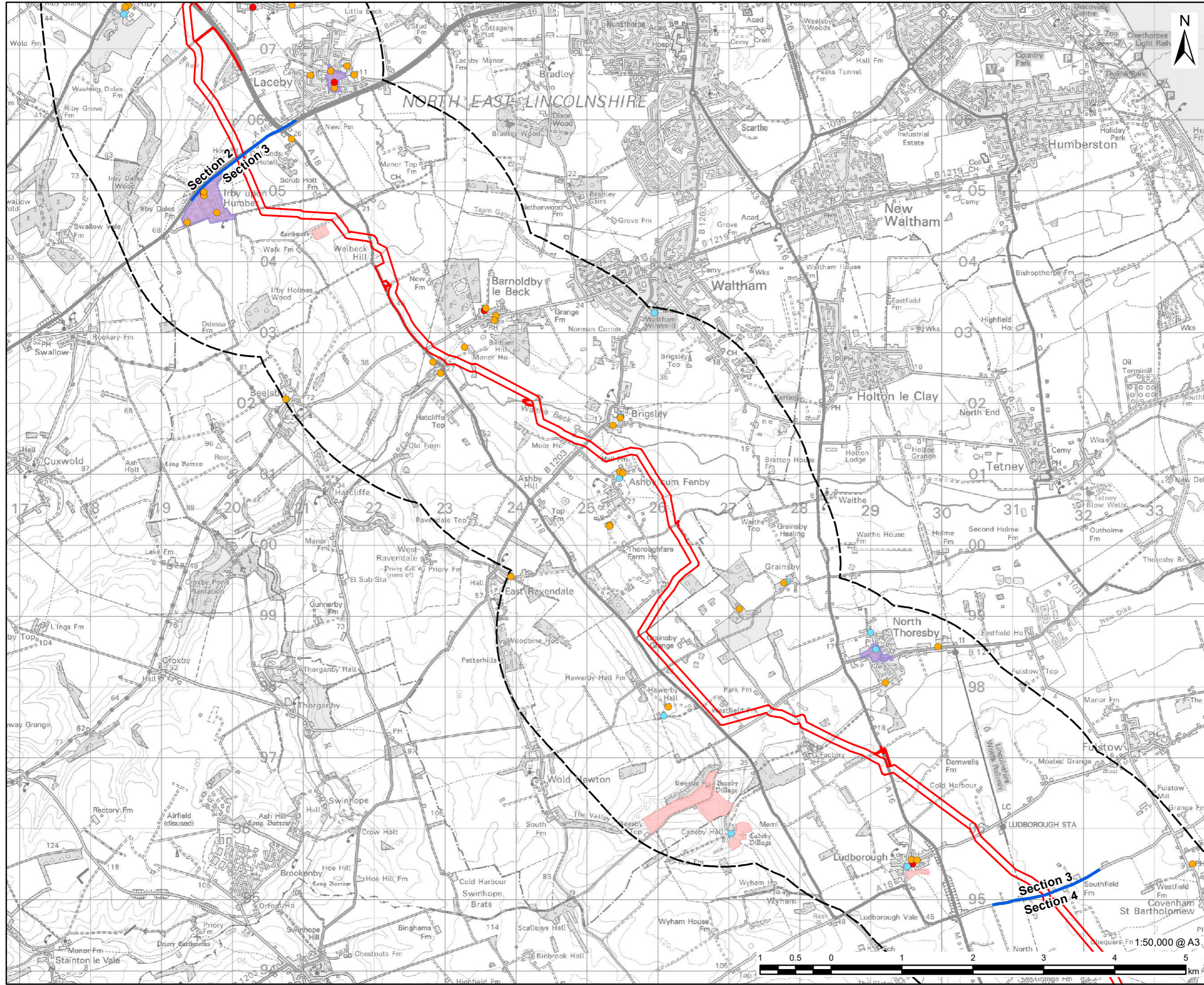
FIGURE TITLE
Figure 8-1 (1 of 4)
Location of Designated Heritage Assets within 2km

ISSUE PURPOSE
 ENVIRONMENTAL STATEMENT

PROJECT NUMBER / REFERENCE
 60668955 / VCCS_230914_ES_8-1

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LEGEND

- DCO Site Boundary
- Route Section Break
- 2km Wider Study Area
- Grade I Listed Building
- Grade II Listed Building
- Grade II* Listed Building
- Scheduled Monument
- Conservation Area

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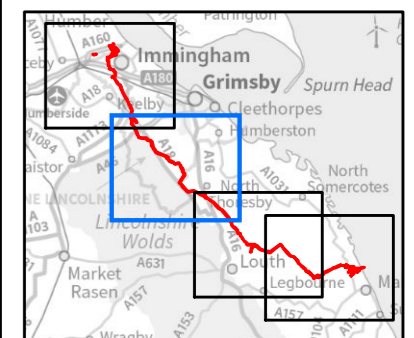
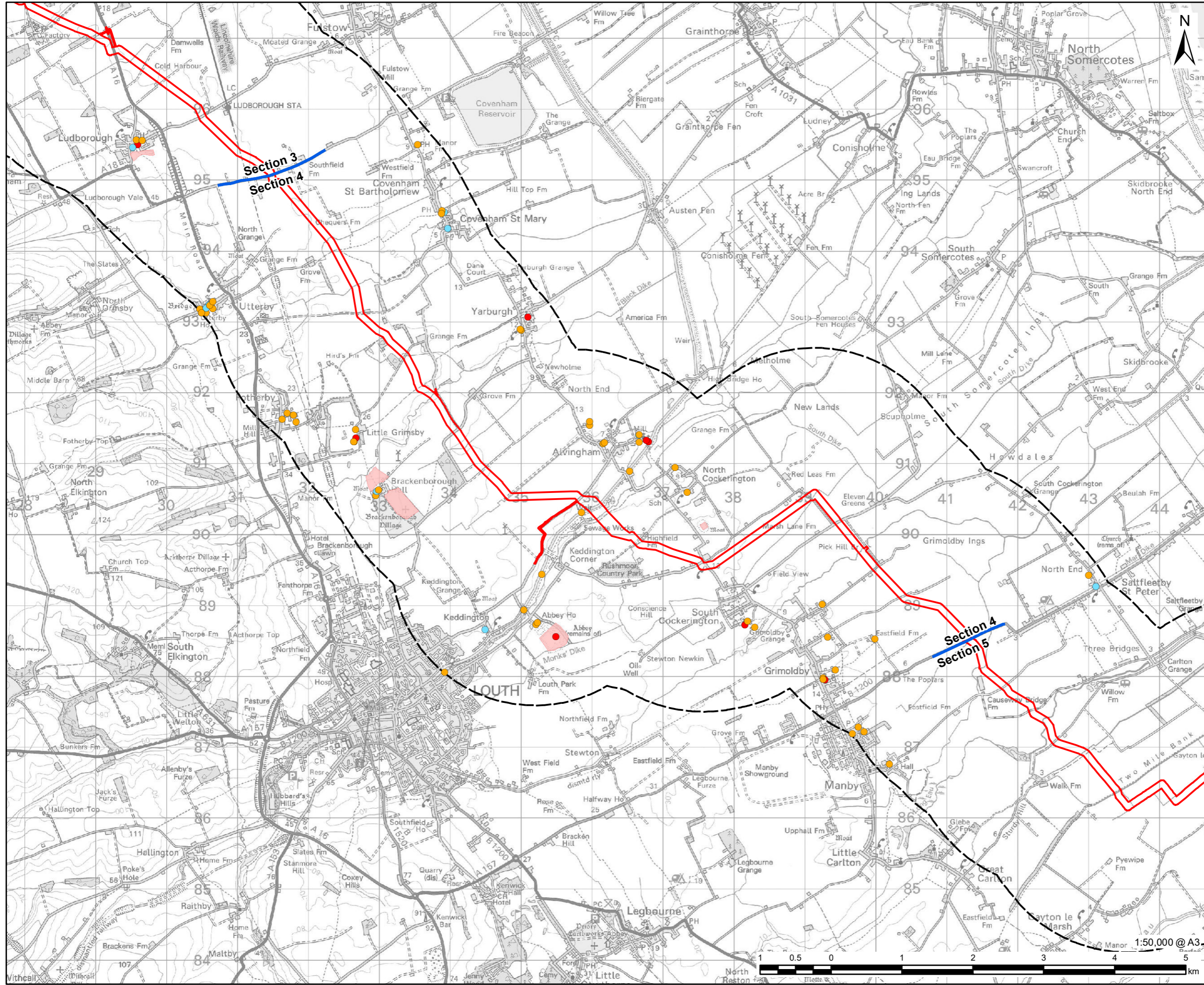


FIGURE TITLE
 Figure 8-1 (2 of 4)
 Location of Designated Heritage Assets within 2km

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LEGEND

- DCO Site Boundary
- Route Section Break
- 2km Wider Study Area
- Grade I Listed Building
- Grade II Listed Building
- Grade II* Listed Building
- Scheduled Monument

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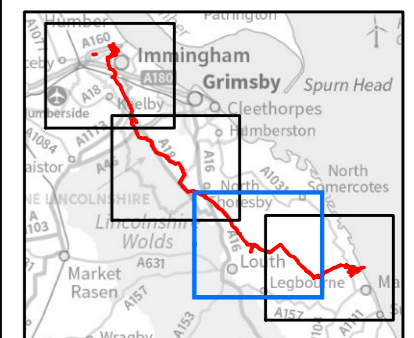
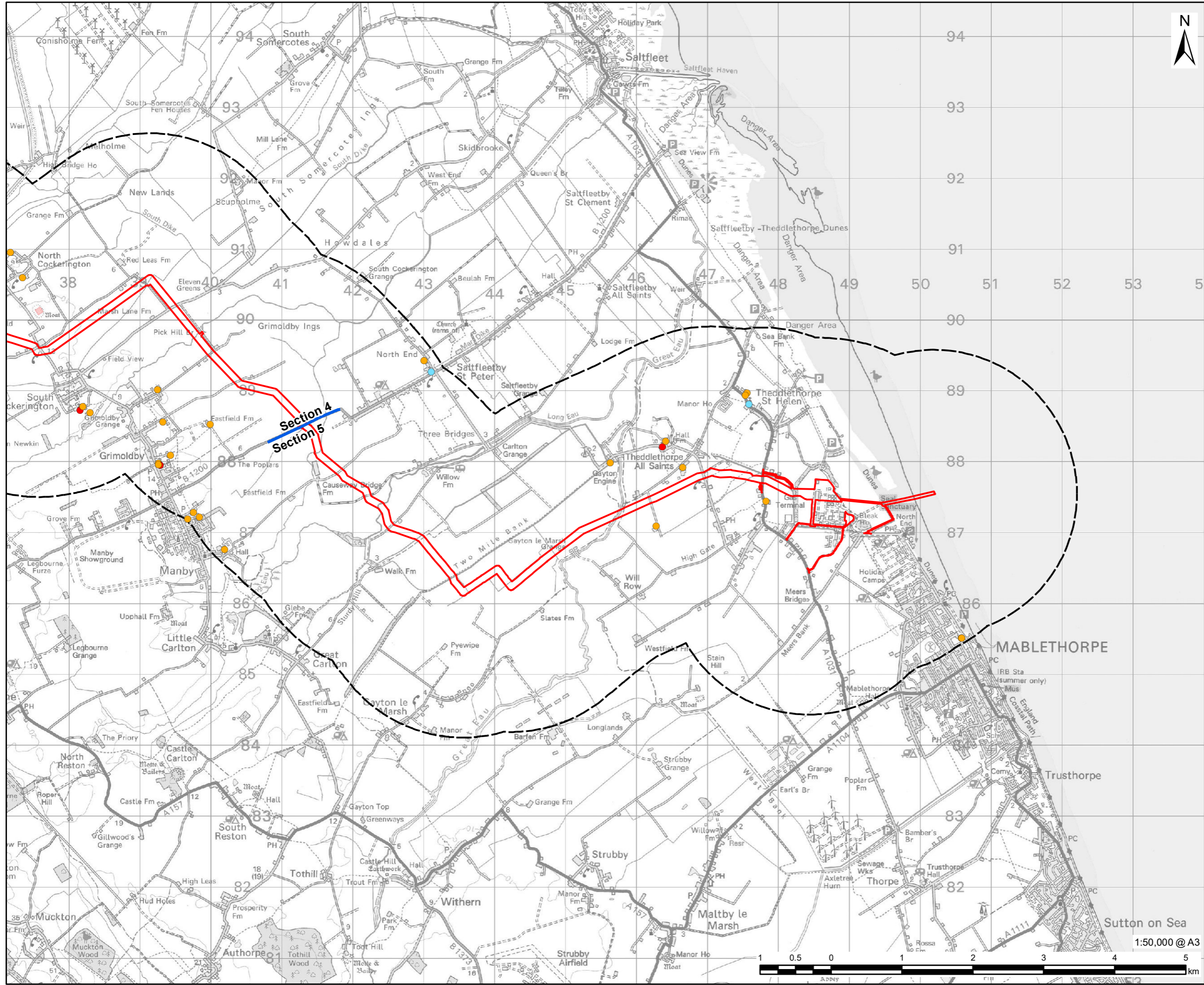


FIGURE TITLE
Figure 8-1 (3 of 4)
Location of Designated Heritage Assets within 2km

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- LEGEND**
- DCO Site Boundary
 - Route Section Break
 - 2km Wider Study Area
 - Grade I Listed Building
 - Grade II Listed Building
 - Grade II* Listed Building
 - Scheduled Monument

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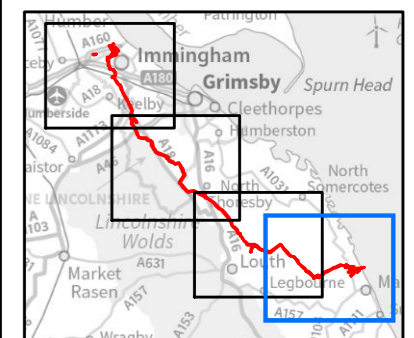
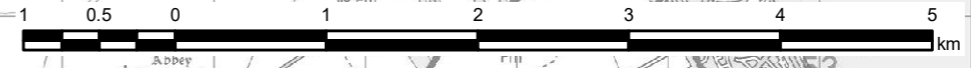


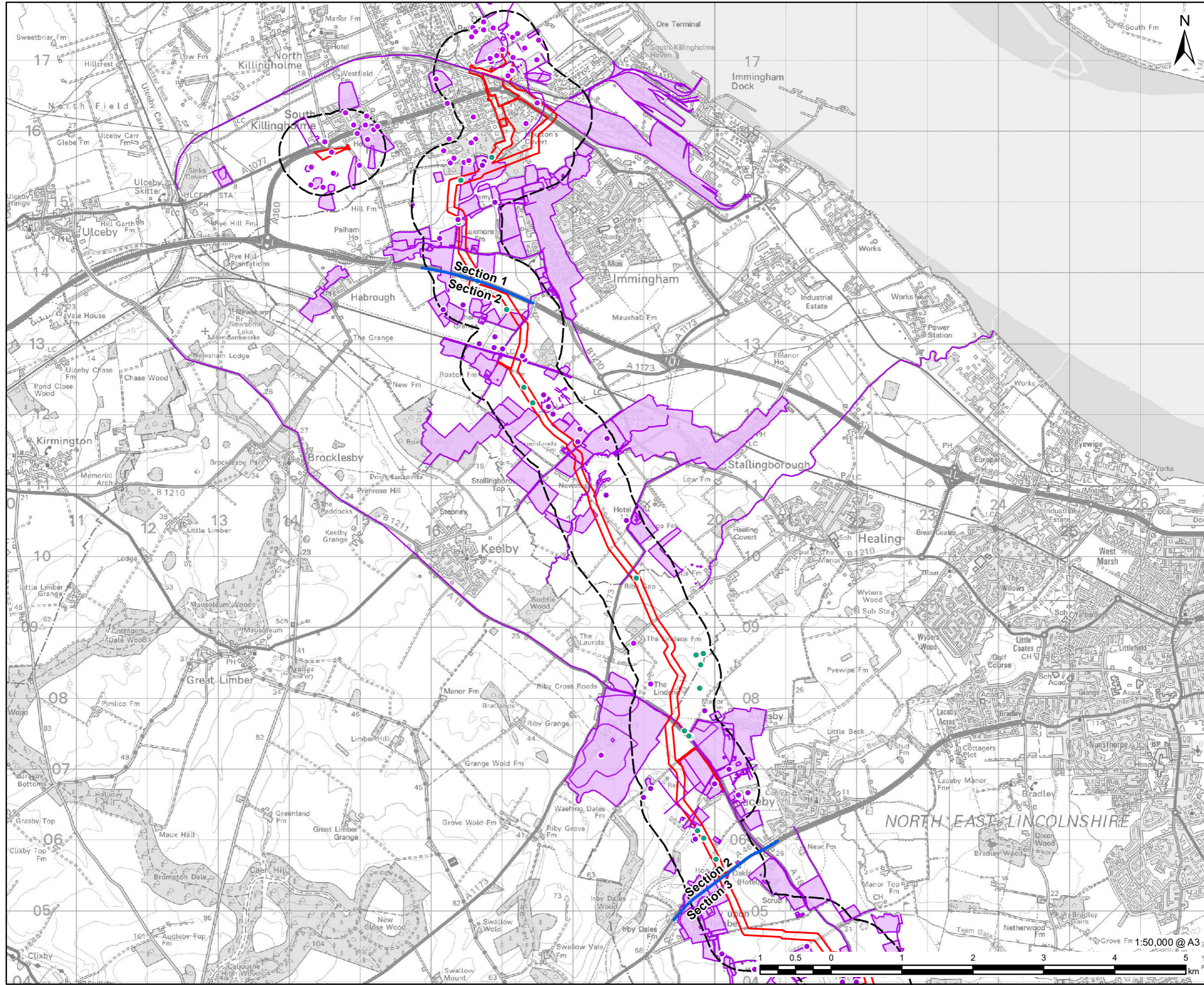
FIGURE TITLE
Figure 8-1 (4 of 4)
Location of Designated Heritage Assets within 2km

ISSUE PURPOSE
 ENVIRONMENTAL STATEMENT

PROJECT NUMBER / REFERENCE
 60668955 / VCCS_230914_ES_8-1



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- LEGEND
- DCO Site Boundary
 - Route Section Break
 - 500m Study Area
 - HER* Monument - Point
 - HER* Monument - Line
 - HER* Monument - Area
 - Additional Non-Designated Asset
- * HER - Historic Environment Records

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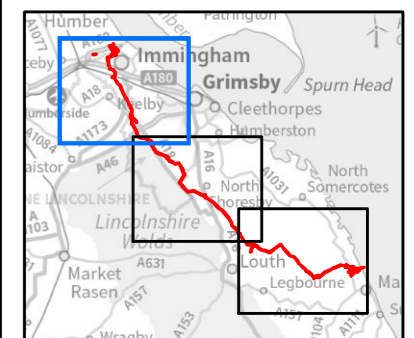
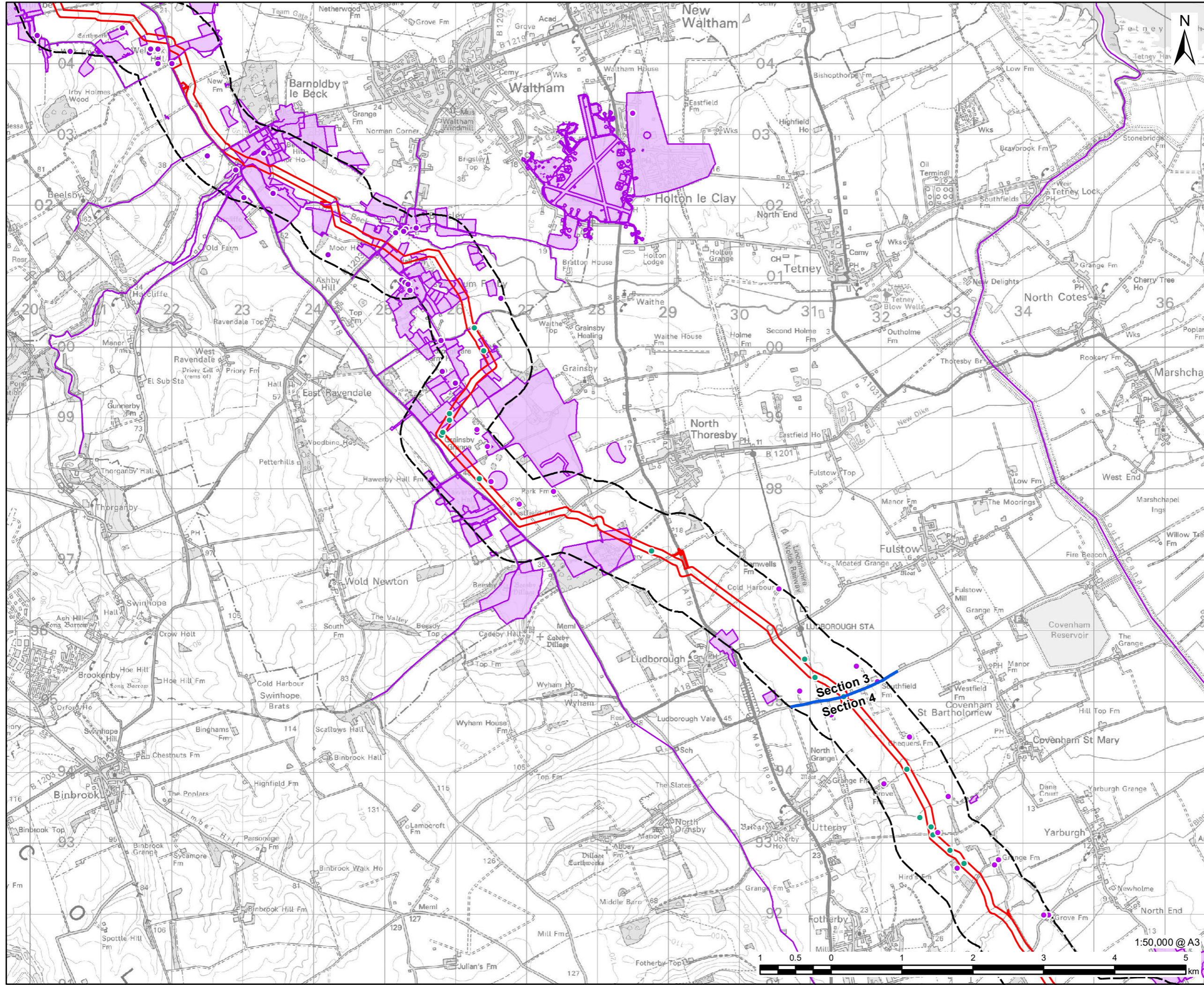


FIGURE TITLE

Figure 8-2 (1 of 3)

Location of Non-Designated Heritage Assets within 500m

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LEGEND

- DCO Site Boundary
- Route Section Break
- 500m Study Area
- HER* Monument - Point
- HER* Monument - Line
- HER* Monument - Area
- Additional Non-Designated Asset

* HER - Historic Environment Records

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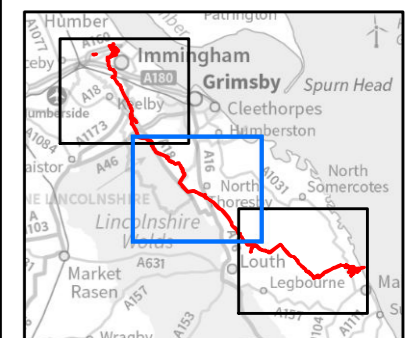


FIGURE TITLE

Figure 8-2 (2 of 3)
Location of Non-Designated Heritage Assets within 500m

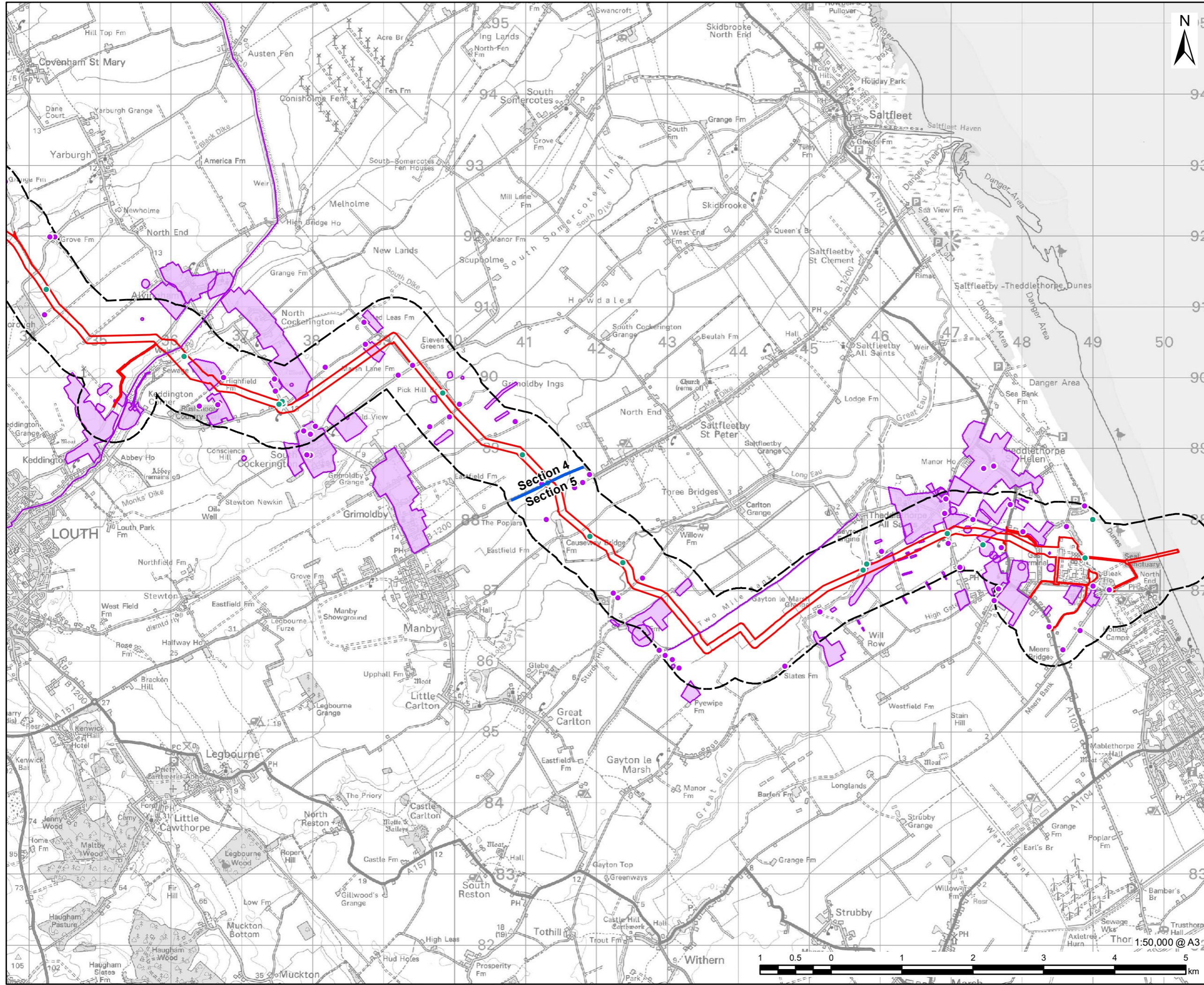
ISSUE PURPOSE

ENVIRONMENTAL STATEMENT

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231004_ES_8-2

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LEGEND

- DCO Site Boundary
- Route Section Break
- 500m Study Area
- HER* Monument - Point
- HER* Monument - Line
- HER* Monument - Area
- Additional Non-Designated Asset

* HER - Historic Environment Records

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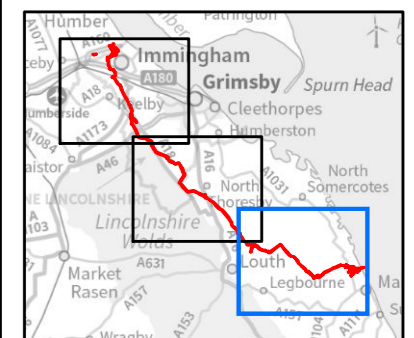


FIGURE TITLE

**Figure 8-2 (3 of 3)
 Location of Non-Designated Heritage Assets within 500m**

ISSUE PURPOSE

ENVIRONMENTAL STATEMENT

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231004_ES_8-2

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8.6 Development Design and Embedded Mitigation

- 8.6.1 EIA is an iterative process which informs the development of the Proposed Development design. Where the outputs of the preliminary assessment identify likely significant effects, changes to the design can be made or mitigation measures can be built-in to the proposal to reduce these effects.
- 8.6.2 This type of mitigation is defined as embedded mitigation, as mitigation measures which have been identified and adopted as part of the evolution of the Proposed Development design (“embedded” into the Proposed Development design).
- 8.6.3 The design of the Proposed Development has been further developed to reflect the findings of ongoing environmental studies, comments raised during the statutory consultation and ongoing engagement with stakeholders. As the design has developed, embedded mitigation measures have been refined as part of an iterative process. A full list of embedded mitigation measures is provided in *ES Volume II Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*.
- 8.6.4 The embedded mitigations relevant to the historic environment are detailed below:
- Careful routeing of the proposed pipeline to avoid direct physical impacts on designated heritage assets and, where possible, non-designated assets, as a result of which no direct physical impacts on designated assets have been identified;
 - Limiting land take within the DCO Site Boundary to only that required to construct, operate and maintain the Proposed Development, to minimise disturbance to buried archaeology; for example, the size of the Central Compound has been reduced, moving it further away from Welbeck Spring;
 - Limiting stripping for construction compounds, laydown, welfare and parking areas, haul roads and other associated works in areas where archaeology is recorded to avoid disturbance, and instead using geotextile and stone over topsoil; and
 - Planting (once established) to visually screen above-ground elements of the Proposed Development, for example the Block Valve Stations, to reduce adverse effects on the setting of heritage assets.
- 8.6.5 The following modifications were made to components of the Proposed Development and the DCO Site Boundary to avoid potential impacts on buried archaeology and to preserve features of potential interest, these have also been added to the full list of embedded mitigation measures found in *ES Volume II Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*:
- Amendments to the DCO Site Boundary to avoid fields with ridge and furrow; and
 - Using trenchless technology to avoid physical impacts on the Louth Navigation [525].

8.7 Potential Impacts and Assessment of Effects

Introduction

- 8.7.1 The potential impacts and effects arising from construction, operation and decommissioning of the Proposed Development have been identified and assessed. These are set out below.

Assessment of Potential Impacts: Construction Phase

General Overview

- 8.7.2 The construction of the Proposed Development has the potential to result in significant effects to non-designated heritage assets within the DCO Site Boundary. This includes

potential permanent impacts to archaeological remains (including historic landscape features).

8.7.3 Temporary construction impacts that would last for all or part of the construction phase of the Proposed Development are likely to arise as a result of:

- The presence and movement of construction plant and equipment, which may impact on the significance of heritage assets caused by changes to their setting;
- The siting of construction compounds and activities within working areas, including associated construction noise and lighting, which may impact on the significance of heritage assets caused by changes to their setting; and
- The use of traffic management and increased volumes of traffic travelling on the local road network, which may impact on the significance of heritage assets caused by changes to their setting.

8.7.4 Permanent construction impacts that would last beyond the construction phase are likely to include:

- Physical impacts on known heritage assets arising from construction activities such as earthworks excavation, the formation of construction compounds and the installation of drainage infrastructure;
- Physical impacts on landscapes of historical, cultural or archaeological significance as a consequence of construction, such as the loss of important elements of the landscape as a result of site clearance; and
- The disturbance, compaction or removal of previously unrecorded subsurface archaeological deposits through construction activities.

8.7.5 This section considers the potential impacts and assesses the likely significant effects arising from construction of the Proposed Development prior to implementation of relevant mitigation measures, as follows:

- Construction Compounds;
- Immingham Facility and Cathodic Protection;
- Pipeline Route;
- Theddlethorpe Facility and Cathodic Protection;
- Block Valve Stations; and
- Dune Isolation Valve.

8.7.6 Impacts associated with laydown, welfare and parking areas within the DCO Boundary are included in the assessments of the above elements of the Proposed Development.

Construction Compounds

8.7.7 The following paragraphs assess the predicted effects on identified heritage assets due to the establishment and use of construction compounds and related works, including temporary access, laydown and welfare areas and electricity supply works. Temporary facilities will be installed at the compound locations, including security fencing and temporary hardstanding for vehicle manoeuvring and parking, site offices, welfare facilities and storage facilities, and utility connections. Where required, topsoil will be stripped and stored on-site. Depending on ground conditions and weather conditions, some areas may temporarily be covered with a geotextile membrane and stone surface to facilitate traffic movements (see *ES Volume II Chapter 3 Description of the Proposed Development (Application Document 6.2.3)*).

Northern Construction Compound

- 8.7.8 Construction of the proposed main compound and pipe storage facility at Habrough Road (A160 roundabout) would have a direct permanent physical impact on the buried archaeological remains of medieval ridge and furrow cultivation south of Ulceby Road, South Killingholme, visible as earthworks on historic aerial photographs (*ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)*; [APS_49]) but no longer extant within arable fields, and an undated circular feature [026] (*ES Volume III, Figure 8-2 (Application Document 6.4.8.2)*), from the stripping of the area of topsoil and subsoil to create the compound area. The area of former earthworks, now partially under modern transport infrastructure, lies to the north and west of areas of complex cropmarked, likely prehistoric-Roman enclosures outside the DCO Site Boundary. Areas of former ridge and furrow can obscure and also preserve buried archaeological remains of earlier periods.
- 8.7.9 The proposed compound site was previously used as a laydown/construction area for construction of the A160 and the potential for survival of archaeological remains here is uncertain. If present, remains of ridge and furrow would be of very low value; however, any surviving remains preserved beneath the ridge and furrow relating to prehistoric or Roman activity would be considered of low value. There would be a medium magnitude of impact and a minor adverse effect. This permanent effect is not considered to be significant.
- 8.7.10 There are no known assets that could have their settings affected by the compound.

Central Construction Compound

- 8.7.11 The DBA (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) and review of aerial photographs and LiDAR data (*ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)*) identified no records of known archaeological remains within the proposed main pipe storage facility off the A18 Barton Street, north of Barnoldby le Beck. In addition, there are no known assets that could have their settings affected by the compound.

Southern Construction Compound

- 8.7.12 The proposed southern construction compound would be located within the previously developed footprint of the former Theddlethorpe Gas Terminal and would be used predominantly as a pipe storage area. Survival of any buried archaeological remains is assumed to be unlikely. There would be no change and a neutral effect.
- 8.7.13 Impacts that the south construction compound could have upon the settings of built heritage assets are reported below with the construction effects of the Theddlethorpe Facility Option 1 location, at paragraphs 8.7.124 to 8.7.127 below.

Immingham Facility

- 8.7.14 Construction of the Immingham Facility would entail construction of operational buildings, installation of above ground pipework and a vent stack up to 25m high, security fencing and hardstanding for vehicle manoeuvring. The facility would occupy a small area of approximately 1.1 ha as described in *ES Volume II Chapter 3 Description of the Proposed Development (Application Document 6.2.3)*, which would also accommodate a temporary working area. This facility would be permanent during the operational life of the Proposed Development.
- 8.7.15 Previous archaeological investigations in the vicinity of the Immingham Facility identified a system of creeks which mark a former high-water position and deposits interpreted as the buried shoreline, with alluvium overlying organic deposits of mid-late Iron Age date [088] (*ES Volume III, Figure 8-2*). Recent geoarchaeological deposit modelling suggests the presence of a relict coastal inlet, likely to have been open in the Mesolithic to Neolithic periods, but which has been gradually infilled during the Holocene by alluvium or warp (flooding) deposits which were found across the site. Made ground of up to approximately

1.4m in thickness was also recorded. Recent trial trenching north of the DCO Site Boundary revealed a small number of pits which produced late Mesolithic / early Neolithic lithic fragments, found beside a possible palaeochannel.

- 8.7.16 Construction of the Immingham Facility at the indicative location within the DCO Site Boundary and construction of the connection to section 1 of the pipeline within its standard 30m working width, and establishment and use of the associated temporary working area, would have a direct physical permanent impact upon geoarchaeological remains associated with the buried former shoreline [091], which are considered to be of low value. Taking account of the relatively small size of the permanent above ground installation, and the short length of pipeline within the indicative location, there would be a low magnitude of impact and a negligible adverse effect: this permanent effect is not considered to be significant.
- 8.7.17 Construction of the Immingham Facility, at the indicative location within the DCO Site Boundary, and construction of the connection to section 1 of the pipeline, within its standard 30m working width, and establishment and use of the associated temporary working area, would have a direct physical permanent impact upon the buried archaeological remains of an Iron Age and Roman settlement site that has been investigated at the Immingham CHP site and which extends to the south within the DCO Site Boundary [009] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Recent archaeological trial trenching, in connection with a proposed carbon capture plant, identified a concentration of features within the DCO Site Boundary dating mostly to the Iron Age / Romano British period (including a large multiphase curvilinear ditch within a possible enclosure, and a series of small ditches, possibly associated with a contemporary field system), perhaps related to two Late Iron Age ditches previously excavated west of Rosper Road [010] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Taking account of the relatively small size of the permanent above ground installation, and the short length of pipeline within the indicative location, there would be a low magnitude of impact on the medium value settlement site and enclosures, and a minor adverse effect. This permanent effect is not considered to be significant.
- 8.7.18 The site of a modern demolished chapel on Rosper Road is recorded within the DCO Site Boundary [084] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Recent trial trenching in connection with a proposed carbon capture plant recorded undated features in the vicinity and demonstrated that archaeological remains survive beneath the hardstanding and alluvium. The survival of any remains associated with the demolished chapel is uncertain; any remains that do survive are considered to be of very low value. Construction of the temporary and permanent access to the Immingham Facility would have a direct physical permanent impact on any surviving remains. There would be a high magnitude of impact on any surviving remains, but due to the very low value of the remains the result is a negligible adverse effect. This permanent effect is not considered significant.

Cathodic Protection

- 8.7.19 The majority of the cathodic protection (CP) system is buried below ground and installed as part of construction of the Immingham Facility: there would be no additional impacts on heritage assets due to installation of the CP system at this location.

Pipeline Route

- 8.7.20 The following paragraphs assess the predicted effects on identified heritage assets prior to the implementation of additional mitigation, due to construction of the pipeline and related works, including temporary access, laydown and welfare areas and electricity supply works. Construction of the pipeline will comprise removal and storage of topsoil and excavation of an open cut trench within a standard working width of 30m, and will involve the use of laydown, welfare and parking areas adjacent to access points. Trenchless crossing techniques including auger bore and HDD methods will be applied where appropriate at road, rail and watercourse crossings; trenchless crossing techniques will require an

extended working width of approximately 50m. The assessment takes into account the level of temporary impact from the construction of the pipeline, which will employ relatively small numbers of mobile plant (assumed to be up to 3.5m high) for up to 7 months in any given section of the Proposed Development.

- 8.7.21 The pipeline route is described below by section; within each section affected heritage assets are described from north to south, with designated heritage assets described first, then non-designated archaeological assets and built heritage assets.

Pipeline (Section 1)

- 8.7.22 Section 1 of the pipeline route intersects the buried shoreline as evidenced within the Immingham Facility area [088] (*ES Volume III, Figure 8-2 (Application Document 6.3)*); impacts on this are assessed above (8.7.14).

- 8.7.23 North of Manby Road, the pipeline construction could impact any surviving remains relating to a possible medieval settlement northeast of Houlton's Covert, that is suggested by fieldname evidence [025] (*ES Volume III, Figure 8-2*). Any remains relating to medieval settlement that may survive here are considered to be of low value. Construction of the pipeline within its standard working width of 30m would have a direct physical permanent impact on any remains. There would be a medium magnitude of impact, and a minor adverse effect. This permanent effect is not considered to be significant.

- 8.7.24 South-west of Manby Road, an undated ditch is visible on historic aerial photographs immediately east of the DCO Site Boundary but no longer present on satellite imagery or LiDAR data [APS_50] (*ES Volume II, Figure 9*). Excavation of launch and reception pits for the trenchless auger bore crossing of Manby Road, construction of the pipeline within its standard working width of 30m, and establishment and use of the laydown, welfare and parking area here would have a direct physical permanent impact on any surviving remains of low value. There would be a medium magnitude impact on the low value asset, and a minor adverse effect. This effect is not considered to be significant.

- 8.7.25 The pipeline route intersects several areas of former ridge and furrow cultivation recorded from late 1940s aerial photographs, north and west of the historic core of Immingham [030] (extending into Section 2, see 8.7.25 below) and in South Killingholme parish [022] (*ES Volume III, Figure 8-2*). The ridge and furrow survives as earthworks visible in LiDAR data at Immingham golf course and several other locations outside the DCO Site Boundary, but otherwise has been levelled within arable fields. Within the DCO Site Boundary, the survival of an area of ridge and furrow visible as earthworks on historic aerial photographs and as eroded features via visualised LiDAR data which lies beneath modern deciduous woodland is uncertain [APS_48] (*ES Volume IV, Appendix 8.2: Figure 9, page 18 (Application Document 6.4.8.2)*). Areas of former ridge and furrow can obscure and also preserve buried archaeological remains of earlier periods. Construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on any buried archaeological remains relating to earlier periods of activity that may survive within the areas of former ridge and furrow. Remains of ridge and furrow would be of very low value; however, any surviving remains preserved beneath the ridge and furrow relating to prehistoric or Roman activity would be considered of low value. There would be a medium magnitude of impact on any remains of low value, a minor adverse effect; this permanent effect is not considered to be significant.

- 8.7.26 Section 1 of the pipeline route intersects a number of historic roads that are marked on early edition OS maps and/or are mentioned in historic documents, including Roxton Road [059] (which also extends into Section 2 of the pipeline), Habrough Road [060] and Mill Lane, Immingham [061] (*ES Volume III, Figure 8-2*). The road crossings at Roxton Road and Habrough Road will be achieved using a trenchless auger bore method; there would be no impact on these historic roads. The Mill Lane crossing would use open-cut trenching

methods (see *ES Volume II, Chapter 3: Description of the Proposed Development*). Open-cut trench crossings of the historic road would have a direct physical permanent impact on any remains of early road construction, which are considered to be of very low value. There would be no long-term severance of the historic routes due to construction of the pipeline following completion of the road crossings; this is assessed as no change, and a neutral effect.

- 8.7.27 Within section 1 the pipeline route crosses the Civil Parish (CP) boundary between South Killinghome CP and Immingham CP, south of Houlton's Covert [628] (*ES Volume III, Figure 8-2*). The parish boundary here follows the Habrough Marsh Drain, shown on the corresponding tithe map and OS maps. The watercourse would be crossed using a trenchless HDD method. The parish boundary is a historic landscape feature and is considered to be of very low value; there would be no long-term severance of the historic landscape feature due to construction of the pipeline following completion of the crossing. This is assessed as no change and a neutral effect. Excavation of launch and reception pits for the HDD crossing either side of the watercourse would have a direct physical permanent impact on any buried archaeological remains of low value relating to activities alongside the watercourse of medieval or earlier date. There would be a very low magnitude of impact and a negligible adverse effect: this permanent effect is not considered significant.
- 8.7.28 The parish boundary between Immingham CP and Habrough CP is crossed and recrossed north of Mill Lane [629] (*ES Volume III, Figure 8-2*). The boundary is marked by a linear hedgerow [H6], one of a series of hedgerows that are marked on the Immingham Tithe Map of 1841 and may be regarded as important under the historic criteria set out in the Hedgerow Regulations (Ref 8-3) as forming part of a field system pre-dating the Enclosure Acts [H1-H6] (*ES Volume IV, Appendix 8.1; Annex C (Application Document 6.4.8.1)*). These hedgerows would be crossed by the pipeline using an open-cut construction method. The working width for pipeline construction would be reduced to the minimum necessary to enable plant to cross the boundary and for the pipeline to be laid safely, whilst only removing the minimum length of hedgerow required (see *ES Volume II, Chapter 3: Description of the Proposed Development*). The hedgerows would be reinstated on completion of the crossing (see *ES Volume IV, Appendix 3.1 (Application Document 6.4.3.1)*). Parish boundary [H6] and the pre-Enclosure hedgerows [H1 – H6] are historic landscape features considered to be of very low value. There would be a temporary short-term impact, however as the hedgerows would be reinstated there will be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the road crossings; this is assessed as no change, and a neutral effect.
- 8.7.29 Two non-designated built heritage assets have been scoped into this assessment.
- 8.7.30 Habrough School [052] is an Edwardian former school building, located approximately 75m west of the DCO Site Boundary of the proposed pipeline corridor and the Habrough Road laydown, welfare and parking area (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The asset is locally listed and considered to have low value. The setting assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding rural landscape, which informs its historic interest as a former village school. The DCO Site Boundary is considered to fall within this setting. Construction of the Proposed Development within the setting of Habrough School will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary facilities will be installed at the laydown area including security fencing and temporary hardstanding for vehicle manoeuvring. These temporary construction activities will be visible within the setting of the asset to the southeast; however, this will not reduce the ability to understand the asset's heritage value which is largely derived from its architectural interest and therefore will remain unaffected. Potential noise and visual intrusion from construction activities would be considered to have a very low magnitude of

impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

- 8.7.31 Luxmore Farm [055] is a non-designated farmstead located approximately 85m east of the DCO Site Boundary of the proposed pipeline corridor and the Habrough Road laydown area (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The asset is locally listed and considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural landscape which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting. Construction of the Proposed Development within the setting of Luxmore Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary facilities will be installed at the laydown area including security fencing and temporary hardstanding for vehicle manoeuvring. These temporary construction activities will alter part of the farmland setting of the asset including views of agricultural land to the south of the farm and farmhouse, slightly affecting the ability to interpret heritage value. This would be considered a low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.
- 8.7.32 A series of designated and non-designated heritage assets within the 500m study area would not be affected by construction of section 1 of the pipeline: these assets have been assessed and there will be no direct or indirect impact on them physically or to their setting: These include:
- Romano-British settlement [016] and geophysical anomalies [086] at East End Farm, South Killingholme (*ES Volume III, Figure 8-2 (Application Document 6.3)*);
 - A cross base approximately 8m south of St Andrew's Church, Immingham [024] (*ES Volume III, Figure 8-1 (Application Document 6.3)*); and
 - Historically important hedgerows (pre-1840), South Killingholme parish [038] (*ES Volume III, Figure 8-2 (Application Document 6.3)*).
- 8.7.33 There would be no change and a neutral effect on these assets due to construction of section 1 of the pipeline.
- 8.7.34 Additionally, immediately north of the A180 Immingham Bypass the former line of a road visible as a cropmark extends into the DCO Site Boundary, but appears to now lie beneath the A180 [APS_46] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The A180 would be crossed using a trenchless HDD method, there would be no impact and no change to any archaeological remains relating to the cropmarked road, and a neutral effect.

Pipeline (Section 2)

- 8.7.35 One designated heritage asset is scoped into the assessment in this section of the pipeline route.
- 8.7.36 The Church of St Edmund [129] is a grade II* listed parish church located in the village of Riby, approximately 840m west of the DCO Site Boundary and 1km northwest of Block Valve Station 1 (Washingdales Lane) (*ES Volume III, Figure 8-1 (Application Document 6.3)*). The asset is considered to have high value. In the settings assessment (*ES Volume IV, Appendix 8.1: (Application Document 6.4.8.1)*) it is noted that the setting of the church is defined as its historic parish of Riby and the churchyard including upstanding grave monuments. The DCO Site Boundary is located within the agricultural land east of the Church of St Edmund within a view of the church tower from the A18 Barton Street. Construction of the Proposed Development will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary construction activities will

change views towards the asset which will slightly affect the ability to appreciate heritage value, although the asset's setting within the churchyard and village will remain unaltered. This would be considered a low magnitude of impact resulting in a temporary moderate adverse effect during construction. This temporary effect is considered to be significant. The impact of the construction activities would be transient and reduce as construction progresses and the open-cut trench is backfilled.

- 8.7.37 Areas of former ridge and furrow cultivation recorded from late 1940s aerial photographs southwest of the historic core of Immingham [030] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) extend into section 2 of the pipeline in the vicinity of Immingham Grange (now levelled in arable fields). The construction impact of the pipeline on this heritage asset is assessed under section 1 above (8.7.25).
- 8.7.38 The pipeline route passes east of the historic settlement of Roxton [125] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Construction of the pipeline within its standard 30 m working width would have a direct physical permanent impact on any associated archaeological remains, which would be of medium value. There would be a medium magnitude of impact, resulting in a moderate adverse effect. This permanent effect is considered to be significant.
- 8.7.39 At Greenland Farm, construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on any buried archaeological remains relating to several areas of medieval to post-medieval ridge and furrow cultivation [124], now mostly levelled in arable fields but including an area of surviving earthworks adjacent to the farm (*ES Volume III, Figure 8-1 (Application Document 6.3)*) [APS_43] [APS_44] (*ES Volume IV, Appendix 8.2 Figure 9, pages 16-17 (Application Document 6.4.8.2)*). Areas of former ridge and furrow can obscure and also preserve buried archaeological remains of earlier periods. Construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on any buried archaeological remains relating to earlier periods of activity that may survive within the areas of former ridge and furrow. Remains of ridge and furrow would be of very low value; however, any surviving remains preserved beneath the ridge and furrow relating to prehistoric, medieval or Roman activity would be considered of low value. There would be a medium magnitude of impact on any low value remains and a minor adverse effect. This permanent effect is not considered to be significant.
- 8.7.40 Southeast of Roxton, cropmarks south of Gatehouse Farm, Stallingborough [198] could form part of a former field system or parts of enclosures (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on any related archaeological remains of low value. There would be a low magnitude of impact, resulting in a negligible adverse effect: this permanent effect is not considered to be significant.
- 8.7.41 Southeast of Greenlands Farm, Stallingborough a complex of enclosures alongside a trackway found by geophysical survey and dated by fieldwalking [105] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is included in the North East Lincolnshire Planning Office Draft Local List of Historic Assets of Special Interest. Construction of the pipeline within its standard 30m working width and establishment and use of the Keelby Road temporary laydown, welfare and parking area, would have a direct physical permanent impact on the asset, which is considered to be of medium value. There would be a medium magnitude of impact and a moderate adverse effect. This effect is considered to be significant and permanent.
- 8.7.42 South of North Beck Drain, construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on buried features including pits, ditches and a possible palaeochannel identified by archaeological geophysical survey in Stallingborough [194] (*ES Volume III, Figure 8-2 (Application Document 6.3)*), and possible

geoarchaeological buried remains. There would be a low magnitude of impact on an asset of low value, and a negligible adverse effect. This permanent effect is not considered to be significant.

- 8.7.43 North of Riby Road, construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on an area of former ridge and furrow cultivation visible as earthworks on historic aerial photographs, but now levelled [APS_40] (*ES Volume IV, Appendix 8.2 Figure 9, page 15 (Application Document 6.4.8.2)*). Remains of ridge and furrow would be of very low value; however, any surviving remains preserved beneath the ridge and furrow relating to prehistoric, medieval or Roman activity would be considered of low value. There would be a low magnitude of impact on an asset of low value, a negligible adverse effect. This permanent effect is not considered to be significant.
- 8.7.44 At Washingdales Lane, construction of the pipeline within its standard 30m working width and establishment and use of the temporary laydown, welfare and parking area would have a direct physical permanent impact on cropmark boundaries and enclosures [197] and on any buried remains of ridge and furrow cultivation (now levelled in arable fields) [123] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Remains of ridge and furrow would be of very low value; however, any surviving remains preserved beneath the ridge and furrow relating to prehistoric, medieval or Roman activity would be considered of low value. There would be a medium magnitude of impact, resulting in a minor adverse effect. This permanent effect is not considered to be significant.
- 8.7.45 East of The Lindens in Riby CP, an undated possible moated site is visible on aerial photographs immediately east of the DCO Site Boundary, with an associated leat extending westwards across the DCO Site Boundary [APS_37] (*ES Volume IV, Appendix 8.2: Aerial Figure 9, page 15 (Application Document 6.4.8.2)*). Construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on the leat. There would be a low magnitude of impact on the low value feature, resulting in a negligible adverse impact. This impact is not considered to be significant.
- 8.7.46 Construction of the electrical connection to the Washingdales Lane Block Valve Station would have a direct physical permanent impact on a post-medieval or modern extraction pit [139] and a landfill site [187] in Laceby (*ES Volume III, Figure 8-2 (Application Document 6.3)*). These are considered to be of very low value, there would be a very low magnitude of impact and a negligible adverse effect. This permanent effect is not considered to be significant.
- 8.7.47 Section 2 of the pipeline route intersects a number of historic roads that are marked on early edition OS maps and/or are mentioned in historic documents, including Barton Street [104], Caistor Road, Laceby [168], Riby Road, Stallingborough [174] and Keelby Road, Stallingborough [175] (*ES Volume III, Figure 8-2 (Application Document 6.3)*).
- 8.7.48 Barton Street [104] is a possible later prehistoric route followed by the present day A18 road, extending into Section 3 of the pipeline route where it forms the boundaries between a number of parishes. The pipeline crosses Barton Street in Section 2 west of Aylesby and in Section 3 between Laceby and Barnoldby le Beck. The default construction method for road crossings would be open-cut trenching (see *ES Volume II, Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*). This would have a direct physical permanent impact on any remains relating to early road construction or possible roadside activities, which are considered to be of very low value. There would be a low magnitude of impact on any surviving buried archaeological remains, a negligible adverse effect. This permanent effect is not considered to be significant. The prehistoric route is a historic landscape feature considered to be of low value. There would be no long-term severance of the historic route due to construction of the pipeline following completion of the road crossings and no change, a neutral effect. There would be a low magnitude of impact on

any surviving remains, a negligible adverse effect. This permanent effect is not considered to be significant.

8.7.49 Caistor Road, Laceby [168] was constructed as part of a turnpike trust of 1765 and is marked on OS maps of 1887-9. In Stallingborough, Riby Road [174] and Keelby Road [175] are also both marked on the OS maps of 1887-9; Keelby Road is also mentioned in historic documents. Open-cut trench crossings of these roads would have a direct physical permanent impact on any remains relating to early road construction, which are considered to be of very low value. There would be a low magnitude of impact on any surviving remains, a negligible adverse effect. This permanent effect is not considered to be significant. The historic roads are historic landscape features considered to be of low value. There would be no long-term severance of the historic routes due to construction of the pipeline following completion of the road crossings and no change, a neutral effect.

8.7.50 In Section 2 the pipeline route crosses the following historic civil parish boundaries, all of which are marked as field boundaries on the OS maps (*ES Volume III, Figure 8-2 (Application Document 6.3)*):

- Parish boundary between Immingham CP and Stallingborough CP south of the Manchester, Sheffield and Lincolnshire Railway [630];
- Parish boundary between Stallingborough CP and Riby CP at Riby Gap, immediately south of Riby Road [631]. The boundary is marked by a hedgerow [H9] shown on the Stallingborough tithe map of 1844;
- Parish boundary between Riby CP and Aylesby CP east of The Lindens [632]. The boundary is marked by a hedgerow [H14] shown on the Riby tithe map of 1839;
- Parish boundary between Aylesby CP and Laceby CP northeast of Rush Hills Covert [633]. The boundary is marked by a hedgerow [H16] shown on the Aylesby tithe map of 1839; and
- Parish boundary between Laceby CP and Irby upon Humber CP south of The Crofts [634]. The boundary is marked by a hedgerow [H19] shown on the Laceby tithe map of 1840.

8.7.51 The parish boundaries are historic landscape features considered to be of very low value. There would be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the pipeline crossings and no change, a neutral effect.

8.7.52 A series of hedgerows crossed by section 2 of the pipeline are marked on tithe maps and may be regarded as important under the historic criteria set out in the Hedgerow Regulations (Ref 8-3) as forming part of a field system pre-dating the Enclosure Acts [H7 – H19], including those that mark parish boundaries as noted above [H9, H14, H16, H19] (*ES Volume IV, Appendix 8.1 Application Document 6.4.8.1*)). These hedgerows would be crossed by the pipeline using an open-cut construction method. The working width for pipeline construction would be reduced to the minimum necessary to enable plant to cross the boundary and for the pipeline to be laid safely, whilst only removing the minimum length of hedgerow required (see *ES Volume II, Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*). The hedgerows would be reinstated on completion of the crossing (see *ES Volume IV, Appendix 3.1 (Application Document 6.4.3.1)*)). The pre-Enclosure hedgerows are historic landscape features considered to be of very low value; there would be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the crossings and reinstatement of the hedgerows. There would be no long-term severance of the historic hedgerows due to construction of the pipeline following completion of the road crossings and no change, a neutral effect.

8.7.53 Greenlands Farm [147] is a non-designated, partially extant 19th century farmstead, located 30m west of the DCO Site Boundary and approximately 90m northwest of Keelby Road laydown, welfare and parking area (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land, which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting. Construction of the Proposed Development within the setting of Greenlands Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary facilities will be installed at the laydown area including security fencing and temporary hardstanding for vehicle manoeuvring. These temporary construction activities will affect part of the farmland setting in close proximity to the asset, including views of agricultural land from the farmhouse to the south, affecting the ability to interpret its heritage value. This would be considered a medium magnitude of impact resulting in a minor adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.54 A series of designated and non-designated heritage assets within the 500m study area would not be affected by construction of section 2 of the pipeline: these assets have been assessed and there will be no direct or indirect impact on them physically or to their setting. These include:

- A series of findspots [108-111, 127, 690] (*ES Volume III, Figure 8-2*);
- A moated site at Roxton Farm [119] (*ES Volume III, Figure 8-2*);
- Cross in St Bartholomew's Churchyard, Keelby [120] (*ES Volume III, Figure 8-1*);
- Gravestone approximately 0.5 metres from the south-west corner of the nave of the Church of St Peter and St Paul, Stallingborough [121] (*ES Volume III, Figure 8-1*);
- The historic settlement of Roxton [125] (*ES Volume III, Figure 8-2*);
- Stallingborough medieval settlement [128] (*ES Volume III, Figure 8-2*);
- Churchyard cross and St Paul's Church, Stallingborough [133] (*ES Volume III, Figure 8-1*);
- The Manchester, Sheffield and Lincoln Railway – Cleethorpes to Barton branch [138] (*ES Volume III, Figure 8-2*);
- A siding on the Immingham railway [143] (*ES Volume III, Figure 8-2*);
- an Anglo-Saxon inhumation cemetery north of Barton House, Laceby [687] (*ES Volume III, Figure 8-2*); and
- A sand and gravel pit in Laceby [689] (*ES Volume III, Figure 8-2*).

8.7.55 There would be no change and a neutral effect on these assets due to construction of the pipeline.

Pipeline (Section 3)

8.7.56 Three designated heritage assets are scoped into the assessment in this section of the pipeline route.

8.7.57 The Civil War earthwork fort 350m north-east of Walk Farm [303] is a scheduled monument located approximately 80m south-west of Section 3 of the DCO Site Boundary (*ES Volume III, Figure 8-1 (Application Document 6.3)*). The earthwork comprises a rectangular earthen rampart approximately 130m x 50m. The fort was built during the English Civil War (1642-46) by royalist troops, believed to have originally enclosed a hall belonging to the Holles

family. The surviving earthen rampart is up to 1.5m high and includes square bastion gun emplacements at each corner. The setting assessment (*ES Volume IV, Appendix 8.1: (Application Document 6.4.8.1)*) notes that the setting of the asset includes the remains of the hall the earthworks originally enclosed and the surrounding landscape which the defences overlooked. The DCO Site Boundary passes the scheduled area to the north and east, and at its closest point is less than 100m from the boundary of the protected area. Construction of the Proposed Development within the setting of the scheduled monument will comprise removal and storage of topsoil, excavation of an open cut trench and associated construction traffic movement and noise. These temporary construction activities will affect part of the landscape setting in close proximity to the asset; however, these are unlikely to affect the ability to interpret its heritage value. This impact would be transient for the duration of construction activities in the vicinity of the monument, estimated to be up to 7 months. This would be considered a very low magnitude of impact on the high value asset, resulting in a minor adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.58 The Church of St Helen [266] is a grade I listed parish church located in the village of Barnoldby le Beck (*ES Volume III, Figure 8-2 (Application Document 6.3)*), approximately 875m east of the DCO Site Boundary and the Main St laydown, welfare and parking area. The asset is considered to have high value. In the settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) it is noted that the setting of the church is defined as the historic parish of Barnoldby le Beck and its churchyard including upstanding grave monuments. The DCO Site Boundary are located within the agricultural land west of the Church of St Helen within a partial view of the church tower from the A18 Barton Street, screened by trees and intervening development. Construction of the Proposed Development will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary construction activities will further affect views towards the asset which will very slightly affect the ability to appreciate heritage value, although the assets setting within the churchyard and village will remain unaltered. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.59 Manor House [270] is a grade II listed post-medieval house located within Barnoldby le Beck non-designated park [282] to the southwest of the village of Barnoldby le Beck. Manor House is located approximately 175m from the DCO Site Boundary (*ES Volume III, Figure 8-1 (Application Document 6.3)*) and is considered to have medium value. Barnoldby le Beck park is located partially within the DCO Site Boundary (*ES Volume III, Figure 8-2 (Application Document 6.3)*) and is considered to have low value. The setting assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the Manor House includes the non-designated parkland which contains an ornamental fishpond [249] as well as Manor Farm Barns and The Old Stables to the west (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The baseline assessment also notes that most of the historic parkland has been turned over to agricultural use and pine plantation with a small area of parkland surviving southwest of Manor House. The DCO Site Boundary bisects the park and therefore temporary construction activity will have a direct physical impact upon the area of surviving parkland resulting in further loss of historic interest and aesthetic value. There would be a medium magnitude of impact upon Barnoldby le Beck park, a moderate adverse effect. This effect is considered to be significant. The temporary construction activities will change part of Manor House's designed setting, affecting the ability to understand a key element of the asset's heritage significance as a post-medieval house set within landscaped grounds and parkland. This would be considered a medium magnitude of impact resulting in a moderate adverse effect of temporary duration during construction. This temporary effect is also considered to be significant. The impact of the construction

activities upon Manor House would be temporary, transient and reduce as construction progresses and the open-cut trench is backfilled. The impact of the trench itself upon Barnoldby le Beck park is a permanent physical change but will reduce upon completion with embedded mitigation including reinstatement landscaping.

- 8.7.60 Immediately south of this the DCO Site Boundary crosses Laceby Beck [204] approximately 100m east of its source at Welbeck spring [203] (*ES Volume III, Figure 8-2*). Laceby Beck would be crossed using a trenchless auger bore method. Excavation of launch and reception pits either side of the crossing section would have a potential direct physical permanent impact upon any buried geoarchaeological remains associated with the floodplain of Laceby Beck [204]. Any remains would be considered to be of low value. There would be a very low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.
- 8.7.61 This section of the pipeline route intersects several areas of former ridge and furrow cultivation recorded from late 1940s aerial photographs (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)* and *ES Volume IV, Appendix 8-2 (Application Document 6.4.8.2)*), including areas in and around the following location and parishes (*ES Volume III, Figure 8-2 (Application Document 6.3)*):
- Welbeck Hill [248] (APS_32) (now levelled in arable fields);
 - Ashby cum Fenby [250] (possible surviving earthworks visible in LiDAR data within the DCO Site Boundary north of Ashby cum Fenby, otherwise levelled within arable fields) [APS_28, APS_27, APS_25, APS_24, APS_23];
 - Barnoldby le Beck [251] (some earthworks extant within the former parkland, but within the DCO Site Boundary the ridge and furrow has been levelled within arable fields) [APS_31, APS_30, APS_29];
 - Brigsley [252] (east of the DCO Site Boundary);
 - Grainsby Grange [244] (now levelled in former arable fields) [APS_23];
 - Hawerby cum Beesby [246] (west of the DCO Site Boundary) [APS_22]; and
 - Ludborough [APS_18] (levelled in arable fields).
- 8.7.62 Areas of former ridge and furrow can obscure and also preserve buried archaeological remains of earlier periods. Construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on any buried archaeological remains relating to earlier periods of activity that may survive within the areas of historic ridge and furrow. Remains of ridge and furrow would be of very low value; however, any surviving remains preserved beneath the ridge and furrow relating to prehistoric, medieval or Roman activity would be considered of low value. There would be a low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.
- 8.7.63 The DCO Site Boundary crosses Waithe Beck [205] (*ES Volume III, Figure 8-2 (Application Document 6.3)*), approximately 1km west of Brigsley. Waithe Beck will be crossed using a trenchless auger bore method. Excavation of launch and reception pits either side of the crossing section would have a potential direct physical permanent impact upon any buried geoarchaeological remains associated with the floodplain of Waithe Beck [205]. Any remains would be considered to be of low value. There would be a very low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.
- 8.7.64 The DCO Site Boundary passes immediately west of a possible Romano-British field system and possible vineyard at North Thoresby [215] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Construction of the pipeline within the standard 30m working width would have a direct physical permanent impact on any related archaeological remains, which

would be considered to be of low value. There would be a low magnitude of impact and a negligible adverse effect: this permanent effect is not considered to be significant.

- 8.7.65 Analysis of aerial photography and LiDAR data (*ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)*) has identified a series of undated crop marked enclosures in Ludborough parish, immediately west of the A16 road southeast of Autby Park [APS_21] and immediately east of the A16 at Damwells Farm [APS_20], at Cold Harbour Farm [APS_19], and immediately south of Station Road [APS_017] (*ES Volume IV, Appendix 8-2: Figure 9, page 09 (Application Document 6.4.8.2)*). The possible enclosures are assigned a low value.
- 8.7.66 Construction of the pipeline within the standard 30m working width would have a direct physical permanent impact on any buried archaeological remains. In area [APS_21] the possible enclosures lie mostly beyond the DCO Site Boundary; there would be a low magnitude of impact, a negligible adverse effect: this permanent effect is not considered to be significant. There would be a medium magnitude of impact on the possible enclosures at [APS_20], [APS_19] and [APS_17], a minor adverse effect. This permanent effect is not considered to be significant.
- 8.7.67 Section 3 of the pipeline route intersects a number of historic roads that are marked on early edition OS maps and/or mentioned in historic documents, including Main Road, Barnoldby le Beck [341], Brigsley Road [342] (part of a turnpike trust of 1765) and Thoroughfare Lane [346] Ashby cum Fenby, and Old Main Road, Irby upon Humber [347] (*ES Volume III, Figure 8-2*). These roads will be crossed using trenchless auger bore or HDD method. The historic roads are historic landscape features considered to be of low value. There would be no long-term severance of the historic routes due to construction of the pipeline: this is assessed as no change and a neutral effect.
- 8.7.68 In Section 3 the pipeline route crosses the following historic civil parish boundaries (*ES Volume III, Figure 8-2 (Application Document 6.3)*):
- Parish boundary between Irby upon Humber CP and Barnoldby le Beck CP, east of Welbeck Spring (boundary formed by Laceby Beck) [204];
 - Parish boundary between Barnoldby le Beck CP and Ashby cum Fenby CP at Waithe Beck (west of Brigsley) [205];
 - Parish boundary between Ashby cum Fenby CP and Grainsby CP south of the demolished Fenby Farm (marked as a field boundary on the OS maps) [635];
 - Parish boundary between Grainsby CP and North Thoresby CP south of Grainsby Grange (marked as a field boundary on the OS maps) [636];
 - Parish boundary between North Thoresby CP and Ludborough CP south of the former Autby House and Autby Park (marked as a field boundary on the OS maps) [637]; and
 - Parish boundary between Ludborough CP and Utterby CP is crossed at Pear Tree Lane [638].
- 8.7.69 The parish boundaries are historic landscape features considered to be of very low value. The parish boundaries at Laceby Beck, Waithe Beck and Pear Tree Lane [204, 205, 638] will be crossed using a trenchless auger bore method. The other parish boundaries [635, 636, 637] will be crossed using open cut methods. There would be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the pipeline crossings and no change, a neutral effect.
- 8.7.70 A series of hedgerows crossed by section 3 of the pipeline are marked on tithe maps and may be regarded as important under the historic criteria set out in the Hedgerow Regulations (Ref 8-3) as forming part of a field system pre-dating the Enclosure Acts [H20 – H30 (*ES*

Volume IV, Appendix 8.1 (Application Document 6.4.8.1)) These hedgerows would be crossed by the pipeline using an open-cut construction method. The working width for pipeline construction would be reduced to the minimum necessary to enable plant to cross the boundary and for the pipeline to be laid safely, whilst only removing the minimum length of hedgerow required (see *ES Volume II, Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*). The hedgerows would be reinstated on completion of the crossing (see *ES Volume IV, Appendix 3.1: (Application Document 6.4.3.1)*). The pre-Enclosure hedgerows [H20 – H30] are historic landscape features considered to be of very low value; there would be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the crossings and reinstatement of the hedgerows. There would be no change and a neutral effect.

- 8.7.71 Moorhouse Farm, Brigsley [278] is a non-designated farmhouse located approximately 20m west of the DCO Site Boundary (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The asset is considered to have low value. The setting assessment (*ES Volume IV, Appendix 8-1 Historic Environment Desk-based Assessment (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a 19th century farmhouse. The DCO Site Boundary are considered to fall within this setting, located within the adjacent field. Construction of the Proposed Development within the setting of Moorhouse Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will change part of the farmland setting in close proximity of the asset, although views from the farmhouse are already partially screened by hedges. This would be considered a medium magnitude of impact resulting in a minor adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.
- 8.7.72 Westfield Farm, North Thoresby [389] is a non-designated 19th century farmstead located approximately 115m east of the DCO Site Boundary (*ES Volume III, Figure 8-2*). The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within the adjacent fields to the west and south of the farmstead. Construction of the Proposed Development within the setting of Westfield Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will alter part of the farmland setting in close proximity of the asset including views to the west and south, affecting the ability to interpret its heritage value. The proposed pipeline route crosses the access road to Westfield Farm. A trenchless auger bore construction method will be adopted hereto maintain access to the farm. This would be considered a medium magnitude of impact resulting in a minor adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.
- 8.7.73 Chestnut Farm, Ashby cum Fenby [294] is a non-designated farmstead located approximately 120m east of the DCO Site Boundary (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The asset is considered to have low value. The settings assessment *ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural fields which inform its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting. Construction of the Proposed Development within the setting of Chestnut Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will affect part of the farmland setting of the asset including views of agricultural land to the west of the farm, slightly affecting the ability to interpret its heritage value. This would be considered a low magnitude

of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.74 A series of non-designated heritage assets and one locally listed heritage asset within the 500m study area would not be affected by construction of section 3 of the pipeline: these assets have been assessed and there will be no direct or indirect impact on them physically or to their setting. These include (*ES Volume III, Figure 8-2 (Application Document 6.3)*):

- A possible Roman villa, west of Barnoldby le Beck [211];
- Anglo-Saxon cemetery [223] and an associated possible pyre deposit visible as a soilmark [224] on Welbeck Hill;
- Historic settlement cores at Hawerby [231] and Fenby [232] and the medieval village of Autby [239];
- The site of Fenby Farm [315];
- Hawerby Park [322] and other areas of parkland in Hawerby cum Fenby parish [323] (locally listed);
- Parkland to Oaklands, west of Laceby [410]; and
- The dismantled East Lincolnshire Railway Line at Ludborough [661].

8.7.75 There would be no change and a neutral effect on these assets due to construction of the pipeline.

Pipeline (Section 4)

8.7.76 No designated heritage assets are scoped into the assessment in this section of the pipeline route.

8.7.77 The DCO Site Boundary passes immediately south of the historic medieval settlement of North Cockerington [420] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Analysis of aerial photographs and LiDAR information has mapped former earthworks (visible as cropmarks with residual microtopography) forming outfields to the settlement and associated moated sites [APS_10]; these are not visible within the DCO Site Boundary (*ES Volume IV, Appendix 8.2: Figure 9, page 05 (Application Document 6.4.8.2)*). Any remains would be considered of medium value. Construction of the pipeline within the standard 30m working width has the potential to have a direct physical permanent impact on any buried remains that survive within the DCO Site Boundary associated with early medieval and later settlement at North Cockerington. There would be a low magnitude of impact, a minor adverse effect. This permanent effect is not considered to be significant.

8.7.78 The DCO Site Boundary passes within 100m southwest of the earthwork remains of a large mill mound marked as 'tumulus' on OS maps from 1824 [453] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural fields and traces of ridge and furrow [APS_09] (*ES Volume IV, Appendix 8.2: Figure 9, pages 05-06 (Application Document 6.4.8.2)*) which inform its historic interest. The DCO Site Boundary and the Louth Road temporary laydown, welfare and parking area are considered to fall within this setting. Construction of the Proposed Development within the setting of the mill mound will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will alter part of the farmland setting of the asset including views of agricultural land to the west, slightly affecting the ability to interpret the asset's heritage value. This would be considered a low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.79 This section of the pipeline route intersects several areas of former ridge and furrow cultivation recorded from late 1940s aerial photographs (*ES Volume IV, Appendix 8.1: (Application Document 6.4.8.1)* and *ES Volume IV, Appendix 8.2: (Application Document 6.4.8.2)*), including areas in and around the following locations and parishes (*ES Volume IV, Appendix 8.2: Figure 9 (Application Document 6.4.8.2)*):

- Grove Farm, Utterby [APS_16] (levelled in arable fields);
- Grange Farm, Yarburgh (Brackenbury with Little Grimsby parish) [APS_15] (levelled in arable fields);
- Immediately north of Louth Canal in Alvingham parish and Keddington parish [713; APS_12] (levelled in arable fields);
- South of Louth Canal and the River Lud in North Cockerington parish and South Cockerington parish [423, 424, 425; APS_09] ([424] includes some surviving earthworks east of the DCO Site Boundary, otherwise levelled within arable fields); and
- Parishes of South Cockerington and Grimoldby [426] (*ES Volume III, Figure 8-2 (Application Document 6.3)*); [APS_08] (levelled within arable fields).

8.7.80 Remains of ridge and furrow would be of very low value; however, any surviving remains preserved beneath the ridge and furrow relating to prehistoric, medieval or Roman activity would be considered of low value. Construction of the pipeline within the standard working width would have a direct physical permanent impact on any buried archaeological remains within the DCO Site Boundary associated with these areas of former ridge and furrow. There would be a low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.

8.7.81 North of the Louth Canal an undated rectilinear enclosure is visible as cropmarks on aerial photographs [APS_13] (*ES Volume IV, Appendix 8.2: Figure 9, page 06 (Application Document 6.4.8.2)*), partially within the DCO Site Boundary. Any remains would be considered of low value. Construction of the pipeline within the standard 30m working width has the potential to have a direct physical permanent impact on any buried archaeological remains that survive within the DCO Site Boundary. There would be a low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.

8.7.82 Immediately south of the River Lud, within and next to the DCO Site Boundary, a possible Iron Age 'Banjo' enclosure feature [APS_11] is visible as cropmarks within an area of medieval / post-medieval ridge and furrow [424] [APS_09] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) (*ES Volume IV, Appendix 8.2: Figure 9, page 06 (Application Document 6.4.8.2)*). Any remains would be considered of low value. Excavation of starter / reception pits for the crossing of the Louth Canal and River Lud using a trenchless HDD technique, and construction of the pipeline within the standard 30m working width have the potential to have a direct physical permanent impact on any buried archaeological remains that survive within the DCO Site Boundary. There would be a medium magnitude of impact resulting in a minor adverse effect. This permanent effect is not considered to be significant.

8.7.83 Analysis of aerial photographs and LiDAR information has identified a post-medieval field boundary off Brackenborough Road, in the parishes of Alvingham, Keddington and Brackenborough with Little Grimsby [APS_14] (*ES Volume IV, Appendix 8.2: Figure 9, page 06 (Application Document 6.4.8.2)*). Any remains would be of very low value. Construction of the pipeline within the standard 30m working width has the potential to have a direct physical permanent impact on any buried remains that survive within the DCO Site Boundary. There would be a low magnitude of impact resulting in a negligible adverse effect. This permanent effect is not considered to be significant.

- 8.7.84 In South Cockerington, the site of the demolished 19th century farmstead at Glebe Farm lies on the edge of the DCO Site Boundary [492] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Any surviving buried archaeological remains would be considered of low value. Construction of the pipeline within the standard 30m working width has the potential to have a direct physical permanent impact on any buried remains that survive within the DCO Site Boundary. There would be a negligible magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.
- 8.7.85 In Grimoldby, the site of the demolished 19th century farmstead at Hedge Ends lies on the edge of the DCO Site Boundary [503] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). Any buried archaeological remains that survive within the DCO Site Boundary would be of low value. Construction of the pipeline within the standard 30m working width has the potential to have a direct physical permanent impact on any buried remains that survive within the DCO Site Boundary. There would be a low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.
- 8.7.86 In Section 4 the pipeline route crosses the following historic civil parish boundaries (*ES Volume III, Figure 8-2 (Application Document 6.3)*):
- Parish boundary between Utterby CP and Brackenborough with Little Grimsby CP at Ings Lane [639];
 - Parish boundary between Brackenborough with Little Grimsby CP and Alvingham CP [640];
 - Parish boundary between Alvingham CP and North Cockerington CP at the River Lud [641];
 - Parish boundary between North Cockerington CP and South Cockerington at Louth Road [642];
 - Parish boundary between South Cockerington and Grimoldby CP at Grayfleet Drain [643]; and
 - Parish boundary between Grimoldby CP and Manby CP at Manby Middlegate (the B1200 road) [644].
- 8.7.87 The parish boundaries are historic landscape features considered to be of very low value. The parish boundaries marked by watercourses [641, 643] will be crossed using trenchless auger bore or HDD methods. The parish boundary between Brackenborough with Little Grimsby CP and Alvingham CP [640] will be crossed using open cut methods. There would be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the pipeline crossings and no change, a neutral effect.
- 8.7.88 A series of hedgerows crossed by section 4 of the pipeline are marked on tithe maps and may be regarded as important under the historic criteria set out in the Hedgerow Regulations (Ref 8-3) as forming part of a field system pre-dating the Enclosure Acts [H31 – H34] (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*). These hedgerows would be crossed by the pipeline using an open-cut construction method. The working width for pipeline construction would be reduced to the minimum necessary to enable plant to cross the boundary and for the pipeline to be laid safely, whilst only removing the minimum length of hedgerow required (see *ES Volume II, Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*). The hedgerows would be reinstated on completion of the crossing (see *ES Volume IV, Appendix 3.1 (Application Document 6.4.3.1)*). The pre-Enclosure hedgerows are historic landscape features considered to be of very low value; there would be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the crossings and reinstatement of the hedgerows. There would be no change and a neutral effect.

- 8.7.89 Section 4 of the pipeline crosses the alignment of the demolished Great North Railway, Mablethorpe Branch line at Grimoldby (section 4) and Theddlethorpe (section 5) [608] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The route is marked by a track bounded by hedgerows. The working width for pipeline construction would be reduced to the minimum necessary to enable the pipeline to be laid safely, whilst only removing the minimum length of hedgerow required (see *ES Volume II, Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*). Construction of the pipeline would have a direct physical permanent impact on any buried archaeological remains. There would be a very low magnitude of impact on any remains which would be considered to be of very low value, a negligible adverse effect. This permanent effect is not considered to be significant.
- 8.7.90 Yew Tree Cottage [506] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a small non-designated farmstead located approximately 20m east of the DCO Site Boundary on Ings Lane. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1: (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, within an adjacent field to the west of the asset. Construction of the Proposed Development within the setting of Yew Tree Cottage will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will change part of the farmland setting including views of agricultural fields to the west and south from the farmhouse, temporarily affecting the ability to interpret its heritage value. This would be considered a medium magnitude of impact resulting in a minor adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.
- 8.7.91 Pear Tree Farm [487] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated 19th century farmstead located approximately 200m southwest of the DCO Site Boundary and the laydown, welfare and parking area on Pear Tree Lane. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1: (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within an adjacent field to the east. Construction of the Proposed Development within the setting of Pear Tree Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary facilities will be installed at the laydown area including security fencing and temporary hardstanding for vehicle manoeuvring. These temporary construction activities will alter part of the farmland setting, very slightly affecting the ability to interpret its heritage value. This would be considered a low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.
- 8.7.92 Chequers Farm [486] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated farmstead located approximately 200m east of the DCO Site Boundary south of Pear Tree Lane. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8-1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within an adjacent field to the west of the asset. Construction of the Proposed Development within the setting of Chequers Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will affect a part of the farmland setting, although this should have little effect upon the ability to interpret its heritage value. This would be considered a low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

- 8.7.93 Woodhouse Farm [507] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated farmstead located approximately 60m west of the DCO Site Boundary. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1: (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural fields which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within an adjacent field to the east of the asset. Construction of the Proposed Development within the setting of Woodhouse Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will change part of the farmland setting to the east of the asset, slightly affecting the ability to interpret its heritage value. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.
- 8.7.94 Highfield House, North Cockerington [498] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated farmstead located approximately 95m east of the DCO Site Boundary. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within agricultural fields to the west and southwest of the asset. Construction of the Proposed Development within the setting of Highfield House will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will alter part of the farmland setting to the west and southwest of the asset, slightly affecting the ability to interpret its heritage value. The proposed pipeline route crosses the access road to Highfield House. A trenchless auger bore construction method will be adopted in order to maintain access to the farm. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.
- 8.7.95 Corner Farm, Grimoldby [512] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated farmstead located approximately 45m east of the DCO Site Boundary. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within agricultural fields to the west, across Pick Hill Lane. Construction of the Proposed Development within the setting of Corner Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will change part of the farmland setting including views to the west from the farmhouse, very slightly affecting the ability to interpret its heritage value. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.
- 8.7.96 Pick Hill Farm, Grimoldby [502] (*ES Volume III, Figure 8-2*) is non-designated farmstead located approximately 55m west of the DCO Site Boundary. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within the adjacent field to the east. Construction of the Proposed Development within the setting of Corner Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will affect part of the

farmland setting, including views to the west of the asset, slightly reducing the ability to appreciate its heritage value. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.97 The White Hart Inn and post office, North Cockerington [666] (*ES Volume III, Figure 8-2*) is located approximately 15m east of the DCO Site Boundary and the laydown, welfare and parking area north of Louth Road. The non-designated asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises of its rural roadside location as a former roadside inn. The DCO Site Boundary is considered to fall within the assets setting, crossing the junction twice in close proximity to the asset. Construction of the Proposed Development within the setting of the former White Hart Inn and post office will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary facilities will be installed at the laydown area including security fencing and temporary hardstanding for vehicle manoeuvring. The pipeline will be installed under Louth Road and Mill Hill Way using a trenchless auger bore construction method. These temporary construction activities will temporarily affect the setting of the asset and affect the ability to appreciate its heritage value as a former roadside inn. This would be considered a low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.98 A series of non-designated heritage assets within the 500m study area would not be affected by construction of section 4 of the pipeline: these assets have been assessed and there will be no direct or indirect impact on them physically or to their setting. These include (*ES Volume III, Figure 8-2 (Application Document 6.3)*):

- Louth Navigation [525]: the pipeline crossing will be achieved using a HDD trenchless crossing technique;
- Enclosure cropmark north east of South Cockerington [532]; and
- Barrow cropmark, Keddington [706].

8.7.99 There would be no change and a neutral effect on these assets due to construction of the pipeline.

Pipeline (Section 5)

8.7.100 One designated heritage asset is scoped into the assessment in this section of the pipeline route.

8.7.101 Ashleigh Farm [580] is a grade II listed farmhouse, located approximately <5m from the temporary side access route onto Mablethorpe Road within the DCO Site Boundary, and approximately 240m south of the of the proposed pipeline corridor (*ES Volume III, Figure 8-1 (Application Document 6.3)*). The asset is considered to have medium value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest and contributes to its aesthetic merit as a 19th century farmhouse. The DCO Site Boundary is considered to fall within the assets setting, in the field adjacent to the north. The proposed side access route onto Mablethorpe Road is located immediately north of the farm. Construction of the Proposed Development within the setting of Ashleigh Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will affect part of the farmland setting and introduce increased volumes of traffic and associated noise and light into the setting of the asset. This will affect the ability to appreciate its heritage value by diminishing the integrity of its setting. This would therefore be considered a medium

magnitude of impact on the medium value asset, resulting in a moderate effect of temporary duration during construction. This temporary effect is considered to be significant. The impact of the construction activities would be transient and reduce as construction progresses and the trench is backfilled.

8.7.102 West of Theddlethorpe All Saints, the pipeline crosses an area of former toft earthworks and cropmarks visible on historic aerial photographs but no longer extant within the arable fields [544] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) [APS_06] (*ES Volume IV, Appendix 8.2: Figure 9, page 02 (Application Document 6.4.8.2)*). Construction of the pipeline within the standard 30m working width would have a direct physical permanent impact on any buried archaeological remains relating to the former toft earthworks, which would be considered of low value. There would be a medium magnitude of impact on the low value asset, a minor adverse effect. This permanent effect is not considered to be significant.

8.7.103 This section of the pipeline route intersects several areas of former ridge and furrow cultivation recorded from late 1940s aerial photographs (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)* and *ES Volume IV, Appendix 8-2 (Application Document 6.4.8.2)*), including areas in and around the following locations and parishes:

- Parish of Saltfleetby [APS_08] (*ES Volume IV, Appendix 8.2: Figure 9, page 03 (Application Document 6.4.8.2)*) (levelled in arable fields);
- Walk Farm, Great Carlton parish [APS_02] (*ES Volume IV, Appendix 8.2: Figure 9; page 03 (Application Document 6.4.8.2)*) (among extensive extant earthwork features (crofts, tofts, building platforms, a moat, ridge and furrow and a boundary) along slightly higher ground above the enclosed fen, immediately west of the DCO Site Boundary); and
- Theddlethorpe [544, 549] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) [APS_05, APS_06] (*ES Volume IV, Appendix 8.2: Figure 9, page 02 (Application Document 6.4.8.2)*) (mostly levelled in arable fields, but some medieval fields remain as microtopographic earthworks visible via visualised LiDAR data within the DCO Site Boundary [APS_06]).

8.7.104 Areas of former ridge and furrow can obscure and also preserve buried archaeological remains of earlier periods. Construction of the pipeline within its standard 30m working width would have a direct physical permanent impact on any buried archaeological remains relating to earlier periods of activity that may survive within the areas of historic ridge and furrow. Remains of ridge and furrow would be of negligible value; however, any surviving remains preserved beneath the ridge and furrow relating to prehistoric, medieval or Roman activity would be considered of low value. There would be a medium magnitude of impact on assets of low value, a minor adverse effect. This permanent effect is not considered to be significant.

8.7.105 Construction of the pipeline within the standard 30m working width would have a direct physical permanent impact on any buried archaeological remains, within the DCO Site Boundary, associated with a series of World War Two aircraft obstructions (four locations) recorded from aerial photographs at Theddlethorpe All Saints [612] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). There would be a negligible magnitude of impact on the very low value assets, a negligible adverse effect. This permanent effect is not considered to be significant.

8.7.106 At Railway Farm, Theddlethorpe All Saints, construction of the pipeline within the standard 30m working width would have a direct physical permanent impact on undated pit features and a scatter of fired clay fragments and medieval pottery [541, 616] (*ES Volume III, Figure 8-2 (Application Document 6.3)*). There would be a low magnitude of impact on remains of

low value, a negligible adverse effect. This permanent effect is not considered to be significant.

8.7.107 West of the former Theddlethorpe Gas Terminal, construction of the pipeline within the standard 30m working width would have a direct physical permanent impact on any buried archaeological remains associated with an undated enclosure [622] (*ES Volume III, Figure 8-3 (Application Document 6.3)*) that is known from aerial photographs, but was not identified in the airborne remote sensing survey (*ES Volume IV, Appendix 8.2: (Application Document 6.4.8.2)*). There would be a high magnitude of impact on any remains of low value, resulting in a moderate adverse effect. This effect is considered to be significant and permanent.

8.7.108 North of Walk Farm, Great Carlton parish, a post-medieval field boundary visible on aerial imagery lies partly within the DCO Site Boundary [APS_04] (*ES Volume IV, Appendix 8.2: Figure 9, page 03 (Application Document 6.4.8.2)*). Construction of the pipeline within the standard 30m working width would have a direct physical permanent impact on any buried archaeological remains, which would be of very low value. There would be a low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.

8.7.109 In section 5 the pipeline route crosses the following historic civil parish boundaries (*ES Volume III, Figure 8-2 (Application Document 6.3)*):

- Parish boundary between Manby CP and Saltfleetby CP at Green Lane, southwest of Saltfleetby (marked by a field boundary) [645];
- Parish boundary between Saltfleetby CP and Great Carlton CP (Long Eau watercourse, north of Walk Farm) [646];
- Parish boundary between Great Carlton CP and Gayton le Marsh CP at Two Mile Bank (east of Walk Farm), a probable medieval salters' route [561];
- Parish boundary between Gayton le Marsh CP and Theddlethorpe All Saints CP (Great Eau) [647];
- Parish boundary between Theddlethorpe All Saints CP and Theddlethorpe St Helen CP (Mill Road) [648]; and
- Parish boundary between Theddlethorpe St Helen CP and Mablethorpe and Sutton CP (Crook Bank, east of former Theddlethorpe Gas Terminal) [649] (crossed by the electrical connection to the Dune Valve).

8.7.110 The parish boundaries are historic landscape features considered to be of very low value. The parish boundaries at the Long Eau [646], the Great Eau [647] and Mill Road [648] will be crossed using trenchless HDD or auger bore methods. The parish boundary marked by the watercourse at Two Mile Bank [561] will be crossed using open cut methods with the working width for construction reduced to 10m or narrower where conditions allow, and the watercourse banks reinstated on completion of the pipe crossing. Open trench methods will also be employed for the crossing of the earthwork at Crook Bank [649], with the working width for construction again reduced to 10m or narrower where conditions allow, and the ground profile reinstated on completion of the crossing. There would be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the pipeline crossings and no change, a neutral effect.

8.7.111 A series of hedgerows crossed by section 5 of the pipeline are marked on tithe maps and may be regarded as important under the historic criteria set out in the Hedgerow Regulations (Ref 8-3) as forming part of a field system pre-dating the Enclosure Acts, in Great Carlton parish (1841 tithe map) [H35] ('Willow Row Bank') and in Gayton le Marsh parish (1839 tithe map) [H36 – H38] (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*). These

hedgerows would be crossed by the pipeline using an open-cut construction method. The working width for pipeline construction would be reduced to the minimum necessary to enable plant to cross the boundary and for the pipeline to be laid safely, whilst only removing the minimum length of hedgerow required (see *ES Volume II, Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*). The hedgerows would be reinstated on completion of the crossing (see *ES Volume IV, Appendix 3.1 (Application Document 6.4.3.1)*). The pre-Enclosure hedgerows [H35 – H38] are historic landscape features considered to be of very low value; there would be no long-term severance of the historic landscape features due to construction of the pipeline following completion of the crossings and reinstatement of the hedgerows. There would be no change and a neutral effect.

8.7.112 Dicote House (Olcote House) [590] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated farmstead, located approximately 30m north of the proposed permanent access and cathodic protection anode bed installation area, and 100m north of the DCO Site Boundary of the proposed pipeline corridor. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within agricultural fields to the south of the Cut watercourse. Construction of the Proposed Development within the setting of Dicote House will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will affect part of the farmland setting in close proximity to the asset and introduce increased volumes of traffic and associated noise and light into its immediate setting. These changes within the setting will affect the ability to appreciate its heritage value. This would be considered a medium magnitude of impact resulting in a minor adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.113 The Poplars [593] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated, partially extant 19th century farmstead, located adjacent to the temporary access route on Mablethorpe Road and approximately 80m south of the DCO Site Boundary and laydown, welfare and parking area west of Mablethorpe Road. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The proposed temporary access route and DCO Site Boundary are considered to fall within the assets setting, located in the agricultural field immediately north of the farmstead. The proposed side access route onto Mablethorpe Road is located immediately north of a historic outbuilding. Construction of the Proposed Development within the setting of the Poplars will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will change part of the farmland setting and introduce increased volumes of traffic and associated noise and light into the immediate setting of the asset. This will affect the ability to appreciate heritage value. This would be considered a medium magnitude of impact resulting in a minor adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.114 Lordship Farm [596] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated farmstead, located approximately 90m east of the DCO Site Boundary and the laydown, welfare and parking area south of Thacker Bank. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within the adjacent fields to the northwest, west and southwest of the asset. Construction of the Proposed Development

within the setting of Lordship Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary facilities will be installed at the laydown area including security fencing and temporary hardstanding for vehicle manoeuvring. These temporary construction activities will affect part of the farmland setting, including views of agricultural fields to the northwest, west and southwest, slightly reducing the ability to appreciate its heritage value. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.115 Grange Farm [575] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated farmstead 80m north of the DCO Site Boundary. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within agricultural fields to the south of the asset. Construction of the Proposed Development within the setting of Grange Farm will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will affect part of the farmland setting, including views of agricultural fields to the south from the farmhouse, slightly affecting the ability to interpret its heritage value. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.116 Little Dams [587] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated 19th century farmstead, located approximately 90m south of the DCO Site Boundary and the laydown, welfare and parking area west of Mill Road. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1: (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The DCO Site Boundary are considered to fall within this setting, located within agricultural fields to the north of the asset. Construction of the Proposed Development within the setting of Little Dams will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. Temporary facilities will be installed at the laydown area including security fencing and temporary hardstanding for vehicle manoeuvring. These temporary construction activities will affect part of the farmland setting, including views of agricultural fields to the north which will slightly affect the ability to interpret its heritage value. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.117 A number of non-designated heritage assets within the 500m study area would not be affected by construction of section 5 of the pipeline: these assets have been assessed and there will be no direct or indirect impact on them physically or to their setting. These include (*ES Volume III, Figure 8-2 (Application Document 6.3)*) (*ES Volume IV, Appendix 8.2 Figure 9 (Application Document 6.4.8.2)*):

- Roman field system and occupation [537] and field system and settlement near Walk Farm, Great Carlton parish [548] [APS_02];
- Historic settlement of Theddlethorpe All Saints [539];
- Medieval settlement remains in Theddlethorpe St Helen parish [546];
- Medieval pottery scatter west of the Theddlethorpe gas terminal [559]; and

- World War Two anti-glider ditches visible on historic aerial photographs south of Two Mile Bank [APS_01], at Mablethorpe [APS_03] and Theddlethorpe [APS_06] [612]; and possible World War Two defensive structures on the shoreline northeast of Theddlethorpe Gas Terminal [APS_07]: these features are no longer present.

8.7.118 There would be no change and a neutral effect on these assets due to construction of the pipeline.

Block Valve Stations & Cathodic Protection

Block Valve Stations (BVS)

8.7.119 Three Block Valve Stations (BVS) are required along the pipeline route to enable pipeline sections to be isolated for operational and maintenance reasons:

- Block Valve Station 1, hereafter called Washingdales Lane Block Valve Station;
- Block Valve Station 2, hereafter called Thoroughfare Block Valve Station; and
- Block Valve Station 3, hereafter called Louth Road Block Valve Station.

8.7.120 Construction of the Washingdales Lane BVS southwest of Aylesby could have a direct physical permanent impact on any archaeological remains relating to cropmark boundaries and enclosures [197], and on any buried remains relating to or obscured by former ridge and furrow cultivation (now levelled in arable fields) [123] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) [APS_34] (*ES Volume IV, Appendix 8.2: Figure 9, page 14 (Application Document 6.4.8.2)*). Remains of ridge and furrow would be of very low value; however, any surviving remains relating to prehistoric, medieval or Roman activity would be considered of low value. Construction of the BVS and establishment and use of the temporary works area would have a medium magnitude of impact, resulting in a minor adverse effect. This permanent effect is not considered to be significant.

8.7.121 Construction of the Thoroughfare BVS southeast of Ashby cum Fenby would have a direct physical permanent impact on any buried archaeological remains within the DCO Site Boundary associated with an area of former ridge and furrow cultivation (now levelled in arable fields) [APS_25] (*ES Volume IV, Appendix 8.2: Figure 9, page 11 (Application Document 6.4.8.2)*). Remains of ridge and furrow would be of very low value; however, any surviving remains relating to prehistoric, medieval or Roman activity (including possible settlement remains) would be considered of low value. There would be a low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.]

8.7.122 Construction of the Louth Road BVS southwest of Alvingham would have a direct physical permanent impact on any buried archaeological remains within the DCO Site Boundary associated with an area of former ridge and furrow cultivation (now levelled in arable fields) [APS_12] (*ES Volume IV, Appendix 8.2: Figure 9, page 06 (Application Document 6.4.8.2)*). Remains of ridge and furrow would be of very low value; however, any surviving remains relating to prehistoric, medieval or Roman activity would be considered of low value. There would be a low magnitude of impact, resulting in a negligible adverse effect. This permanent effect is not considered to be significant.

8.7.123 The Block Valve Stations are not considered to fall within the setting of any designated or non-designated built heritage assets, therefore, they are not considered likely to experience any temporary changes to setting as result of the presence or movement of plant or from construction activities. Accordingly, the construction work associated with this element of the Proposed Development will have no impact upon these types of assets.

Theddlethorpe Facility

8.7.124 Construction of the Theddlethorpe Facility would entail construction of operational buildings, installation of above ground pipework and a vent stack up to 25m high, security fencing and hardstanding for vehicle manoeuvring, and the connection to the existing LOGGS pipeline. These facilities would be permanent during the operational life of the Proposed Development.

Theddlethorpe Option 1

8.7.125 Option 1 for the location of the Theddlethorpe Facility lies within the previously developed footprint of the former Theddlethorpe Gas Terminal. Aerial photograph assessment and LiDAR analysis identified former ridge and furrow cultivation within the footprint of the Theddlethorpe Facility [APS_05] (*ES Volume IV, Appendix 8.2: Figure 9, page 01 (Application Document 6.4.8.2)*). Remains of ridge and furrow would be of very low value; however, any surviving remains relating to prehistoric, medieval or Roman activity would be considered of low value. No visible earthworks remain within the DCO Site Boundary and survival of any buried remains within the previously developed footprint of the former gas terminal is assumed to be unlikely. There would be no change to the low value asset and a neutral effect.

8.7.126 North End Farm [591] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated, partially extant 19th century farmstead, located approximately 45m southeast of the southern compound, 480m southeast of the Theddlethorpe Facility preferred site, and approximately 15m east of the proposed permanent access track. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset includes the remaining area of agricultural land to the south, which informs its historic interest as a working 19th century farmstead. The original setting of the asset has been heavily degraded by the previous presence of the former Theddlethorpe Gas Terminal to the immediate west within historic agricultural land. The DCO Site Boundary is not considered to fall within this setting, being located within the previously developed footprint of the former Theddlethorpe Gas Facility. Construction of the Theddlethorpe Facility will not result in any further loss of farmland from the asset's setting, but will introduce noise and light associated with the movement of traffic and plant and delivery of materials. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

8.7.127 Sand Hills Farm (Crook Bank Farmhouse) [600] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated, partially extant 19th century farmstead, located approximately 160m north of the DCO Site Boundary. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a 19th century farmhouse. The proposed temporary working area is located within the north of the former Theddlethorpe Gas Facility site, south of the agricultural land which forms the asset's setting. The presence of the temporary working area will not result in the loss of any farmland from the setting but will introduce noise and light associated with construction activity and the movement of traffic and plant. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

Theddlethorpe Option 2

8.7.128 Option 2 for the Theddlethorpe Facility lies within agricultural land directly west of The Cut, approximately 300m west of the former Theddlethorpe gas terminal. Although medieval settlement evidence [545, 546] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) and

former ridge and furrow cultivation (now levelled in arable fields) [APS_05] has been identified in the wider area around Theddlethorpe, desk-based assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) and aerial photograph assessment and LiDAR analysis undertaken for this EIA (*ES Volume IV, Appendix 8.2: Figure 9, page 01 (Application Document 6.4.8.2)*) have identified no records of known archaeological remains within the proposed alternate Theddlethorpe Facility Option 2 site. Remains of ridge and furrow would be of very low value; however, any surviving remains relating to prehistoric, medieval or Roman activity would be considered of low value. There would be a low magnitude of impact, a negligible adverse effect. This permanent effect is not considered to be significant.

8.7.129 Ashleigh Farm [580] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a grade II listed farmhouse located approximately 235m southwest of the Theddlethorpe Facility Option 2 site. The asset is considered to have medium value. The settings assessment (*ES Volume IV, Appendix 8-1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises of the surrounding agricultural land which informs historic interest and contributes to aesthetic merit. The Theddlethorpe Facility Option 2 site is considered to fall within the asset's setting, located within the adjacent field. Construction of the Theddlethorpe Facility will introduce noise and visual intrusion associated with construction activities and increased traffic. These temporary changes will affect an area of farmland within the asset's setting and introduce visual changes and noise into the surroundings in which the asset is experienced, affecting the ability to interpret its heritage value. This would be considered a medium magnitude of impact resulting in a moderate adverse effect of temporary duration during construction. This temporary effect is considered to be significant.

8.7.130 Dicote House (Olcote House) [590] (*ES Volume III, Figure 8-2 (Application Document 6.3)*) is a non-designated farmstead, located approximately 150m north of the Theddlethorpe Facility Option 2 site and 30m north of the proposed access route. The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs historic interest as a working 19th century farmstead. The Theddlethorpe Facility Option 2 site is considered to fall within this setting, located within agricultural fields to the south of the Cut watercourse. Construction of the facility within the setting of Dicote House will comprise removal and storage of topsoil, an open cut trench and associated construction traffic movement and noise. These temporary construction activities will alter part of the farmland setting in close proximity to the asset and introduce increased volumes of traffic and associated noise and light into its immediate setting. This would be considered a medium magnitude of impact resulting in a minor adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

Cathodic Protection

8.7.131 The majority of the cathodic protection (CP) system is buried below ground and installed as part of construction of the Theddlethorpe Facility: there would be no additional impacts on heritage assets due to installation of the CP system at this location.

Dune Isolation Valve

8.7.132 Desk-based assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) and (*ES Volume IV, Appendix 8-2 (Application Document 6.4.8.2)*) have identified no records of known archaeological remains within the proposed site of the Dune Isolation Valve or its related construction corridor. Replacement of the Dune Valve in its existing location will not entail any new excavation. There will be no impact on any archaeological remains.

8.7.133 Bleak House [601] (*ES Volume III, Figure 8-2 (Application Document 6.4.8.2)*) is a non-designated, partially extant 19th century farmstead located adjacent to the permanent access route to the Dune Isolation Valve Station. The asset is considered to have low value.

The settings assessment (*ES Volume IV, Appendix 8-1 (Application Document 6.4.8.1)*) noted that the setting of the asset includes the remaining area of agricultural land to the north, which helps to inform its historic interest as a working 19th century farmstead. The original setting of the asset has been heavily degraded by the presence of the former Theddlethorpe Gas Terminal to the west and modern holiday parks to the east and south of the asset. The DCO Site Boundary are considered to fall within this setting, located along an existing access route used by the farmstead and within agricultural fields to the northeast of the asset. Construction of the Dune Isolation Valve within the setting of Bleak House will involve construction traffic movement within close proximity and introduce noise associated with construction. These temporary construction activities will slightly affect the ability to interpret its heritage value, but would not result in the loss of any additional agricultural land from the asset's setting. This would be considered a very low magnitude of impact resulting in a negligible adverse effect of temporary duration during construction. This temporary effect is not considered to be significant.

Unidentified Archaeological Remains within the DCO Site Boundary

8.7.134 Archaeological evaluations in respect of the Proposed Development include an ongoing geophysical survey and a proposed programme of trial trenching and geoarchaeological assessment. On the basis of the baseline established in section 8.5 above, it is considered possible that as yet unidentified archaeological remains may be encountered within the DCO Site Boundary. Where these are encountered, these could vary in value from Very Low to High value. Where these archaeological remains are removed by the construction of the Proposed Development then it would result in a high magnitude of impact and a range of effects would result from negligible adverse to major adverse. An archaeological mitigation strategy to allow for such circumstances is outlined in section 8.8, Additional Mitigation and Enhancement Measures (below).

Assessment of Potential Impacts: Operational Phase

Immingham Facility

8.7.135 There would be no additional impacts on archaeological remains due to the operation of the Immingham Facility.

8.7.136 The grade I listed Church of St Andrew [035] (*ES Volume III, Figure 8-1 (Application Document 6.3)*) is located approximately 1.75 km south of the proposed Immingham Facility. The church is considered to be of high value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset includes the churchyard which contains a grade II listed medieval cross base [024] and the historic parish of Immingham to the south of the church. The DCO Site Boundary is not visible from the churchyard, screened by the golf course and mature trees and foliage which form the boundary of the churchyard. Where potential for intervisibility with the proposed Immingham Facility remains, these views are not considered likely to diminish the setting of the asset but rather blend into the existing industrial landscape. The presence of the Immingham Facility in long-distance views will not impact the ability to interpret the significance of the asset or alter the relationship between the church and its parish. There will also be no impact upon the grade II listed medieval cross base [024].

8.7.137 The Church of St Denys [036] (*ES Volume III, Figure 8-1 (Application Document 6.3)*) is a grade I listed parish church located approximately 2km north-west of the DCO Site Boundary of the proposed Immingham Facility. The asset is considered to be of high value. The settings assessment (*ES Volume IV, Appendix 8-1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the churchyard and the historic parish of North Killingholme to the south of the church. Both the Lindsey Oil Refinery and Phillips 66 Oil Refinery are visible from the churchyard. Where there is potential for views of the Proposed Development, these will blend with the existing view of the industrial skyline and will not

alter the setting of the church. Potential views of the Immingham Facility from the churchyard in the distance are not considered to impact the ability to appreciate the asset's significance.

Pipeline

8.7.138 There would be no additional impacts on heritage assets due to the operation of the pipeline, which will be operated and maintained via the Immingham and Theddlethorpe Facilities and the three Block Valve Stations.

Block Valve Stations

8.7.139 There would be no additional impacts on archaeological remains due to the operation of the Block Valve Stations. The Block Valve Stations are not considered to fall within the setting of any designated or non-designated built heritage assets, therefore, they are not considered likely to experience any changes to setting as a result of the operation of the block valves or their presence within the landscape during the operational phase of the Proposed Development.

Theddlethorpe Facility

Theddlethorpe Facility Option 1

8.7.140 There would be no additional impacts on archaeological remains due to the operation of the Theddlethorpe Facility Option 1.

8.7.141 Ashleigh Farm [580] is a grade II listed farmhouse located approximately 730m west of the Theddlethorpe Facility preferred site (*ES Volume III, Figure 8-1 (Application Document 6.3)*). The asset is considered to have medium value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises of the surrounding agricultural land, which informs its historic interest and contributes to its aesthetic merit. Theddlethorpe Facility Option 1, located within the previously developed footprint of the former Theddlethorpe Gas Facility, is not considered to fall within the immediate setting of Ashleigh Farm which consists of surrounding agricultural land.. The Theddlethorpe Facility will be unmanned and subject to periodic visits during hours of daylight, therefore, it is not expected to introduce any noise or light intrusion into the asset's setting. Occasional activities such as repairs will cause a greater level of disturbance but only for a short period. The presence of the Theddlethorpe Facility will introduce new infrastructure, such as the proposed vent stack, into views east from the farmhouse; however, these views will not affect the ability to interpret its heritage value as the immediate setting in which the asset is experienced will remain unchanged. The operation of the Theddlethorpe Facility Option 1 on the preferred site location is considered to have a very low impact during the operational lifetime of the pipeline, resulting in a negligible adverse effect. This effect is not considered to be significant.

8.7.142 Three partially extant, non-designated 19th century farmsteads, North End Farm [591], Sand Hills Farm [600] and Bleak House [601], are located within proximity of the Theddlethorpe Facility Option 1 (*ES Volume III, Figure 8-2 (Application Document 6.3)*). North End Farm is located approximately 480m southeast, Sand Hills Farm is located approximately 350m north and Bleak House is located approximately 670m southeast of the site. The assets are all considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the settings of the assets comprises surrounding agricultural land which informs the historic interest of the assets as working 19th century farmsteads. The Theddlethorpe Facility Option 1 site is not considered to fall within these settings, being located within the previously developed footprint of the former Theddlethorpe Gas Terminal. As the site of the Theddlethorpe Facility Option 1 has previously been developed, there will be no loss of agricultural land from the setting of any of the assets. The Theddlethorpe Facility will be unmanned and subject to periodic visits during hours of daylight, therefore, it is not expected to introduce any noise or light intrusion into the settings

of the assets. Occasional activities such as repairs will cause a greater level of disturbance but only for a short period. The presence of the Theddlethorpe Facility will introduce new infrastructure, such as the proposed vent stack, into views from the farmsteads. These views are not considered to alter the character of the assets settings, which remains agricultural. The ability to interpret heritage value will therefore remain largely unaffected. The operation of the Theddlethorpe Facility on the preferred site location is therefore considered to have a very low impact upon North End, Sand Hills Farm and Bleak House during the operational lifetime of the pipeline, resulting in negligible adverse effects. These effects are not considered to be significant.

Theddlethorpe Facility Option 2

8.7.143 There would be no additional impacts on archaeological remains due to the operation of the Theddlethorpe Facility Option 2.

8.7.144 Ashleigh Farm [580] is a grade II listed farmhouse located approximately 240m southwest of the Theddlethorpe Facility Option 2 (*ES Volume III, Figure 8-1 (Application Document 6.3)*). The asset is considered to have medium value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises of the surrounding agricultural land which informs the asset's historic interest and contributes to its aesthetic merit. Theddlethorpe Facility Option 2 is located within the asset's setting on previously undeveloped agricultural land. The Theddlethorpe Facility will introduce an industrial element into a currently rural landscape, including tall infrastructure, such as the venting stack. Although the Theddlethorpe Facility will be unmanned and routine checks and maintenance are anticipated to be minimal and largely unintrusive, there is still the potential for limited noise and visual intrusion from traffic movement during operation. Occasional activities such as repairs will cause a greater level of disturbance but only for a short period. The heritage value of Ashleigh Farm will remain legible during the operation of the Theddlethorpe Facility, but an element of the asset's setting will be eroded, diminishing the contribution of setting to its historic interest and impacting its integrity. This would be considered a medium magnitude of impact resulting in a moderate adverse effect. This permanent effect is considered to be significant.

8.7.145 Dicote House (Olcote House) [590] is a non-designated farmstead, located approximately 150m north of the Theddlethorpe Facility alternate site, and 30m north of the proposed access route (*ES Volume III, Figure 8-2 (Application Document 6.3)*). The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of the asset comprises the surrounding agricultural land which informs its historic interest as a working 19th century farmstead. The Theddlethorpe Facility Option 2 site is considered to fall within this setting, located within agricultural fields to the south of the Cut watercourse. The Theddlethorpe Facility will introduce tall infrastructure, such as the venting stack and other associated elements, which will be visible from the farmstead and diminish its rural character. The Theddlethorpe Facility will be unmanned and subject to periodic visits during hours of daylight. Occasional activities such as repairs will cause a greater level of disturbance but only for a short period. Operation of the facility has the potential to introduce noise and visual intrusion including from traffic movement, due to the proximity of the access route to the asset. The operation of the Theddlethorpe Facility on the alternate location site will affect part of the setting of the farmstead and will therefore affect the ability to appreciate its heritage value. This would be considered a medium magnitude of impact resulting in a minor adverse effect during operation. This permanent effect is not considered to be significant.

Dune Isolation Valve

8.7.146 Bleak House [601] is a non-designated, partially extant 19th century farmstead, located adjacent to the permanent access route to the Dune Isolation Valve (*ES Volume III, Figure*

8-2 (*Application Document 6.3*). The asset is considered to have low value. The settings assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) noted that the setting of Bleak House comprises of the surviving agricultural land but this has been degraded by modern development including the former Theddlethorpe Gas Terminal and modern holiday parks. The Dune Isolation Valve permanent access route is considered to fall within this setting, located along an existing access route to the northeast of the farm. Operation of the Proposed Development within the setting of Bleak House will comprise occasional light traffic associated with the monthly inspections, routine maintenance and repairs to the Dune Isolation Valve Station. The operation of the Dune Isolation Valve will not result in the further loss of any agricultural land. This operation activity will not impact the ability to appreciate the asset's significance.

Assessment of Potential Impacts: Decommissioning Phase

8.7.147 Decommissioning impacts no greater than those temporary impacts experienced during construction of the Proposed Development. Impacts lasting for all or part of the decommissioning phase of the Proposed Development potentially include the following:

- The presence and movement of plant and equipment within the Site and surrounding road network, which may impact on the value of heritage assets through change to their setting; and
- The siting of compounds and activities within working areas, including associated noise and lighting, which may impact on the value of heritage assets through change to their setting.

8.7.148 It is not anticipated that there will be any permanent impacts during decommissioning as a well-designed decommissioning scheme would not have any impact beyond the already-disturbed footprint of the Proposed Development; therefore, it is not anticipated that decommissioning activities would have a direct physical impact upon below ground archaeological remains.

8.7.149 Any adverse effects identified on the setting of heritage assets as a result of the permanent upstanding elements of the Proposed Development will be reversed as part of the decommissioning with land reinstated to the current baseline.

Sensitivity analysis

8.7.150 The effects of construction, operation and decommissioning of the Proposed Development on predicted archaeological remains have been assessed, taking into account the results of the historic environment desk-based assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) and aerial photographic assessment and LiDAR analysis (*ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)*). These surveys have supplemented existing baseline data held by the local authority Historic Environment Records and Historic England. This lends increased confidence in the impact assessment in areas where previous archaeological surveys have demonstrated the presence already of the resource in the area. The assessment of effects takes account of the certainty of interpretation expressed in survey reports.

8.7.151 In some areas it is not currently known whether buried archaeological remains exist as archaeological investigations have not yet been completed, for example where ongoing geophysical surveys and pre-determination trial trenching remain to be undertaken. In such areas, assessments are based on the desk-based assessment (*ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*) and the aerial photographic assessment and LiDAR analysis (*ES Volume IV, Appendix 8.2 (Application Document 6.4.8.2)*), and a moderate degree of confidence is assigned to the impact assessments.

8.7.152 The effects of construction, operation and decommissioning of the Proposed Development on built heritage assets and historic landscape features have been assessed, based on the results of the heritage walkover survey, which confirmed the presence of heritage assets and allowed an assessment of their settings to be undertaken. This field-based assessment of impacts on the significance of the asset, and the contribution made by setting to that significance, has been supplemented by a review of the ZTVs and viewpoints (see *ES Volume II, Chapter 7: Landscape and Visual (Application Document 6.2.7)*). This lends a high degree of confidence to the impact assessment in relation to the setting of heritage assets.

8.7.153 As noted in section 8.5, Baseline Conditions and Study Area above, changes to buried archaeological assets which might occur during the lifespan of the Proposed Development, in the absence of the Proposed Development, are predicted to be minimal and would be unlikely to significantly alter the current baseline scenario. The built heritage baseline is also considered unlikely to undergo significant change during the lifespan of the Proposed Development in the absence of the Proposed Development. The levels of confidence in the assessments expressed above would not, therefore, be altered by any predicted change in the historic environment baseline.

8.8 Additional Mitigation and Enhancement Measures

Additional Mitigation and Enhancement – Construction Phase

Outline Archaeological Mitigation Strategy

8.8.1 Historic environment impacts have been mitigated in the first instance through avoidance, careful routing and design refinement (see section 8.6, Development Design and Embedded Mitigation).

8.8.2 Additional project specific mitigation has been developed to help mitigate impacts identified as part of the impact assessment. This includes a suite of measures which are considered to be standard requirements of statutory consultees including the local planning authorities/County Archaeologists, which will form the basis of the archaeological mitigation strategy. This will be agreed during the course of Examination and implementation will be subject to approval by the relevant local planning authorities of a written scheme of investigation (WSI). The final strategy will take the form of a Detailed Archaeological Mitigation Strategy (DAMS) and accompanying Overarching Written Scheme of Investigation (OWSI). These will set out the scope, guiding principles and methods for the planning and implementation of essential archaeological mitigation.

8.8.3 The following paragraphs provide an outline of the archaeological mitigation strategy for the Proposed Development as the basis for continuing consultation with heritage stakeholders.

Unidentified Archaeological Remains within the DCO Site Boundary

8.8.4 Where unidentified archaeological remains are encountered within the DCO Site Boundary, the pipeline alignment will be adjusted, where feasible to avoid significant remains, the pipeline construction working width will be reduced to the minimum to allow the pipeline to be installed safely, and remains within working areas will be protected in situ. Where adjustment of the pipeline alignment, within the DCO Site Boundary is not feasible, consideration will be given to use of trenchless construction methods such as horizontal directional drilling to avoid significant archaeological remains.

Minimisation of impacts

8.8.5 Where unidentified archaeological remains are encountered within the DCO Site Boundary, the pipeline alignment will be adjusted, where feasible to avoid significant remains. Within the DCO Site Boundary, the working width for the pipeline construction, temporary

construction compounds and working areas, Block Valve Stations and the Immingham and Theddlethorpe Facilities will be fenced during construction, to prevent construction plant working beyond the areas of direct impact. Impacts will not be felt to buried archaeological remains beyond the fenced working areas – this will remain as agricultural land and farming will continue in this area.

Archaeological investigation and recording

8.8.6 Where impacts cannot be avoided, archaeological investigation and recording will be undertaken as advanced works. Taking into account the form and significance of archaeological remains, or other heritage assets that would be impacted by the Proposed Development, it is anticipated that the following approaches and techniques may be relevant:

- Surface artefact collection / test pitting / metal detection where required in advance of archaeological excavation and recording;
- Topographic survey of earthworks to allow reinstatement works post-construction;
- Archaeological excavation and recording in areas where significant archaeological remains have been recorded/identified, including by archaeological Strip, Map and Sample;
- Targeted archaeological monitoring during construction works (where prior archaeological evaluation indicates this approach is appropriate and/or where safety considerations preclude other approaches);
- Geoarchaeological investigation (this may entail, for example, the sinking of archaeological borehole or auger transects in locations specified in the DAMS in order to inform preparation of a deposit model); and
- Protection of remains (i.e., temporary burial of remains within working areas) and preservation of archaeological remains in situ (i.e., fencing – see 8.8.5 above).

8.8.7 The aim of the archaeological mitigation strategy is to mitigate impacts on archaeological sites identified within the DCO Site Boundary. Rather than taking a blanket approach (such as extensive strip, map and record, for example) it is envisaged that excavations will instead be targeted upon those sites that would maximise knowledge gain in order to answer scheme-wide and site-specific research questions that will be developed as part of the archaeological mitigation strategy. For sites that do not fit these criteria, additional work would not be undertaken. Other sites, although within the DCO Site Boundary, would be fenced off during construction to ensure they are preserved where the pipeline installation activities can be routed around the site/feature.

8.8.8 Based on current knowledge, an outline programme of mitigation has been set out which focuses on areas of known archaeology, and areas where the surveys undertaken to date have not recorded any evidence of buried archaeological remains. Details of the full mitigation will be addressed in the DAMS, and this will also be based on the results of archaeological evaluation undertaken post-submission of the DCO application.

Draft Construction Environmental Management Plan (CEMP)

8.8.9 The Draft Construction Environmental Management Plan (CEMP) (*ES Volume IV, Appendix 3.1 (Application Document 6.4.3.1)*) sets out additional mitigation measures identified in this assessment of likely significant effects within the Mitigation Register. Section D of the Mitigation Register sets out the following additional mitigation measures in respect of the historic environment:

- **D1:** Ongoing discussion and engagement with the County Archaeologist (or equivalent) relating to the archaeological mitigation strategy;

- **D2:** Develop and implement a detailed archaeological mitigation strategy in consultation with the County Archaeologist (or equivalent), likely to include archaeological mitigation measures such as: surface artefact collection / test pitting / metal detection where required in advance of archaeological excavation and recording; topographic survey of earthworks to allow reinstatement works post-construction; archaeological excavation and recording in advance of construction; targeted archaeological monitoring during construction works; geoarchaeological investigation; and protection of remains within working areas and preservation of archaeological remains in situ. Mitigation will be carried out in accordance with a Written Scheme of Investigation which will be produced in consultation with the County Archaeologist (or equivalent);
- **D3:** Targeted archaeological monitoring would be undertaken in areas where prior archaeological evaluation indicates this approach is appropriate, and/or in areas where archaeological investigation and recording in advance of construction are not feasible due to safety or logistical considerations, or undesirable due to environmental or engineering constraints. The works contractor's preferred method of working would be controlled as necessary by the supervising archaeologist to allow archaeological recording to take place to the required standard;
- **D4:** In the event of human remains being found during the course of archaeological monitoring of construction works, works would stop and the local coroner, Project Manager and County Archaeologist (or equivalent) would be notified immediately. The local area around the remains should be immediately isolated and protected by the Contractor. Work in this area would not recommence without the prior acceptance of the Project Manager and a Ministry of Justice (exhumation) licence being in place prior to their removal;
- **D5:** If archaeological finds are discovered during archaeological monitoring of construction works, the Applicant's Project Manager will be informed, and appropriate steps undertaken, in consultation with the County Archaeologist (or equivalent), to excavate and record the finds prior to construction works continuing;
- **D6:** Ensure all written records of the archaeological investigations undertaken are completed and submitted in a timely manner. A copy of any analysis, reporting or publication required as part of the Mitigation Strategy should be deposited with the relevant local authority repositories as part of the Proposed Development archives within 1 year of completion of the Proposed Development or such other period as may be agreed in writing by the relevant planning authority. Archive should be deposited with an appropriate museum as listed below:
 - West Lindsey and East Lindsey District Councils: Lincolnshire County Council Heritage Service;
 - North Lincolnshire Council: North Lincolnshire Museums; and
 - North East Lincolnshire Council.
- **D7:** Upstanding earthworks, including ridge and furrow earthworks, that are impacted by the Project would be reinstated post-construction to restore their form and character, based on pre-commencement topographic survey of the features;
- **D8:** Raising the awareness of construction workers and operatives of any control and reporting procedures to be followed, should archaeological deposits be encountered during the works, for example through toolbox talks and regular briefings;
- **D9:** The protection of built heritage assets and archaeological sites during construction, for example through the demarcation of buffer zones around such interests with fencing and signage;

- **D10:** The control of light spillage, noise and dust within construction compounds and working areas, for example by adhering to working hours and through good site layout and working practices, to minimise impacts on the setting of heritage assets; and
- **D11:** A programme of outreach/public engagement to raise awareness of the cultural heritage of the scheme.

Additional Mitigation and Enhancement – Operational Phase

8.8.10 Due to the nature of the Proposed Development, the majority of the impacts are linked to the construction phase, with operational impacts limited to changes to the setting of a small number of heritage assets, resulting from the operation of the Theddlethorpe Facility. The effects of operation of the Theddlethorpe Facility at the Option 1 site are considered to be not significant. The physical presence and operation of the Theddlethorpe Facility at the Option 2 site would result in significant effects on one site, the grade II listed Ashleigh Farm [580]. No required additional mitigation has been identified during the operational phase in respect of the historic environment.

Additional Mitigation and Enhancement – Decommissioning Phase

8.8.11 No significant effects have been identified in relation to the decommissioning of the Proposed Development. Decommissioning would remove infrastructure from key views and reinstate agricultural land use within the assets' settings, therefore, reinstating the baseline conditions. No required additional mitigation has been identified during the decommissioning phase in respect of the historic environment.

8.9 Residual Effects

8.9.1 Where the pipeline can be routed within the DCO Site Boundary to avoid or preserve archaeological remains, the magnitude of impact on such remains would be reduced such that the residual effect would not be considered significant.

8.9.2 Where impacts on archaeological remains cannot be avoided, implementation of Additional Mitigation based on archaeological investigation and recording will not result in the magnitude of impacts on archaeological remains being reduced as the excavation, recording, and publication of the archaeological features will not compensate for the loss of remains, which are considered a finite resource. There will, therefore, still be a number of significant impacts, although these will be no greater than Moderate Adverse. Residual effects arising from the construction, operation and decommissioning phases are shown in **Table 8-10**, **Table 8-11** and **Table 8-12** respectively.

8.9.3 The majority of significant effects identified due to change to the settings of designated and non-designated built heritage assets are temporary effects during the construction period, generally associated with the siting of laydown, parking and welfare areas, and working areas in combination with the open-cut pipeline trench within the setting of heritage assets. No Additional Mitigation is proposed in respect of these effects, which would be transient and would reduce as construction progresses and the open-cut pipe trench is backfilled. Following decommissioning, the land will be returned to existing uses and these effects will cease. Therefore, temporary residual significant effects remain and are shown in **Table 8-10**. These include temporary effects related to pipeline construction activities within the settings of the grade II* Church of St Edmund in Riby [129] (pipeline section 2), the grade II listed Manor House at Barnoldby le Beck [270] (pipeline section 3) and the grade II listed Ashleigh Farm in Theddlethorpe [580] (pipeline section 5, Theddlethorpe Facility Option 2), and the non-designated Dicote House [590] (Theddlethorpe Facility Option 2).

8.9.4 Significant residual effects have been identified due to changes in the setting of one designated heritage asset during operation. These relate to the presence of the

Theddlethorpe Facility Option 2 within the direct setting of the grade II listed Ashleigh Farm [580]. Additional Mitigation such as screening measures is not recommended as this would likely amplify the presence of the Theddlethorpe Facility rather than reduce visual impact. Therefore, the effect remains significant and is shown in **Table 8-11**. Following decommissioning, the land will be returned to existing uses; this effect will cease, and the baseline conditions will be restored.

- 8.9.5 No significant effects on historic landscape character zones have been identified due to construction, operation or decommissioning of the Proposed Development.
- 8.9.6 In the event that as yet unidentified archaeological remains are encountered within the DCO Site Boundary and are removed by the construction of the Proposed Development, a range of residual effects would result. Depending on the value of the remains, these residual effects could be significant.
- 8.9.7 In terms of the test set out at paragraphs 199-203 of the NPPF (Ref 8-8) the significant and non-significant residual effects identified in this ES Chapter are considered to amount to less than substantial harm (see the Planning Statement, *Application Document 7.1*).

Assessment of Residual Effects: Construction Phase

- 8.9.8 There would be residual significant effects on buried archaeological remains at three sites (**Table 8-10**) due to the construction of the Proposed Development. These relate to direct physical permanent impacts as a result of the construction of pipeline section 2 ([125], [105], [129]). There would be residual significant effects on designated and non-designated built heritage assets due to construction of sections 3 ([270], [282]) and 5 ([580]) of the pipeline, and due to construction of the Theddlethorpe Facility Option 2 ([580], [590]). For conciseness, the construction residual effects table includes only those heritage assets where an impact is identified; heritage assets where no impact is identified, and therefore where there would be a neutral effect due to construction of the Proposed Development, are omitted.

Assessment of Residual Effects: Operational Phase

- 8.9.9 There would be residual significant effects on the setting of one designated heritage asset (the grade II listed Ashleigh Farm [580]) due to operation of the Proposed Development (see paragraph 8.9.4 above) (**Table 8-11**). For completeness, all operational buildings and structures, following the completion of the construction phase, including the Immingham and Theddlethorpe Facilities and the Block Valve Stations, are considered in the operational residual effects table, whether there is an impact or change assessed or not.

Assessment of Residual Effects: Decommissioning Phase

- 8.9.10 There would be no residual significant effects due to the decommissioning of the Proposed Development (**Table 8-12**). For completeness, all operational buildings and structures, including the Immingham and Theddlethorpe Facilities and the Block Valve Stations, are considered in the decommissioning residual effects table, whether there is an impact or change assessed or not.

Table 8-10: Summary of Construction Phase Residual Effects

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
026	Low	<u>Construction Compound North</u> Direct physical permanent impact on any buried archaeological remains relating to or obscured by traces of former ridge and furrow cultivation and an undated circular feature, due to topsoil stripping of compound area.	Medium	Minor adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects	Medium	Minor adverse (Not Significant)
009, 010	Medium	<u>Immingham Facility</u> Direct physical permanent impact on buried archaeological remains of Iron Age and Roman settlement west of Rosper Road, due to construction of the Immingham Facility, connection to Section 1 of the pipeline and associated temporary working area.	Low	Minor adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects	Low	Minor adverse (Not Significant)
084	Very Low	<u>Immingham Facility</u> Direct physical permanent impact on any surviving buried archaeological remains relating to the	High	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce	High	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		site of a modern demolished chapel.			the significance of effects		
091	Low	<u>Immingham Facility</u> Direct physical permanent impact upon geoarchaeological remains associated with the buried former prehistoric shoreline west of Rosper Road.	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects	Low	Negligible adverse (Not Significant)
025	Low	<u>Pipeline – Section 1</u> Direct physical impact on any buried archaeological remains associated with a possible medieval farmstead north east of Houlton’s Covert.	Medium	Minor adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects	Medium	Minor adverse (Not Significant)
022, 030; APS_48	Low	<u>Pipeline – Section 1</u> Direct physical permanent impact on any buried archaeological remains relating to or obscured by areas of levelled former ridge and furrow cultivation, north and west of Immingham.	Medium	Minor adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Medium	Minor adverse (Not Significant)
061	Very Low	<u>Pipeline – Section 1</u>	Low	Negligible adverse	Archaeological investigation prior to or during	Low	Negligible adverse

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		Direct physical permanent impact on any buried archaeological remains relating to the historic road marked on early edition OS maps and/or mentioned in historic documents.			construction, though noting this does not reduce the significance of effects.		(Not Significant)
628	Very Low / Low	<u>Pipeline – Section 1</u> Direct physical permanent impact on any buried archaeological remains due to excavations for HDD crossing of the watercourse south of Houlton’s Covert.	Very Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Very Low	Negligible adverse (Not Significant)
052	Low	<u>Pipeline – Section 1</u> Temporary construction activities within the setting of the Edwardian Habrough school which affect views of agricultural land to the southeast.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
055	Low	<u>Pipeline – Section 1</u> Temporary construction activities within the setting of Luxmore Farm which affect part of the farmland setting of the asset.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
125	Medium	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains relating to historic settlement at Roxton.	Medium	Moderate adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Medium	Moderate adverse (Significant)
124	Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains relating to or obscured by several areas of levelled ridge and furrow cultivation at Roxton Farm.	Medium	Minor adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Medium	Minor adverse (Not Significant)
198	Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains relating to a former field system or enclosures southeast of Roxton.	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Low	Negligible adverse (Not Significant)
105	Medium	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains	Medium	Moderate adverse	Archaeological investigation prior to or during construction,	Medium	Moderate adverse (Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		relating to a former field system or enclosures southeast of Greenlands Farm.			though noting this does not reduce the significance of effects.		
194	Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains and geoarchaeological remains south of North Beck Drain.	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Low	Negligible adverse (Not Significant)
APS_40	Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains relating to an area of former ridge and furrow north of Riby Road.	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Low	Negligible adverse (Not Significant)
197, 123	Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains relating to cropmark boundaries and enclosures and ridge and levelled furrow cultivation southeast of Riby.	Medium	Minor adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Medium	Minor adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
APS_37	Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on earthwork remains of a leat associated with an undated possible moated site visible on aerial photographs east of The Lindens, Riby.	Low	Negligible adverse	Archaeological investigation and recording prior to or during construction	Low	Negligible adverse (Not Significant)
139 – 142, 187	Very Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains relating to a series of post-medieval or modern extraction pits and landfill sites in Aylesby and Laceby.	Very Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Very Low	Negligible adverse (Not Significant)
104	Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried archaeological remains relating to early road construction or possible roadside activities at Barton Street.	Very Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Very Low	Negligible adverse (Not Significant)
168, 174, 175	Low	<u>Pipeline – Section 2</u> Direct physical permanent impact on any buried	Very Low	Negligible adverse	Archaeological investigation prior to or during construction,	Very Low	Negligible adverse

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		archaeological remains relating to early road construction at Caistor Road, Riby Road and Keelby Road.			though noting this does not reduce the significance of effects.		(Not Significant)
129	High	<u>Pipeline – Section 2</u> Temporary construction activities within views towards the Grade II* Church of St Edmund in Riby.	Low	Moderate adverse	None proposed	Low	Moderate adverse (Significant)
147	Low	<u>Pipeline – Section 2</u> Temporary construction activities which affect part of the farmland setting of Greenland Farm.	Medium	Minor adverse	None proposed	Medium	Minor adverse (Not Significant)
303	High	<u>Pipeline – Section 3</u> Temporary construction activities which affect part of the landscape setting of the Scheduled Civil War fort north-east of Walk Farm.	Very Low	Minor adverse	None proposed	Very Low	Minor adverse (Not Significant)
204	Low	<u>Pipeline – Section 3</u> Direct physical permanent impact upon potential geoarchaeological buried remains associated with	Very Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce	Very Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		the floodplain of Laceby Beck.			the significance of effects.		
244, 246, 248, 250, 251, 252, APS_18, APS_31, APS_30, APS_29	Low	<u>Pipeline – Section 3</u> Direct physical permanent impact on any buried archaeological remains associated with or obscured by areas of former ridge and furrow cultivation around Welbeck Hill, Ashby cum Fenby, Barnoldby le Beck, Brigsley. Grainsby. Haverby cum Beesby and Ludborough.	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Low	Negligible adverse (Not Significant)
205	Low	<u>Pipeline – Section 3</u> Direct physical permanent impact upon potential geoarchaeological buried remains associated with the floodplain of Waithe Beck.	Very Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Very Low	Negligible adverse (Not Significant)
215	Low	<u>Pipeline – Section 3</u> Direct physical permanent impact on any buried archaeological remains relating to a possible Romano-British field	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce	Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		system and vineyard at North Thoresby.			the significance of effects.		
APS_21	Low	<u>Pipeline – Section 3</u> Direct physical permanent impact on any archaeological remains relating to crop marked enclosures southeast of Autby Park.	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Low	Negligible adverse (Not Significant)
APS_17, APS_19, APS_20	Low	<u>Pipeline – Section 3</u> Direct physical permanent impact on any archaeological remains relating to crop marked enclosures at Damwells Farm, Cold Harbour Farm and south of Station Road, Ludborough.	Medium	Minor adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Medium	Minor adverse (Not Significant)
270, 282	Medium	<u>Pipeline – Section 3</u> Temporary construction activities will have a direct physical impact upon the area of surviving parkland at Barnoldby le Beck Park, resulting in further loss of its historic interest and its aesthetic value, prior to reinstatement and alter part of the setting of	Medium	Moderate adverse	None proposed	Medium	Moderate adverse (Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		the Grade II Listed Manor House, Barnoldby le Beck.					
278	Low	<u>Pipeline – Section 3</u> Temporary construction activities will alter part of the farmland setting of Moorhouse Farm, Brigsley.	Medium	Minor adverse	None proposed	Medium	Minor adverse (Not Significant)
389	Low	<u>Pipeline – Section 3</u> Temporary construction activities will alter part of the farmland setting of Westfield Farm, North Thoresby.	Medium	Minor adverse	None proposed	Medium	Minor adverse (Not Significant)
266	High	<u>Pipeline – Section 3</u> Temporary construction activities will affect views towards the Grade I Listed Church of St Helen in Barnoldby le Beck.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
294	Low	<u>Pipeline – Section 3</u> Temporary construction activities will alter part of the farmland setting of Chestnut Farm, Ashby cum Fenby.	Low	Negligible adverse	None proposed	Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
420	Medium	<u>Pipeline – Section 4</u> Direct physical permanent impact on any buried archaeological remains associated with an area of early medieval and later settlement at North Cockerington.	Low	Minor adverse	Archaeological investigation and recording prior to and/or during construction.	Low	Minor adverse (Not Significant)
453	Low	<u>Pipeline – Section 4</u> Temporary effect on setting of non-designated mill mound earthwork at North Cockerington.	Low	Negligible adverse	None proposed	Low	Negligible adverse (Not Significant)
423, 424, 425, 426, 713 APS_08, _09, _12, _15, _17	Low	<u>Pipeline – Section 4</u> Direct physical permanent impact on any buried archaeological remains associated with or obscured by areas of former ridge and furrow cultivation at Grove Farm, Utterby; Grange Farm, Yarburgh; north and south of Louth Canal; South Cockerington and Grimoldby.	Low	Negligible adverse	Archaeological investigation and recording prior to and/or during construction	Low	Negligible adverse (Not Significant)
APS_13	Low	<u>Pipeline – Section 4</u> Direct physical permanent impact on any buried	Low	Negligible adverse	Archaeological investigation and recording prior to	Low	Negligible adverse

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		archaeological remains relating to an undated enclosure north of Louth Canal.			and/or to during construction		(Not Significant)
APS_11	Low	<u>Pipeline – Section 4</u> Direct physical permanent impact on any buried archaeological remains relating to a possible Iron Age ‘banjo’ enclosure south of Louth Canal.	Medium	Minor adverse	Archaeological investigation and recording prior to and/or to during construction	Medium	Minor adverse (Not Significant)
APS_14	Very Low	<u>Pipeline – Section 4</u> Direct physical permanent impact on any buried archaeological remains relating to a post-medieval field boundary off Brackenborough Road.	Low	Negligible adverse	Archaeological investigation and recording prior to and/or to during construction	Low	Negligible adverse (Not Significant)
492	Low	<u>Pipeline – Section 4</u> Direct physical permanent impact on any buried archaeological remains relating to the demolished 19th century Glebe Farm, South Crockerington.	Very Low	Negligible adverse	Archaeological investigation and recording prior to and/or to during construction	Very Low	Negligible adverse (Not Significant)
503	Low	<u>Pipeline – Section 4</u> Direct physical permanent impact on any buried archaeological remains	Low	Negligible adverse	Archaeological investigation and recording prior to	Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		relating to the demolished 19th century farmstead at Hedge Ends, Grimoldby.			and/or to during construction		
608	Very Low	<u>Pipeline – Section 4</u> Direct physical permanent impact on any archaeological remains relating to the demolished Great North Railway at Grimoldby.	Very Low	Negligible adverse	Archaeological investigation and recording prior to and/or to during construction	Very Low	Negligible adverse (Not Significant)
506	Low	<u>Pipeline – Section 4</u> Temporary construction activities will alter part of the farmland setting of Yew Tree Cottage.	Medium	Minor adverse	None proposed	Medium	Minor adverse (Not Significant)
487	Low	<u>Pipeline – Section 4</u> Temporary construction activities will alter part of the farmland setting of Pear Tree Farm.	Low	Negligible adverse	None proposed	Low	Negligible adverse (Not Significant)
486	Low	<u>Pipeline – Section 4</u> Temporary construction activities will affect part of the farmland setting of Chequers Farm.	Low	Negligible adverse	None proposed	Low	Negligible adverse (Not Significant)
507	Low	<u>Pipeline – Section 4</u> Temporary construction activities will alter part of	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		the farmland setting to the east of Woodhouse Farm.					
498	Low	<u>Pipeline – Section 4</u> Temporary construction activities will alter part of the farmland setting to the west of Highfield House.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
512	Low	<u>Pipeline – Section 4</u> Temporary construction activities will alter part of the farmland setting to the west of Corner Farm.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
502	Low	<u>Pipeline – Section 4</u> Temporary construction activities will alter part of the farmland setting to the west of Pick Hill Farm.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
666	Low	<u>Pipeline – Section 4</u> Temporary construction activities will obscure the setting of the White Hart Inn and post office.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
544, APS_06,	Low	<u>Pipeline – Section 5</u> Direct physical permanent impact on any buried archaeological remains relating to former toft earthworks and	Medium	Minor adverse	Archaeological investigation and recording prior to and/or to during construction	Medium	Minor adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		cropmarks at Theddlethorpe All Saints.					
544, 549, APS_02, _05, _06, _08	Low	<u>Pipeline – Section 5</u> Direct physical permanent impact on any buried archaeological remains associated with or obscured by areas of former ridge and furrow cultivation in Saltfleetby; at Walk Farm, Great Carlton; and Theddlethorpe All Saints.	Medium	Minor adverse	Archaeological investigation and recording prior to and/or to during construction	Medium	Minor adverse (Not Significant)
612	Very Low	<u>Pipeline – Section 5</u> Direct physical permanent impact on any buried archaeological remains relating to WW2 aircraft obstructions at Theddlethorpe All Saints.	Very Low	Negligible adverse	Archaeological investigation and recording prior to and/or to during construction	Very Low	Negligible adverse (Not Significant)
541, 616	Low	<u>Pipeline – Section 5</u> Direct physical permanent impact on any buried archaeological remains relating to undated pit features and a medieval pottery scatter at Railway Farm, Theddlethorpe All Saints.	Low	Negligible adverse	Archaeological investigation and recording prior to and/or to during construction	Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
622	Low	<u>Pipeline – Section 5</u> Direct physical permanent impact on any buried archaeological remains associated with an undated enclosure west of Theddlethorpe Gas Terminal.	Low	Minor adverse	Archaeological investigation and recording prior to and/or to during construction	Low	Minor adverse (Not Significant)
APS_04	Very Low	<u>Pipeline – Section 5</u> Direct physical permanent impact on any buried archaeological remains relating to a post-medieval field boundary north of Walk Farm, Great Carlton parish.	Low	Negligible adverse	Archaeological investigation and recording prior to and/or to during construction	Low	Negligible adverse (Not Significant)
580	Medium	<u>Pipeline – Section 5</u> Temporary construction activities will alter part of the farmland setting of the grade II listed 19th century Ashleigh Farm.	Medium	Moderate adverse	None proposed	Medium	Moderate adverse (Significant)
590	Low	<u>Pipeline – Section 5</u> Temporary construction activities will alter part of the farmland setting of Dicote House.	Medium	Minor adverse	None proposed	Medium	Minor adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
593	Low	<u>Pipeline – Section 5</u> Temporary construction activities will alter part of the farmland setting of the 19th century farmstead at The Poplars.	Medium	Minor adverse	None proposed	Medium	Minor adverse (Not Significant)
596	Low	<u>Pipeline – Section 5</u> Temporary construction activities will alter part of the farmland setting of Lordship Farm.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
575	Low	<u>Pipeline – Section 5</u> Temporary construction activities will alter part of the farmland setting of Grange Farm.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
587	Low	<u>Pipeline – Section 5</u> Temporary construction activities will remove part of the farmland setting of the 19 th century farmstead at Little Dams, Theddlethorpe All Saints, slightly affecting the ability to interpret its heritage value.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
197, 123	Low	<u>Block Valve Station – Washingdales Lane</u>	Medium	Minor adverse	Archaeological investigation prior to or during	Medium	Minor adverse

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		Direct physical permanent impact on any buried archaeological remains relating to cropmark boundaries and enclosures and ridge and furrow cultivation southeast of Riby.			construction, though noting this does not reduce the significance of effects.		(Not Significant)
APS_25	Low	<u>Block Valve station – Thoroughfare Lane</u> Direct physical permanent impact on any buried archaeological remains associated with or obscured by an area of former ridge and furrow cultivation.	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Low	Negligible adverse (Not Significant)
APS_12	Low	<u>Block Valve station – Thoroughfare Lane</u> Direct physical permanent impact on any buried archaeological remains associated with or obscured by an area of former ridge and furrow cultivation.	Low	Negligible adverse	Archaeological investigation prior to or during construction, though noting this does not reduce the significance of effects.	Low	Negligible adverse (Not Significant)
591	Low	<u>Theddlethorpe Facility – Option 1</u>	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		Temporary changes to the setting of North End Farm during construction.					
600	Low	<u>Theddlethorpe Facility – Option 1</u> Temporary changes to the setting of the 19th century Sand Hills Farm during construction.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
580	Medium	<u>Theddlethorpe Facility – Option 2</u> Temporary changes to the setting of Grade II listed Ashleigh Farm during construction.	Medium	Moderate adverse	None proposed	Medium	Moderate adverse (Significant)
590	Low	<u>Theddlethorpe Facility – Option 2</u> Temporary changes to the setting of Dicote House during construction.	Medium	Moderate adverse	None proposed	Medium	Moderate adverse (Significant)
601	Low	<u>Dune Isolation Valve</u> Temporary changes to the setting of Bleak House during construction.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
Unidentified Archaeological Remains	Very Low to High	<u>All sections</u> Direct physical permanent impact on any as yet unidentified archaeological remains	Very Low to High	Negligible adverse to Major Adverse	Archaeological investigation prior to or during construction, though noting this	Very Low to High	Negligible adverse to Major adverse

Receptor	Sensitivity	Description of Potential Impact	Potential Effect		Mitigation Measure(s)	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		within the DCO Site Boundary.			does not reduce the significance of effects.		(Not Significant to Significant)

Table 8-11: Summary of Operational Phase Residual Effects

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
035, 024	High	<u>Immingham Facility</u> Potential views of the Proposed Development from the Grade I Listed Church of St Andrew, Immingham, are likely to blend into the existing industrial landscape. Operation will have no impact on the setting of the church, or the grade II listed medieval cross base [024] in the churchyard.	No change	Neutral	n/a	No change	Neutral (Not Significant)
036	High	<u>Immingham Facility</u> Potential views of the Proposed Development from the Grade I Listed Church of St Denys, North Killingholme, will blend with the existing view of the industrial skyline. Operation	No change	Neutral	n/a	No change	Neutral (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		will have no impact on the setting of the church.					
n/a	n/a	<u>Block Valve Stations</u> The Block Valve Stations are not considered to fall within the setting of any designated or non-designated built heritage assets. Operation of these elements of the Proposed Development will have no impact upon these types of assets.	No change	Neutral	n/a	No change	Neutral (Not Significant)
580	Medium	<u>Theddlethorpe Facility – Option 1</u> Changes within the landscape not anticipated to alter the setting nor affect the ability to interpret the heritage value of the grade II listed Ashleigh Farm.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)
591, 600, 601	Low	<u>Theddlethorpe Facility – Option 1</u> Changes within the landscape not anticipated to alter setting nor affect the ability to interpret heritage value of North End Farm, Sand Hills Farm and Bleak House.	Very Low	Negligible adverse	None proposed	Very Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
580	Medium	<u>Theddlethorpe Facility – Option 2</u> Changes to the setting of Grade II listed Ashleigh Farm which impact integrity and diminish the contribution of setting to significance.	Medium	Moderate adverse	None proposed	Medium	Moderate adverse (Significant)
590	Low	<u>Theddlethorpe Facility – Option 2</u> Changes to the setting of Dicote House which alter setting and affect ability to appreciate heritage value.	Medium	Minor adverse	None proposed	Medium	Minor adverse (Not Significant)

Table 8-12: Summary of Decommissioning Phase Residual Effects

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
035, 024	High	<u>Immingham Facility</u> Potential views of the Proposed Development from the Grade I Listed Church of St Andrew, Immingham, are likely to blend into the existing industrial landscape. Decommissioning will have no impact on the setting of the church, or the grade II listed medieval cross base [024] in the churchyard.	No change	Neutral	n/a	No change	Neutral (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
036	High	<u>Immingham Facility</u> Potential views of the Proposed Development from the Grade I Listed Church of St Denys, North Killingholme will blend with the existing view of the industrial skyline. Decommissioning of the Proposed Development will have no impact on the setting of the church.	No change	Neutral	n/a	No change	Neutral (Not Significant)
n/a	n/a	<u>Block Valve Stations</u> The Block Valve Stations are not considered to fall within the setting of any designated or non-designated built heritage assets. Decommissioning of these elements of the Proposed Development will have no impact upon these types of assets.	No change	Neutral	n/a	No change	Neutral (Not Significant)
580	Medium	<u>Theddlethorpe Facility – Option 1</u> Removal of the above ground installations would remove the negligible operational effects upon the grade II listed Ashleigh Farm. This would result in reinstatement of the baseline conditions.	Very Low	Negligible adverse	n/a	Very Low	Negligible adverse (Not Significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
591, 600, 601	Low	<u>Theddlethorpe Facility – Option 1</u> Removal of the above ground installations would remove the negligible operational effects upon North End Farm, Sand Hills Farm and Bleak House. This would result in reinstatement of the baseline conditions.	Very Low	Negligible adverse	n/a	Very Low	Negligible adverse (Not Significant)
580	Medium	<u>Theddlethorpe Facility –Option 2</u> Removal of the above ground installations and return to agricultural land use would remove the moderate adverse effect upon the grade II listed Ashleigh Farm This would result in reinstatement of the baseline conditions.	Very Low	Negligible adverse	n/a	Very Low	Negligible adverse (Not Significant)
590, 593	Low	<u>Theddlethorpe Facility –Option 2</u> Removal of the above ground installations and return to agricultural land use would remove the moderate adverse effect upon Dicote House and The Poplars. This would result in reinstatement of the baseline conditions.	Very Low	Negligible adverse	n/a	Very Low	Negligible adverse (Not Significant)

8.10 Monitoring

- 8.10.1 The archaeological mitigation works (including protection measures for heritage assets and preservation in situ of archaeological remains) would be undertaken as advanced works (the majority of the archaeological fieldwork and recording) and at the construction works stages. The archaeological mitigation works would be monitored to ensure compliance with the OEMP, the Outline Archaeological Mitigation Strategy (see section 8.8 above) and any subsequent revisions, and to ensure the works are undertaken to the appropriate standards.
- 8.10.2 The OEMP and the Outline Archaeological Mitigation Strategy set out appropriate measures to be undertaken during the preliminary works and construction stages to ensure that the mitigation measures embedded in the Scheme design are appropriately implemented.

8.11 Cumulative Effects

Assessment of Intra-Project Effects

- 8.11.1 The assessment of effects on heritage assets has taken into account potential visual impacts and noise and vibration impacts. As this is already the case, there are not considered to be any cumulative effects on historic environment receptors from intra-project effects.

Assessment of Inter-Project Effects

- 8.11.2 The committed developments listed in *ES Volume II, Chapter 20: Cumulative Effects Assessment (Application Document 6.2.20)* have been reviewed and assessed for any cumulative effects on the settings of designated and non-designated heritage assets, taking into consideration the effects from the Proposed Development and the nature of the assets identified. The results of this assessment are included in **Table 8-13** below.
- 8.11.3 Due to the distance of these projects from the Proposed Development, the intervening topography and vegetation, or the fact they do not have effects on the settings of assets affected by the Proposed Development, there are not considered to be any cumulative effects on the setting of designated and non-designated heritage assets, or changes to the contribution that the assets' settings make to the significance of each individual heritage assets, as identified in this ES chapter, as a result of inter-project effects.

Table 8-13 Assessment of Potential for Cumulative Effects with Other Projects

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
Nationally Significant Infrastructure Projects				
#DCO-5	TR030007	<u>Immingham Eastern Ro-Ro Terminal</u>	Pre-examination stage, construction not likely to start until 2026 at earliest.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, located 1.5 km south-east of the Proposed Development, and screened by intervening development at Immingham, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#DCO-7	EN070006	<u>Humber Low Carbon Pipelines (previously developed by National Grid Ventures)</u>	At the pre-application stage, DCO submission expected Q3 of 2023.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, located 3.15 km north at the closest extent, and well screened by existing industrial development at Immingham, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#DCO-8	TR030008	<u>Immingham Green Energy Terminal (Associated British Ports)</u>	At the pre-application stage, Scoping Report submitted to the Planning	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
			Inspectorate on 30 August 2022.	distant, located 3 km east of the Proposed Development and well screened by existing industrial development surrounding the port and north of Immingham, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
North East Lincolnshire Council				
#NELC CULM-1	DM/0211/20 /REM	<u>Keigar Homes Ltd – Residential Development off Station Road, Habrough. Outline application for a residential development of up to 118 dwellings</u>	Approved – September 2021.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, located 1.4 km west of the Proposed Development, and well screened by the intervening A180 highway, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-2	DM/1175/17 /FUL	<u>Peter Ward Homes – Brocklesby Avenue Habrough Road Residential development for 145 dwellings</u>	Approved – 23 December 2019. Construction of this development has commenced.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore,

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
				there is no potential for inter-project cumulative effects.
#NELC CULM-3	DM/0696/19 /FUL	<u>Cyden Homes – Residential development at Midfield Road, Humberston.</u> Erection of 225 dwellings	Pending consideration – application validated 15 August 2019. Amended plans and information were submitted in May 2023.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant (8 km east of the Proposed Development) and well screened enough by existing residential development at Waltham and New Waltham that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-5	DM/1240/21 /FUL	<u>Barratt York – New Waltham Phase 2 Residential Development</u> Erection of 227 dwellings,	Approved – 24 August 2022.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant (3.3 km) east of the Proposed Development and well screened by existing development at Waltham, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-6	DM/0026/18 /FUL	<u>North Beck Energy Ltd – North Beck Energy Centre</u>	Approved – 12 October 2018.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
		Erect an Energy Recovery Facility with an electricity export capacity of up to 49.5MW		distant, located 3.5 km east of the Proposed Development, and well screened by existing development at Immingham to the west, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-7	DM/1145/19 /FUL	<u>Engie - NEL Energy Park</u> Construction and operation of an energy park comprising photovoltaic (PV) solar panels	Approved – 6 November 2020.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, the main site being 1.4 km from the Proposed Development and well screened by the intervening A180 highway, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-8	DM/0105/18 /FUL	<u>Engie – SHIIP Stallingborough Interchange</u> Hybrid application seeking outline consent with access, landscaping and scale to be considered for the development of a 62ha Business Park comprising up to 120,176 sq.m for B1 (Business), B2 (General	Approved – 12 October 2018.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant (2 km) from the Proposed Development, and well screened by the intervening A180 highway and development at Stallingborough, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
		Industrial) and B8 (Storage and Distribution		significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-9	DM/0198/20 /REM	<u>Cyden Homes – Proposed Residential Development at Land Off Larkspur Avenue</u> Reserved matters application following DM/0378/15/OUT (Outline planning application with means of access to be considered for the construction of up to 250 residential dwellings	Approved – 5 February 2021.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant (2 km) from the Proposed Development, and well screened by the intervening development at Healing, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-12	DM/0899/21 /FUL	<u>Grimsby Solar Farm – Aura Power</u>	Approved – 25 November 2022..	There is no overlap between the footprint of this project and that of the Proposed Development. The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-20	DM/0728/18 /OUT	<u>Brocklesby Estate – Residential Development on Land East of Stallingborough Road, Immingham.</u>	Approved – 12 November 2020.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is well screened by the intervening development at Immingham, the A180 and the A1173, that it is not included within the settings of any of

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
		Outline planning application for the development of up to 525 residential dwellings		the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-24	DM/0118/15 /OUT	<u>Monmouth Properties - Residential Development on Land at Toll Bar New Waltham.</u> Outline application with access to be considered for residential development (of up to 400 dwellings)	Granted at Appeal – 22 November 2017.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, located 3 km from the Site and well screened by existing residential development at Waltham, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-28	DM/0769/22 /FUL	<u>CHI Investments – The Willows</u> Construction of new foul sewer and associated works	Validated - 1 December 2022 - Pending Consideration.	There is no overlap between the footprint of this project and that of the Proposed Development. Because of the nature of the works, the project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-31	DM/1133/17 /OUT	<u>Humberside Land Developers Ltd - Residential Development in Laceby</u>	Approved – 5 August 2019.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant (900 m east of the Proposed

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
		Outline application for 152 dwellings		Development) and well screened by the intervening A18 Barton Street highway, it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-33	DM/1167/16 /FUL / AP/001/19	<u>Cyden Homes – Residential Development Land off Brigsley Road, Waltham</u> Hybrid application to include Full Planning for 194 dwellings (Appeal Allowed with Conditions – 6 November 2020. Conditions have	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, located 1.6 km from the Proposed Development at Waltham, it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NELC CULM-38	DM/0118/23 /FUL	<u>Land Developers (Lincs) Ltd – Residential Development at Land off Field Head Road, Laceby</u> Erection of 60 dwellings	Pending – validated 20 February 2023.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, located 800m from the Proposed Development, and well screened by the intervening A18 Barton Street highway, it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore,

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				there is no potential for inter-project cumulative effects.
#NELC CULM-39	DM/0261/23 /OUT	<u>Residential Development at Land off Waltham Road, Barnoldby</u> Outline erection of 42 dwellings	Pending – validated 28 March 2023.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant located at Waltham, it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
North Lincolnshire Council				
#NLC CULM-2	PA/2022/12 23	<u>Associated British Ports (ABP) – Land Adjacent to the Westgate Entrance, Port of Immingham</u> A hybrid application for port related employment uses.	Pending – validated 18 August 2022	There is no overlap between the footprint of this project and that of the Proposed Development. The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NLC CULM-3	PA/2022/15 48	<u>VPI Immingham - VPI Immingham Pilot Carbon Capture Plant</u> Planning permission to construct and operate a temporary pilot post-combustion	Approved with Conditions – 26 October 2022.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore,

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		carbon capture plant and associated infrastructure		there is no potential for inter-project cumulative effects.
#NLC CULM-4	PA/2022/62 8	<u>MF Strawson Limited – Residential Development at Main Road, Sturton</u> Hybrid application comprising full planning permission to erect 32 dwellings and outline planning permission for 85 dwellings	Approved – 23 March 2023.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, located 4.5km from the Proposed Development, and well screened by the intervening development that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NLC CULM-5	PA/2022/44 3	<u>Lightrock Power Ltd – Sweetbriar Farm</u> Planning permission for the installation of a solar photovoltaic array/solar farm & associated infrastructure.	Pending - validated 18 February 2022.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant, located 5 km from the Proposed Development, and well screened by the intervening development at Immingham, North Killingholme and South Killingholme that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NLC CULM-9	PA/SCO/20 22/13	<u>Orsted Gigastack Limited and Phillips 66 Limited – Gigastack Project</u>	Awaiting Scoping Opinion	Although there is no overlap between the boundary of this project and the Proposed Development, there is potential for inter-

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
		<p>EIA Scoping request for a 100MV hydrogen electrolyser together with an underground electrical cable connection to the Hornsea Two onshore substation, water discharge and a hydrogen export pipeline to the Humber Refinery.</p>		<p>project cumulative effects on one asset, archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] which extends into both site boundaries. The Proposed Development is assessed to have a Negligible adverse effect on the asset. The cumulative effect on the extensive former shoreline is also assessed as Negligible adverse (not significant). <i>The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i></p>
#NLC CULM-12	PA/2023/42 2	<p><u>Humber Zero Project – Phillips-66 Carbon Capture Plant</u> Planning permission for the construction and operation of a post-combustion carbon capture plant,</p>	Pending - Validated 16 March 2023.	<p>There is some overlap between the boundary of this project and the Proposed Development, at the site of the proposed Immingham facility and section 1 of the pipeline. There is potential for inter-project cumulative effects on one asset, archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] which extends into both site boundaries. Both proposals are assessed to have a Negligible adverse effect on the asset. The cumulative effect on the extensive former shoreline is also</p>

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
				<p>assessed as Negligible adverse (not significant). <i>The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i></p>
#NLC CULM-13	PA/2023/42 1	<p><u>Humber Zero Project – VPI Immingham LLP Carbon Capture Plant</u> Planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor .</p>	<p>Pending - Validated 8 March 2023. completed in 2028.</p>	<p>There is some overlap between the boundary of this project and the Proposed Development, at the site of the proposed Immingham facility and section 1 of the pipeline. There is potential for inter-project cumulative effects on two assets comprising buried archaeological remains which extend into both project boundaries, namely archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] and archaeological evidence of settlement dating from the Iron Age to Roman periods [009]. Both proposals are assessed to have a Negligible adverse effect on the former shoreline [091] asset and the cumulative effect on the extensive former shoreline is also assessed as Negligible adverse (not significant). Both proposals are assessed to have a Minor adverse effect on the settlement site [009] and the cumulative effect on the asset is also assessed as Minor adverse (not</p>

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
				significant). <i>The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i>
#NLC CULM-14	PA/SCO/20 23/1	<u>Associated British Ports – Immingham Onshore Wind</u> EIA Scoping request for Immingham onshore wind including up to three wind turbines (Immingham Dock Western Entrance, Humber Road, South Killingholme).	Opinion given – 20 June 2023	There is some overlap between the project boundary and the Proposed Development, east of Manby Road within pipeline section 1. There is potential for inter-project cumulative effects on two assets comprising buried archaeological remains which extend into both project boundaries, namely archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] and any archaeological evidence of a possible medieval farmstead [025]. The Proposed Development is assessed to have a Negligible adverse effect on the former shoreline [091] asset and the cumulative effect on the extensive former shoreline is also assessed as Negligible adverse (not significant). The Proposed Development is assessed to have a Minor adverse effect on the possible farmstead [025]. Although the details of the and the cumulative effect on the asset is also assessed as Minor adverse (not significant). <i>The project is not included</i>

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				<p><i>within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i></p>
#NLC CULM-15	PA/SCO/20 23/2	<p><u>Associated British Ports – Immingham Onshore Wind</u> EIA Scoping request for Immingham onshore wind including up to three wind turbines (Land Along Tracks, West Haven Way, South Killingholme).</p>	Validated 3 April 2023.	<p>There is some overlap between the project boundary and the Proposed Development, east of Manby Road within pipeline section 1. There is potential for inter-project cumulative effects on two assets comprising buried archaeological remains which extend into both project boundaries, namely archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] and any archaeological evidence of a possible medieval farmstead [025]. The Proposed Development is assessed to have a Negligible adverse effect on the former shoreline [091] asset and the cumulative effect on the extensive former shoreline is also assessed as Negligible adverse (not significant). The Proposed Development is assessed to have a Minor adverse effect on the possible farmstead [025] and the cumulative effect on the asset is also assessed as Minor adverse (not significant). <i>The project is not included within the settings of any of the assets considered in this assessment, nor does it</i></p>

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
				<i>make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i>
#NLC CULM-16	PA/2023/61 2	<u>VEV Services Limited - Vitol (VPI Immingham)</u> Planning permission for the installation of a 71.28 kwp solar carport	Pending - Validated 27 March 2023	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently screened by the existing industrial development at Immingham that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NLC CULM-17	PA/2018/91 8	Planning permission to construct a new gas-fired power station with a gross electrical output of up to 49.9 megawatts	Approved – 07 September 2018	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently screened by the existing industrial development at Immingham that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NLC CULM-18	PA/SCO/20 22/12	<u>Uniper - Humber Hub Blue Project</u> EIA scoping request for the Humber Hub Blue Project; a	Pending – validated 22 November 2022.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant and screened by the existing

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
		blue hydrogen production facility (HPF) on the south bank of the Humber to supply low-carbon hydrogen via a pipeline to industrial and power customers.		industrial development at Immingham that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NLC CULM-19	PA/2023/50 2	<u>Able UK Limited – Site Enabling Works, Land East of Rosper Road, Killingholme. Full planning application for enabling works on land east of Rosper Road, Killingholme,</u>	Pending - validated 23 March 2023	There is no overlap between the footprint of this project and that of the Proposed Development. The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NLC CULM-27	PA/2021/15 25	<u>Able UK Limited - Monopole Manufacturing Facility at Land at Able Marine Energy Park, south of Station Road, South Humber Bank, South Killingholme</u> Planning permission to erect a monopole manufacturing facility to provide an offshore wind turbine monopile foundation manufacturing facility.	Approved – 08 August 2022	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently distant and screened by the existing industrial development at Immingham that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#NLC CULM-9	PA/SCO/20 22/13	<u>Orsted Gigastack Limited and Phillips 66 Limited – Gigastack Project</u>	Awaiting Scoping Opinion	Although There is some overlap between the boundary of this project boundary and the Proposed Development, at the site of

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
		<p>EIA Scoping request for a 100MV hydrogen electrolyser together with an underground electrical cable connection to the Hornsea Two onshore substation, water discharge and a hydrogen export pipeline to the Humber Refinery.</p>		<p>the proposed Immingham facility. , there is potential for inter-project cumulative effects on one asset, archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] which extends into both site boundaries. The Proposed Development is assessed to have a Negligible adverse effect on the asset. Although the details of the hydrogen production proposal are not certain, it is considered that the cumulative effect on the extensive former shoreline would be Negligible adverse (not significant). <i>The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i></p>
#NLC CULM-12	PA/2023/42 2	<p><u>Humber Zero Project – Phillips-66 Carbon Capture Plant</u> Planning permission for the construction and operation of a post-combustion carbon capture plant,</p>	Pending - Validated 16 March 2023.	<p>There is some overlap between the boundary of this project and the Proposed Development, at the site of the proposed Immingham facility and section 1 of the pipeline. There is potential for inter-project cumulative effects on one asset, archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] which extends into both site boundaries. Both proposals are</p>

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
				<p>assessed to have a Negligible adverse effect on the asset. Given the extensive nature of the former shoreline and the limited area of impact, it is considered that the cumulative effect on the extensive former shoreline would be Negligible adverse (not significant). <i>The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i></p>
#NLC CULM-13	PA/2023/42 1	<p><u>Humber Zero Project – VPI Immingham LLP Carbon Capture Plant</u> Planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor .</p>	<p>Pending - Validated 8 March 2023. completed in 2028.</p>	<p>There is some overlap between the boundary of this project and the Proposed Development, at the site of the proposed Immingham facility and section 1 of the pipeline. There is potential for inter-project cumulative effects on two assets comprising buried archaeological remains which extend into both project boundaries, namely archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] and archaeological evidence of settlement dating from the Iron Age to Roman periods [009]. Both proposals are assessed to have a Negligible adverse effect on the former shoreline [091] asset. Given the extensive nature of the former shoreline and the limited area of impact, it is</p>

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
				<p>considered that the cumulative effect on the extensive former shoreline would be Negligible adverse (not significant). Both proposals are assessed to have a Minor adverse effect on the settlement site [009]. Given the limited area of impact for the proposals, it is considered that the cumulative effect on the asset is also assessed as Minor adverse (not significant). <i>The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i></p>
#NLC CULM-14	PA/SCO/20 23/1	<p><u>Associated British Ports – Immingham Onshore Wind</u> EIA Scoping request for Immingham onshore wind including up to three wind turbines (Immingham Dock Western Entrance, Humber Road, South Killingholme).</p>	Opinion given – 20 June 2023	<p>There is some overlap between the project boundary and the Proposed Development, east of Manby Road within pipeline section 1. There is potential for inter-project cumulative effects on two assets comprising buried archaeological remains which extend into both project boundaries, namely archaeological evidence of the ancient foreshore of the River Humber and associated palaeochannels (ancient tributaries) [091] and any archaeological evidence of a possible medieval farmstead [025]. The Proposed Development is assessed to have a Negligible adverse effect on the former shoreline [091] asset. Although the details of the wind turbine</p>

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
<p>proposal are not certain, it is considered that the cumulative effect on the extensive former shoreline is also assessed as Negligible adverse (not significant). The Proposed Development is assessed to have a Minor adverse effect on the possible farmstead [025]. Although the details of the wind turbine proposal are not certain, it is considered that the cumulative effect on the asset would be Minor adverse (not significant). <i>The project is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</i></p>				
<p>East Lindsey District Council</p>				
<p>#ELDC CULM-1</p>	<p>N/085/0088 3/15</p>	<p><u>Housing Development – Louth Road</u> A hybrid application consisting of outline erection of up to 300 dwellings</p>	<p>Approved – 22 November 2017.</p>	<p>There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently well distanced, located 3.5 km east of the proposed development, and screened by intervening development at Holton le Clay that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.</p>

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
#ELDC CULM-2	N/133/0141 3/21	<u>Cyden Homes – Residential development at Ludborough Road</u> Application for the erection of 198no. dwellings	Pending decision – validated 1 July 2021.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently screened by intervening hedgerows and the A16 Louth Road highway that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#ELDC CULM-15	N/105/0105 5/22	Charterpoint (Louth) Limited – Daisy Way, Louth Outline erection of up to 90no. dwellings	Pending – appeal date unknown.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently well distanced, located 1.1 km west of the Proposed Development, and screened by intervening development at Louth that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#ELDC CULM-18	N/019/0145 1/20	<u>Brackenborough Ltd – Brackenborough Hotel</u> Change of use of land for the siting of 114 no. holiday lodges.	Approved – 19 February 2021.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently well distanced, located 2.2 km west of the Proposed Development, and screened by intervening hedgerows and development that it is not included within the settings of any of the assets considered in this

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
				assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#ELDC CULM-19	N/092/0101 7/20	<u>Lovell – Residential Development Chestnut Drive</u> Outline erection of up to 141 no. dwellings	Approved – 15 June 2021.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently well distanced, located 2.7 km west of the Proposed Development, and screened by intervening hedgerows and topography that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#ELDC CULM-22	N/085/0121 5/21	<u>Homes by Gleeson – Residential Development Louth Road, Holton Le Clay</u> Application for approval of reserved matters (appearance, landscaping, layout and scale) for 233no. dwellings	Approved – 30 June 2022. Development not yet built.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently well distanced, located 3.5 km east of the proposed development, and screened by intervening development at Holton le Clay that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
#ELDC CULM-31	N/105/0196 1/19	<u>Gleeson - Proposed Residential Brackenborough Road, Louth</u> Erection of 237no. dwellings,	Approved - 26 March 2021	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently well distanced, located 1.8 km west of the Proposed Development, and screened by intervening hedgerows and topography, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
#ELDC CULM-32	N/105/0059 3/19	<u>Cyden Homes – Proposed Residential Development at The Park, Eastfield Road, Louth.</u> Erection of 60no. houses in total	Approved - 9 August 2019	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently well distanced, located 2.4 km west of the Proposed Development, and screened by intervening hedgerows and topography, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
Lincolnshire County Council				
#LCC CULM -7	PL/0037/23	<u>Manby BGE Ltd - Anaerobic Digester and Fertiliser Production Plant</u> For an anaerobic digester and fertiliser production plant at	Validated – 19 May 2023. No decision yet.	There is no overlap between the footprint of this project and that of the Proposed Development. The project is sufficiently well distanced, located 3.6 km west of the Proposed Development and screened by

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Include in Historic Environment Inter Project Cumulative Assessment
		Land at Manby Airfield, off Manby Middlegate, Manby.		intervening existing development at Manby, that it is not included within the settings of any of the assets considered in this assessment, nor does it make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.
West Lindsey District Council				
No developments identified within West Lindsey District Council.				
Wider Viking CCS Project				
#OFF CULM-1	N/A	<u>Wider Viking CCS Project</u> – offshore elements including refurbishment of the existing offshore Lincolnshire Offshore Gas Gathering system (LOGGS) Pipeline and a newly installed spur pipeline, to the offshore injection facilities for permanent storage.	Pre-application stage, Non-statutory Scoping Report currently being prepared (May 2023)	These wider elements of the project are not included within the settings of any of the assets considered in this assessment, nor do they make any other contribution to the significance of those assets. Therefore, there is no potential for inter-project cumulative effects.

8.12 Summary

Scope of assessment

- 8.12.1 The historic environment assessment has considered temporary and permanent likely significant effects arising from impacts during construction, operation and decommissioning of the Proposed Development. Effects have been assessed on archaeological remains, historic assets and the historic landscape character, within a study area relevant to the nature of the impacts and the heritage assets likely to be affected.
- 8.12.2 Temporary changes to the settings of designated and non-designated heritage assets up to 2km from the Proposed Development have been considered, including the presence and movement of construction plant that may alter the setting of heritage assets, such as change arising from noise and dust, and the presence of construction compounds which may change the setting of heritage assets as a result of noise or light intrusion.
- 8.12.3 Designated heritage assets outside of the 2km study area and up to 5km, have been considered where the settings of designated heritage assets of the highest significance may be impacted. No potential setting impacts on designated heritage assets between 2km and 5km from the Proposed Development were identified, and therefore designated heritage assets between 2km and 5km were scoped out of the assessment.
- 8.12.4 Non-designated heritage assets outside of the 500m study area and up to 1km have also been considered, where these provide context and inform the potential for unknown archaeology within the DCO Site Boundary.
- 8.12.5 Permanent construction impacts that would last beyond the construction phase are considered, including physical impacts to known and previously unknown buried archaeological assets, key components of the historic landscape arising from construction activities within the working width of the pipeline and associated laydown, welfare and parking areas, and from the establishment of the Immingham Facility and Theddlethorpe Facility, Block Valve Stations and associated temporary works areas, and construction compounds. The physical impacts considered include removal of buried archaeological remains as a result of excavation for construction, and damage as a result of compaction in areas such as construction compounds.
- 8.12.6 Operational impacts that could result in changes to the settings of heritage assets are considered in relation to limited noise and visual intrusion, including traffic movement associated with general operation of the Immingham Facility, Theddlethorpe Facility and the Dune Isolation Valve Station, and the presence of new Block Valve Stations, where these installations are located within the settings of heritage assets. Potential operational impacts on heritage assets were identified in relation to the Theddlethorpe Facility only. No potential operational impacts were identified in relation to the Immingham Facility or the Block Valve Stations.
- 8.12.7 Temporary effects from decommissioning of the above ground installations are also considered.
- 8.12.8 It is assessed that the construction, operation and decommissioning of the Proposed Development would not result in any significant effects on historic landscape character.

Construction phase effects

- 8.12.9 The assessed permanent construction significant effects are detailed in section 8.7, Potential Impacts and Assessment of Effects. The detail of the setting assessment is set out in *ES Volume IV, Appendix 8.1 (Application Document 6.4.8.1)*.
- 8.12.10 The historic environment assessment has identified likely significant residual effects on non-designated buried archaeological remains at one site due to construction of the pipeline:

- Section 5 – cropmark enclosures at Theddlethorpe [622].

8.12.11 The archaeological site affected relates to medieval settlement activity. The significant residual effects identified are assessed as Moderate adverse permanent effects.

8.12.12 Residual effects on other buried archaeological remains would be Minor or Negligible adverse: these permanent effects are not considered to be significant.

8.12.13 These assessments reflect the sensitivity (value) of the heritage assets affected and the scale of impact (change), taking into account the ability to minimise impact within the DCO Site Boundary by careful routing of the pipeline and reduction in the working width.

8.12.14 On the basis of the baseline established in section 8.5 above, it is possible that unidentified archaeological remains may be encountered within the DCO Site Boundary. Where these are encountered, these could vary in value from Very Low to High value. Where these archaeological remains are removed by the construction of the Proposed Development then it would result in a High magnitude of impact and a range of effects would result from Negligible adverse to Major adverse.

8.12.15 The historic environment assessment has identified likely significant residual effects on three designated heritage assets, the grade II* listed Church of St Edmund in Riby, the grade II listed Ashleigh Farm at Theddlethorpe, and the grade II listed Manor House and non-designated former parkland at Barnoldby le Beck due to construction of the pipeline. The significant residual effects identified are assessed as Moderate adverse effects, which would be temporary during the construction phase, and would be transient, reducing as construction progresses. Residual effects on other built heritage assets due to construction of the Proposed Development are assessed as Minor or Negligible adverse: these temporary effects are not considered to be significant.

Mitigation of construction phase effects

8.12.16 Where impacts cannot be avoided, mitigation will take the form of archaeological investigation and recording, to be undertaken as advanced works. A detailed archaeological mitigation strategy will be developed and agreed during Examination; however, it is anticipated that the following mitigation approaches may be relevant:

- Surface artefact collection / test pitting / metal detection where required in advance of archaeological excavation and recording;
- Topographic survey of earthworks to allow reinstatement works post-construction;
- Archaeological excavation and recording in areas where significant archaeological remains have been recorded/identified, including by archaeological Strip, Map and Sample;
- Targeted archaeological monitoring during construction works (where prior archaeological evaluation indicates this approach is appropriate and/or where safety considerations preclude other approaches);
- Geoarchaeological investigation; and
- Protection of remains (i.e., temporary burial of remains within working areas) and preservation of archaeological remains in situ.

8.12.17 It is envisaged that full excavation will be targeted upon those sites that would maximise knowledge gain in order to answer scheme-wide and site-specific research questions that will be developed as part of the archaeological mitigation strategy. For sites that do not fit these criteria, additional work would not be undertaken. Other sites, although within the DCO Site Boundary, would be fenced off during construction to ensure they are preserved where the pipeline installation activities can be routed around the site/feature.

8.12.18 Development of the archaeological mitigation strategy will be informed by a programme of archaeological evaluation including trial trenching to further evaluate the survival and significance of archaeological remains (*ES Volume IV, Appendix 8.3 (Application Document 6.4.8.3)*).

Operation and decommissioning phase effects

8.12.19 Operation of the Theddlethorpe Facility would have significant residual effects on the setting of one designated heritage asset (the grade II listed Ashleigh Farm). This effect is assessed as Moderate adverse and would be permanent during the operational lifetime of the Proposed Development. Decommissioning of the Theddlethorpe Facility would reverse this effect and reinstate the existing baseline conditions. Residual effects on other built heritage assets due to operation and decommissioning of the Proposed Development are assessed as Minor or Negligible adverse: these temporary effects are not considered to be significant.

8.12.20 It is assessed that the operation and decommissioning phases of the Proposed Development would not result in any additional significant effects on buried archaeological remains.

8.13 References

Ref 8-1 *HM Government (1979)*. Ancient Monuments and Archaeological Areas Act 1979. Available at: <https://www.legislation.gov.uk/ukpga/1979/46> Accessed August 2023.

Ref 8-2 *HM Government (1990)*. Planning (Listed Buildings and Conservation Areas) Act 1990. Available at: <https://www.legislation.gov.uk/ukpga/1990/9/contents> Accessed August 2023.

Ref 8-3 *HM Government (1997)*. The Hedgerows Regulations 1997. 1997 No. 1160. Accessed: 05/05/2023. Available at: <http://www.legislation.gov.uk/uksi/1997/1160/made> Accessed August 2023.

Ref 8-4 *Department of Energy and Climate Change (2011)*. Overarching National Policy Statement for Energy (EN-1). Accessed: 05/05/2023. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf Accessed August 2023.

Ref 8-5 *Department for Energy Security & Net Zero (2023)*. Draft Overarching National Policy Statement for Energy (EN-1) (2023). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf Accessed August 2023.

Ref 8-6 *Department of Energy and Climate Change (2011)*. National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4). Accessed: 05/05/2023. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47857/1941-nps-gas-supply-oil-en4.pdf Accessed August 2023.

Ref 8-7 *Department for Energy Security and Net Zero (2023)*. Draft National Policy Statement for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) . Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147383/NPS_EN-4.pdf Accessed August 2023.

Ref 8-8 *Department for Levelling Up, Housing and Communities (2023)*. National Planning Policy Framework (NPPF). Ministry of Housing, Communities and Local Government, London. Accessed: 12/09/2023. Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> Accessed August 2023.

Ref 8-9 *Ministry of Housing, Communities & Local Government (2019)*. Planning Practice Guidance – Conserving and enhancing the historic environment. Ministry of Housing, Communities and Local Government, London. Accessed: 05/05/2023. Available at: <https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment> Accessed August 2023.

Ref 8-10 *North Lincolnshire Council (2011)*. North Lincolnshire Local Development Framework Core Strategy Adopted June 2011. Accessed: 05/05/2023. Available at: <https://www.northlincs.gov.uk/planning-and-environment/planning-policy-local-development-framework/#1591178700859-b856fc83-069c> Accessed August 2023.

Ref 8-11 *North Lincolnshire Council (2007)*. Saved Policies of the North Lincolnshire Local Plan Local Development Frameworks Government Office for Yorkshire and The Humber, 2007. Accessed: 05/05/2023. Available at: <http://www.planning.northlincs.gov.uk/planningreports/localplan/savedpolicies/direction.pdf> Accessed August 2023.

Ref 8-12 *North Lincolnshire Council (2022)*. North Lincolnshire Local Plan. Publication Draft Addendum Plan, May 2022. Accessed: 05/05/2023. Available at: https://m.northlincs.gov.uk/public/localplan/stage_4_doc/North%20Lincolnshire%20Local%20Plan%20-%20Addendum%202022.pdf Accessed August 2023.

Ref 8-13 *North East Lincolnshire Council (2018)*. North East Lincolnshire Local Plan 2013 to 2032 (Adopted 2018). Accessed: 05/05/2023. Available at: <https://www.nelincs.gov.uk/assets/uploads/2020/10/The-NEL-Local-Plan-adopted-2018.pdf> Accessed August 2023.

Ref 8-14 *East Lindsey District Council (2018)*. East Lindsey Local Plan Core Strategy Adopted July 2018. Accessed: 05/05/2023. Available at: [https://www.e-lindsey.gov.uk/media/9791/Core-Strategy/pdf/Final Version of Core Strategy 2018.pdf?m=636821922732300000](https://www.e-lindsey.gov.uk/media/9791/Core-Strategy/pdf/Final%20Version%20of%20Core%20Strategy%202018.pdf?m=636821922732300000) Accessed August 2023.

Ref 8-15 *Central Lincolnshire Council (2021)*. Central Lincolnshire Local Plan Review Consultation Draft June 2021. Accessed: 05/05/2023. Available at: <https://central-lincs.inconsult.uk/connect.ti/CLLP.Draft.Local.Plan/consultationHome> Accessed August 2023.

Ref 8-16 *HM Government (2019)*. Planning Practice Guidance, historic environment. Available at: <https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment> Accessed August 2023.

Ref 8-17 *Historic England (2015)*. Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment. Accessed: 05/05/2023. Available at: <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/> Accessed August 2023.

Ref 8-18 *Historic England (2017)*. Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets (2nd edition). Accessed: 05/05/2023. Available at: <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/> Accessed August 2023.

Ref 8-19 *Historic England (2019)*. Statements of Heritage Significance: Historic England Advice Note 12. Accessed: 05/05/2023. Available at: <https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/> Accessed August 2023.

Ref 8-20 *Historic England (2021)*. Commercial Renewable Energy Development and the Historic Environment Historic England Advice Note 15. Accessed: 05/05/2023. Available at: <https://historicengland.org.uk/images-books/publications/commercial-renewable-energy-development-historic-environment-advice-note-15/> Accessed August 2023.

Ref 8-21 *Chartered Institute for Archaeologists (2021)*. Code of Conduct: ethics in archaeological practice. Chartered Institute for Archaeologists: Reading, October 2021. Accessed: 05/05/2023. Available at: <https://www.archaeologists.net/sites/default/files/Code%20of%20conduct%20revOct2021.pdf> Accessed August 2023.

Ref 8-22 *Chartered Institute for Archaeologists (2020)*. Standard and guidance. Historic environment desk-based assessment. Chartered Institute for Archaeologists: Reading, October 2020. Accessed: 05/05/2023. Available at: https://www.archaeologists.net/sites/default/files/CifAS%26GDBA_4.pdf Accessed August 2023.

Ref 8-23 *Institute of Environmental Management and Assessment and Institute of Historic Building Conservation (IHBC) and Cifa (2021)*. Principles of Cultural Heritage Impact

Assessment in the UK. Accessed: 05/05/2023. Available at: https://s3.eu-west-2.amazonaws.com/iema.net/documents/knowledge/policy/impact-assessment/resources/J30361_IEMA_PrinciplesOfCHIA_V8.pdf Accessed August 2023.

Ref 8-24 *Jennings, L. (ed.), (2019)*. Lincolnshire County Council Archaeology Handbook. Lincolnshire County Council. Available online: <https://www.lincolnshire.gov.uk/downloads/file/2204/archaeology-handbook-pdf> Accessed August 2023.

Ref 8-25 *British Geological Survey (2023)*. Geo-Index online resources. Available at: https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.139948279.53941229.1614087105-556125256.1573056023 Accessed August 2023.

