VikingCCS

Viking CCS Pipeline

Environmental Statement Volume IV – Appendix 8-3: WSI for Archaeological Evaluation

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1 Introduction

1.1 Project Background

1.1.1 This Archaeological Evaluation Strategy has been prepared by AECOM ('the Consultant') on behalf of Chrysaor Production (U.K.) Limited, a Harbour Energy group company ('the Client'). It details the aims, objectives and methods that will be applied during survey to further evaluate the archaeological resource for the Viking CCS Pipeline ('the Proposed Development'). The scope and detailed design of the archaeological evaluation will be informed by the previous phases of desk-based research, aerial photographic assessment and LiDAR analysis, and geophysical survey and determined in liaison with Historic England and the relevant local authority planning archaeologists (collectively, 'the Viking CCS Heritage Consultees').

1.1.2 The Viking CCS Pipeline ('the Proposed Development') comprises a new 24 " (609 mm) diameter onshore pipeline of approximately 55.5 km in length, which will transport Carbon Dioxide (CO_2) from the Immingham industrial area to the Theddlethorpe area on the Lincolnshire coast, where it will connect into the existing 36 " (921 mm) diameter offshore LOGGS pipeline.

1.1.3 The Proposed Development is an integral part of the overall Viking CCS Project, which intends to transport compressed and conditioned CO_2 received at a facility at Immingham to store in depleted gas reservoirs under the Southern North Sea. The offshore elements of the Viking CCS Project, including the transport of CO_2 through the LOGGS pipeline to the Viking gas fields under the North Sea, are subject to a separate consenting process.

1.1.4 The key components of the Proposed Development comprise:

- Immingham Facility;
- Approximately 55.5 km 24 inch (") onshore steel pipeline (including cathodic protection);
- Three Block Valve Stations;
- Theddlethorpe Facility;
- Existing LOGGS pipeline and isolation valve to the extent of the Order Limits at Mean Low Water Springs (MLWS);
- Permanent access to facilities;
- Mitigation and landscaping works;
- Temporary construction compounds, laydown, parking and welfare facilities;
- Temporary access points during construction.

1.1.5 Further details of each element of the Proposed Development are set out in Chapter 3 of the Environmental Statement *(Application Document 6.2.3)*.

1.1.6 The Proposed Development extends across the administrative areas of Lincolnshire County Council, North Lincolnshire Council, North East Lincolnshire Council, West Lindsey District Council and East Lindsey District Council (West Lindsey District Council and East Lindsey District Council are located within the Lincolnshire County Council administrative boundary).

1.1.7 For the purpose of this Written Scheme of Investigation ('WSI') the archaeological evaluation site ('the Site') is defined as a corridor 100m wide representing the DCO Site Boundary for the proposed pipeline route, running from Immingham to Theddlethorpe, and areas for temporary compounds (Error! Reference source not found., Annex C).

1.1.8 In format and content, this WSI conforms to current good practice, as well as the Chartered Institute for Archaeologists' (CIfA) Standard and guidance for archaeological field evaluation (2020), and the Lincolnshire County Council Archaeology Handbook (Ref 22).

1.2 Roles and Responsibilities

1.2.1 The works specified in this WSI, including the fieldwork, archiving and reporting of the results, will be let by competitive tender to a suitably qualified and experienced Archaeological Contractor, who will be Registered as an Archaeological Organisation with the Chartered Institute for Archaeologists. The appointed Archaeological Contractor will undertake the works for the Consultant, on behalf of the Client. The Consultant will act as Principal Contractor for the archaeological evaluation.

1.2.2 The requirements and responsibilities of the Archaeological Contractor, the Consultant, and the Client have been set out in the relevant sections of this WSI to assist the Archaeological Contractor in the completion of the archaeological works.

1.2.3 Access to the Site will be arranged with relevant landowners and stakeholders prior to the works commencing. The Archaeological Contractor will be required to liaise with any other consultants or contractors undertaking survey work in the same area(s) to co-ordinate the work programmes. The Archaeological Contractor shall liaise with the Consultant and the Client to ensure that the archaeological evaluations are undertaken in accordance with an approved programme and schedule.

1.3 Consultation

1.3.1 Preliminary consultation with Historic England and the local authority planning archaeologists was undertaken at the Scoping stage. Comments on the historic environment Scoping Report and Preliminary Environmental Impact Report (PEIR) have been taken into account in preparing this WSI. 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 (collectively called the 'Viking CCS Heritage Consultees') and is ongoing as the Proposed Development progresses.

1.4 Structure of this Document

1.4.1 This document is structured in 16 sections, with illustrations and appendices at the end.

- Section 1 provides an outline of the Proposed Development and the purpose and development of this document, together with the roles and responsibilities of various parties in the delivery of the archaeological evaluation.
- Section 2 describes the Site, providing topographical and geological background together with a description of the known archaeological resource and the historical development of the landscape, which the Proposed Development traverses.

- Section 3 sets out the general aims and objectives of the archaeological evaluation together with research themes from the regional research agenda (Ref 23) identified in the desk-based assessment (*ES Volume IV, Appendix 8-1: Historic Environment Desk-based Assessment (Application Document 6.4.8.1)*), which the evaluation has the potential to contribute to.
- Section 4 outlines the scope of the archaeological evaluation and the techniques proposed to be used.
- Section 5 outlines site constraints affecting how the archaeological evaluation will be undertaken.
- Section 6 details the methodology for each of the techniques proposed to be applied during the archaeological evaluation.
- Section 7 details the procedures for reporting and the content of resultant deliverables for the archaeological evaluation.
- Section 8 outlines the requirements for resourcing and programme.
- Section 9 describes the requirements for preparation of the site archive resulting from the archaeological evaluation and its deposition with a receiving museum.
- Section 10 sets out the safety, health and environment requirements including mandatory training for site staff.
- Section 11 describes the approach to technical and safety monitoring during the archaeological evaluation.
- Section 12 details the requirements for confidentiality and approach to publicity during the archaeological evaluation.
- Section 13 details the requirements relating to the copyright of resultant deliverables.
- Section 14 provides information on the arrangements for accessing the Site.
- Section 15 describes any other relevant general provisions.
- Section 16 provides a list of references used within the document.
- Annex A provides a list of relevant professional archaeological standards and guidance.
- Annex B provides a survey log arranged by field parcel, detailing what techniques are proposed and which have been completed to date.

2 Background Information

2.1 Introduction

2.1.1 The historic environment baseline for the Proposed Development has been established to date through previous phases of desk-based research, aerial photographic assessment and LiDAR analysis, and geophysical survey, as reported in the following appendices within the Environmental Statement (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: Archaeological Geophysical Survey.

2.1.2 For the purposes of describing the Proposed Development it 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.

2.1.3 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 (including the Immingham Facility and the proposed North Compound);
- Section 2 - A180 road to A46 road (including Washingdales Lane Block Valve Station);
- Section 3 - A46 road to Pear Tree Lane (including the proposed Central Compound and Thoroughfare Block Valve Station);
- Section 4 – Pear Tree Lane to Manby Middlegate (B1200) (including Louth Road Block Valve Station); and
- Section 5 – Manby Middlegate (B1200), to Theddlethorpe and down to MLWS (Including the Theddlethorpe Facility and the proposed Southern Compound).

2.1.4 The location of the Proposed Development is shown on Figure 1.

2.2 Topography and Geology

Section 1 - Rosper Road (Immingham) to A180 road

2.2.1 Ground levels across Section 1 are generally at and below the 10m contour (contour heights are expressed above Ordnance Datum (aOD)) with slightly higher ground at the western side of the Section. Historically this coastal landscape strip mainly comprised seasonal saltmarsh grazing utilised by settlements located on the higher ground. At the start of the pipeline route the ground level is around the 5m contour and rises to the 11m contour at Habrough Road (B1210).

2.2.2 Most of the Section is underlain by superficial geological deposits comprising Glacial Till, a heterogenous mixture of clay, sand, gravel, and boulders varying widely in size and shape

(diamicton). Tidal Flat Deposits are also present which comprise a consolidated soft silty clay, with layers of sand, gravel and peat. Alluvium is also present along localised watercourse channels around Immingham. These deposits comprise soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel. The bedrock geology underlying this Section is Chalk of the Burnham Chalk Formation. Comprising white, thinly-bedded chalk with common tabular and discontinuous flint bands; sporadic marl seams.

Section 2 - A180 road to A46 road

2.2.3 At the start of Section 2 the ground level is around the 9m contour, rising to the 17m contour at Roxton Farm. Between this point and Riby Road (A1173) ground levels are generally at and around the 17m contour, although they are lower in the floodplain of North Beck Drain (13m). South of Riby Road the ground levels drop onto the 15m contour where the route passes Riby Gap. West of Aylesby, the topography becomes gently undulating and rises onto the 22m contour. Between Barton Street (A18 road) and the end of the Section the ground level rises further onto the 48m contour where the pipeline route approaches the low foothills of the Lincolnshire Wolds west of Laceby.

2.2.4 The underlying superficial geology comprise mostly Glacial Till, however, Glaciofluvial Deposits of glacial origin are also present around Aylesby and between Irby Upon Humber and Laceby (sand and gravel with rare clay interbeds). Lacustrine Deposits are present around Irby Upon Humber which form small, localised pockets, commonly comprising laminated clay and silt and which may contain thin layers of organic material or sand. Alluvium is also present along localised watercourse channels, for example alongside North Beck Drain (south of Greenlands Farm) and between Irby Upon Humber and Laceby (tributaries of Laceby Beck). The solid geology is predominantly Chalk of the Burnham Chalk Formation, although chalk of the Welton Chalk Formation is present towards the southern end, generally comprising white, massive or thickly bedded chalk with common flint nodules, lacking tabular flint bands.

Section 3 - A46 road to Pear Tree Lane

2.2.5 At the start of Section 3 the ground level is around the 50m contour, but it falls gradually to the 44m contour west of Scrub Holt Farm and then falls again onto the 28m contour as the pipeline route passes the earthwork remains of a scheduled Civil War earthwork fort (northeast of Walk Farm). Between the A18 road and Waithe Beck, west and south of Barnoldby Le Beck, the ground level varies between the 28m to 41m contour, but it drops down to the 18m contour where the pipeline route crosses the broad valley of Waithe Beck, south of Waltham Road, Brigsley (B1203 road). South of Ashby cum Fenby the ground level rises to the 40m contour as the pipeline approaches and follows the alignment of the A18 but as the route crosses Whites Road and the A16 Louth Road, south of North Thoresby, the ground levels fall to the 21m contour. Between the A16 and the end of the Section at Pear Tree Lane the ground level is between the 21m and 24m contour.

2.2.6 Superficial deposits of Glacial Till covers most of this section; however, alluvium is also present along localised watercourses, including Laceby Beck, Waithe Beck and more extensively around Old Fleet Drain on the south side of Grainsby. Lacustrine and Glaciofluvial Deposits are also present within this section and form smaller localised features (Glaciofluvial Deposits are recorded around Grainsby, and north of Ludborough there are Lacustrine Deposits). Chalk bedrock of the Burnham Chalk Formation underlies the northern end of the Section, although elsewhere it is Chalk of the Welton Chalk Formation (the Welton Formation follows the orientation of the A18 between Aylesby and

Brigsley and generally comprises white, massive or thickly bedded chalk with common flint nodules, lacking tabular flint bands).

Section 4 - Pear Tree Lane to Manby Middlegate (B1200)

2.2.7 At the start of Section 4 between Pear Tree Lane and Louth Road the ground level is gently undulating at between the 24m to 17m contour, although lower where the route crosses the floodplain of Poulton Drain and its tributaries, west of Covenham St Mary (10m) and Yarburgh Beck / Black Dike (12m), southwest of Yarburgh. From Alvingham Road the ground level drops to the 9m contour where the route crosses the Louth Canal / Navigation and River Ludd, between Alvingham and North Cockerington. Between North Cockerington and South Cockerington the ground rises slightly onto the 13m contour, before dropping again onto the 7m contour to the east of South Cockerington, and between here and the end of the section at Manby Middlegate (B1200 road) the topography is low lying and relatively flat at between the 7m and 4m contour.

2.2.8 The superficial geology in this Section mostly comprises Glacial Till. Alluvium is also present along localised watercourses, including Poulton Drain catchment area (western side of Covenham St Mary), Yarburgh Beck / Black Dike and its tributaries (south of Yarburgh) and more extensively around Louth Canal and the River Ludd, to the south of Alvingham. East of South Cockerington the pipeline route crosses Pock Hill Lane and runs along the interface of an area that comprises Glacial Till and Tidal Flats Deposits. The bedrock geology in this Section comprises Chalk of the Welton Chalk Formation, although the pipeline route crosses into the Ferriby Chalk Formation to the east of Brackenborough.

Section 5 - Manby Middlegate (B1200), to Theddlethorpe and down to MLWS

2.2.9 Ground levels throughout Section 5 are generally flat and around the 3m to 4m contour as the pipeline route crosses the coastal fenland area.

2.2.10 The superficial geology covering most of this Section comprise Tidal Flat Deposits but includes, at the northern end, small areas of Glacial Till immediately south of Manby Middlegate road (B1200). The northern end of this Section is underlain by Chalk of the Welton Chalk Formation and then Chalk of the Burnham Formation from east of Walk Farm, Great Carlton to the end of the Section.

2.3 Historical and Archaeological Background

2.3.1 The following description of the archaeological and historical resource within the Site is based upon an assessment of the baseline within a 500m wide study area either side of the DCO Site Boundary, as reported in Appendix 8-1 of the Environmental Statement (ES) (*ES Volume IV, Appendix 8-1: Cultural Heritage Desk Based Assessment (Application Document 6.4.8.1*)). Asset reference numbers refer to the relevant local authority Historic Environment Record archaeology datasets, or National Heritage List for England (NHLE) list numbers where relevant; APS references are those used in *ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis (Application Document 6.4.8.2).*

Section 1– Rosper Road (Immingham) to A180 Road

Prehistoric (up to AD43) and Roman (AD43-450) periods

2.3.2 Archaeological evidence shows that the Humber estuary has been a key trade and communication route between the North Sea and the Pennines, and to the Midlands (River Trent), since prehistoric times. Important palaeo-environmental and archaeological evidence preserved within wetland locations includes Bronze Age boats and fish traps.

There is also evidence of early settlement on higher, drier land, while the lower wetlands provided fishing and fowling as well as summer grazing for the surrounding settlements.

2.3.3 Research on the Humber wetlands has suggested that, at the beginning of the Holocene, the onset of warmer conditions led to the establishment of dense vegetation cover over undulating boulder clay. At the same time kettle-holes and poorly draining hollows would have allowed the formation of a series of organic peaty sediments, and fluctuating sea levels would have led to increasing sedimentation through the process of alluviation and the formation of marshlands (Ref 24; Ref 28; Ref 32). The Humber continued to have great importance throughout the Roman and medieval periods for trade and communication and it is possible that on the north bank of the estuary drainage of the marshes began as long ago as the second century AD.

2.3.4 Prehistoric flintwork (waste material and tools), of Late Mesolithic to Early Bronze Age date, has been found during archaeological investigations close to the DCO Site Boundary (surface artefact collection and excavations) (MNL3927, MLS19799, MLS1615, MLS1614, MLS19831, MLS19832, MLS19834) and within the DCO Site Boundary (MLS21544). There are other findspots of prehistoric flintwork (waste flakes and cores) in the wider area, south of Station Road (MLS19726).

2.3.5 Archaeological evaluation at the Humber Refinery, c.300m northeast of the DCO Site Boundary, has recorded evidence of Bronze Age activity and a late prehistoric and Roman settlement with associated evidence for salt-making and iron smelting (MLS21553, MLS21554, MLS21555, MLS21556). Charcoal from a ditch has been radiocarbon dated to the Early Bronze Age and, sealed beneath 0.4m of alluvial clay, a charcoal-rich deposit (burnt stone and charcoal) was radiocarbon dated to the Late Bronze Age. A spread of burnt material which lay over a possible buried soil was also sealed beneath the alluvium which produced a Middle Bronze Age date. The Iron Age (and early Roman occupation) appears to occupy the driest ground, towards the west of the investigated area. Many of the features coincided with geophysical anomalies (possibly representing Iron Age enclosure ditches) and it is possible that salt making was carried out on the wetter ground to the east.

2.3.6 Although undated deposits interpreted as the buried shoreline were recorded east of Rosper Road during archaeological evaluations in 2004 and 2005, trenches in 2004 recorded 1m of alluvium over a peaty deposit and alluvium over deposits of mid-late Iron Age date. In 2005 alluvium which sealed an organic deposit was recorded beneath subsoil within the DCO Site Boundary (MLS20141). Also, a system of creeks which were detected by geophysical survey are likely to mark a former high-water position.

2.3.7 Close to the northern end of the DCO Site Boundary an archaeological trial trench evaluation in 2016 at Rosper Road identified multiperiod activity, including several Iron Age ditches (MLS20103, MLS20422, MLS20424). An earlier excavation either side of Rosper Road, that was carried out between 2000 to 2002 adjacent to the Conoco Refinery, suggested that the original early Iron Age settlement was located on the lower ground near to a former creek on the shore of the River Humber. There then appears, on the basis of the pottery sequence, to have been a hiatus in the mid- to late Iron Age. The subsequent late Iron Age and Romano-British settlement, representing possibly a small farmstead, developed on higher ground further north on the palaeo-shoreline. This was centred around a droveway and a pattern of enclosures (MLS1614, MLS20078), including within the DCO Site Boundary (MLS19771). Further evidence for Iron Age occupation was found west of Rosper Road, within the DCO Site Boundary, during trial trenching in 2010, related to the A160-A180 road improvements, where two Iron Age ditches were recorded (MLS22428).

2.3.8 Trial trench evaluation carried out in April 2023 for the proposed Humber Zero carbon capture scheme, within the northern extent of the DCO Site Boundary at the proposed pipeline offtake facility at Immingham, has recorded evidence of prehistoric activity and Iron Age / Romano-British occupation along the edge of the former buried shoreline (Ref 34; Ref 27)). The evaluation formed part of a programme of works, following a geophysical survey and a geoarchaeological borehole survey. A total of 32 trenches were excavated, which identified three areas of archaeological activity at the northwest, northeast and southeast corners of the trenched area, centring on the slightly higher ground within the site. Trenching at the northwestern corner of the evaluation area revealed several ditches containing Romano-British pottery and animal bone, however, the earliest evidence of activity came from a small number of pits found beside a possible palaeochannel which produced late Mesolithic / early Neolithic lithic fragments. At the northeastern corner an alignment of postholes and several small boundary or enclosure ditches were recorded. A concentration of features at the southeastern corner, dated mostly to the Iron Age / Romano-British period, included a large multiphase curvilinear ditch within a possible enclosure, and a series of small ditches possibly associated with a contemporary field system.

2.3.9 In the central part of the evaluation area geoarchaeological boreholes (11 drilled boreholes to a maximum depth of c.6m below ground level) were used to identify areas of archaeological potential by characterising the probable nature and depth of sub-surface deposits (ibid). The deposit sequence recorded included Pleistocene glacial till found between approximately -0.5m and 3m OD; the lower elevations traverse the evaluation site from the northeastern boundary, forming a relict coastal inlet which was found to be infilled with intertidal deposits. It is likely that this inlet was open in the Mesolithic to Neolithic periods but 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.

2.3.10 There are several cropmark features of possible Iron Age date, including west of Habrough Road where a linear feature is visible (MLS20077) and a series of three possible enclosures (MLS20780). From the same general area, a late Iron Age enclosure, which was also visible on aerial photographs, was identified by geophysical survey and trial trenching (MLS1611).

2.3.11 Late Roman ditches were also recorded north of Marsh Lane (c.100 m north of the DCO Site Boundary) during trial trenching in 2012 and 2013. These are likely to represent a continuation of the small farmstead recorded on the west side of Rosper Road (MLS22743).

2.3.12 At East End Farm (c.130 m west of the DCO Site Boundary) archaeological geophysical survey has detected a trackway and a complex series of rectangular ditches flanking the trackway. Evidence also included a walled building. The complex could represent a series of small Romano-British farmsteads, a single large farm, or perhaps even be of military or ritual origin (MLS20152). Metal detection in the same area also recovered Roman coins and metalwork.

2.3.13 A droveway and enclosure of possible Roman date are visible on aerial photographs next to Ulceby Road and the woodland known as Sinks Covert (MLS8765).

2.3.14 South of East End Farm, and c.75m west of the DCO Site Boundary, archaeological geophysical survey detected the buried remains of a Roman enclosure, northeast of Glebe Farm, which is also associated with Roman coins and pottery (MNL820).

2.3.15 A sherd of possible imitation Samian pottery has been found within the DCO Site Boundary (MNL1508).

2.3.16 Late Iron Age pottery and Roman pottery was found west of Habrough Road during excavations (MLS19829, MLS19830). A large hoard of Roman coins was also discovered by a metal-detectorist in the same area (MLS16344).

2.3.17 In the wider area a high-status Roman settlement and industrial site was found at Mauxhall Farm / Stallingborough Interchange (MNL4490, MNL4763). Here trial trenching revealed a substantial settlement belonging to two main phases (1st to 2nd centuries and 3rd centuries) followed by the site's abandonment. The presence of a stone building appears to mark this site out as different from other settlements along the edge of the tidal flats. It has been suggested that it may have functioned as a possible estate centre from which other sites were managed.

Early medieval (450-1066) and medieval (1066-1500)

2.3.18 Evidence of early medieval and medieval occupation tends to be concentrated within and close to the historic settlements that the pipeline route passes, however, the surrounding area also contains evidence for activity and occupation as a result of shifting settlement patterns and landscape changes. Within much of the study area the majority of the evidence is represented by former cultivation features, and it is likely that some of these also continued in use until enclosure in the post-medieval period.

2.3.19 Immingham is mentioned in the Domesday Book, the Lindsey Survey (c.1115) and the Early Yorkshire Charters (1100-15), and it formed a small cluster of settlements with place names indicating early Anglo-Saxon settlement (MNL287). The form of the settlement appears to have been a chain of farmsteads or hamlets laid out along a pair of parallel roads, with a denser core around the parish church. Archaeological trial trenching has recovered early medieval pottery and also pottery of 13th to 14th century and post-medieval date. Alluvial layers also show that the area was prone to flooding and that in some places, which were most vulnerable, seasonal farming activities were undertaken.

2.3.20 Habrough is also mentioned in various historic documents (Domesday, the Lindsey Survey (c.1115), Assize Rolls (1202), the Valuation of Norwich (1254) and Pipe Rolls (1197)) (MNL205). Originally the parish included a large, detached section of coastal marshland, Habrough Marsh (now a part of Immingham). The village was comprised of two settlement cores with dispersed occupation between them. The eastern core contains the church and at least one moated manorial site. It appears to have been laid out along a single road and the western core contains post-medieval Newsham Farm (settlement appears to have formed around a small grid like system of roads without an obvious topographic influence).

2.3.21 Settlement evidence has been identified within and surrounding Immingham. The scheduled Manor Farm medieval moated site is located in North Killingholme and was occupied into the post-medieval period (NHLE1008044, NHLE1346854, NHLE1214980). A possible area of medieval settlement is located within the DCO Site Boundary, northeast of Houlton's Covert, (evidenced by a fieldname which may correspond to the small close shown on Russell's pre-enclosure map of Killingholme, on the edge of Summergates) (MLS19827). The possible remains of a shrunken medieval village have been found at South Killingholme (MLS1613), c.270m north of the DCO Site Boundary, comprising a rectilinear enclosure, ditches and ridge and furrow (visible on aerial photographs, but now largely built over, although elements of the site may survive). A possible medieval moated site was found during an archaeological evaluation and excavation west of Luxmore Farm (complex of ditches and pits that respected Immingham Road) (MNL2373). A series of linear earthwork features (drainage systems, trackways and enclosures) at Homestead Park, Immingham (MNL284) (c.486m southeast of the DCO Site Boundary) also suggest medieval settlement

in the wider area where waterlogged deposits of possible late medieval origin were recorded during monitoring in 1994.

2.3.22 There is evidence of extensive ridge and furrow cultivation in the area, of likely medieval to post-medieval date, associated with areas of historic settlement activity. The remains are visible on aerial photographs at several locations within or close to the DCO Site Boundary, including at Habrough (MNL2234), South Killingholme (MLS10748, MLS20104) and at Immingham (MNL2238 and which extends into Section 2). Several findspots of medieval pottery may also be connected to activity associated with cultivation or occupation (MLS20275), including within the DCO Site Boundary (MNL1507).

Post-medieval (1500-1900) and modern (post-1900)

2.3.23 From the 17th century, coastal reclamation, drainage and enclosure had a significant impact on the rural landscape. Flood defences were built to protect the developing towns and industrial areas and warping was introduced by the Dutch in the 18th century. Later, Parliamentary enclosures produced the landscape of regular, geometric fields, mostly enclosed by dikes, with associated large brick-built isolated farmsteads and excavation of brick pits for the extraction of Pleistocene clays.

2.3.24 The pipeline route passes several extant or demolished post-medieval and later farms / farmsteads, including Glebe Farm (MNL1818); Church Farm, Habrough (MNL2302); Luxmore Farm, Habrough Road (MNL2449); Elm Tree Farm, South Killingholme (MLS25002); Willows Farm, Immingham (MNL2451); and also several rural dwellings (NHLE1161631, NHLE1215113, NHLE1161630 / MNL288, NHLE1161587 and MNL2311). These reflect the former agricultural character and rural industries of the area prior to the development of Immingham Docks and the subsequent expansion of Immingham. Within the DCO Site Boundary is the site of a demolished post mill that is located along Mill Lane, Immingham (MNL4349).

2.3.25 Immingham Dock was established by the Humber Commercial Railway and Dock Company in association with the Great Central Railway (Humber Commercial Railway and Dock Act of 1904, and subsequent amendments). Construction of Immingham Docks began in 1906 and was completed by 1912. Initially the dock exported coal from the coalfields of Derbyshire and Yorkshire via the Humber Commercial Railway (Grimsby District Light Railway was used for contractors' traffic and later for carrying passengers / dock workers) (Grace's Guide, 2020). A temporary settlement, or workers village, was established at Immingham (Humberville) comprising of a series of corrugated tin huts (known as Tin Town) for the dock construction workers (NHLE1391349). An extensive complex of railway lines and sidings were integrated into Immingham dock (London and North Eastern Railway - Immingham Dock Branch) (MNL3039). The Humber Commercial Railway line constructed in 1912 linked the eastern jetty at Immingham Dock with the main Grimsby - New Holland line at Ulceby (MLS21326).

2.3.26 From the 16th and 17th centuries onwards, defensive structures were constructed to protect the coastline from attack and the threat of invasion. The importance of defence continued into the late-19th century (coastal artillery battery and minefield control centre built at Paull Point on the north bank of the estuary) and was followed by a 20th century World War 1 acoustic mirror near Kilnsea and two forts at the estuary mouth.

2.3.27 During World War 1 Immingham Docks was a base for British D-class submarines. Following the end of World War 1 trade declined (as it did elsewhere along the east coast), including demand for shipping services and new ships. World War 2, however, revived its prospects but, together with other ports along the east coast such as Hull, it became the target of

bombing raids. During World War 2 Immingham Docks became a naval base and headquarters for the Royal Navy. A series of anti-aircraft batteries and bombing decoys were built to protect the docks and nearby military airfields from attack. There are several known World War 2 military installations which are outside of the DCO Site Boundary, including heavy anti-aircraft battery installations at Immingham (MNL1523) and next to Sinks Covert (MLS17455); a searchlight emplacement at North Killingholme (MLS26168) and levelled anti-aircraft obstructions at Immingham (MLS21322). A possible bomb crater has been identified on aerial photographs at South Killingholme (MLS26149); and in the wider area are former barrage balloon sites (MNL4651, MNL4684, MNL4675), and other military buildings and installations (MNL4644, MNL4689).

Undated Assets

2.3.28 The pipeline route passes several undated cropmark sites including a possible square enclosure (now beneath the Immingham CHP Plant, MLS21321) and an undated linear feature, west of Rosper Road (MLS21315); and outside the DCO Site Boundary, south of Ulceby Road (MLS20124, MLS1608, MLS1609, MLS20781, MLS8766, MLS25944, MLS1610, MLS21317). A series of linear geophysical anomalies at East End Farm, South Killingholme that are also undated (MLS20273, MLS20274) have been identified from archaeological geophysical survey.

Section 2 – A180 Road to A46 Road

Prehistoric (to AD43) and Roman (AD42-450)

2.3.29 There is no evidence of significant prehistoric activity within this Section of the pipeline route. In the wider area to the west of the pipeline route there is evidence of Neolithic and Bronze Age burial activity. Southwest of Riby Grove Farm are the remains of a Neolithic long barrow and a Bronze Age round barrow (NHLE1018838) that are located on a spur of land overlooking several dry valleys. Prehistoric flintwork has been found outside of the DCO Site Boundary but only in small quantities or as a single findspot (MNL4760, MNL3924, MNL3922, MNL3923).

2.3.30 Barton Street forms the parish boundary between several settlements and has been identified as a possible late Iron Age routeway that continued in use into historic times (MNL2583 / MLI116141 and also crosses Section 3).

2.3.31 Evidence for a possible Roman settlement have been found within the DCO Site Boundary southeast of Greenlands Farm, Stallingborough (MNL2689). The site appears to occupy an area of higher ground and comprises a complex of small enclosures alongside a trackway. Pottery from the site included possible Iron Age and early medieval material, suggesting the site may have earlier origins and was occupied into the post-Roman period. The discovery of fragments of Roman brick and tile in Stallingborough are possible indicators of Romano-British settlement / occupation (MNL3920, MNL3921). There is also a scatter of findspots of Roman material (pottery and metalwork) that indicate a possible more extensive Roman presence in the area (MNL1906, MNL3925, MNL3926, MNL834).

Early medieval (450-1066) and medieval (1066-1500)

2.3.32 The pipeline route passes close to several historic settlements that have their origins in the early medieval and medieval periods. Aylesby is mentioned in Domesday (1086) and the Lindsey Survey (c.1202) and the village is probably a later Saxon foundation (occupation focused on Barton Street) (MNL125). Evidence of Anglo-Scandinavian occupation has been recorded (pottery and other finds) in the village which suggests occupation from at least the 10th century.

2.3.33 Stallingborough is mentioned in Domesday, the Lindsey Survey (c.1115), the British Museum Charters (c.1130), the Episcopal Registers (1233) and the Valuation of Norwich (1254). Along with Healing, Immingham and a lost settlement called Lopingham, it forms a small cluster of settlements with place names indicating early Anglo-Saxon settlement (MNL371). The medieval village was originally located on the edge of the salt marsh that has since been almost totally reclaimed. A low hill formed an early settlement focus, and this elevated position was used for the church and the principal manor house of the village. Recorded as a designated 'creek' port during the post-medieval period, archaeological investigations (geophysical survey, monitoring, trial trenching and excavation) have found evidence for Late Saxon and medieval occupation.

2.3.34 Irby upon Humber is mentioned in Domesday, the Lindsey Survey (c.1115) and the Assize Rolls (1202). The medieval settlement developed on patches of high ground around a river-less valley. It formed around a sub-rectangular road, with others radiating away from it, with no particular focus for dense settlement (MNL67).

2.3.35 There is evidence of early medieval occupation in the wider area at Riby where a substantial middle Saxon settlement, comprising field and enclosure ditches and elements of probable post-built and sunken buildings, has been investigated (Riby Crossroads) (MLI52885). The site is associated with an extensive pattern of cropmarks. At Riby Park a small 7th century Anglo-Saxon cemetery was discovered in 1915 (MLI50022) along with Anglo-Saxon pottery (MLI50023). Southeast of Riby Church, investigations within the Walled Garden have also recorded evidence of Roman, early medieval and medieval activity (MLI125879, MLI125880, MLI125881, MLI125882). At Laceby (north of Barton House), another Anglo-Saxon inhumation cemetery was found during sand and gravel extraction in 1934 and 1936-1939 (MNL295), but this is located in the wider area.

2.3.36 A sherd of possible Saxo-Norman pottery is also recorded north of Greenlands Farm, Immingham (MNL4199).

2.3.37 There are several smaller historic settlements within this Section. Roxton is mentioned in historic documents (including the Book of Fees, 1242, in the 1334 tax list, and it is marked on the Yarborough Estate map). Earthwork remains of the deserted medieval settlement at Roxton have largely been levelled but are visible as soil and cropmarks, including within the DCO Site Boundary (part of an extensive area covering c.15 hectares) (MNL286). At Stallingborough, part of the deserted medieval settlement, together with the earthworks of a post-medieval manor house and associated formal gardens, are located next to the parish church (NHLE1020423). At nearby Little London three areas, which are separated by roads and earthworks, are largely contiguous with the earthworks at Stallingborough; and features along the south bank of North Beck Drain may represent a series of moated enclosures and fishponds. Investigation of some of the features has revealed building platforms, chalk foundations, tile, and Roman, medieval to post-medieval pottery and other material (animal bones, oyster shell, nails and a coin of Henry IV) (MNL382).

2.3.38 Medieval moated sites are also recorded in the wider area, including the scheduled Healing Hall (NHLE1010947), at Roxton Farm (MNL283) and possibly also south of Manor Farm, Aylesby (MNL120).

2.3.39 There are cropmark remains of medieval / post-medieval ridge and furrow surrounding several of the historic villages and settlements, including at Stallingborough (MNL2235) and at Aylesby (MNL2225), which cross into the DCO Site Boundary.

2.3.40 Post-medieval (1500-1900) and modern (post 1900)

2.3.41 The pipeline route passes several gravel and chalk extraction pits, of post-medieval to modern date, that are shown on OS maps from the end of the 19th century (MNL1565, MNL1569), including two that are within the DCO Site Boundary (MNL1566, MNL2175).

2.3.42 There are numerous farmsteads and dwellings of post-medieval to modern date that the pipeline passes that reflect the farming and rural character of the area within the wider study area. These include Roxton Farm, Immingham (MNL1881); Stallingborough Grange (MNL1893); Healing Wells Farm (NHLE1346977 / MNL241); Manor Farm, Aylesby (MNL1609); Church Farm, Riby (NHLE1308735 / MLI96869); Church Farmhouse, Riby (NHLE1359822 / MLI97067); The Crofts, Laceby (MNL4254); and Greenland's Farm, which is located just outside of the DCO Site Boundary (MNL1895).

2.3.43 Riby Park (MLI92320) was built over the deserted medieval settlement of Riby and was laid out around the Church of St Edmund. The Park is recorded on both the OS 1st edition maps (1887-9) and 2nd edition maps (1902-6).

2.3.44 The north end of the pipeline route crosses the Manchester, Sheffield and Lincoln Railway – Cleethorpes to Barton railway line, that opened in 1848 (Cleethorpes extension added around 1863, part of a trans Pennine route from Manchester via Sheffield) (MNL1302). The site of a former railway siding, alongside Roxton Road, is within the DCO Site Boundary and is shown on the OS maps of 1887-9 (MNL2960) (associated with Roxton Siding Signal Box, MNL2820).

2.3.45 The pipeline passes several historic roads of post-medieval date (marked on OS maps of 1887-9), although some are also likely to have medieval origins, including Riby Road, Stallingborough (MNL3502); Keelby Road, Stallingborough (probably documented in the reign of Henry III as 'Kelebigate') (MNL3505); Beach Holt Lane, Aylesby (MNL3476); and Nooking Lane, Aylesby (also documented in 1840) (MNL3477).

2.3.46 The pipeline route passes a number of modern refuse disposal sites in Aylesby (MNL1031) and Laceby (MNL1020), and landfill sites in Aylesby (MNL1068, MNL1069, MNL1070). A part of the former Aylesby Park is also within the DCO Site Boundary which is shown on OS maps of 1907-10 (southwest side of Aylesby, next to Manor House Farm) (MNL3157).

2.3.47 Several World War 2 military installations are recorded at the northern end of the Section, but outside of the DCO Site Boundary, that belong to the defensive arrangements for Immingham Docks. These include the Heavy Anti-Aircraft Battery H37 at Immingham Grange (MNL1524) (although possibly never built) and a pair of designated World War 2 heavy anti-aircraft batteries at Stallingborough (NHLE1403222 / MNL1525), which in 1946 became a Nucleus Force Battery headquarters. A group of closely spaced circular or sub-circular earthworks at Healing Wells Farm, identified on aerial photographs from the 1940s, possibly represent the site of a World War 2 searchlight battery (MNL4346). There is also a 1960s underground Royal Observer Corps monitoring post at Stallingborough (NHLE1403218 / MNL1900).

Undated assets

2.3.48 The pipeline route passes several undated cropmark sites, including a small enclosure and field boundaries of possible medieval to post-medieval date that is within the DCO Site Boundary (200 m southwest of Barton Street) (MNL123). Undated ditches, pits and a possible palaeochannel have been identified during a geophysical survey at Immingham (MNL3915) and similar features were recorded within the DCO Site Boundary at Stallingborough (MNL3914). In the wider area an undated cropmark south of Gatehouse Farm, Stallingborough (MNL1234) was not located during construction work for a linear

pipeline scheme in 1996 (although a large deposit of organic sediment was recorded during archaeological investigations close to the site).

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

Prehistoric (to AD43) and Roman (AD43-450)

2.3.49 Evidence of prehistoric activity comes from findspots and cropmarks along this Section of the pipeline route. Small amounts of prehistoric flintwork comprising tools and waste material have been recovered at Irby Upon Humber (MNL1213), Holton le Clay (MLI41238), Ashby cum Fenby (MNL2110, MNL2111) and near Grainsby (MLI41215). Neolithic flints (two flint scrapers and numerous flint flakes, including a human tooth) were discovered in Hatcliffe, located in discrete patches that possibly reflect disturbed buried features (MNL2081).

2.3.50 There is a possible prehistoric burial mound at Waltham that is visible as a subcircular cropmark on aerial photographs (MNL2554); and beyond the wider area there is a scheduled Bronze Age round barrow cemetery at Tetney (visible as low earthworks and cropmarks) (NHLE1469975).

2.3.51 Topographic features such as hilltops and areas of higher ground may have been attractive to early settlers. A spring located on Welbeck Hill, west of Barnoldby le Beck, is marked on OS maps of 1887-9. but may have been used in the prehistoric period (MNL1570). Similarly, Laceby Beck may have been a valuable resource from the prehistoric period (connecting Wellbeck Spring in the south with the River Freshney in the north) (MNL4273) and also Waithe Beck (MNL4344).

2.3.52 A possible late prehistoric or Roman enclosure, with an opening to the east and a small enclosure at the northwest corner, has been identified from aerial photographs at Ludborough (MLI98689). Another possible late prehistoric farmstead, with an associated field system, has been identified from cropmarks, west of North Thoresby, and beyond the wider area (MLI87920). Iron Age pottery from a ditch at Ashby cum Fenby is possibly indicative of late Iron Age activity in the area (MNL4398).

2.3.53 There is evidence for more extensive Romano-British occupation and settlement within this Section of the pipeline route. A possible Roman villa is visible as a cropmark to the west of Barnoldby le Beck (MNL850). Finds recovered from the site include a wide range of material such as brickwork, stone roof tile, a flint core and flakes, worked stone masonry, painted plaster, ceramic roof tile, possible tessara, possible hypocaust tiles, animal bone, stonework with paint and a large number of grey-ware sherds. At Irby upon Humber a dark soil on the south side of Welbeck Hill has produced Roman finds (abundant animal bone, burnt material and Roman pottery) (MNL1952). The presence of early medieval pottery at the same site suggests that occupation may have extended into later periods. Surface artefact collection, archaeological geophysical survey and archaeological excavations of a cropmark site have revealed evidence of a Romano-British settlement at Hatcliffe (MNL211).

2.3.54 Southwest of Hatcliffe Mill another Roman settlement is suggested by possible building platforms, that are visible on aerial photographs, alongside an old road (MNL208) with abundant Roman pottery from an adjacent field. In Ashby cum Fenby a Romano-British pit or ditch was uncovered during a watching brief in 1995 (MNL2370). Roman material has also been found near Ashby Hill, west of Ashby cum Fenby (MNL96) and Roman coins (together with early medieval and medieval material) has been reported by the Portable Antiquity Scheme near Ashby cum Fenby. An extensive Romano-British field system, covering approximately 12 acres that is associated with a possible vineyard, is visible on aerial photographs at North Thoresby (MLI41207). Pottery that is associated with dark

soilmarks at Grainsby may indicate the presence of kilns and a buried cultivation system (MLI41216).

2.3.55 Several cropmark features that have been detected in this Section, but which are undated, could represent evidence for occupation in the prehistoric and Roman periods.

Early medieval (450-1066) and medieval (1066-1500)

2.3.56 The pipeline route passes several historic settlements that have their origins in the early medieval and medieval periods, however, not all settlements prospered, and there are a number of shrunken and deserted settlements. Irby upon Humber (whose historic core lies within the wider area, MNL67) is mentioned in Domesday, the Lindsey Survey (c.1115AD) and the Assize Rolls (1202AD) and likely has early medieval origins. It developed on patches of high ground around a river-less valley and the settlement formed around a sub-rectangular road, with others radiating away from it, but it appears that there was no particular focus for dense settlement, instead it contained small clusters of houses and farmsteads, separated from each other by relatively small distances.

2.3.57 Barnoldby le Beck also has early medieval origins and is mentioned in historical sources (Domesday (1086), the Lindsey Survey (c.1115), and the Index to the Charters and Rolls (1202)). Part of its historic core is within the DCO Site Boundary (MNL137). In the post-medieval period, it was de-populated and emparked. A cluster of farmsteads and cottages is shown around the parish church at the end of the 19th century, suggesting that in the medieval period there was a dense nucleated core with a tight grid like pattern of roads. Crofts arranged along a possible road, suggestive of planned settlement, are documented around 250 m south of the church. Two large areas of parkland were established around the 18th to 19th centuries ‘Manor House’ and ‘Oakland House’ (also known as ‘Woodlands’ and ‘The Grange’) which may have involved some re-organisation of the settlement. Remains dating to the 13th and 14th centuries have been recorded during archaeological investigations and there are earthworks representing the former medieval extent of settlement to the south of Main Road and Waltham Road (building platforms, paddocks and trackways).

2.3.58 Brigsley is mentioned in Domesday (1086), the Lindsey Survey (c.1115), the Assize Rolls (1202) and the Index to Charters and Rolls in the British Museum (1202). The settlement is formed within a rough grid-based road system of three north-south roads and two east-west roads with the parish church roughly central (MNL2250). Areas of historic settlement earthworks survive, including a hollow-way to the east of the church which represents an abandoned road. To the east of the hollow-way is a post-medieval manorial site, around which appear to be the earthworks of medieval building platforms and house plots now covered by woodland. Archaeological investigations in Brigsley have uncovered evidence dated to the early medieval to medieval periods (ditches containing Ipswich ware and Northern Maxey Ware) (MNL2320).

2.3.59 The settlement of Holton le Clay is first documented in the Domesday Book and is subsequently documented throughout the medieval period (MLI80552). The remains of parts of the medieval settlement are visible on aerial photographs. There is evidence to suggest that the origins of the village lie in the late Anglo-Saxon period, if not earlier. Saxon graves were found during excavations at the church and finds dating from the mid- to late Saxon period were also recovered. Archaeological investigations elsewhere in the village have produced late Saxon and medieval pottery and medieval and post-medieval features.

2.3.60 Ashby cum Fenby is also mentioned in Domesday (1086), the Lindsey Survey (c.1115) and the Curia Regis Rolls (1205). Archaeological investigations have found evidence of 9th to

15th century occupation (MNL2113, MNL3102), including areas that are within the DCO Site Boundary (MNL2249, MNL98). Aerial photographs and historic documents suggest that the settlement comprised dwellings interspersed with garths, paddocks and crofts. From at least the 19th century the settlement spread to the south of the manor and church. The area around the medieval manor was converted into parkland and formal gardens during the post-medieval period.

2.3.61 Hawerby is an historic settlement known to have existed since the early medieval period (MNL233). The former settlement pattern is of house platforms and crofts, arranged along a single central road, with the church and rectory to the west and a small country house with its associated farmstead to the north.

2.3.62 The pipeline route passes close to an Anglo-Saxon cemetery on Welbeck Hill (MNL64) that spread along a gravel spur projecting from the hilltop. This was investigated in 1962 and 1979 and a total of 72 inhumation and 5 cremation burials were recorded in three areas: north-south along the hill crest, east-west on the hill's western slope and a deposit of cremations on the eastern slope. Finds recovered from the burials indicate a likely date for the burials from the mid-5th century to the 6th century and it is likely that the cemetery went out of use in the late 6th or early 7th centuries. It is possible that the cemetery has not been fully excavated. A soil mark area to the northeast of the cemetery could represent either contemporary settlement or possibly a pyre associated with the cremations found in the cemetery (MNL71).

2.3.63 There is evidence of medieval settlement and cultivation across this Section with a cluster in and around the settlements that had their origins in the early medieval period. Southwest of North Thoresby, traces of the deserted medieval settlement of Autby (MLI41208) have been identified in the northwest corner of Autby Park (MLI41209). The scheduled remains of the deserted medieval village of Beesby [NHLE1003553] are located on the edge of the wider area, north of Cadeby Hall (northwest of Ludborough), and to the south of Cadeby Hall are the remains of the deserted medieval village of North Cadeby (NHLE1003611).

2.3.64 Beyond the wider area are the remains of Waithe deserted medieval village (located alongside the A16 road (MLI41233) and the shrunken medieval settlement of Grainsby, which extends either side of Grainsby Lane (MLI41222).

2.3.65 Several medieval moated sites are scattered across the Section, including east of Manor House, Irby upon Humber (MNL2511), where a square enclosure is flanked and respected by ridge and furrow; and at Ashby cum Fenby where there is a moated site and other possibly associated features which are crossed by the DCO Site Boundary at Hall Farm (MNL411). At Barnoldby le Beck an L-shaped fishpond which is marked on OS maps of 1887-9 is potentially the remains of another moated site (MNL1590); and at Ludborough, the Manor Moated site [673] has several earthworks including a rectangular enclosure likely to represent the site of the former manor house.

2.3.66 Aerial photography has identified several areas of medieval / post-medieval ridge and furrow throughout this Section. At Barnoldby le Beck extensive ridge and furrow earthworks almost surround the village core and are preserved in the two landscape parks to the south of the village, including within the DCO Site Boundary (MNL2228). Ridge and furrow are also recorded at Welbeck Hill, northwest of Barnolby le Beck, also within the DCO Site Boundary (MNL2237). At Brigsby, numerous disparate areas of ridge and furrow earthworks (MNL2230) suggest that these remains are part of more extensive cultivation systems (a geophysical survey identified linear features which might be the remains of ridge and furrow along with other field boundaries). In Ashby cum Fenby there are also extensive earthwork

remains of ridge and furrow cultivation features visible on aerial photographs from the late 1940s (MNL2224) [APS_24, APS_25, APS_27, APS_28, APS_30] (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis (Application Document 6.4.8.2)*). Ridge and furrow cultivation features are also recorded at Laceby (MNL2243), Hatcliffe (MNL2236), Grainsby Grange (MLI98651, MLI98650) [APS_23], Hawerby (MNL2226) and northeast of Ludborough (MLI125503) and at Cold Harbour Farm (Ludborough Parish) where cropmarked features are visible partially within and next to the DCO Site Boundary [APS_18].

Post-medieval (1500-1900) and modern (post-1900)

2.3.67 Southeast of Irby upon Humber and below Welbeck Hill is a scheduled Civil War earthwork fort that is located c.75m west of the DCO Site Boundary (NHLE1007735, MNL62) [APS_33] (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis*). The 17th century fort comprises a rectangular earthen rampart, with projecting bastions at each of its four corners, an enclosing ditch, and a counterscarp bank. It is sited on high ground close to the road from the Humber to Boston and Kings Lynn (Barton Street, A18) and within easy reach of the road from Newark to the Humber via Gainsborough (Grimsby Road, A46). It is possible that remains associated with the Civil War fort may extend into the DCO Site Boundary.

2.3.68 A post-medieval field boundary that is partially within the DCO Site Boundary is visible on satellite imagery between Barnoldby le Beck Park and Waithe Beck [APS_29] and another field boundary that is broadly aligned along the axis of the DCO Site Boundary is visible also as a cropmark feature at Ashby cum Fenby [APS_26].

2.3.69 The OS maps of 1887-9 show two areas of parkland on the south side of Barnoldby le Beck with a northern boundary along Main Road and Waltham Road (MNL1588, MNL1589) and at Hawerby cum Beesby. Part of Hawerby Park is close to the DCO Site Boundary (MNL1870), it surrounds St Michael's Church and is also shown on OS maps of 1887-9. Further south there is a large area of dispersed trees, occasionally in groups, indicative of a landscape park (shown on the OS maps of 1887-9) (MNL3935), possibly an extension of Cadeby Park or parkland for Beesby House, which lies at the centre of the landscape. The parkland is still extant in areas where scheduled medieval earthworks are present (NHLE1003553). Early 20th century OS maps (between 1906-10) also depict an area of parkland at Oaklands, Laceby (MNL3156) and, southwest of North Thoresby, part of Autby Park, which is marked on OS maps of 1956, lies within the DCO Site Boundary (MLI41209).

2.3.70 The pipeline route passes several demolished post-medieval buildings and farmsteads, including two that are close to the DCO Site Boundary at Barnoldby le Beck (MNL1571) and Asby cum Fenby (MNL1555).

2.3.71 The pipeline route passes several gravel and chalk extraction pits, that are marked on OS maps from the end of the 19th century, at Irby upon Humber (MNL1922, MNL1925), Barnoldby le Beck (MNL1587), Beelsby (MNL1593), Hatcliffe (MNL1838, MNL1840) and Ashby cum Fenby (MNL1547).

2.3.72 The pipeline passes several historic roads of post-medieval date (marked on OS maps of 1887-9), although some are also likely to have medieval origins, including Old Main Road, Irby upon Humber (MNL3534) (the road from the village eastwards was part of the turnpike trust of 1765); Main Road, Barnoldby le Beck (MNL3447); Main Road, Beelsby (MNL3542); Brigsley Road, Ashby cum Fenby (MNL3448) (part of the turnpike trust of 1765); Ashby Lane, Ashby cum Fenby (MNL3450); Thoroughfare Lane, Ashby cum Fenby (MNL3455)

(the section around Thoroughfare Farm (formerly Sykes Farm), is shown as a trackway rather than a formal road); and Hawerby Road (MNL3562).

2.3.73 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 (*ES Volume IV, Appendix 8-1: Cultural Heritage Desk-based Assessment*) as forming part of a field system pre-dating the Enclosure Acts [H20 – H30] (see *ES Volume IV, Appendix 8-1: Cultural Heritage Desk-based Assessment, Annex C (Application Document 6.4.8.1)*).

2.3.74 A World War 2 searchlight battery and possible command post are visible on aerial photographs at Ashby cum Fenby (MNL2223).

Undated assets

2.3.75 The pipeline route passes several undated cropmark features (enclosures and linear features) which could belong to any period (prehistoric to modern), including at Irby upon Humber (faint cropmarks indicating a possible sub-rectangular enclosure and trackway, MNL409) and at Waltham (cropmark of a possible undated small enclosure, MNL2544; and linear features, MNL2555).

Section 4 – Pear Tree Lane to B1200 road, Grimoldby

Prehistoric (to AD43) and Roman (AD43-450)

2.3.76 This Section of the pipeline route crosses the edge of the low-lying Mablethorpe Outmarsh in an area where there are few known heritage assets of prehistoric or Roman date. There are no find spots of prehistoric date, although beyond the wider area prehistoric flintwork has been found at South Cockerington (MLI81617, MLI43242). Possible Bronze Age barrows (MLI82192) and prehistoric enclosures are recorded at Keddington (MLI87925, MLI87928) Aerial photographs have also revealed a probable Bronze Age barrow at Alvingham (MLI82175).

2.3.77 A possible Iron Age ‘banjo’ enclosure is visible as a cropmark feature partially within the DCO Site Boundary to the south of Louth Canal (Keddington Parish) [APS_12] (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis (Application Document 6.4.8.2)*).

Early medieval (450-1066) and medieval (1066-1500)

2.3.78 The historic settlements of Covenham St Bartholomew, Covenham St Mary, Yarburgh, North End, Alvingham, North Cockerington, South Cockerington and Grimoldby were likely founded in the early medieval or medieval periods. All are documented since the medieval period and are often associated with ridge and furrow and other settlement related features (crofts, tofts and former field boundaries and lanes), which extend beyond the historic cores, and which are visible on aerial photographs; for example, at Covenham St Bartholomew (MLI87811), Covenham St Mary (MLI87807, MLI87808) and Yarburgh (MLI87851).

2.3.79 The scheduled earthworks and buried remains of the deserted medieval village of Brackenborough are located c.1 km west of the DCO Site Boundary (NHLE1003616).

2.3.80 The historic settlement at North Cockerington, whose area extends into the DCO Site Boundary (MLI83365), is first documented in Domesday. Medieval settlement remains (trackway, ponds, enclosures, ridge and furrow, field boundary, boundary bank and crofts) are visible as cropmarks and earthworks around the present village. Archaeological watching briefs have recorded evidence of medieval and later occupation which are likely associated with the earthworks and cropmarks. Features associated with the settlement

were visible from the detailed assessment of aerial photographs, but the remains lie to the north of Red Leas Lane and outside of the DCO Site Boundary [APS_10] (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis (Application Document 6.4.8.2)*).

2.3.81 Between Meadow Lane and Red Lease Lane, on the south side of North Cockerington, there is a scheduled medieval moated site (NHLE1004988, MLI43595).

2.3.82 South Cockerington is first documented in Domesday, and it probably has its origins in the Anglo-Saxon period (MLI43243). The regular road layout is possibly the result of deliberate planning. Earthworks associated with medieval settlement (crofts and trackways) have been identified and archaeological watching briefs have recorded evidence of medieval occupation.

2.3.83 Keddington is also first recorded in the Domesday book and is listed as being owned by the Bishop of Durham and Rainer of Brimeux. Based on the size of the settlement and the etymology of the name it is likely that the settlement originated in the early Anglo-Saxon period. A medieval earthwork moat, enclosures and ditches are recorded near the village (MLI88730), as are earthworks of ridge and furrow visible on aerial photographs (MLI98757) [APS_12].

2.3.84 Areas of medieval / post-medieval ridge and furrow have been identified within and surrounding the historic settlements (also often extending beyond the wider area, for example, at Alvingham (MLI5866, MLI116055). The features are visible on aerial photographs and have been identified by archaeological geophysical survey and earthwork survey at Alvingham (MLI87867), North Cockerington (MLI87881, MLI87883, MLI87887, MLI87886) [APS_9], South Cockerington (MLI88026, MLI88027, MLI99468) [APS_8], Keddington (MLI99449) and Grimoldby (MLI97316). The cropmarked remains of ridge and furrow are also visible on satellite imagery within the DCO Site Boundary at Grove Farm (Utterby Parish) [APS_16] and at Grange Farm (Brackenborough with Little Grimsby Parish) [APS_15].

2.3.85 The earthwork remains of a large post-medieval mill mound are visible at North Cockerington (MLI41375) next to an area of ridge and furrow (the mound was originally identified as a tumulus on early OS maps).

Post-medieval (1500-1900) and modern (post-1900)

2.3.86 The pipeline route crosses the historic Louth Navigation (MLI86587) between Alvingham and North Cockerington. Construction of the canal began in 1767 and linked inland Louth with coastal Tetney. A small inland port developed at Louth and the canal remained open until the 20th century (canal closed to navigation in 1924). Several designated (listed grade II) historic canal locks of red brick and ashlar limestone construction, are present within the wider area, including Ticklepenny Lock TF 351889 (NHLE1063048) and Willows Lock TF 352892 (NHLE1063049) at Keddington; Alvingham Lock and inverted syphon (NHLE1063080, MLI89033) and Salter Fen Lock at Alvingham (NHLE1063081, MLI89034).

2.3.87 The pipeline route passes several demolished post-medieval buildings and farmstead including two that are within the DCO Site Boundary at South Cockerington (MLI117795) and at Grimoldby (MLI117829).

2.3.88 A series of hedgerows, crossed by Section 4 of the pipeline route, are marked on tithe maps and may be regarded as important, under the historic criteria set out in the Hedgerow Regulations, as forming part of a field system pre-dating the Enclosure Acts [H31 – H34]

(see *ES Volume IV, Appendix 8-1: Cultural Heritage Desk-based Assessment, Appendix C (Application Document 6.4.8.1)*).

2.3.89 The pipeline route crosses a demolished railway line, of post-medieval to modern date (Great North Railway, Mablethorpe Branch line, marked on OS maps from 1888: Lincolnshire Sheet XLVIII.SE), northeast of Eastfield Farm, Grimoldby, which is visible as a soilmark (Google Earth images) (part of the same line is also visible at Theddlethorpe All Saints).

2.3.90 There are two World War 2 anti-aircraft obstructions at Grimoldby which are part of a larger network of similar features constructed to deter an invading landing force (MLI88037, MLI88040).

Undated assets

2.3.91 The pipeline route passes several undated enclosures visible as cropmarks at North Cockerington (possible moated site) (MLI42854), near South Cockerington (MLI88024), including one that is close to the DCO Site Boundary (MLI88025); and at Grimoldby (MLI88041). An undated (possible prehistoric) rectilinear enclosure is visible on aerial photographs and lies partially within the DCO Site Boundary, north of Louth Canal (Alvingham Parish) [APS_13] (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis*).

Section 5 – B1200 road, Grimoldby to MLWS, near TGT

Prehistoric (to AD43) and Roman (AD43-450)

2.3.92 This Section of the pipeline route is located on the low-lying Mablethorpe Outmarsh area where there are few known heritage assets of prehistoric or Roman date. A prehistoric flint scraper (MLI87326) was found between Two Mile Bank and Pyewipe Farm during archaeological monitoring for the Maltby le Marsh to Manby Replacement Water Main.

2.3.93 An archaeological watching brief near Walk Farm, Great Carlton, has recorded evidence of a Romano-British field system and occupation remains (MLI87322) [APS_02] (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis*), suggesting the possible presence of a nearby settlement (ditches, gully, hearth, pit and pottery) and possible industrial activity. A sherd of Roman pottery was found during archaeological monitoring at Gayton le Marsh (MLI87325).

Early medieval (450-1066) and medieval (1066-1500)

2.3.94 There is extensive evidence for medieval settlement and cultivation within this Section of the pipeline route. Northeast of Great Carlton the route passes the remains of a medieval field system and settlement at Walk Farm (MLI42821) [APS_02], where remains sit on slightly higher ground above the neighbouring enclosed fen that forms the marshland parish (features visible on aerial photographs include crofts, tofts, building platforms, a moat, ridge and furrow and a linear boundary feature). An archaeological geophysical survey (2003) identified a series of archaeological anomalies, including linear and rectilinear features (possibly representing field systems and/ enclosures) and several pit-like features (represented by burning or possible domestic dumping). During a subsequent archaeological watching brief (Maltby le Marsh to Manby Replacement Water Main), ridge and furrow was recorded, and a sherd of medieval pottery was recovered. Next to the medieval settlement a boundary earthwork is also visible on aerial photographs (MLI88280). There is also an undated earthwork north of Walk Farm that could be part of the settlement (MLI88283).

2.3.95 An area of historic settlement is documented at Theddlethorpe All Saints (MLI88255), which is mentioned in Domesday, and remains of the settlement have been identified on aerial photographs (enclosures and a moat). Pottery from Theddlethorpe All Saints suggests possible early medieval / medieval occupation west of Mablethorpe Road (MLI80941) and also near Railway Farm (MLI80945). A possible late Saxon / medieval farmstead (MLI80963) has been recorded next to Station Road. A medieval moated site known as 'Keleshall' was found in 1956 along Grove Road (MLI41411). Between Slates Farm and Will Row, on the western side of Theddlethorpe All Saints, more remains of likely medieval settlement have been found (cropmark and earthwork remains of tofts and a trackway visible on aerial photographs next to the Great Eau) (MLI88207). Also, north of Will Row and alongside the Great Eau, there are more cropmarks and earthwork features (including the remains of tofts) (MLI88214) [APS_06] (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis*).

2.3.96 At Theddlethorpe St Helen there is evidence of medieval settlement and cultivation (tofts and ridge and furrow). The remains have been identified either side of A1031 Mablethorpe Road and extending as far south as Carlton House (MLI98809) [APS_05], and also within the DCO Site Boundary next to Dicote House (cropmark and earthwork remains of enclosures and tofts) (MLI98811).

2.3.97 Areas of medieval / post-medieval ridge and furrow have been found associated with the evidence of settlement activity, including at Pyewipe Farm, Gayton (MLI84714) and within the DCO Site Boundary either side of Station Road (MLI80946) [APS_06]. Cultivation earthworks are also recorded at Theddlethorpe All Saints, alongside Highgate and east of Highgate Farm, (MLI88216) and either side of Station Road. Other areas of more extensive ridge and furrow are also present at Theddlethorpe St Helen (MLI98954) and either side of Mablethorpe Road, (MLI88266, MLI98722, MLI88264), including within or close to the DCO Site Boundary (MLI80943, MLI98724) [APS_06]. West of Mablethorpe Road there are other linear and pit-like features (recorded during archaeological monitoring) that are undated, but which could belong to this period (MLI80940, MLI80942, MLI80944).

2.3.98 Medieval pottery has been found at Gayton le Marsh, during surface artefact collection for a linear scheme (MLI84716, MLI84718, MLI84724), and a medieval candlestick was found during drainage work on the edge of Long Eau at Dowsey Fen (MLI41309). These could be related to the medieval settlement near Walk Farm. Several pieces of medieval pottery were also recovered during an archaeological watching brief close to the Theddlethorpe Gas Terminal (MLI80938).

2.3.99 The pipeline crosses a probable medieval salters' route (MLI82703) that follows the parish boundaries between Gayton le Marsh and Great Carlton and corresponds to an earthwork (Two Mile Bank) that is recorded on the 1st edition OS map of 1888.

Post-medieval (1500-1900) and modern (post-1900)

2.3.100 A post-medieval field boundary that is partially within the DCO Site Boundary is visible on satellite imagery north of Walk Farm (Great Carlton Parish) [APS_04].

2.3.101 This Section of the pipeline route contains several demolished farms / farmsteads of post medieval to modern date (all within the wider area), including at Saltfleetby (MLI117784, MLI117785, MLI117786), Manby (MLI118194), Gayton le Marsh (MLI118412), Theddlethorpe All Saints (MLI118152) and at Mablethorpe and Sutton (MLI118366). The site of a post-medieval to modern tower mill lies close to the DCO Site Boundary at Theddlethorpe St Helen (MLI85787).

2.3.102 A series of hedgerows, crossed by Section 5 of the pipeline route, are marked on tithe maps and may be regarded as important under the historic criteria, set out in the Hedgerow Regulations as forming part of a field system pre-dating the Enclosure Acts, on Great Carlton parish tithe map [H35] ('Willow Row Bank') and in Gayton le Marsh parish (1839 tithe map) [H36 – H38] (see *ES Volume IV, Appendix 8-1: Cultural Heritage Desk-based Assessment, Annex C (Application Document 6.4.8.1)*).

2.3.103 The pipeline route crosses a demolished railway line of post-medieval to modern date at Theddlethorpe All Saints (Great North Railway, Mablethorpe Branch line, marked on OS maps from 1888: Lincolnshire Sheet XLIX.SE & XLIXA.SW), which is visible as a soilmark.

2.3.104 There are several World War 2 aircraft obstruction sites which are visible on aerial photographs towards the eastern end of the Section, including at Theddlethorpe All Saints (MLI88212), within the DCO Site Boundary (MLI88213) and at Theddlethorpe St Helen (MLI88267). These are part of a larger group of former coastal defence installations that are situated in the wider area, including pillbox and gun emplacements (MLI43272); anti-aircraft pillboxes (MLI125949, MLI125950); and the possible site of a World War 2 store (MLI43393).

Undated

2.3.105 The pipeline route passes undated linear cropmark features at Theddlethorpe All Saints, on the eastern side of the Great Eau (MLI88208, MLI88209), and close to the centre of the village (MLI88217) where there are two enclosures at Theddlethorpe St Helen (MLI88265, MLI98810).

2.4 Geophysical Survey

2.4.1 Geophysical survey of the Site is ongoing. The results of the geophysical survey have been used to inform the approach to archaeological evaluation detailed in this WSI at the time of writing. The interpretation plots of the results of the geophysical survey are shown on Error! R eference source not found., Annex C.

2.5 Aerial Photographic Assessment and LiDAR Analysis

2.5.1 A specialist aerial photographic assessment and LiDAR analysis has been completed (APS, 2023) (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis (Application Document 6.4.8.2)*). Cropmarks identified for targeted trial trenching include (APS references provided below are those used in *ES Volume IV Appendix 8-2 (Application Document 6.4.8.2)*:

- APS_21 (Section 3) - An undated (possibly prehistoric) cropmarked enclosure;
- APS_20 (Section 3) - An area of undated (possibly prehistoric) cropmarked enclosures and medieval / post-medieval field boundaries;
- APS_19 (Section 3) - An undated (possibly prehistoric) cropmarked enclosure; and
- APS_17 (Section 3) - An undated (possible prehistoric) cropmarked enclosure.

3 Aims and Objectives

3.1 Aims

3.1.1 The aims of the archaeological investigation are to provide further information on the archaeological resource within the DCO Site Boundary and to inform the baseline evidence for and detailed design of the Proposed Development.

3.1.2 The general objectives of the archaeological investigation are to:

- assess the potential for the presence/absence of surviving archaeological remains;
- assess the location, nature, extent, date, condition, state of preservation, significance and complexity of any archaeological remains;
- assess the likely range, quality, and quantity of artefactual and environmental evidence present;
- inform the strategy for any required mitigation via recording, preservation and/or management of identified assets;
- interpret the archaeology of the Proposed Development within its local, regional and national archaeological context; and,
- assess the potential that any remains may have in addressing research questions set out in the East Midlands Historic Environment Research Framework (Available online at: [redacted] (Ref 10).

3.1.3 The presence or absence, nature and significance of archaeological deposits identified during the archaeological evaluation will be utilised to guide the detailed design of the Proposed Development and to inform the requirement for and scope of any archaeological mitigation that may be required.

3.2 Objectives

3.2.1 More specific objectives of the investigation are:

- To make a record, through measured earthwork survey, of extant ridge and furrow present in fields that will be subject to archaeological evaluation trenching;
- To assess, through metal detecting, survey areas adjacent to the Civil War fortification and the Welbeck Hill Anglo-Saxon cemetery site to inform the potential for evidence relating to these sites to extend in the DCO Site Boundary; and
- To investigate, through a programme of geoarchaeological investigation, the archaeological and palaeoenvironment potential of deeper deposits at:
    - South Killingholme / Immingham (Section 1), where there is a former prehistoric shoreline.
    - North Beck Drain (Section 1), where there is a possible palaeochannel evident in the geophysical survey results.
    - Laceby Beck (Section 3), where there is a potential for alluvial deposits and where trenchless techniques will be utilised to install the pipeline that will require entry and exit pits;

- Waithe Beck (Section 3), where trenchless techniques will be utilised to install the pipeline that will require entry and exit pits;
- River Lud/Louth Canal, Alvingham (Section 4), where there is alluvium along the valley floor and where trenchless techniques will be utilised to install the pipeline that will require entry and exit pits;
- Grayfleet Drain, South Cockerington (Section 4), where there is alluvium along the valley floor and where trenchless techniques will be utilised to install the pipeline that will require entry and exit pits;
- The Lincolnshire Outmarsh (Section 5), where there are a series of former roddons and tributary channels.

3.3 Research Themes

3.3.1 Information collated for the desk based assessment (*ES Volume IV, Appendix 8-1: Cultural Heritage Desk Based Assessment (Application Document 6.4.8.1)*), the results of the aerial photographic assessment and LiDAR analysis (APS, 2023) (*ES Volume IV, Appendix 8-2: Aerial Photographic Assessment and LiDAR Analysis (Application Document 6.4.8.2)*), and interpretation of the geophysical survey results (AOC, 2023) to date indicates several archaeological areas of interest along the route. The character of these archaeological areas of interest are indicative of potential prehistoric, Roman and possibly Medieval agriculture and settlement. In addition the presence of industrial activity relating to these periods cannot be ruled out. Based on this the archaeological research questions from the regional research agenda (Ref 23) identified in the desk-based assessment (*ES Volume IV, Appendix 8-1: Cultural Heritage Desk-based Assessment*) that the Site may have the potential to contribute to, the archaeological evaluation has the potential to contribute to the following:

Table 1: Mesolithic (c. 9500 to c.4000 BC)

Research question	Updated Research Agenda section ref.	Research Objective
How were sites distributed across low-lying and upland areas, and in particular how many sites might be concealed beneath alluvium, colluvium and other masking deposits or beneath the sea?	Spatial distribution of activity: 2.2.2	2B, 2C, 2D, 2G, 2I
What can analyses of palaeochannel fills and other deposits with potential for preserved pollen, charcoal and other organic remains contribute to studies of the earliest stages of woodland clearance and plant domestication?	Environmental change and food procurement strategies: 2.6.1	2A, 2H, 2I
How can we maximise the potential of palaeochannels or coastal peats and other organically rich deposits as sources of data on Early Holocene landscapes and changes in subsistence strategies and diet?	Environmental change and food procurement strategies: 2.6.2	2A, 2H, 2I

Table 2: Neolithic and Early to Middle Bronze Age (c. 4,000 to c.1150 BC)

Research question	Updated Research Agenda section ref.	Research Objective
How may the region's remarkable variety of upland, lowland and coastal landscapes be surveyed in ways that would permit recognition of significant intra-regional variations in land use?	Exploitation of landscape zones: 3.4.1	3D, 3E
Can we identify locations with a high potential for elucidating variations in arable, pasture and woodland cover between ecological zones (e.g., palaeochannels)?	Exploitation of landscape zones: 3.4.2	3D, 3E, 3I
Can we further refine our knowledge of the selective use of particular landscapes for ritual, agriculture and other activities?	Exploitation of landscape zones: 3.4.3	3E, 3F, 3G
Can we obtain a clearer understanding of temporal and spatial variability in the duration of settlement activity?	Settlement patterns: 3.5.2	3A

Table 3: Late Bronze Age and Iron Age (c. 1150 BC to AD 43)

Research question	Updated Research Agenda section ref.	Research Objective
How can we expand our knowledge of first millennium BC activity in areas with a poor record of settlement?	Site visibility, prospection and landscape exploration: 4.2.3	4C, 4I
Why are sites of this period comparatively rare in the archaeological record?	Late Bronze Age & Early Iron Age settlement: 4.3.1	4A, 4B, 4C, 4I
Can we shed further light upon the development of field and boundary systems?	Field systems and major linear boundaries: 4.6.1	4C, 4F
What roles may wet, and other natural locations have performed and how might these have changed over time?	Ritual & structured deposition & religion: 4.7.2	4H, 4J

Table 4: Romano-British (AD 43 to c. 410)

Research question	Updated Research Agenda section ref.	Research Objective
How did the Conquest impact upon rural settlements and landscapes?	Rural settlement patterns and landscapes: 5.4.1	5C, 5H, 5I
How did rural settlements relate to each other and to towns and military sites, and how may this have varied regionally and over time?	Rural settlement patterns and landscapes: 5.4.3	5B, 5C, 5H, 5I
How did field and boundary systems relate to earlier systems of land allotment, and how did these boundary networks develop over time?	Rural settlement patterns and landscapes: 5.4.4	5C, 5H, 5I
What patterns can be discerned in the location of settlements in the landscape?	Rural settlement patterns and landscapes: 5.4.5	5H, 5I
To what extent may communication routes have been influenced by Late Iron Age settlement patterns and routes of movement?	Roads and waterways: 5.7.3	5G, 5I, 5J

Table 5: Early Medieval (c. AD 410 to 1066)

Research question	Updated Research Agenda section ref.	Research Objective
Can we identify social / political boundaries (e.g., surviving linear earthworks and natural barriers) and / or estate centres?	Demography and the identification of social groups: 6.1.7	6F, 6G, 6I
Can 'sub-Roman' or 'British' cemeteries and cemeteries dating from the late seventh to ninth centuries be identified?	Ritual and belief: 6.2.2	6B
Can we elucidate the production and distribution of Early Medieval salt?	Industry, trade and the emergence of a monetary system: 6.6.3	6H

Table 6: Medieval (1066 to 1485)

Research question	Updated Research Agenda section ref.	Research Objective
How can we shed further light upon the origin and development of dispersed hamlets and farms in champion and pastoral areas?	Rural settlement: 7.2.2	7E, 7I
Can we clarify further the processes of settlement desertion and shrinkage, especially within zones of dispersed settlement?	Rural settlement: 7.2.4	7E, 7F
How best may we enhance study of the origins and development of early land reclamation and drainage?	The agrarian landscape and food-producing economy: 7.7.6	7E

Table 7: Post-medieval (1485 to 1750)

Research question	Updated Research Agenda section ref.	Research Objective
How did water management and land drainage change the landscape during this period?	Agricultural landscapes and the food-producing economy: 8.3.2	8E
How can we refine our knowledge of Civil War defences and siege works?	Battlefields and fortifications: 8.7.2	8J

Table 8: Modern (1750 to present)

Research question	Updated Research Agenda section ref.	Research Objective
What survives of country estates, parks and gardens, how are they distributed, and how should they be classified?	Estates, parks, gardens and woodlands: 9.5.2	9H
How did Parliamentary enclosure and other agricultural improvements (e.g., water management) impact upon the rural landscape?	Agriculture: 9.6.2	9G

3.3.2 The trial trench evaluation provides opportunities to obtain further information on the varied use of the landscape, geographically across the DCO Site Boundary and chronologically through time; and has the potential to contribute to our understanding of human use and interaction with the landscape.

3.3.3 With regard to additional new research topics related to landscape evolution on the Outmarsh proposed by Green (Green, forthcoming), the archaeological evaluation provides the opportunity for borehole/auger and geoarchaeological surveys to add to the knowledge of landscape evolution over time.

4 Scope of Archaeological Works

4.1 Approach

4.1.1 The scope and detailed design of the archaeological evaluation have been informed by the previous phases of desk-based research (*ES Volume IV, Appendix 8-1 (Application Document 6.4.8.1))*, aerial photographic assessment and LiDAR analysis *(ES Volume IV, Appendix 8-2 (Application Document 6.4.8.2)*), and geophysical survey *(ES Volume IV, Appendix 8-3 (Application Document 6.4.8.3))* and determined in liaison with the Viking CCS Heritage Consultees.

4.1.2 For the purposes of the archaeological evaluation the Site has been divided into fields, each field has been given an alphanumeric identifier providing its field number/parish/local authority (e.g. 9SoKNli is field nine in South Killingholme in North Lincolnshire). To avoid confusion, field numbers follow a continuous sequence running from north to south of the Site. A log of all fields, the evaluation undertaken to date, and proposed is provided in Annex B.

4.1.3 The archaeological evaluation strategy will comprise four principal approaches, building on the previous stages of research, aerial photograph assessment and LiDAR analysis, and non-intrusive geophysical survey:

- earthwork survey;
- metal detector survey;
- archaeological trial trenching; and
- geoarchaeological investigation.

4.2 Earthwork Survey

4.2.1 The earthwork survey programme will record extant ridge and furrow earthworks present in fields that will be subject to evaluation trenching: the earthwork recording will be completed in individual fields prior to trial trenching taking place. The fields to be surveyed are 21ImmNEL, 44StaNEL (Section 1), and 227TASLiC to 230 TASLiC Section (5) (Annex B).

4.3 Metal Detector survey

4.3.1 The metal detector survey programme will assess areas adjacent to the Civil War fortification and the Welbeck Hill Anglo-Saxon cemetery site. The metal detector survey will be carried out in fields 70IrbNEL to 77BLBNEL (Section 2) (Annex A) prior to trial trenching taking place.

4.4 Archaeological Trial Trenching

4.4.1 The trial trenching programme will investigate the full extent of the DCO Site Boundary (within which the pipeline will be routed) that will be directly impacted by the Proposed Development works, including:

- sections of the pipeline that will be installed using open-cut trenching methods; Block Valve Stations at Washingdales Lane, Thoroughfare and Louth Road;

- working areas, site welfare and car parking areas where previous phases of desk-based research, aerial photographic assessment and LiDAR analysis (and geophysical survey suggest archaeological remains may be at risk due to compaction (see 4.7 below);
- temporary and permanent access routes;
- electrical connections; and
- temporary construction compounds and laydown areas.

4.4.2 Within the DCO Site Boundary, the trial trenching will target particular anomalies that are identified in the geophysical surveys, particular cropmarked features identified by the Aerial Photographic Assessment and LiDAR Analysis, and particular archaeological high-risk areas. These are:

- areas of apparent high archaeological potential or sensitivity based on current information from the desk-based assessment, geophysical survey and aerial photography assessment and LiDAR analysis; and
- areas beyond the standard pipeline working width (typically 30m but up to 50m for trenchless crossings) where construction activities may impact sensitive archaeological remains due to compaction, including:
    - compound locations and laydown areas;
    - HDD stringing areas; and
    - block valve working areas.

4.4.3 The confidence level in respect of the results of geophysical survey can vary depending on the nature of the geology, recent activities on the land and nature of the archaeology. For the purposes of evaluation of the land within the DCO Site Boundary the confidence levels in the results of the geophysical survey have been assigned to three categories, namely:

- Green – high confidence;
- Amber – moderate confidence; and
- Red – low confidence.

4.4.4 For example, in green areas where archaeology is shown the trenching strategy takes a focused, targeted approach. Green areas with no archaeological anomalies are not trenched. In amber areas trenches are targeted on anomalies and are also located to test ‘blank’ areas. For red areas a more general overall sample is set out.

Sections of the pipeline that will be installed through auger bore or HDD are not proposed to be trial trenched as there will be no impact.

4.4.5 **Figure 3** (Annex C) shows the indicative location of trial trenches with the interpretation of geophysical survey results available at the time of writing.

4.4.6 **Figure 4** (Annex C) shows the indicative location of trial trenches with the aerial photographic assessment and LiDAR analysis. The location of trial trenches will be revised as further geophysical results are obtained. The final location of trial trenches will be determined following PAS128 D-B survey (see Section 10 of this WSI) and identification of local site constraints in liaison with landowners and occupiers. The final trench locations will be agreed with the Consultant and the Viking CCS Heritage Consultees and presented in the Archaeological Contractor’s Site Specific WSI.

4.5 Geoarchaeological Investigation

4.5.1 The geoarchaeological investigation programme will focus on the distribution, archaeological and palaeoenvironment potential of Holocene alluvial floodplain, estuarine and tidal deposits through targeted borehole and/or window sampling transects at the following locations:

- South Killingholme / Immingham (Section 1), where there is a former shoreline (Fields 3SoKNLi, 5SoKNLi, 6SoKNLi, 7SoKNLI, 10ImmNEL, 11ImmNEL and 13ImmNEL) (Annex B);
- North Beck Drain (Section 1), where a possible palaeochannel is evident in the geophysics results (Fields 18SKiNLi to 022ImmNEL) (Annex B);
- Laceby Beck (Section 3), where there is a potential for alluvial deposits and where the pipeline is likely to be HDD with exit/entry pits. (Fields 75IrbNEL and 76IrbNEL) (Annex B);
- Waithe Beck (Section 3), where there is a potential for alluvial deposits and where the pipeline is likely to be HDD with exit/entry pits (Fields 86BLBNEL to 88AcFNEL) (Annex B);
- River Lud/Louth Canal, Alvingham (Section 4), where there is alluvium along the valley floor and where the pipeline is likely to be HDD with exit/entry pits (Fields 166AlvLiC to 168NCoLiC) (Annex B);
- Grayfleet Drain, South Cockerington (Section 4), where there is alluvium along the valley floor and where the pipeline is likely to be HDD with exit/entry pits (Fields 186SCoLiC and 187GriLiC) (Annex B); and
- the Lincolnshire Outmarsh (Section 5), where there are a series of former roddons and tributary channels (Fields 193ManLiC, 195ManLiC to 240TASLiC and 243MStLiC to 245MstLiC) (Annex B).

5 Site Constraints

5.1 Overview

5.1.1 Site Constraints are mapped on Figure 6.

5.1.2 The Principal Contractor will operate a permit system for all work to ensure control measures have been considered and implemented in relation to site constraints.

5.1.3 A review of the Statutory Utility plans indicates that the Site is crossed or aligned with various services comprising gas mains, powerlines, water / wastewater mains and telecommunication cabling. These have the potential to constrain the extent of the evaluation in the areas affected (other utilities are present along field boundaries and alongside highway boundaries). The Archaeological Contractor shall obtain an updated utilities search (PAS128 D). The Archaeological Contractor shall undertake an initial site inspection (PAS128 C) to supplement the information obtained from the updated utilities search (PAS128 D) prior to mobilisation to Site and will review and adjust intrusive works accordingly.

5.1.4 Prior to commencement of intrusive works on the Site the Archaeological Contractor shall undertake a PAS128 B survey.

5.2 Site Access, Vegetation Clearance

5.2.1 The archaeological evaluation will be carried out on arable farmland and small amounts of managed pasture and as such there is no requirement to cut back scrub or grassy sward prior to the start of the fieldwork. The archaeological evaluation will be preceded by a site inspection along the working area to assess ground conditions, to identify survey constraints, such as verification and location of utilities as per PAS128 C survey, and to confirm the area of data capture within each of the land ownership title plots. The site inspection will be carried out by the Archaeological Contractor in accordance with a timetable approved with the Consultant and agreed with the Client, the lands liaison team and the relevant landowner and tenant(s).

5.3 Site Mobilisation

5.3.1 The Archaeological Contractor will be responsible for establishing and decommissioning their own temporary site welfare facilities as necessary (compound, welfare facilities etc). If temporary site welfare facilities are proposed on Site their location, access routes, ground protection measures and security arrangements will be agreed prior to the start of the evaluation, in consultation with the Client, the lands liaison team and the relevant landowner. Temporary site facilities will be located to ensure that there is no impact on archaeological earthworks or buried remains.

5.3.2 The Archaeological Contractor shall keep a photographic record at each location where temporary welfare facilities are proposed, both prior to mobilisation and after de-mobilisation.

6 Methodology

6.1 Standards

6.1.1 This WSI takes account of the guidance provided by the Chartered Institute for Archaeologists' *Code of Conduct* (2022) and *Standard and Guidance for Archaeological Field Evaluation* (CIfA, 2020a), the relevant policies as set out in the Lincolnshire County Council Archaeology Handbook (2019), and other current and relevant good practice and standards and guidance (refer to Annex A).

6.1.2 The archaeological works will be carried out in accordance with this WSI and any further instructions from the Consultant. No variation from or changes to the evaluation strategy will occur except by prior agreement with the Consultant and in liaison with the Viking CCS Heritage Consultees.

6.1.3 Prior to the commencement of fieldwork, the Archaeological Contractor will familiarise themselves with the results of previous phases of work at the site, including the Geophysical Survey (AOC, 2023) and the Aerial Photographic Assessment and LiDAR Analysis (Air Photo Services, 2023), as well as this Archaeological Evaluation Strategy.

6.2 Site Specific Written Scheme of Investigation

6.2.1 The Archaeological Contractor will produce a Site-Specific Written Scheme of Investigation (SSWSI) setting out detailed proposals for each phase of the archaeological evaluation. The SSWSI will include:

- summary and introduction to the proposed investigation;
- summary of the evaluation aims and objectives;
- fieldwork methodology;
- a list and drawing showing each fieldwork area (which may broadly correspond to the current field pattern), including the location and extent of proposed earthwork survey and metal detector survey, trial trench and borehole locations relative to previous geophysical survey results and features identified by the aerial photographic assessment and LiDAR analysis, as relevant, including a written rationale for each survey / trench / borehole location;
- provisional structure for the technical report and publication and dissemination proposals;
- provisional programme for the evaluation; and
- staffing and responsibilities (including sub-contractors and/or specialists).

6.2.2 The SSWSI will be developed for archaeological purposes and will be separate to the Archaeological Contractor's Risk Assessment and Method Statement (RAMS). The SSWSI will be agreed with the Consultant and the Viking CCS Heritage Consultees.

6.3 Earthwork Survey

6.3.1 The earthwork survey shall be carried out in line with the guidance provided in Metric Survey Specifications for Cultural Heritage (3rd ed.) (Ref 15), and Understanding the Archaeology of Landscapes (2nd Edition) (Ref 19).

6.3.2 The survey shall be undertaken to Level 2 (ibid), and shall consist of a written description, and a metrically accurate interpretative site plan supplemented by a photographic record. The earthwork survey shall provide as complete as possible a record and interpretation of the surviving features.

6.3.3 The survey shall be carried out using either a total station theodolite or a GPS, or combination of the two (accurate to ±0.01m relative to established control).

6.3.4 The survey shall record as a minimum the inner and outer edges and entrance positions of any wall, building or structure; and the top, bottom and break of slope for all earthwork features. For ridge and furrow the centreline of each furrow shall be surveyed. Additional 3D points shall be recorded to enable the generation of accurate contours or digital terrain/ground models as necessary. Additional detail (fences, hedges and modern ditches etc.) shall be recorded to provide a check on the detail depicted by the Ordnance Survey.

6.3.5 Data from the survey shall be downloaded from the data-logger into a separate computer at appropriate intervals, and at least daily, to ensure security of the data.

6.3.6 A written descriptive and interpretative account of the remains, accompanied by a sketch plan shall be recorded on pro-forma recording sheets during the survey. This field record shall include:

- the type (classification) of the archaeological field monument being investigated, and its period;
- the location of the site;
- the name of the compiler, the date of the investigation and reason(s) for the survey, with details of site ownership and present land use;
- a summary of the salient features;
- a concise description of the site, including information on plan, form, dimensions and area, function, age, developmental sequence and past land use; and
- consideration of the topographical setting of the earthworks and their relationship to other sites and landscapes, and to historic buildings in the immediate vicinity.

6.3.7 A photographic record shall be made of the earthworks at each site and their surroundings to illustrate their broader context and their place in the landscape. Photographs shall be taken using a high-resolution digital camera with a minimum resolution of 24 megapixels (Ref 17).

6.3.8 Care shall be taken to ensure that all photographs are well exposed in good natural light and, where possible, that advantage is taken of variations in light conditions that may enhance the definition of the sites against their surroundings. A record shall be kept of the subject, orientation, the date taken and any other relevant information. Photographs shall include landscape setting as well as detailed images of individual features.

6.4 Metal Detecting Survey

6.4.1 The metal detecting survey will be undertaken by experienced metal detectorists following a methodology recommended by the Battlefields Trust (Ref 1) and the Code of Practice for Responsible Metal Detecting in England & Wales (Ref 26). For the survey, modern metal detecting equipment shall be used, and the survey will be undertaken in all metal mode, with both pulse induction and VLF detectors.

6.4.2 The Archaeological Contractor shall appoint a nominated Survey Coordinator, who will have the necessary archaeological experience and expertise to ensure the best results from metal detector operators in the field and the efficient reporting of the results. The nominated Survey Coordinator shall be responsible for maintaining a register of detector users involved in the survey, providing appropriate site access and to ensure good practice in survey and recording methodology. They will also ensure that appropriate arrangements are made for identification, conservation, security of the finds and ultimately their incorporation into the overall project finds database. They shall also ensure that all detector users are fully briefed to ensure that they adhere to the principles set out in the written agreement and have completed all health and safety inductions and training necessary to work on the site.

6.4.3 In each area for metal detecting the soil chemistry will be established for the topsoil and the subsoil in several locations in order that the potential for survival of metal artefacts, especially ferrous artefacts, can be assessed prior to the start of the survey.

6.4.4 Initially, a non-intensive metal detection survey will be completed at the locations identified in the scope of works (Section 4 of this WSI). Depending on the results and subject to instruction by the Consultant this may be followed by intensive metal detecting survey to target specific hotspots identified from the non-intensive survey, in order to clarify the extent, character and complexity of the artefact distribution.

Non-intensive survey areas

6.4.5 These areas will be scanned using 10m line transects laid out on two orthogonal axes.

Intensive survey areas

6.4.6 The Archaeological Contractor shall only carry out an intensive metal detecting survey with the prior written approval of the Consultant.

6.4.7 These areas will be detected using 2m line transects laid out on two orthogonal axes consistent with the preceding non-intensive survey in order that the survey identifies possible artefacts lying at different angles according to the orientation of the transects.

6.4.8 Each artefact will be three dimensionally recorded using survey grade equipment to an accuracy of ±0.01m relative to established control (Historic England, 2016) and individually bagged (metal targets may be initially flagged and labelled before recovery but no flags will be left out overnight). All obviously modern items such as modern food and drink waste, foil, aluminium items, modern screws and bolts, wire nails, barbed wire, cast iron, titanium or nickel items, modern fencing pickets, modern buttons will be discarded (as recorded in the Archaeological Contractor's finds disposal policy).

6.4.9 Only metal objects that are within the depth of ploughing shall be recovered. The amount of ground disturbance shall be minimised by using suitable tools and by reinstating any small holes.

6.4.10 The Archaeological Contractor shall ensure that recovered metal objects are provisionally identified by an appropriate specialist on the next working day and conserved in accordance with the Archaeological Contractor's finds policy (objects may also require x-ray to confirm their identification (Historic England, 2006)). The metal objects shall be indexed and will form part of the overall evaluation assemblage and finds database.

6.4.11 If the Archaeological Contractor appoints external metal detector users for all or part of the survey they must agree to abide by the relevant Policies, Methods/Guidelines and Agreements of the Archaeological Contractor to undertake metal detector surveys. In these

circumstances the Archaeological Contractor shall ensure that the work is regulated by formal written agreements between the organisation and the nominated detectorists to ensure that all work is carried out in accordance with a set of principles agreed at the outset of the project and detailed in the Archaeological Contractor's SSWSI.

6.4.12 The overall results of metal detecting shall be presented in a specialist technical report prepared by the Archaeological Contractor (see Section 7 of this WSI). A series of interim statements will also be produced following the completion of each stage of work within a survey area (non-intensive or intensive survey) (to be produced within two working days). Each statement shall briefly summarise what has been found and any recommendations for extending the survey or to advance to intensive metal-detecting.

6.5 Archaeological Trial Trenching

Machine Excavation

6.5.1 The Consultant will agree access for the works and associated resources with the Client and their lands liaison team. As the DCO Site Boundary constitutes multiple landowners this will be conducted for each working area and a timetable will be devised to reflect this. The Archaeological Contractor will be advised of the arrangements by the Consultant prior to entering the DCO Site Boundary for the Proposed Development.

6.5.2 The Archaeological Contractor shall make a photographic record of survey areas prior to commencement of work and on completion of work.

6.5.3 The Archaeological Contractor shall be responsible for identifying any buried or overhead services. No excavation will commence without a PAS128 Type B utilities survey having been completed and a Permit to Dig issued by the Principal Contractor. This should include confirmation that the locations of any services are marked on site, along with any environmental or ecological constraints and corresponding buffer zones, and that any additional demarcation or safety measures required to ensure that each area is safe are in place prior to commencement of site work.

6.5.4 The Archaeological Contractor will also ensure that everyone involved in the works is aware of safe digging practices and emergency procedures. The Archaeological Contractor's Project Manager for the works will enforce these procedures and ensure that all staff are inducted regarding the site Health and Safety Plan and Risk Assessment prior to commencing works on site. Any services that are disturbed during excavation shall be immediately notified to the utility company owner(s), and restored by the Archaeological Contractor, at their own cost, to the utility company's requirements and specifications.

6.5.5 Trenches should be positioned to an accuracy of ± 0.1m using survey-grade GPS (Ref 16) or equivalent metric-survey equipment. The Consultant will provide the Archaeological Contractor with the trench locations (Ordnance Survey grid co-ordinates of the trench corners or a digital drawing of the trench locations on an Ordnance Survey basemap).

6.5.6 The extent of the trial trenches will be clearly demarcated to ensure that persons or plant cannot inadvertently traverse across the area of investigation whilst archaeological works are in progress. Trenches (including adjacent spoil heaps) will be demarcated by the Archaeological Contractor in line with the requirements of their RAMS. Fencing and other demarcation will be regularly inspected and maintained by the Archaeological Contractor until works in the area have been completed.

6.5.7 The trial trenches will be opened under direct archaeological supervision using an appropriate mechanical excavator fitted with a toothless ditching bucket.

6.5.8 The excavation of all trenches will be carried out in such a manner that avoids undue damage to the Site. The sides of each trench will, as far as possible, be even and vertical with no significant undercutting.

6.5.9 The excavation will proceed under direct archaeological supervision, in level spits, until either the top of the first archaeological horizon or undisturbed natural deposits are encountered. Archaeological trial trenches that exceed a safe working limit (site specific, but generally in excess of 0.5m in depth) will be subject to an updated RAMS and permit to dig provided by the Principal Contractor to ensure the stability of the sides of the trenches. Should the trench uncover unstable ground (for example, loosely backfilled cellar infill material), the full width and depth of material will not be excavated; a sondage will be inserted through the material, by machine, to establish the depth of the made ground. Particular attention should be paid to achieving a clean and well-defined horizon with the machine. Under no circumstances should the machine be used to cut arbitrary trenches down to natural deposits. All trenches are to be the stated dimensions at their base. The surface achieved through machine excavation will be inspected for archaeological remains. The mechanical excavator will not traverse any stripped areas.

6.5.10 The machined surface will be cleaned by hand, where required, to enable the definition of archaeological remains. Following cleaning, all archaeological deposits and remains will be planned to enable the selection of features and deposits for sample excavation.

6.5.11 The Archaeological Contractor will be responsible for ensuring a safe and appropriate mode of entry into and out of each trench.

6.5.12 The Archaeological Contractor will ensure that petrol or diesel-powered equipment such as generators, compressors or pumps are not sited on, or near to, the edge of an excavation unless fumes can be ducted away or the area can be ventilated.

6.5.13 A competent person must inspect trenches:

- at the start of each working day prior to work commencing, and during the working day, as appropriate;
- after any event likely to have affected the strength, stability or integrity of the trenches; and
- after any accidental fall of earth or other material.

6.5.14 The Archaeological Contractor will leave the site tidy and in a workmanlike condition and remove all materials brought onto the site.

6.5.15 Excavated material will be retained on site and stockpiled adjacent to trenches with the topsoil and subsoil separated at a safe distance from each trench edge. Excavated material will be prevented from entering any drainage system or water course. The Archaeological Contractor must ensure that the edges of the trenches are protected against falling materials and collapsing sides. This must be done in accordance with HSE recommendations. Toe boards will be provided where necessary.

Hand Excavation

6.5.16 Any archaeological deposits / features that are identified will be hand excavated in an archaeologically controlled and stratigraphic manner, in order to meet the aims and

objectives of the trial trench evaluation. The complete stratigraphic sequence, down to naturally occurring deposits, will be investigated and the work will investigate and record all inter-relationships between features / deposits. Areas without archaeological features will be recorded as sterile. The stratigraphy of all trenches will be recorded, even where no archaeological deposits have been identified.

6.5.17 The following sampling strategies will be utilised as a minimum:

- all features will be investigated – discrete features will be half-sectioned in the first instance; linear features will be sampled a minimum of 20% along their length (each sample section to be not less than 1m), or a minimum of a 1m sample section, if the feature is less than 5m long. Deposits at junctions or intersections between linear features will be sufficiently excavated for the relationship between components to be established;
- structures will be sampled sufficiently to define their form, extent, character, date, stratigraphic complexity and their associated deposits to achieve the objectives of the investigation; and
- where possible / feasible, no archaeological deposits should be entirely removed, unless this is unavoidable. Excavation must be undertaken with a view to avoiding damage to any features or deposits which appear to be worthy of preservation *in situ*.

Recording

6.5.18 The perimeter of each trench, and all identified archaeological remains within the trench, will be recorded in plan using metric survey-grade equipment (or its equivalent) (Historic England, 2015) and overlain onto the Ordnance Survey National Grid using digital map data.

6.5.19 A full written, drawn and photographic record will be made even where no archaeological features are identified. Hand drawn plans and sections of features will be produced at an appropriate scale (normally 1:20 for plans and 1:10 for sections). At least one long section of each trench will be drawn at not less than 1:50, but only after the features / deposits within the trench have been sample excavated. All plans and sections will include spot heights relative to Ordnance Datum in metres, correct to two decimal places.

6.5.20 Colour transparency and monochrome negative photographs will be taken at a minimum format of 35mm. Digital photography will be used to supplement the archive at a minimum of 10 megapixels resolution. In addition to records of archaeological features, a number of general site photographs will also be taken prior to, during and after the works have been completed. Particular attention should be paid to obtaining shots suitable for displays, exhibitions and other publicity.

Backfilling

6.5.21 The trial trenches will not be reinstated without the prior approval of the Consultant, in agreement with the relevant Viking CCS Heritage Consultees, although in exceptional circumstances backfilling will be permitted on health and safety grounds. The trenches will only be backfilled by machine when conditions are appropriate and with direct archaeological supervision. Arisings will be returned strictly in the correct sequence and will be compacted by ‘tracking in’ with the mechanical excavator.

6.5.22 Where services and drains are encountered during the archaeological works these will be left *in situ* and retained on a suitable raised earth baulk. At the end of the investigation, they will be carefully covered with soil arisings from the excavations and consolidated using hand tools to avoid damage during the backfilling process.

6.5.23 In the event that land drains are broken during the evaluation the location of the break will be recorded to ± 0.1m using survey-grade GPS. The landowner will be consulted by the Principal Contractor prior to any reinstatement of a broken land drain to confirm the land owner's preferred method of reinstatement.

Artefact Recovery

6.5.24 All artefacts are to be retained for processing and analysis except for clearly modern material, which may be noted and discarded. All 'significant finds' will be recorded three dimensionally. If artefact scatters are encountered these should be recorded three dimensionally. Bulk finds will be collected by context. Finds will be stored in appropriate controlled conditions. If necessary, an accredited conservator will visit the site to undertake 'first aid' conservation treatment or provide specialist advice.

6.5.25 All hand excavated spoil will be scanned for ferrous and non-ferrous metal artefacts using a metal detector capable of making this discrimination, operated by an experienced metal detector user employed by the Archaeological Contractor. Modern artefacts are to be noted but not retained (19th century material and earlier are to be retained).

6.5.26 All artefacts that are retained will be collected, stabilized, conserved, stored, and processed in accordance with standard methodologies and national guidelines (refer to Annex B). The Archaeological Contractor's Method Statement will provide an indicative artefact collection policy.

6.5.27 Artefacts will be stored in appropriate materials and conditions and monitored to minimise further deterioration.

Environmental Sampling

6.5.28 Sampling will be carried out in consultation with the Consultant, and the Historic England Regional Science Advisor.

6.5.29 The Archaeological Contractor's WSI will outline an appropriate environmental sampling strategy, which contributes to the aims and objectives of the evaluation. Bulk samples must be taken from securely stratified deposits, and the sampling procedures must follow current methodologies (refer to Annex B). If appropriate, the Historic England Regional Science Advisor will be notified of the commencement of the works (or at each phase of the works) and will be consulted regarding the sampling strategy proposed by the Archaeological Contractor.

6.5.30 The overall sampling regime will include the types of deposit sample described below:

- Bulk-sieved Sample (BS): Sample size will depend upon the context / feature size but should be up to 40-60 litres in size (if the context size allows). These samples are taken for the recovery of charcoal, burnt seeds, bone and artefacts. Samples will be processed by flotation, on site where possible, with 1mm and 500micron sieves on a rack to collect the carbonised washover. The retents and flots will then be dried, sorted and assessed to advise of the potential for further analysis.
- General Biological Analysis (GBA): A 10 litre sample size will be used (if the context size allows). These samples will be processed in the laboratory, to recover macrofossils and microscopic remains such as pollen and insects, and to assess the potential for deposits to preserve organic remains.

6.5.31 Samples will be taken for scientific dating to support the aims and objectives of the evaluation. Material removed from site will be stored in appropriate controlled environments.

6.5.32 The sampling programme shall assess the potential for palaeo-environmental remains in support of the aims and objectives of the archaeological investigation. Samples shall be taken as routine from securely stratified deposits irrespective of their apparent 'organic' content as judged in the field or the presence of datable material. Recommendations for analysis of samples and palaeoenvironmental evidence will be included in the fieldwork assessment report.

6.5.33 If industrial activity of any scale is detected, industrial samples and process residues will also be collected. Separate samples (c. 10ml) will be collected for micro-slags (hammerscale and spherical droplets).

Human Remains

6.5.34 Should human remains be discovered during the course of the excavations the remains will be covered and protected and left *in situ* in the first instance, in accordance with current good practice. The removal of human remains will only take place in accordance with a licence from the Ministry of Justice and under the appropriate Environmental Health Regulations and the Burial Act 1857 (Ref 6). In the event of the discovery of human remains the Archaeological Contractor will notify the Consultant immediately, who will contact the relevant local authority planning archaeologist to establish whether it is necessary to contact the office of H.M. Coroner.

Treasure

6.5.35 Any artefacts which are recovered that fall within the scope of the Treasure Act 1996, Treasure (Designation) Order 2002 and Treasure (Designation) (Amendment) Order 2023 No. 404, will be reported to the Consultant and H.M. Coroner immediately. The Archaeological Contractor will ensure that the Treasure regulations are enforced and that all the relevant parties are kept informed. In addition, the Archaeological Contractor shall maintain a list of finds that have been collected that fall under the Treasure Act and related legislation and this list shall be included in the fieldwork report.

6.5.36 Artefacts that are classified as 'treasure' will be removed to a safe place. Where removal cannot be effected on the same working day as the discovery, suitable security measures must be taken by the Archaeological Contractor to protect the finds from damage or unauthorised removal.

Finds Processing

6.5.37 Initial processing of finds (and, if appropriate, other samples) will be carried out concurrently with the fieldwork. The processing of finds will be finished shortly after completion of the investigations. The finds will be retained (according to the collection policy), washed, marked, bagged and logged on a MS Access or GIS database (or equivalent), together with their locations (if applicable) according to the National Grid (eastings, northings) and Ordnance Datum (height), accurate to 2 decimal places.

6.5.38 The finds assemblage will be treated, labelled and stored in accordance with the appropriate Historic England (formerly English Heritage) guidance documents and the Institute of Conservation guidelines (refer to Annex B). At all times the Archaeological Contractor shall ensure that the processing of the assemblage is in accordance with the requirements of the recipient repository or Museum.

6.5.39 If appropriate, each category of find or each material type will be examined by a suitably qualified archaeologist or specialist and the results incorporated into the report.

Specialist Assessment

6.5.40 The Archaeological Contractor will include the list of staff they will use for specialist assessment within their Method Statement.

6.5.41 The stratigraphic information, artefacts, soil samples and residues will be assessed for their potential and value for further analysis and study. The material will be quantified (counted and weighed). Specialists will undertake a rapid scan of all excavated material. An assessment will be made of each artefact type.

6.5.42 Materials considered vulnerable to deterioration should be selected for stabilisation after specialist recording. Where intervention is necessary, consideration will be given to possible investigative procedures (e.g., glass composition studies, residues on pottery, and mineral preserved organic material). Allowance will be made for preliminary conservation and stabilisation of all objects and a written assessment of long-term conservation and storage needs produced. Once assessed, all material will be packed and stored in optimum conditions, in accordance with Watkinson and Neal (Ref 33), CIfA (2020b) (Ref 8) and Museums and Galleries (1992).

6.5.43 All finds will be cleaned, marked and labelled as appropriate prior to assessment. For ceramic assemblages any recognised local pottery reference collections and relevant fabric codes will be used.

6.6 Geoarchaeology

6.6.1 The Archaeological Contractor's geoarchaeologist will review available information geotechnical and geoarchaeological information for the Site and immediate surroundings, in particular Land on the Edge: The Landscape Evolution of the Lincolnshire Coastline (Ref 11), in order to identify the number, location and type of boreholes to be undertaken in each area identified for geoarchaeological investigation (see para 4.11). This information will be detailed in the Archaeological Contractor's WSI (see para 6.4 and 6.5) and will be agreed with the Consultant and the Viking CCS Heritage Consultees.

6.6.2 The position of each borehole location will be accurately set out by the Archaeological Contractor and tied into the Ordnance Survey National Grid and Ordnance Survey datum. The control points used to locate these points relative to base mapping and/ absolute position on the Earth's surface will be located to survey-grade accuracy (±0.1m).

6.6.3 The Archaeological Contractor shall have responsibility for locational accuracy throughout the site work. Each borehole will be mechanically drilled by a specialist drilling rig contractor appointed by the Archaeological Contractor using a tracked terrier rig.

6.6.4 The Archaeological Contractor's geoarchaeologist shall determine the drilled diameter of the borehole in consultation with the specialist drilling rig contractor (either 150mm, 200mm or 300mm diameter).

6.6.5 The Archaeological Contractor shall be responsible for identifying any buried or overhead services. No excavation will commence without a PAS128 Type B utilities survey having been completed and a Permit to Dig issued by the Principal Contractor. This should include confirmation that the locations of any services are marked on site, along with any environmental or ecological constraints and corresponding buffer zones, and that any additional demarcation or safety measures required to ensure that each area is safe are in place prior to commencement of site work.

6.6.6 The Archaeological Contractor will also ensure that everyone involved in the works is aware of safe digging practices and emergency procedures. The Archaeological Contractor's Project Manager for the works will enforce these procedures and ensure that all staff are inducted regarding the site Health and Safety Plan and Risk Assessment prior to commencing works on site. Any services that are disturbed during excavation shall be immediately notified to the utility company owner(s), and restored by the Archaeological Contractor, at their own cost, to the utility company's requirements and specifications.

Hand excavated starter pits

6.6.7 Hand excavated starter pits (excavated dimensions c. 0.50m x 0.50m) at each borehole location will be opened by the rigger team under the constant supervision of the geoarchaeologist. If any archaeological remains are present, they shall be investigated (excavated and recorded) by the geoarchaeologist prior to the start of the drilling work.

Boreholes

6.6.8 The purpose of the geoarchaeological work is to investigate the nature and extent of buried archaeological and geological deposits and alluvial sediments which could be impacted by the Scheme.

6.6.9 The main aim of palaeoenvironmental assessment will be to establish the date of deposits and the presence/absence of key palaeoenvironmental indicators, in order to identify the potential of further work to contribute data towards key research objectives.

6.6.10 The borehole survey will be undertaken in accordance with the Chartered Institute for Archaeologists (CIfA) Code of Conduct (CIfA, 2021) and Standard and guidance for archaeological field evaluation (CIfA, 2020), and the relevant national guidance produced by Historic England, including Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sample and Recovery to Post-excavation (Ref 14), Geoarchaeology: using Earth Sciences to understand the archaeological record (Ref 18), and Deposit modelling and archaeology: guidance for mapping buried deposits (Ref 21).

6.6.11 The Archaeological Contractor will consult with their specialist drilling rig contractor during the preparation of the site-specific Risk Assessment and Method Statement (RAMS) regarding safe working practices, such as work within the vicinity of watercourses, utilities, active highway boundaries, contaminated soils and excavations.

6.6.12 Soil core sample holes will be re-instated with bentonite (or equivalent inert material) to protect the groundwater, minimise contamination pathways and/or address any other residual hazards. Should a significant obstruction be encountered before reaching the target depth an additional hole shall be drilled, at a distance of at least 1.0m from the survey point, at the discretion of the Archaeological Contractor. Should the additional core encounter an obstruction of a similar nature the circumstances shall be recorded, and the excavation ceased. Such additional cores will be assigned the same unique number as the original core along with a suffix (e.g., A, B, etc for each additional drilling attempt).

Monitoring and recording

6.6.13 The geoarchaeologist supervising the work will be familiar with the geology of the Scheme area or have experience of similar geological contexts. The geoarchaeologist will liaise with the rig crew to ensure that the methods used to recover the material are sufficient to support palaeoenvironmental sampling and sampling for scientific dating where required, to address project specific research questions.

6.6.14 The geoarchaeologist undertaking the investigation will attend the works at each borehole location. They will record archaeological remains (if present in starter pits) and the deposit sequence from the drilled cores (ground surface to the base of the sequence). The results of the investigation will be used to illustrate the main trends in the deposit sequence (depth and distribution of main depositional units by means of schematic cross-sections), and if appropriate surface and thickness plots (e.g., thickness of alluvium and organic sediments). The geoarchaeologist will work with the rig crew to assess the deposits in the field.

Assessment of cores

6.6.15 The geoarchaeologist shall be present during drilling operations at each borehole until they are content that geological deposits (laminated clays) are reached, or 13m depth is achieved.

6.6.16 Cores will be longitudinally split and opened to allow recording in the field, with selected cores also retained for later laboratory description and sampling. Additional core sequences may be recovered in opaque black liners for optically stimulated luminescence dating (OSL / IRSL) dating, where it will contribute to the aims and objectives of the evaluation.

6.6.17 Cores retrieved for laboratory description and assessment will be re-sealed for transport back to the Archaeological Contractors geoarchaeology laboratory.

6.6.18 Prior to sub-sampling, cores will be cleaned and recorded using standard sedimentological descriptions including Munsell colour, texture, structure and nature of boundaries. A full written, drawn and photographic record will be made of each core even where no archaeological deposits are identified. Cores will be recorded on pro-forma logs. Hand drawn sections (and plans where relevant) of the deposit sequence will be produced at an appropriate scale. All plans and sections will include spot heights relative to Ordnance Datum in metres, correct to two decimal places. Cores recovered for OSL / IRSL dating recovered in opaque black liners and opened, described and sub-sampled under red-light conditions.

6.6.19 Photographs will record site activities, the deposit sequence and sample locations.

6.6.20 The strategy and methods for sampling will follow the relevant guidance set out in the Archaeological Contractor's in-house standard procedure for environmental sampling and scientific dating. Sampling of vertical deposit sequences will follow the Archaeological Contractor's in-house guidelines for geoarchaeological sampling, in line with the procedures and principles for environmental sampling and scientific dating produced by Historic England (Historic England, 2015). The Archaeological Contractor will ensure a co-ordinated approach to specialist assessment. The geoarchaeologist will closely guide any staff undertaking sampling, interpretation and assessment. The samples will be recorded on the Archaeological Contractor's standard environmental and sample recording form.

6.6.21 Samples will be processed, sorted, identified and subject to an initial interpretation as soon as it is practically feasible and within the timescales to be determined between the Archaeological Contractor and the Client following the completion of the fieldwork (including preparation of the preliminary technical fieldwork report).

Specialist sub-samples

6.6.22 Recommendations for palaeoenvironmental assessment and scientific dating will be made following fieldwork and the description / interpretation of deposits in the preliminary technical fieldwork report (see 7.6.3 and 7.6.4). The range and type of samples that will be taken forward to assessment will be tailored to the deposit type, initially to determine the date of

deposits and preservation. The range of specialist samples and corresponding deposits are outlined in Table 9. If opportunities emerge for additional techniques during the course of the works, the need for and scope will be discussed between the relevant specialists and included in the preliminary technical fieldwork report.

Table 9: Potential palaeoenvironmental and dating samples from deposits / features

Deposit / feature type	Sample type	Scientific dating potential	Palaeoenvironmental samples
Buried soils and occupation deposits	Boreholes, kubiena, bulk samples, column samples	OSL IRSL, 14C	Plant macros, snails, insects, pollen, non-pollen palynomorphs (NPP), micro-charcoal, phytoliths, micromorphology, geochemistry
Peat / organic rich sediment	Boreholes, monoliths	14C	Plant macros, pollen, NPP, micro-charcoal, snails, insects, microflora, tephra
Palaeochannels	Boreholes, monoliths, column samples	OSL IRSL, 14C	Plant macros, pollen, NPP, micro-charcoal, snails, insects, microflora, tephra
Solution features	Boreholes, column samples, kubiena, bulk samples	OSL IRSL, 14C	Plant macros, pollen, NPP, micro-charcoal, snails, insects, sedimentary ancient DNA (sedaDNA)

Deposit modelling

6.6.23 The preparation of a local or site-specific deposit model will contribute to the future understanding of the past cultural landscape and its evolution and will be undertaken in line with Historic England guidance on deposit modelling (Ref 21).

6.6.24 The deposit model will be developed by the Archaeological Contractor using all available data from previous investigations where available. It will include a rigorous approach to review the quality of the data, including standardisation, identification of any anomalies and missing information. Consideration will be given for inclusion of other relevant data sources into deposit models where appropriate, including geophysical data and stratigraphic data from excavations. The deposit model will also inform the proposal for scientific dating. It will be tailored to the site, including the extent of deposits and spatial availability of data, including cross-sections (lateral transects and 3D fence diagrams), thickness plots and digital elevation models (DEMs).

6.7 Digital Data

6.7.1 The Archaeological Contractor shall ensure that digital data generated as a result of the evaluation are preserved, curated and archived in accordance with the Contractors' strategy for digital data, as presented in their Method Statement, and current good professional practice (refer to Annex B).

7 Reporting

7.1.1 Separate reports will be produced for each phase of the evaluation, namely earthwork survey, metal detecting, trial trenching and geoarchaeological investigation. The results of non-intrusive survey will be used to inform the design of intrusive survey phases where available for inclusion in the Archaeological Contractor's SSWSI.

7.2 Interim Reporting

7.2.1 The Archaeological Contractor will issue an interim statement of the results of each phase of the Archaeological Evaluation (earthwork survey, metal detecting, trial trenching, geoarchaeological investigation) to the Consultant within ten working days of completion of the fieldwork for that phase. Given the large geographic spread of the Proposed Development, it may be necessary to provide staged interim statements for some phases, e.g. trial trenching.

7.3 Earthwork Survey

7.3.1 Within four weeks of completion of the earthwork survey an illustrated report will be produced by the Archaeological Contractor. This will include as a minimum:

7.3.2 The report will include the following:

- a quality assurance (QA) sheet detailing as a minimum: title, author, version, date, checked by and approved by;
- non-technical summary;
- description of the background to and circumstances of the work;
- brief description of the previously known archaeology of the survey area;
- a detailed methodology;
- the aims of the survey;
- description and interpretation of results;
- location plans, detailed plans for each survey area, and sections of individual features where necessary;
- a selection of photographs illustrating the earthworks and their landscape context; and
- a statement on the storage and curation requirements for the data.

7.3.3 The Archaeological Contractor will ensure that the report contains at the front a quality assurance sheet that is appropriately signed-off to confirm that the report has gone through an in-house technical review process before it is presented for external comment.

7.3.4 An electronic copy of the draft report and drawings/figures will be submitted to the Consultant for comment. A digital version of the report and illustrations will be produced within one week of the receipt of comments on the draft report from the Consultant. Following acceptance of the report by the Consultant, the report will be issued to the relevant local authority planning archaeologists for review. In finalising the report, the comments of the local authority planning archaeologists will be taken into account. The digital report shall comprise a complete version of the report in PDF format and separate digital text (in

Microsoft Word format) and CAD mapping (in AutoCAD format) and any other illustrations or plates as appropriate (in JPEG or TIFF format).

7.4 Metal Detector Survey

7.4.1 The results of the Metal Detector Survey will be presented in the form of a written report to be prepared by the Archaeological Contractor. This report will synthesize the results of the survey and determine the significance, extent and distribution of any archaeological artefacts. The report will include the following:

- a quality assurance (QA) sheet detailing as a minimum: title, author, version, date, checked by and approved by;
- a non-technical summary;
- the archaeological and historical background (including an assessment of the results of previous phases of fieldwork);
- a detailed methodology;
- descriptive text detailing the artefacts identified and an interpretation of their date and purpose;
- a general and detailed plan showing findspots and transects;
- a statement that addresses the future retention of the material, if human remains are encountered, including if appropriate, options for reburial;
- a list of all finds that fall within the scope of the Treasure Act and associated legislation;
- an assessment / conclusion and a statement of potential (stratigraphic, artefactual, environmental);
- recommendations for publication and dissemination, where appropriate;
- photographs that illustrate work in progress and archaeological discoveries; and
- the current and proposed arrangements for long term conservation and archive storage (including details of the accredited repository).

7.4.2 The Archaeological Contractor will ensure that the report contains at the front a quality assurance sheet that is appropriately signed-off to confirm that the report has gone through an in-house technical review process before it is presented for external comment.

7.4.3 An electronic copy of the draft report and drawings/figures will be submitted to the Consultant for comment. A digital version of the report and illustrations will be produced within one week of the receipt of comments on the draft report from the Consultant. Following acceptance of the report by the Consultant, the report will be issued to the relevant local authority planning archaeologists for review. In finalising the report, the comments of the local authority planning archaeologists will be taken into account. The digital report shall comprise a complete version of the report in PDF format and separate digital text (in Microsoft Word format) and CAD mapping (in AutoCAD format) and any other illustrations or plates as appropriate (in JPEG or TIFF format).

7.5 Trial Trench Evaluation Report

7.5.1 Within eight weeks of completion of each phase of field work for the archaeological trial trenching, a post-fieldwork assessment report will be prepared by the Archaeological Contractor.

7.5.2 The preparation of the site archive and fieldwork assessment report will be undertaken in accordance with current good practice standards and guidance (refer to Annex B). The precise format of the report is dependent upon the findings of the investigations, but it will contain the following as a minimum:

- a quality assurance (QA) sheet detailing as a minimum: title, author, version, date, checked by and approved by;
- a non-technical summary;
- the archaeological and historical background (including an assessment of the results of previous phases of fieldwork);
- a full detailed methodology;
- a description of the aims and objectives of the archaeological evaluation works;
- the results of the investigations (to include full description of importance and value of the remains, in their local, regional and national context cross-referenced to the Regional Research Framework);
- a general and detailed plan showing the location of the evaluation areas accurately positioned on an Ordnance Survey base map (at an appropriate and recognised scale);
- detailed plans and sections illustrating archaeological features and relationships between features (at an appropriate and recognised scale);
- a statement that addresses the future retention of the material, if human remains are encountered including, if appropriate, options for reburial;
- a list of all finds that fall within the scope of the Treasure Act and associated legislation;
- depending upon the complexity of the remains, a stratigraphic matrix for each excavated trench;
- an assessment / conclusion and a statement of potential (stratigraphic, artefactual, environmental);
- recommendations for publication and dissemination, where appropriate;
- photographs that illustrate work in progress and archaeological discoveries;
- the current and proposed arrangements for long term conservation and archive storage (including details of the accredited repository);
- specialist artefact reports; palaeoenvironmental/ geoarchaeological reports or their equivalent;
- an appendix illustrating specific finds and general working shots or portraits of specific features or structures as appropriate; and
- a cross-referenced index of the project archive.

7.5.3 The report will specifically comment on the results of the archaeological evaluation works and will highlight relevant information on the spatial extent, character, depth, preservation,

date and detail of the archaeological resource, where appropriate. The report will comment on the potential for extrapolating the results onto adjacent areas, if applicable.

7.5.4 Environmental assessment is to include identification of the remains, quantification by context, discussion / interpretation, if warranted, and a description of the processing methodology. Radiocarbon results must be presented in full (laboratory sample number, conventional radiocarbon age, calibration programme). Copies of the laboratory-issued dating certificates must be included as an appendix to the report.

7.5.5 The Archaeological Contractor will ensure that the report contains at the front a quality assurance sheet that is appropriately signed-off to confirm that the report has gone through an in-house technical review process before it is presented for external comment.

7.5.6 An electronic copy of the draft report and drawings/figures will be submitted to the Consultant for comment. A digital version of the report and illustrations will be produced within one week of the receipt of comments on the draft report from the Consultant. Following acceptance of the report by the Consultant, the report will be issued to the relevant local authority planning archaeologists for review. In finalising the report, the comments of the local authority planning archaeologists will be taken into account. The digital report shall comprise a complete version of the report in PDF format and separate digital text (in Microsoft Word format) and CAD mapping (in AutoCAD format) and any other illustrations or plates as appropriate (in JPEG or TIFF format).

7.6 Geoarchaeology

7.6.1 The results of the borehole survey will be contained in a two-staged technical report to be prepared by the Archaeological Contractor. Earlier investigations (evaluation surveys and excavations) will be reviewed by the Archaeological Contractor where these contribute to an understanding of the borehole survey or address the research objectives.

7.6.2 A Preliminary Technical Report will be prepared once the fieldwork is complete and in accordance with a time frame determined by the Client following completion of the fieldwork but no later than 4 weeks following completion of the fieldwork. The Preliminary Technical Report will be followed by an Assessment Technical Report prepared in accordance with a time frame determined by the Client.

Preliminary Technical Report

7.6.3 The Preliminary Technical Report will detail the results of fast-turnaround assessment of environmental data (recognising that the timescale of field and laboratory-based investigation and assessment may differ slightly to the fieldwork program). The purpose of the report will be to provide outline descriptions and interpretation of superficial deposits and their geoarchaeological and archaeological potential. If relevant the report may include interim results of deposit modelling to guide interpretation or inform on the need for further work, where appropriate. It will include recommendations for targeted palaeoenvironmental / geoarchaeological assessment and initial scientific dating, considering key overarching and site-specific research objectives.

7.6.4 The Preliminary Technical Report will include (but is not limited to):

- A summary of results (geoarchaeological and archaeological).
- A draft plan of borehole investigations and interim deposit modelling (where appropriate).
- Photographs and illustrations.

- Recommendations for palaeoenvironmental / geoarchaeological assessment and scientific dating; and a programme (schedule of work) for the completion of the assessment, with results to be detailed in the full Assessment Technical Report.
- A quantification of the primary archive including finds and samples.
- Identification of any issues that have arisen during the course of the fieldwork.
- Bibliography.

Assessment Technical Report

7.6.5 The Assessment Technical Report will be prepared by the Archaeological Contractor. The aim of the Assessment Technical Report is to detail the results of initial laboratory-based works using a range of analytical techniques, guiding the need for and scope of subsequent targeted analysis, where appropriate.

7.6.6 This may include (dependent on the deposits and research objectives) an assessment of the preservation of key palaeoenvironmental indicators, geochemical, micromorphological and / or sedimentological investigations and the results of initial scientific dating.

7.6.7 The report will include recommendations for a targeted program of palaeoenvironment / geoarchaeological analysis and scientific dating, where appropriate.

7.6.8 The scope of the analysis and publication will be informed by the assessment and future discussions to be held with the Client. The report will be illustrated, and it will include the following, as a minimum:

- non-technical summary;
- site location;
- brief geoarchaeological background, including geology and topography;
- aims and objectives;
- methods;
- results – factual data (e.g., stratigraphy, updated deposit model, palaeoenvironmental assessment);
- discussion, including a statement of significance and potential;
- statement on how analysis can meet the aims and objectives of the WSI;
- statement on how analysis will contribute to specific research objectives;
- recommendations for analysis;
- a cross-referenced index to the project archive and summary of contexts; and
- appendices containing specialist reports and tables that describe the deposit sequence of boreholes.

7.6.9 The Preliminary Technical Report and the Assessment Technical Report will be submitted to the Consultant for review and comment. The Archaeological Contractor will address any comments that the Consultant may have. In finalising the report, the Archaeological Contractor will take account of the comments of the Consultant.

7.6.10 The Archaeological Contractor will ensure that the report contains at the front a quality assurance sheet that is appropriately signed-off to confirm that the report has gone through an in-house technical review process before it is presented for external comment.

7.6.11 An electronic copy of the draft report and drawings/figures will be submitted to the Consultant for comment. A digital version of the report and illustrations will be produced within one week of the receipt of comments on the draft report from the Consultant. Following acceptance of the report by the Consultant, the report will be issued to the local authority planning archaeologists for review. In finalising the report, the comments of the local authority planning archaeologists will be taken into account. The digital report shall comprise a complete version of the report in PDF format and separate digital text (in Microsoft Word format) and CAD mapping (in AutoCAD format) and any other illustrations or plates as appropriate (in JPEG or TIFF format).

7.7 OASIS Record

7.7.1 An OASIS entry shall be completed at the end of the fieldwork, irrespective of whether a formal report is required. The Archaeological Contractor will complete the online form at http://ads.ahds.ac.uk/project/oasis/ within one month following completion of the fieldwork. Archaeological contractors are advised to contact OASIS (oasis@ads.ahds.ac.uk) for technical advice.

8 Programme and Resources

8.1 Programme

8.1.1 The evaluation programme will be dependent upon land access agreements, including those related to environmental constraints and prevailing ground / weather conditions. The Archaeological Contractor shall liaise with the Consultant when designing a provisional programme for the evaluation. The provisional programme shall be included in the Archaeological Contractor's Method Statement (tabulated and / Gantt format, as appropriate).

8.1.2 Following acceptance of the programme by the Consultant and the Client the Archaeological Contractor shall mobilise to Site (subject to clearance from environmental disciplines and approval from the Client's lands liaison team and landowners).

8.1.3 The Archaeological Contractor will ensure that adequate and appropriate management procedures are in place to ensure that risks to the programme timetable (for example caused by inclement weather) can be identified at an early stage. These risks will be kept under constant review by the Archaeological Contractor to ensure that the fieldwork is completed to the required standard within the agreed timescales and to budget.

8.1.4 The Archaeological Contractor will notify the Consultant at the earliest opportunity if there are any changes to the methodology or programme of work that arise from these reviews. Changes / variations to the programme will only be accepted after they have been agreed in writing with the Consultant as part of a change control procedure. The Archaeological Contractor will immediately notify the Consultant should any agreed programme date not be achievable.

8.1.5 The Archaeological Contractor will provide early warnings for any delays to the works' timetable or programme issues. The early warnings will be sent to the Consultant and the Client.

8.2 Resources

8.2.1 All archaeological personnel involved in the project should be suitably qualified and experienced professionals. The Archaeological Contractor shall provide the Consultant with staff CVs of the Project Manager, Project Officer, Site Supervisors and any proposed specialists that might be involved in the post-excavation work. Site assistant CVs will not be required, but all site assistants should have an appropriate understanding of excavation procedures.

8.2.2 All staff will be fully briefed and aware of the work required under this WSI and will understand the aims and objectives of the investigation and the methodologies to be employed.

8.3 Archaeological Clerk of Works

8.3.1 The Consultant will appoint an Archaeological Clerk of Works (ACoW). The ACoW will be responsible for daily monitoring and record checking of the archaeological investigation to assure adherence to this WSI (Section 11). The ACoW will support the archaeological

investigations on site by, for example, providing liaison with ecologists with regard to ecological constraints and in confirming changes to trench positions to avoid local site constraints in the field.

8.3.2 The ACoW will provide the Viking CCS Heritage Consultees and the Client with a weekly report on progress and findings from the trial trenching. The ACoW will liaise with the Heritage Consultees in relation to backfilling of trenches and changes to trench locations should prevailing site conditions necessitate this.

8.3.3 The ACoW will work with AECOM's site management team to ensure the safe and timely delivery of the trial trenching.

9 Archive Preparation and Deposition

9.1 Archive Preparation

9.1.1 The archive will be prepared by the Archaeological Contractor in accordance with the requirements of the receiving local authority repositories and the Lincolnshire County Council Archaeology Handbook (Ref 22).

9.1.2 All archaeological material recovered from fieldwork is irreplaceable and data recorded in the course of fieldwork should be held securely in a separate location in line with current good practice.

9.1.3 The site records and assemblages (list of fieldwork interventions, notebooks / diaries, completed pro forma record cards, records of site geometry (drawings), photographs and films, finds records and associated datafiles) will constitute the primary site archive. This is the key archive of the fieldwork project and the raw data upon which all subsequent assessment, analysis and future interpretation will be based. The archive will, therefore, not be altered or compromised; it remains the original record of the fieldwork. The site archive should be quantified, ordered, indexed and made internally consistent, and prepared in line with Archive Selection Toolkit: A toolkit to aid in the selection of the working project archive (CIfA 2019b) and current good practice (CIfA 2020c; Brown 2011a & 2011b).

9.1.4 The archive of finds and records generated during the fieldwork will be removed from the Site at the end of each day and kept secure at all stages of the project until it is deposited in the agreed repository. The archive will be produced to current national standards (refer to Annex A).

9.2 Archive Deposition

9.2.1 The Archaeological Contractor will, prior to the start of fieldwork, liaise with the receiving repository or museum to obtain agreement in principle to accept the documentary, digital and photographic archive for long-term storage. The Archaeological Contractor will be responsible for identifying any specific requirements or policies of the recipient repository in respect of the archive, and for adhering to those requirements. As a minimum the Archaeological Contractor will keep the repository informed of the likely quantification and content of the archive throughout the progress of the fieldwork. Any charges levied by the repository for the long-term storage of the archive will be met by the Archaeological Contractor.

9.2.2 The deposition of the site archive forms the final stage of the project. The Archaeological Contractor shall provide copies of communication with the accredited repository and written confirmation of the deposition of the archive. The Archaeological Contractor shall deal with the transfer of ownership and copyright issues.

10 Safety, Health and Environment (SHE)

10.1 General

10.1.1 The Archaeological Contractor shall comply with the Construction (Design and Management) Regulations 2015 (Ref 12), Health and Safety at Work Act (1974), the Control of Pollution Act (1974), the Control of Substances Hazardous to Health Regulations 1999 (COSHH), the Environmental Protection Act (1990), and all other relevant statutory requirements.

10.1.2 The Archaeological Contractor will provide the Consultant with details of their public and professional indemnity insurance cover.

10.1.3 Project staff are required to follow health and safety procedures and a risk assessment should be carried out and submitted to the Consultant prior to commencing work, to ensure the safety of workers on site.

10.1.4 The Archaeological Contractor will have their own Health and Safety policies compiled using national guidelines, which conform to all relevant Health and Safety legislation and good practice. A copy of the Archaeological Contractor's Health and Safety policy will be submitted along with their tender to the Consultant, who will forward on to the Client.

10.2 Risk Assessment and Method Statement

10.2.1 The Archaeological Contractor shall prepare a Risk Assessment and Method Statement (RAMS) that will be submitted to the Consultant for approval, 10 days prior to commencing the work. The RAMS may be issued back to the Archaeological Contractor with comments requesting amendments to be made to the document, before it is reissued, reviewed and approved. The Archaeological Contractor will not start work until the RAMS has been approved by the Consultant.

10.2.2 If amendments are required to the Risk Assessment during the works, the Consultant and any other interested party must be provided with the revised document at the earliest opportunity.

10.2.3 The contents required of all RAMS issued are:

1. Scope of Works
2. Project Specific Hazards / Risks / Environmental Factors
3. Reference Documents
4. Subcontracted and third-party works
5. Areas of Work (access and egress)
6. Resources
7. Plant and Equipment

8. Materials
9. Mandatory PPE
10. Task Specific PPE
11. Methodology of Works
12. Environmental Protection
13. HSE Hold Points
14. Attachments
15. Risk Assessment
16. Environmental Risk Assessment
17. Amendments Record

10.2.4 Daily briefings to those individuals involved in the work tasks will be delivered by the Principal Contractor's Site Manager or the Archaeological Contractor's work supervisor (Project Officer) prior to works commencing. Site staff are to ask questions on anything that is unclear or requires repeating. At the end of the shift any feedback shall be provided to the Archaeological Contractor's work supervisor / Principal Contractor's Site Manager on the RAMS performance via the Task Hazard Assessment procedure, with a view to this being incorporated into future revisions of the documents as necessary.

10.2.5 All site personnel will familiarise themselves with the following:

- site emergency and evacuation procedures;
- the site's health and safety coordinator;
- the first aider; and
- the location of the nearest hospital and doctor's surgery.

All equipment that is used in the course of the fieldwork must be 'fit for purpose' and be maintained in a sound working condition that complies with all relevant Health and Safety regulations and recommendations.

10.2.6 The Archaeological Contractor shall liaise with the Consultant and any other sub-contractors to ensure that the archaeological work is undertaken in an organised and professional manner.

All parties shall have full regard for the safety of all personnel on site, including measures to ensure the safety of all.

10.3 Mandatory Training

10.3.1 Mandatory training requirements for all site staff are:

- Construction Skills Certification Scheme (CSCS) card (or equivalent United Kingdom based scheme), appropriate to the role they are undertaking;
- Asbestos in Soils Awareness training; and
- Manual Handling training.

Site Supervisors (AECOM and Sub-contractors) are to hold the following mandatory training:

- Site Supervisors Safety Training Scheme (SSSTS) or equivalent;

- Construction Skills Certification Scheme (CSCS) card (Black Card);
- Asbestos in Soils Awareness training;
- Manual Handling training; and
- First Aid at Work (3-day course).

10.4 On Site Training

10.4.1 Toolbox Talks will be undertaken weekly, or as required following an incident, on relevant subjects and delivered by the Principal Contractor's Site Manager or Archaeological Contractor's work supervisor to all personnel on site. The briefing will be held within the site welfare and, following the talk, the opportunity to raise health and safety concerns, improvement suggestions, good practise, etc. will be opened up to all present.

10.4.2 Daily Site Briefings (10.8 above) also provide a medium for employees to discuss Health and Safety issues and for training to be delivered as part of the delivery of key tasks. These are undertaken prior to any works being undertaken on site each day. The proposed works for the day are discussed and all controls / work procedures reinforced to ensure that all members of the site team understand their role. At the end of these briefings the workforce can then discuss the proposed work methods and other issues.

10.5 Welfare and Security Provisions

10.5.1 The Archaeological Contractor shall supply mobile welfare and satellite compounds as needed for the completion of the works as set out in this WSI.

10.6 Utilities

10.6.1 The Archaeological Contractor shall be responsible for obtaining and checking up to date statutory utility plans and undertaking a PAS128 B survey prior to the commencement of fieldwork. The Archaeological Contractor will take the necessary precautions to avoid utilities and the RAMS and Health and Safety Plan shall refer to relevant guidance and good practice, for example:

- Health and Safety Executive GS6 - Avoidance of Danger from Overhead Lines;
- HS(G)47 - Avoiding Danger from Underground Services;
- PAS 128:2022 – Underground Utility Detection; and
- National Grid T/SP/SSW/22 - Safe Working in the Vicinity of National Grid High Pressure Gas Pipelines and Associated Installations.

10.7 Ground Contamination

10.7.1 The Consultant and the Client will supply reports relating to any known or suspected ground contamination (both on surface and sub-soil) so that known risks can be mitigated. The Archaeological Contractor's RAMS will establish procedures should ground contamination be encountered or suspected. This will include notifications to the Consultant and the Client, the relevant local authority, the Environment Agency and the affected landowner.

10.8 Permit to Dig

10.8.1 The Principal Contractor shall issue the Archaeological Contractor with a Permit to Dig prior to any excavation being undertaken. The Permit to Dig system will ensure that all necessary constraints to excavation have been appropriately considered and control measures implemented before excavation works are carried out.

11 Monitoring

11.1 SHE Monitoring Arrangements

11.1.1 The arrangements for monitoring Health and Safety during the project will be detailed in the Construction Phase Health and Safety Plan.

11.2 Technical Monitoring

11.2.1 The fieldwork will be monitored to ensure that it is being carried out to the required standard and that it will achieve the aims and objectives as set out in the WSI. The Archaeological Contractor shall ensure that the Archaeological Evaluation complies with current historic environment guidance and legislation, and the requirements as set out in this WSI.

11.2.2 The archaeological investigation will be subject to daily monitoring by the Consultant's ACoW, who will have unrestricted access to the area, fieldwork records or any other information. The work will be inspected to ensure that it is being carried out to the required standards, and that it will achieve the stated objectives.

11.2.3 The relevant Viking CCS Heritage Consultees have a statutory role as the planning authorities in relation to archaeological works for the Scheme, including the responsibility to 'sign-off' the archaeological fieldwork, and approval of this WSI for Archaeological Evaluation Strategy and any subsequent Site-Specific Written Scheme of Investigation ('SSWSI').

11.2.4 The Consultant will notify the Viking CCS Heritage Consultees in writing of the commencement of works, two weeks prior to the start of works, as a minimum. Access to the evaluation works areas will be accorded to the relevant local authority planning archaeologist to enable them to monitor the work being undertaken against the methodology detailed in this WSI for Archaeological Evaluation and any subsequent SSWSI. If significant or unusual deposits are revealed, the Historic England Regional Science Advisor will be contacted by the Consultant to discuss excavation and sampling techniques and, if necessary, to arrange a site visit.

11.2.5 Progress meetings involving the Consultant, the Archaeological Contractor, and the Viking CCS Heritage Consultees may be held on site, as appropriate.

11.2.6 In the event of remote sign off of trenches, photographs of open archaeological trial trenches will be submitted to the Consultant and the Viking CCS Heritage Consultees. Permission to backfill archaeological trial trenches must be sought by the Archaeological Contractor and given by the ACoW in liaison with the Viking CCS Heritage Consultees prior to backfilling, unless Health and Safety considerations dictate immediate backfilling, in such cases the ACoW may authorise the backfilling of trenches.

11.2.7 The Archaeological Contractor will only accept instruction from the Consultant.

11.2.8 The monitors are not liable in any way for the failings of the Archaeological Contractor and such monitoring is not intended to take the place of proper self-regulation.

11.2.9 At the end of each phase of fieldwork the Archaeological Evaluation will be subject to a formal signing-off procedure, whereby the ACoW submits a Completion Statement to the relevant local authority planning archaeologist for confirmation that the fieldwork has been completed in compliance with this WSI.

12 Confidentiality and Publicity

12.1.1 The archaeological works may attract the interest of the public and the press. All communication regarding this project is to be directed through the Consultant. The Archaeological Contractor will refer all inquiries to the Consultant without making any unauthorised statements or comments.

12.1.2 The Archaeological Contractor will not disseminate information or images associated with the project for publicity or information purposes without the prior written consent of the Consultant.

13 Copyright

13.1.1 The Archaeological Contractor will assign copyright in all reports, documentation and images produced as part of this project to the Client. The Archaeological Contractor shall retain the right to be identified as the author or originator of the material.

13.1.2 The Archaeological Contractor will obtain such rights from sub-contracted specialists.

13.1.3 The Archaeological Contractor may apply in writing to the Client to use or disseminate any of the project archive or documentation (including images). Such permission shall not be unreasonably withheld.

13.1.4 Information relating to the project will be deposited with the relevant local authority Historic Environment Record where it can be freely copied for the purposes of archaeological research, or development control within the planning process.

13.1.5 The technical report and the project archive may contain material that is non-Archaeological Contractor copyright (e.g., Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which the Archaeological Contractor can provide for limited reproduction under the terms of their own copyright licences, but for which copyright itself is non-transferable by the Archaeological Contractor.

13.1.6 Users remain bound by the conditions of the Copyright, Designs and Patents Act 1988 regarding multiple copying and electronic dissemination of such material.

14 Access Arrangements

14.1.1 Access to the Site is restricted to authorised personnel only.

14.1.2 Access to the Site and instruction for access/ egress to each area will be arranged by the Consultant's lands liaison team (Gateley Hamer) and communicated to the Archaeological Contractor.

14.1.3 The Consultant will provide the Archaeological Contractor with the details for access and any known constraints prior to the start of fieldwork.

15 General Provisions

15.1.1 The Archaeological Contractor shall make the minimum of disturbance during the fieldwork and will avoid any unnecessary damage. Access for temporary parking and the location of site welfare shall be agreed with the Consultant and, if appropriate, individual landowners or tenants prior to commencement of the archaeological evaluation works.

15.1.2 The Archaeological Contractor will undertake the works in accordance with this evaluation strategy and any subsequent Written Scheme of Investigation. No variation from, or changes to, the specification will occur except by prior agreement with the Consultant and the Viking CCS Heritage Consultees.

15.1.3 The Site will be left in a tidy and workman-like condition and the Archaeological Contractor will ensure that all materials brought onto site are removed.

References

Ref 1 Battlefields Trust, (2022) *Battlefield Investigation: Policy and Guidance* Battlefield Trust

Ref 2 British Geological Survey (BGS) Accessed December 2022. Online geoindex map. Available online at [redacted].

Ref 3 British Standards Institute, (2022) *Underground utility detection, verification and location. Specification*. British Standards Institute

Ref 4 Brown, D.H., (2011). Safeguarding Archaeological Information. Procedures for minimising risk to undeposited archaeological archives. English Heritage https://www.historicengland.org.uk/imagesbooks/publications/safeguarding-archaeological-information/

Ref 5 Brown, D.H., (2011). Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation. 2nd edition. Institute of Field Archaeologists/Archaeological Archives Forum (Reading) [redacted]

Ref 6 Burial Act (1857) http://www.legislation.gov.uk/ukpga/Vict?20-21/81/contents

Ref 7 CIfA, (2020a) *Standard and guidance for archaeological field evaluation*. Chartered Institute for Archaeologists, Reading. [redacted]

Ref 8 CIfA, (2020b). *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*. Chartered Institute for Archaeologists, Reading. [redacted]

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Annex B Survey Log

Proposed (P), Completed (C)

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
1	1SoKNLi	1	South Killingholme	NLincs						
	2SoKNLi	2	South Killingholme	NLincs						
	3SoKNLi	3	South Killingholme	NLincs						
	4SoKNLi	4	South Killingholme	NLincs	Developed					
	5SoKNLi	5	South Killingholme	NLincs						
	6SoKNLi	6	South Killingholme	NLincs	Developed					
	7SoKNLi	7	South Killingholme	NLincs					P	
	8SoKNLi	8	South Killingholme	NLincs	Woodland					
	9SoKNLi	9	South Killingholme	NLincs	Developed					
	10ImmNEL	10	Immingham	NELincs						
	11ImmNEL	11	Immingham	NELincs	Grassland	C			P	P
	12ImmNEL	12	Immingham	NELincs	Grassland	C				
	13ImmNEL	13	Immingham	NELincs	Arable	C			P	P
	14SKiNLi	14	South Killingholme	NLincs						
	15SKiNLi	15	South Killingholme	NLincs		P			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	16ImmNEL	16	Immingham	NELincs	Mixed	P				
	17SKiNLi	17	South Killingholme	NLincs	Woodland					
	18SKiNLi	18	South Killingholme	NLincs	Woodland					
	19SKiNLi	19	South Killingholme	NLincs	Woodland					
	20ImmNEL	20	Immingham	NELincs	Woodland					
	21ImmNEL	21	Immingham	NELincs	Woodland					
	22ImmNEL	22	Immingham	NELincs	Arable	C			P	P
	23HabNEL	23	Habrough	NELincs	Arable	C			P	
	24HabNEL	24	Habrough	NELincs	Arable	C			P	
	25HabNEL	25	Habrough	NELincs	Arable	C			P	
	26HlmNEL	26	Habrough Immingham	NELincs	Arable	C			P	
	27ImmNEL	27	Immingham	NELincs	Grassland	C			P	
	28ImmNEL	28	Immingham	NELincs	Grassland	C				
	29ImmNEL	29	Immingham	NELincs	Grassland	C			P	
2	30ImmNEL	30	Immingham	NELincs	Arable	C			P	
	31ImmNEL	31	Immingham	NELincs	Arable	C			P	
	32ImmNEL	32	Immingham	NELincs	Arable	C			P	
	33ImmNEL	33	Immingham	NELincs	Arable	C			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	34ImmNEL	34	Immingham	NELincs	Arable	C				
	35ImmNEL	35	Immingham	NELincs	Arable	C				
	36ImmNEL	36	Immingham	NELincs	Arable	C				
	37ImmNEL	37	Immingham	NELincs	Arable	C			P	
	38ImmNEL	38	Immingham	NELincs	Arable	C			P	
	39ImmNEL	39	Immingham	NELincs	Arable	C			P	
	40ImmNEL	40	Immingham	NELincs	Arable	C			P	
	41StaNEL	41	Stallingborough	NELincs	Arable	C			P	
	42StaNEL	42	Stallingborough	NELincs		C			P	
	43StaNEL	43	Stallingborough	NELincs		C			P	
	44StaNEL	44	Stallingborough	NELincs		C	P		P	
	45StaNEL	45	Stallingborough	NELincs		C			P	
	46StaNEL	46	Stallingborough	NELincs		C			P	
	47StaNEL	47	Stallingborough	NELincs	Arable	C				
	48aStaNEL	48	Stallingborough	NELincs	Arable	C				
	49StaNEL	49	Stallingborough	NELincs	Arable	C			P	
	50StaNEL	50	Stallingborough	NELincs	Arable	P			P	
	51StaNEL	51	Stallingborough	NELincs	Arable	P			P	
	52RibLiC	52	Riby	LincsC	Arable	P			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
		52a				P			P	
	53RibLiC	53a	Riby	LincsC		P			P	
		53b				P			P	
	54RibLiC	54a	Riby	LincsC		P			P	
	55RibLiC	55a	Riby	LincsC		P			P	
	56AylNEL	56a	Aylesby	NELincs		P			P	
	57AylNEL	57a	Aylesby	NELincs		P			P	
		57b							P	
	58AylNEL	58	Aylesby	NELincs	Arable	P			P	
		58a				P			P	
	59AylNEL	59	Aylesby	NELincs	Arable	P			P	
		59a				P			P	
	60AylNEL	60	Aylesby	NELincs	Grassland	P			P	
	61AylNEL	61	Aylesby	NELincs	Grassland	P			P	
	62AylNEL	62	Aylesby	NELincs	Arable	P			P	
	63LacNEL	63	Laceby	NELincs	Arable	P			P	
	64LacNEL	64	Laceby	NELincs	Arable	P			P	
	65LacNEL	65	Laceby	NELincs	Arable	P				
	66IrbNEL	66	Irby	NELincs	Arable	C			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
3	67IrbNEL	67	Irby	NELincs	Arable	C				
	68IrbNEL	68	Irby	NELincs	Arable	C			P	
		68a				P			P	
	69IrbNEL	69a	Irby	NELincs		C			P	
	70IrbNEL	70	Irby	NELincs	Arable	C		P	P	
		70a				P		P	P	
	71IrbNEL	71	Irby	NELincs	Arable	C		P	P	
	72IrbNEL	72	Irby	NELincs	Arable	C		P	P	
	73IrbNEL	73	Irby	NELincs	Arable	C		P	P	
	74IrbNEL	74	Irby	NELincs	Arable	C		P	P	
		74a				P		P	P	
	75IrbNEL	75	Irby	NELincs	Arable	C		P	P	P
		75a				P		P	P	P
	76IrbNEL	76	Irby	NELincs	Grassland	C		P		P
	77BLBNEL	77	Barnoldby Le Beck	NELincs		C		P	P	
		77a				P		P	P	
	78BLBNEL	78	Barnoldby Le Beck	NELincs		P			P	
		78a				P				
	79BLBNEL	79	Barnoldby Le Beck	NELincs		P			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
		79a				P			P	
	80BLBNEL	80	Barnoldby Le Beck	NELincs	Arable	C			P	
	81BLBNEL	81	Barnoldby Le Beck	NELincs		C			P	
	82BLBNEL	82	Barnoldby Le Beck	NELincs		C			P	
	83BLBNEL	83	Barnoldby Le Beck	NELincs	Plantation					
	84BLBNEL	84	Barnoldby Le Beck	NELincs	Grassland	P				
	85BLBNEL	85	Barnoldby Le Beck	NELincs	Woodland					
	86BLBNEL	86	Barnoldby Le Beck	NELincs	Arable	P			P	P
	87AcFNEL	87	Ashby cum Fenby	NELincs	Woodland					P
	88AcFNEL	88	Ashby cum Fenby	NELincs	Grassland	C			P	P
	89AcFNEL	89	Ashby cum Fenby	NELincs	Grassland	C			P	
	90AcFNEL	90	Ashby cum Fenby	NELincs	Grassland	C			P	
	91AcFNEL	91	Ashby cum Fenby	NELincs	Grassland	C			P	
	92AcFNEL	92	Ashby cum Fenby	NELincs	Grassland	C			P	
	93AcFNEL	93	Ashby cum Fenby	NELincs	Grassland	P			P	
	94AcFNEL	94	Ashby cum Fenby	NELincs	Woodland					
	95AcFNEL	95	Ashby cum Fenby	NELincs	Arable	C			P	
	96AcFNEL	96	Ashby cum Fenby	NELincs	Woodland	C				
	97AcFNEL	97	Ashby cum Fenby	NELincs	Arable	C			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	98AcFNEL	98	Ashby cum Fenby	NELincs	Arable	C			P	
	99AcFNEL	99	Ashby cum Fenby	NELincs	Arable	C			P	
	100AcFNEL	100	Ashby cum Fenby	NELincs	Arable	P			P	
	101AcFNEL	101	Ashby cum Fenby	NELincs	Arable	P			P	
	102AcFNEL	102	Ashby cum Fenby	NELincs	Arable	C			P	
	103AcFNEL	103	Ashby cum Fenby	NELincs	Arable	C			P	
	104AcFNEL	104	Ashby cum Fenby	NELincs	Arable	C			P	
	105AcFNEL	105	Ashby cum Fenby	NELincs	Arable	C			P	
	106AcFNEL	106	Ashby cum Fenby	NELincs	Arable	C			P	
	107AcFNEL	107	Ashby cum Fenby	NELincs	Arable, grassland	C			P	
	108AcFNEL	108	Ashby cum Fenby	NELincs	Arable, grassland	C			P	
	109AcFNEL	109	Ashby cum Fenby	NELincs	Arable	C			P	
	110GraLiC	110	Grainsby	LincsC	Arable	C			P	
	111GraLiC	111	Grainsby	LincsC	Arable	C			P	
	112GraLiC	112	Grainsby	LincsC	Arable	C			P	
	113GraLiC	113	Grainsby	LincsC	Arable	C			P	
	114NorLiC	114	North Thoresby	LincsC	Arable	C			P	
	115NorLiC	115	North Thoresby	LincsC	Arable	P			P	
	116NorLiC	116	North Thoresby	LincsC	Arable	P			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	117NorLiC	117	North Thoresby	LincsC	Arable	P			P	
	118NorLiC	118	North Thoresby	LincsC	Arable	P			P	
	119NorLiC	119	North Thoresby	LincsC	Arable	P			P	
	120NorLiC	120	North Thoresby	LincsC	Arable	P				
	121NorLiC	121	North Thoresby	LincsC	Arable	C			P	
	122NorLiC	122	North Thoresby	LincsC	Arable	C			P	
	123NorLiC	123	North Thoresby	LincsC	Arable	C			P	
	124NorLiC	124	North Thoresby	LincsC	Arable	C			P	
	125NTLLiC	125	North Thoresby Ludborough	LincsC	Arable	P			P	
	126LudLiC	126	Ludborough	LincsC	Arable	P			P	
	127LudLiC	127	Ludborough	LincsC	Arable	C			P	
	128LudLiC	128	Ludborough	LincsC	Arable	C			P	
	129LudLiC	129	Ludborough	LincsC	Arable	C			P	
	130LudLiC	130	Ludborough	LincsC	Arable	C			P	
	131LudLiC	131	Ludborough	LincsC	Arable	P			P	
	132LudLiC	132	Ludborough	LincsC	Arable	P			P	
	133LudLiC	133	Ludborough	LincsC	Arable	P			P	
	134LudLiC	134	Ludborough	LincsC	Arable	P			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	135LudLiC	135	Ludborough	LincsC	Arable	P			P	
	136LudLiC	136	Ludborough	LincsC	Arable	P			P	
	137LudLiC	137	Ludborough	LincsC	Arable	P			P	
	138LudLiC	138	Ludborough	LincsC	Arable	P			P	
4	139UttLiC	139	Utterby	LincsC	Arable	P			P	
	140UttLiC	140	Utterby	LincsC	Arable	P			P	
	141UttLiC	141	Utterby	LincsC	Arable	P			P	
	142UttLiC	142	Utterby	LincsC	Arable	P			P	
	143UttLiC	143	Utterby	LincsC	Arable	P			P	
	144UttLiC	144	Utterby	LincsC	Arable	P			P	
	145UttLiC	145	Utterby	LincsC	Arable	P			P	
	146UttLiC	146	Utterby	LincsC	Grassland	P			P	
	147UttLiC	147	Utterby	LincsC	Arable	P			P	
	148BraLiC	148	Brackenborough	LincsC	Arable	P			P	
	149BraLiC	149	Brackenborough	LincsC	Arable	P			P	
	150BraLiC	150	Brackenborough	LincsC	Arable	P			P	
	151BraLiC	151	Brackenborough	LincsC	Arable	P			P	
	152BraLiC	152	Brackenborough	LincsC	Arable	P			P	
	153BraLiC	153	Brackenborough	LincsC	Grassland	P			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	154BraLiC	154	Brackenborough	LincsC	Arable	P			P	
	155BraLiC	155	Brackenborough	LincsC	Arable	P			P	
	156BraLiC	156	Brackenborough	LincsC	Arable	P			P	
	157BraLiC	157	Brackenborough	LincsC	Arable	P			P	
	158BraLiC	158	Brackenborough	LincsC	Arable	P			P	
	159AlvLiC	159	Alvingham	LincsC	Arable	P			P	
	160AlvLiC	160	Alvingham	LincsC	Arable	P			P	
	161AlvLiC	161	Alvingham	LincsC		P			P	
	162AlvLiC	162	Alvingham	LincsC		P			P	
	163AlvLiC	163	Alvingham	LincsC		P			P	
	164AlvLiC	164	Alvingham	LincsC		P			P	
	165AlvLiC	165	Alvingham	LincsC		P			P	
		165a				P				
	166AlvLiC	166	Alvingham	LincsC		P				P
	167AlvLiC	167	Alvingham	LincsC		P				P
		167a				P				P
	168NCoLiC	168	North Cockerington	LincsC		P				
	169NCoLiC	169	North Cockerington	LincsC	Arable	P			P	
		169a				P			P	

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	170NCoLiC	170	North Cockerington	LincsC	Arable	P			P	
		170a				P			P	
	171NCoLiC	171	North Cockerington	LincsC	Arable	P			P	
	172NCoLiC	172	North Cockerington	LincsC	Arable	P			P	
	173NCoLiC	173	North Cockerington	LincsC	Arable	P			P	
	174NCoLiC	174	North Cockerington	LincsC	Arable	P			P	
	175NCoLiC	175	North Cockerington	LincsC	Arable	P			P	
	176SCoLiC	176	South Cockerington	LincsC	Arable	P			P	
	177SCoLiC	177	South Cockerington	LincsC	Arable	P			P	
	178SCoLiC	178	South Cockerington	LincsC	Arable	P			P	
	179SCoLiC	179	South Cockerington	LincsC	Arable	P			P	
	180SCoLiC	180	South Cockerington	LincsC	Arable	C			P	
	181SCoLiC	181	South Cockerington	LincsC	Arable	P			P	
	182SCoLiC	182	South Cockerington	LincsC	Arable	P			P	
	183CoLiC	183	South Cockerington	LincsC	Arable	P			P	
	184SCoLiC	184	South Cockerington	LincsC	Arable	C			P	
	185SCoLiC	185	South Cockerington	LincsC		C			P	
		185a				P			P	
	186SCoLiC	186	South Cockerington	LincsC		P			P	P

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
		186a				P			P	P
	187GriLiC	187	Grimoldby	LincsC		P			P	P
		187a				P			P	P
	188GriLiC	188	Grimoldby	LincsC		P			P	
		188a				P			P	
	189GriLiC	189	Grimoldby	LincsC		C			P	
	190GriLiC	190	Grimoldby	LincsC		C			P	
	191GriLiC	191	Grimoldby	LincsC		C			P	
	192GriLiC	192	Grimoldby	LincsC		C			P	
5	193ManLiC	193	Manby	LincsC	Arable	P			P	P
	194ManLiC	194	Manby	LincsC	Arable	P			P	P
	195ManLiC	195	Manby	LincsC	Arable	P			P	P
	196ManLiC	196	Manby	LincsC	Arable	P			P	P
	197ManLiC	197	Manby	LincsC	Arable	P			P	P
	198ManLiC	198	Manby	LincsC	Arable	P			P	P
	199SalLiC	199	Saltfleetby	LincsC	Arable	P			P	P
	200SalLiC	200	Saltfleetby	LincsC	Arable	P			P	P
	201SalLiC	201	Saltfleetby	LincsC	Arable	P				P
	202GrCLiC	202	Great Carlton	LincsC	Grassland	C			P	P

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	203GrCLiC	203	Great Carlton	LincsC	Grassland	P			P	P
	204GrCLiC	204	Great Carlton	LincsC	Grassland	P			P	P
	205GrCLiC	205	Great Carlton	LincsC	Arable	P			P	P
	206GrCLiC	206	Great Carlton	LincsC	Arable	P			P	P
	207GrCLiC	207	Great Carlton	LincsC	Arable	P			P	P
	208GrCLiC	208	Great Carlton	LincsC	Arable	P			P	P
	209GrCLiC	209	Great Carlton	LincsC	Grassland	P			P	P
	210GLMLiC	210	Gayton Le Marsh	LincsC	Arable	P			P	P
	211GLMLiC	211	Gayton Le Marsh	LincsC	Arable	P			P	P
	212GLMLiC	212	Gayton Le Marsh	LincsC	Arable	P			P	P
	213GLMLiC	213	Gayton Le Marsh	LincsC	Arable	P			P	P
	214GLMLiC	214	Gayton Le Marsh	LincsC	Arable	P			P	P
	215GLMLiC	215	Gayton Le Marsh	LincsC	Arable	P			P	P
	216GLMLiC	216	Gayton Le Marsh	LincsC	Arable	P			P	P
		216a				P			P	P
	217GLMLiC	217	Gayton Le Marsh	LincsC	Arable	P			P	P
		217a				P			P	P
	218GLMLiC	218	Gayton Le Marsh	LincsC	Arable	P			P	P
		218a				P			P	P

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	219GLMLiC	219	Gayton Le Marsh	LincsC	Arable	P			P	P
		219a				P			P	P
	220GLMLiC	220	Gayton Le Marsh	LincsC	Grassland	P				P
		220a				P				P
	221TASLiC	221	Theddlethorpe AS	LincsC	Grassland	P				P
		221a				P				P
	222TASLiC	222	Theddlethorpe AS	LincsC		C				P
	223TASLiC	223	Theddlethorpe AS	LincsC		C			P	P
		223a				P			P	P
	224TASLiC	224	Theddlethorpe AS	LincsC		P			P	P
		224a				P			P	P
	225TASLiC	225	Theddlethorpe AS	LincsC		P			P	P
		225a				P			P	P
	226TASLiC	226	Theddlethorpe AS	LincsC		P			P	P
		226a				P			P	P
	227TASLiC	227	Theddlethorpe AS	LincsC		P	P		P	P
		227a				P	P		P	P
	228TASLiC	228	Theddlethorpe AS	LincsC		P	P		P	P
		228a				P	P		P	P

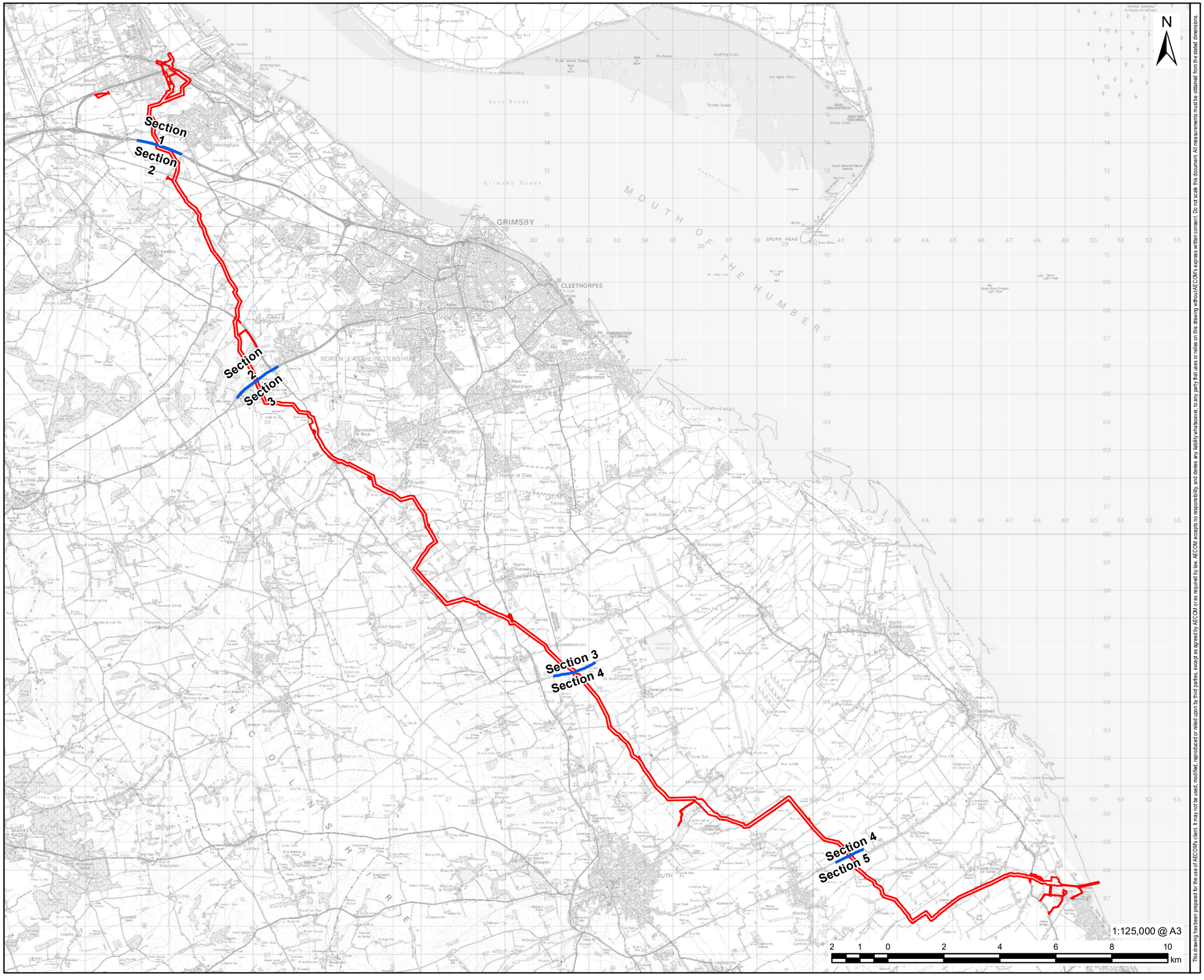
Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	229TASLiC	229	Theddlethorpe AS	LincsC		P	P		P	P
		229a				P	P		P	P
	230TASLiC	230	Theddlethorpe AS	LincsC		P	P		P	P
	231TASLiC	231	Theddlethorpe AS	LincsC		P			P	P
		231a				P			P	P
	232TASLiC	232	Theddlethorpe AS	LincsC		P			P	P
	233TASLiC	233	Theddlethorpe StH	LincsC		P			P	P
	234TASLiC	234	Theddlethorpe StH	LincsC		P			P	P
	235TASLiC	235	Theddlethorpe StH	LincsC		P			P	P
	236TASLiC	236	Theddlethorpe StH	LincsC		P			P	P
	237TASLiC	237	Theddlethorpe StH	LincsC		P			P	P
		237a				P				
	238TASLiC	238	Theddlethorpe StH	LincsC		P				P
	239TASLiC	239	Theddlethorpe StH	LincsC		P			P	P
		239a				P			P	P
	240TASLiC	240	Theddlethorpe StH	LincsC		P				P
	241TASLiC	241	Theddlethorpe StH	LincsC						
	242TASLiC	242	Theddlethorpe StH	LincsC	Developed					
	243MStLiC	243	Mablethorpe&Sttn	LincsC						P

Section	Field ID	Field No.	Parish	LocalA	Landuse	Geophysical survey	Earthwork survey	Metal detecting survey	Trial trenching	Geoarchaeological borehole survey
	244MStLiC	244	Mablethorpe&Sttn	LincsC						P
	245MStLiC	245	Mablethorpe&Sttn	LincsC						P
	246MStLiC	246	Mablethorpe&Sttn	LincsC						
	247MStLiC	247	Mablethorpe&Sttn	LincsC	Dunes					
	248MStLiC	248	Mablethorpe&Sttn	LincsC	Foreshore					
1	249SKiNLi	249	South Killingholme	NLincs	Arable				P	

Annex C Figures

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

Filename: \\eu.aecomnet.com\EMIA\UK\UKNCL2\Jobs\60668955 V_Net_Zero_Project\900_CAD_GIS\920_GIS\02_Maps\WSI Trail Trenching\VCCS_WSI_TT_1_Site_Location_v3_230927_LC.mxd



VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Route Section Break

FIGURE TITLE

Figure 1
Site Location

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_1

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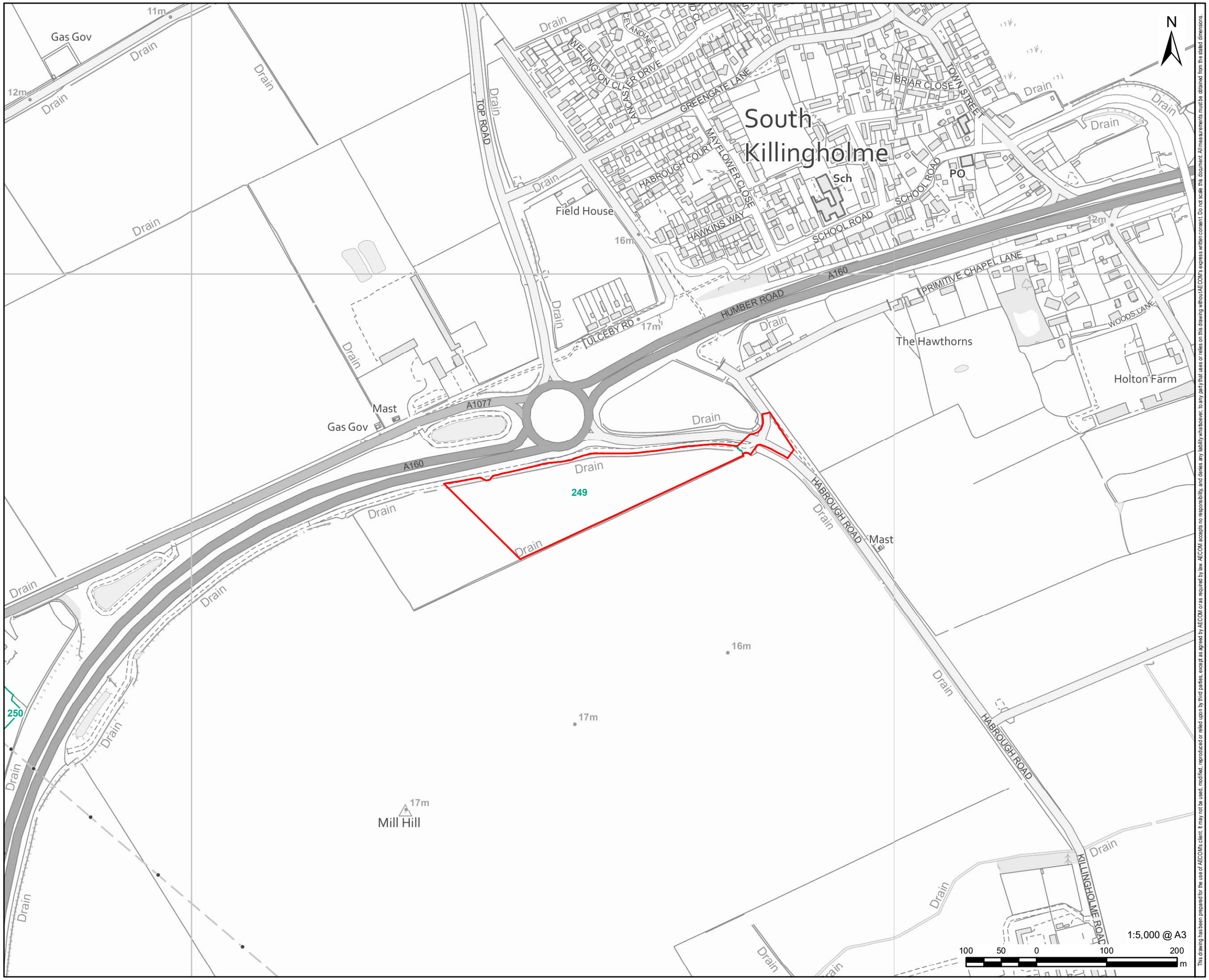

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

NOTES:

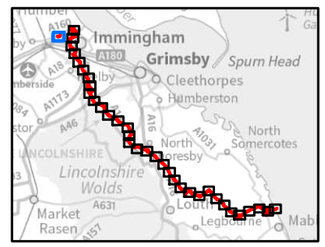

FIGURE TITLE

Figure 2 (1 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668965 / VCCS_230927_WSI_TT_2

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Possible Archaeology)
- Linear Trend (Probable Archaeology)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable

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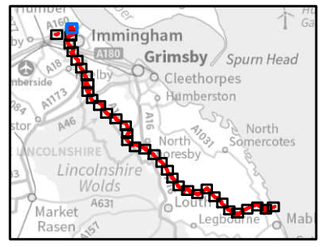

FIGURE TITLE

Figure 2 (2 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

1:5,000 @ A3

100 50 0 100 200 m

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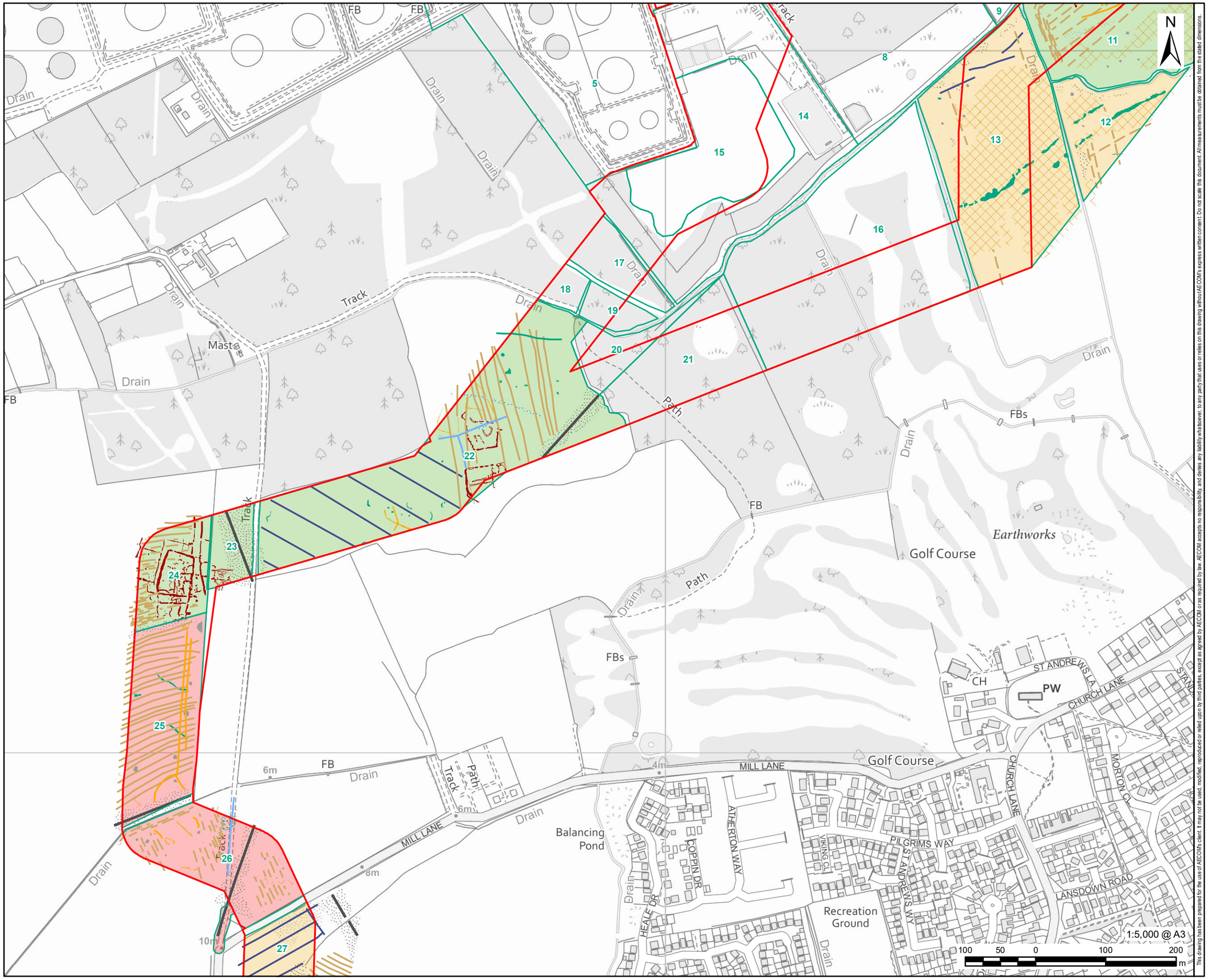

N

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Historic Feature)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Possible Archaeology)
- Linear Trend (Probable Archaeology)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Linear Trend (Unclear Origin)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Agricultural)
- Spread (Agricultural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Spread (Historic Feature)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable
- Uncertain

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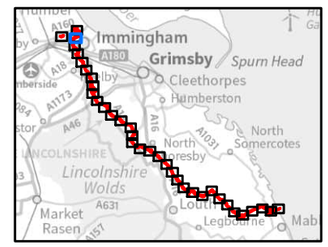

FIGURE TITLE

Figure 2 (3 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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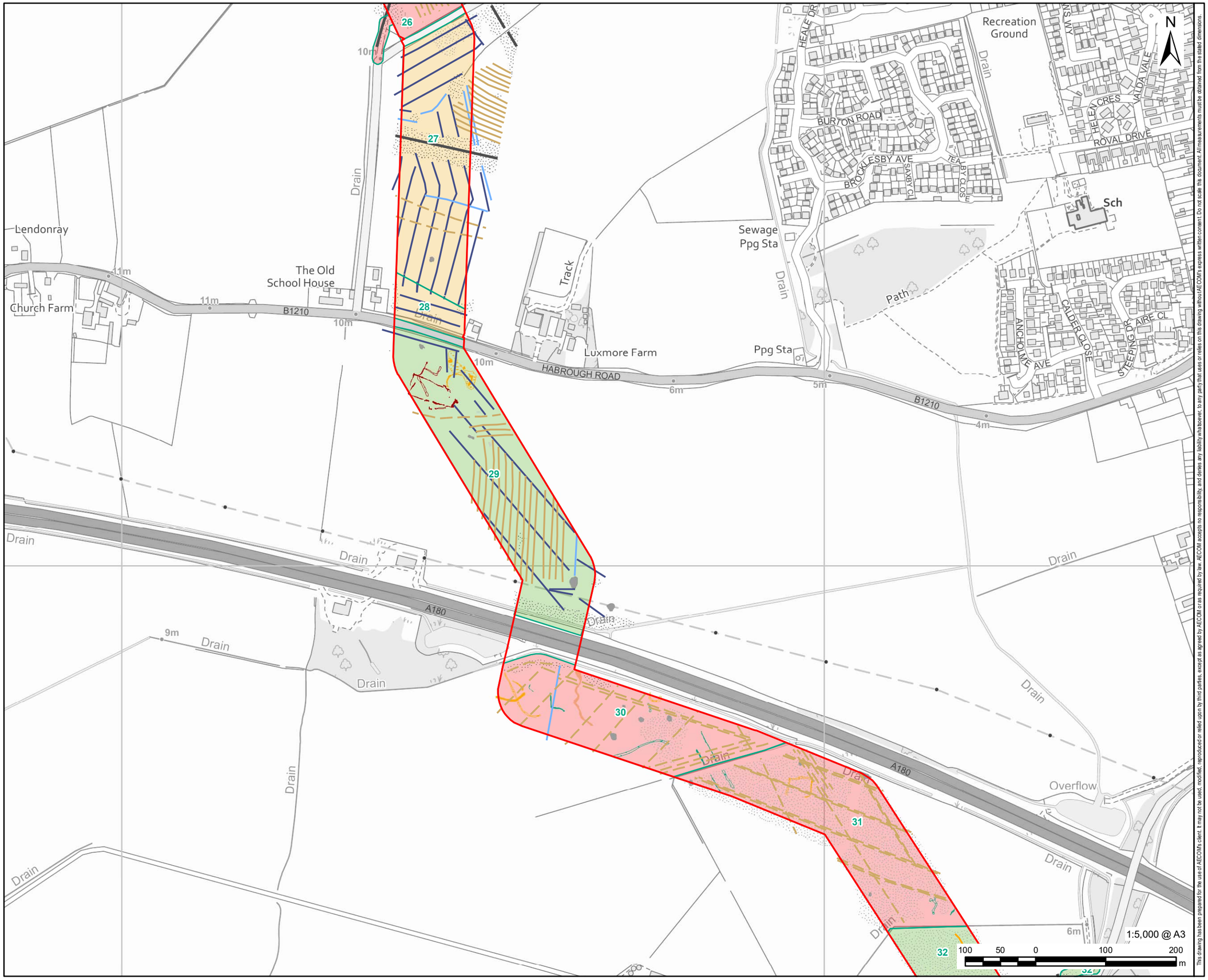

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Historic Feature)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Possible Archaeology)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Anomaly (Ferrous/Iron Spike)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable
- Uncertain

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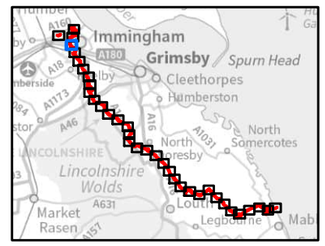

FIGURE TITLE

Figure 2 (4 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

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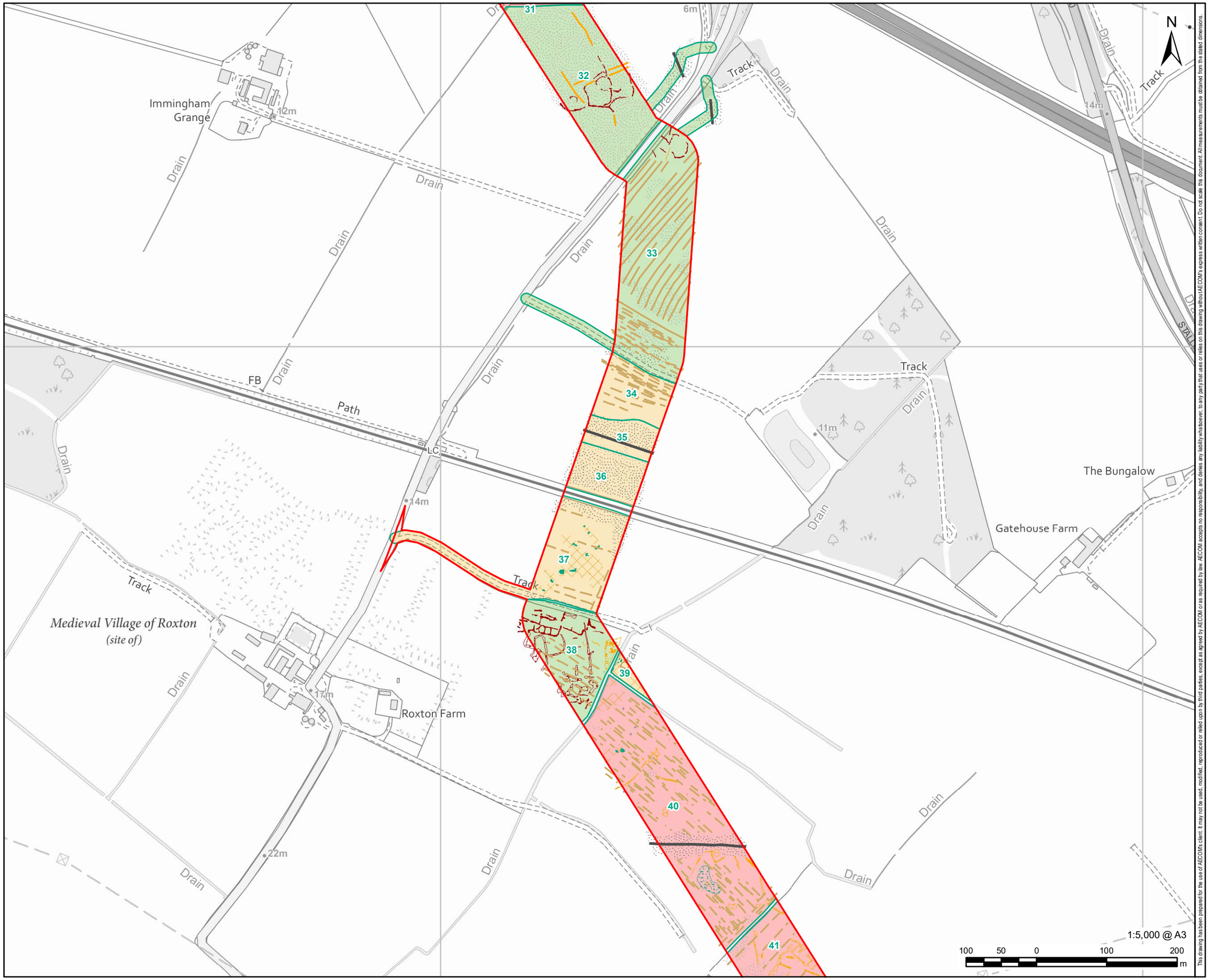

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Possible Archaeology)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable
- Uncertain

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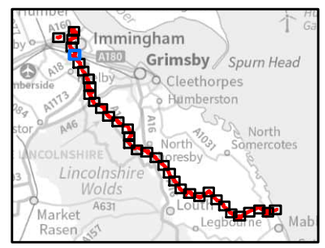

FIGURE TITLE

Figure 2 (5 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Geology/Natural)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Agricultural)
- Spread (Agricultural)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable
- Uncertain

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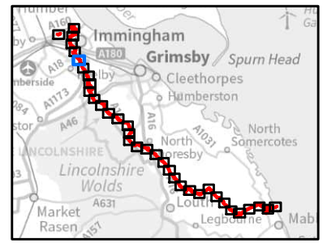

FIGURE TITLE

Figure 2 (6 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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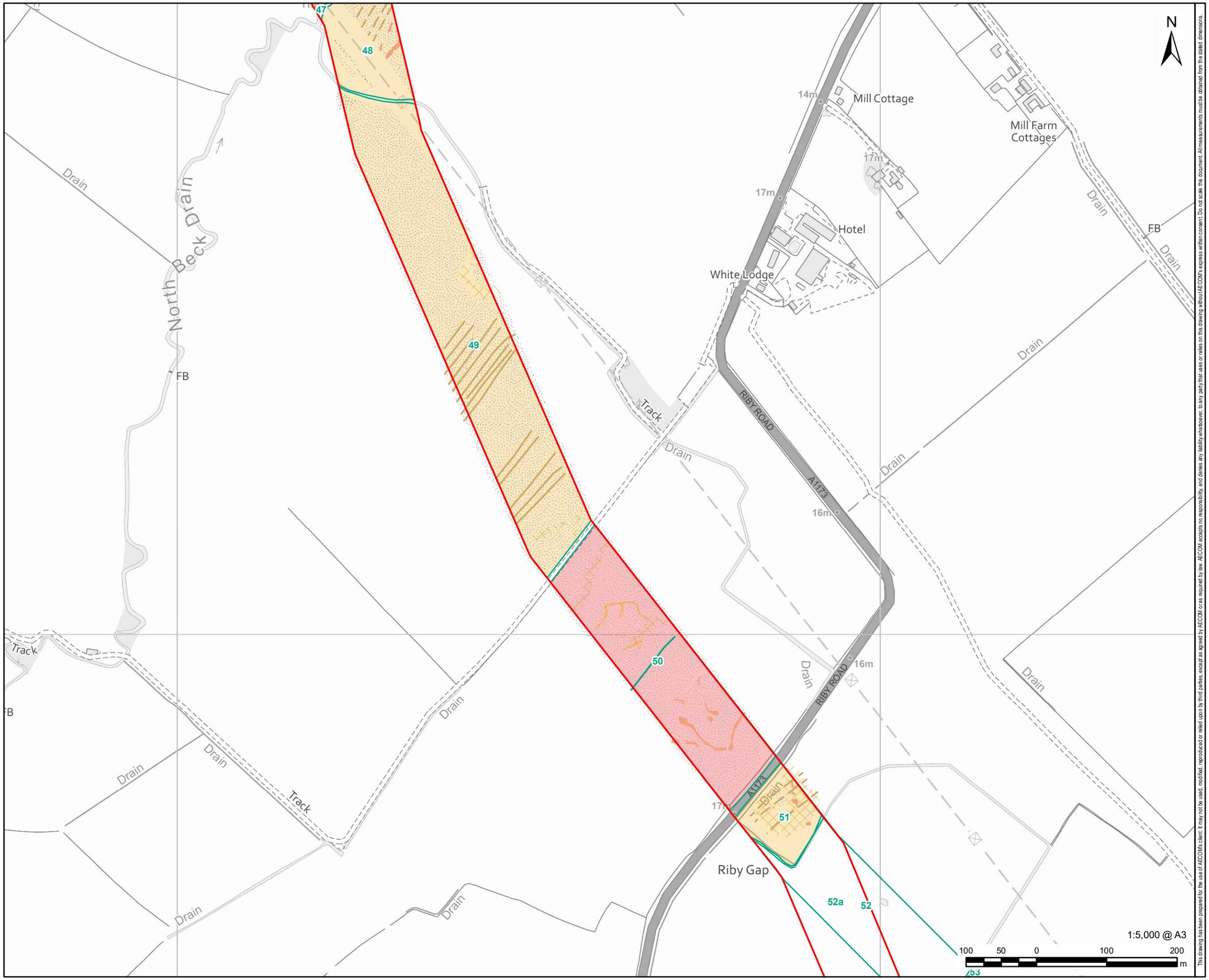

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Unclear Origin)
- Spread (Possible Archaeology)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)

Interpretation Confidence Rating (AOC)

- Unreliable
- Uncertain

NOTES:

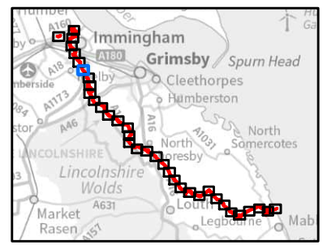

FIGURE TITLE

Figure 2 (7 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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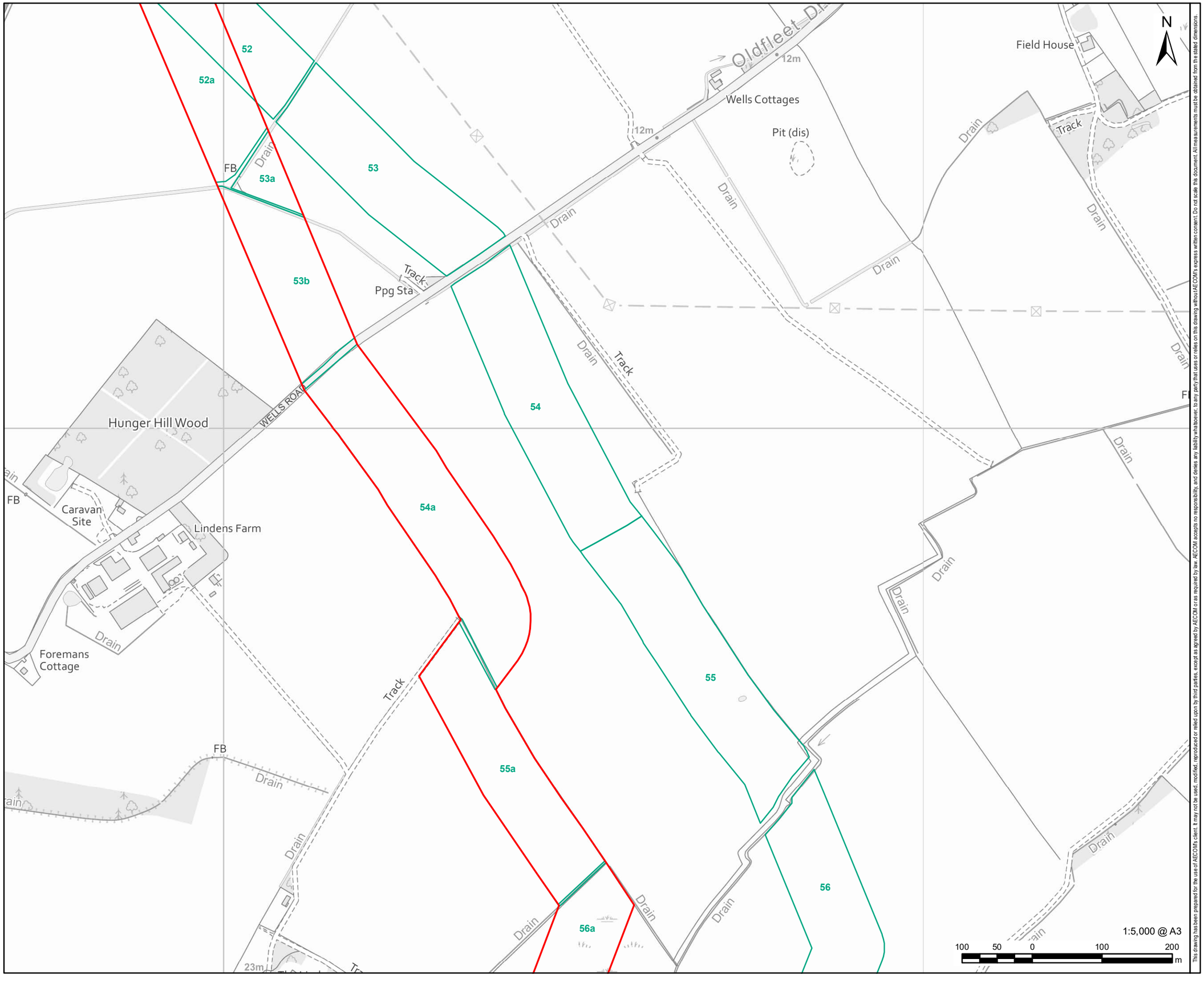

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

NOTES:

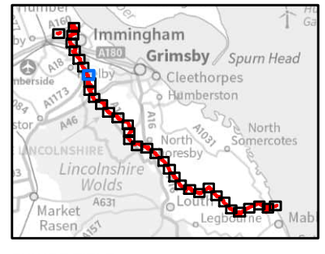

FIGURE TITLE

Figure 2 (8 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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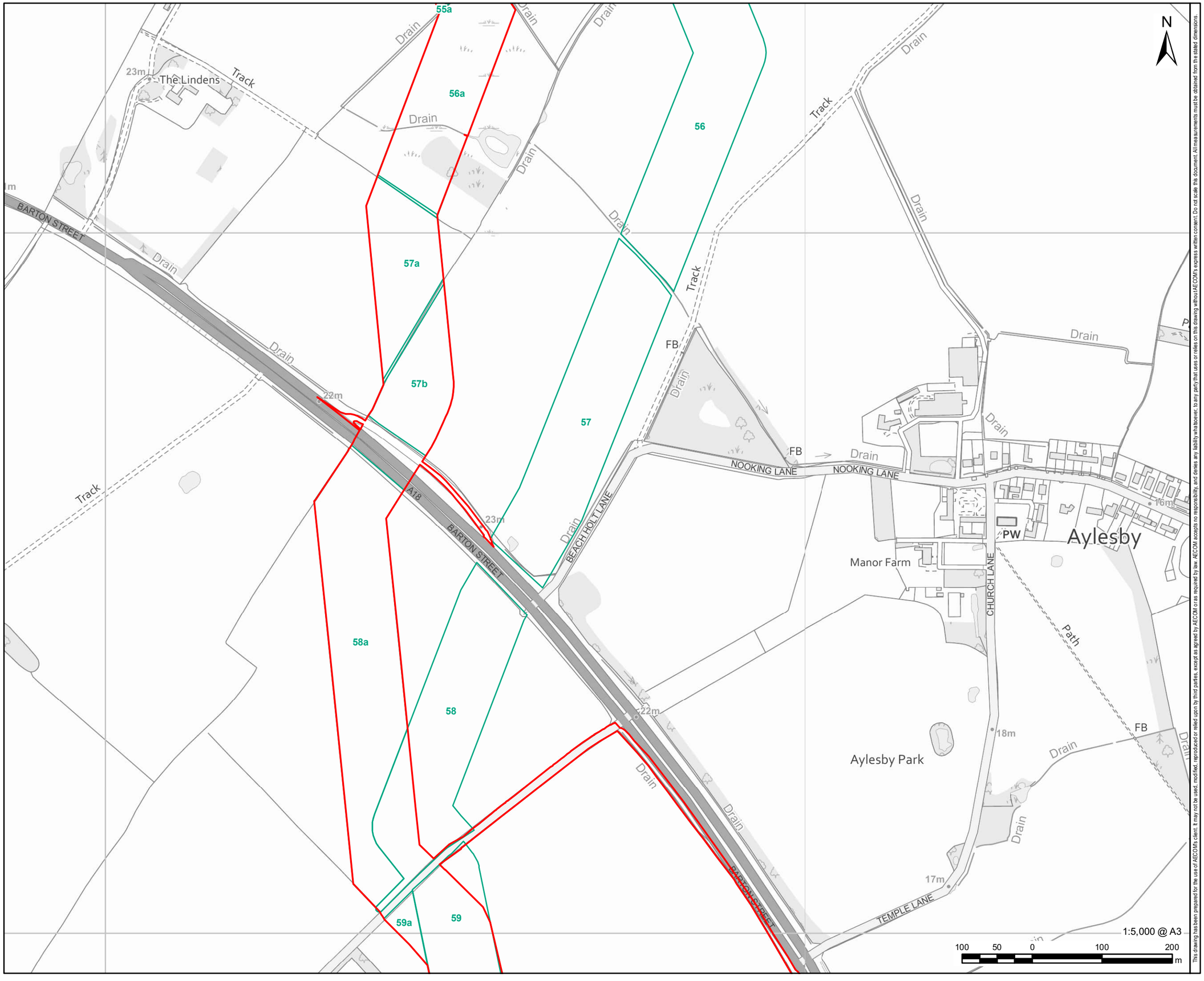

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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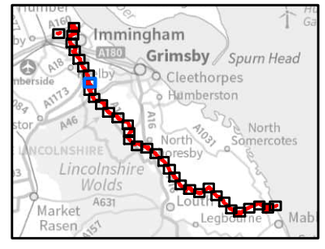

FIGURE TITLE

Figure 2 (9 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ridge and Furrow)
- Spread (Ferrous/Iron Spike)

Interpretation Confidence Rating (AOC)

- Uncertain

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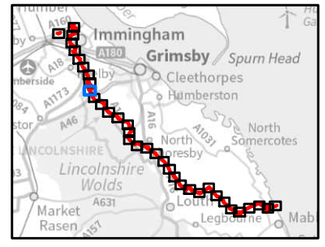

FIGURE TITLE

Figure 2 (10 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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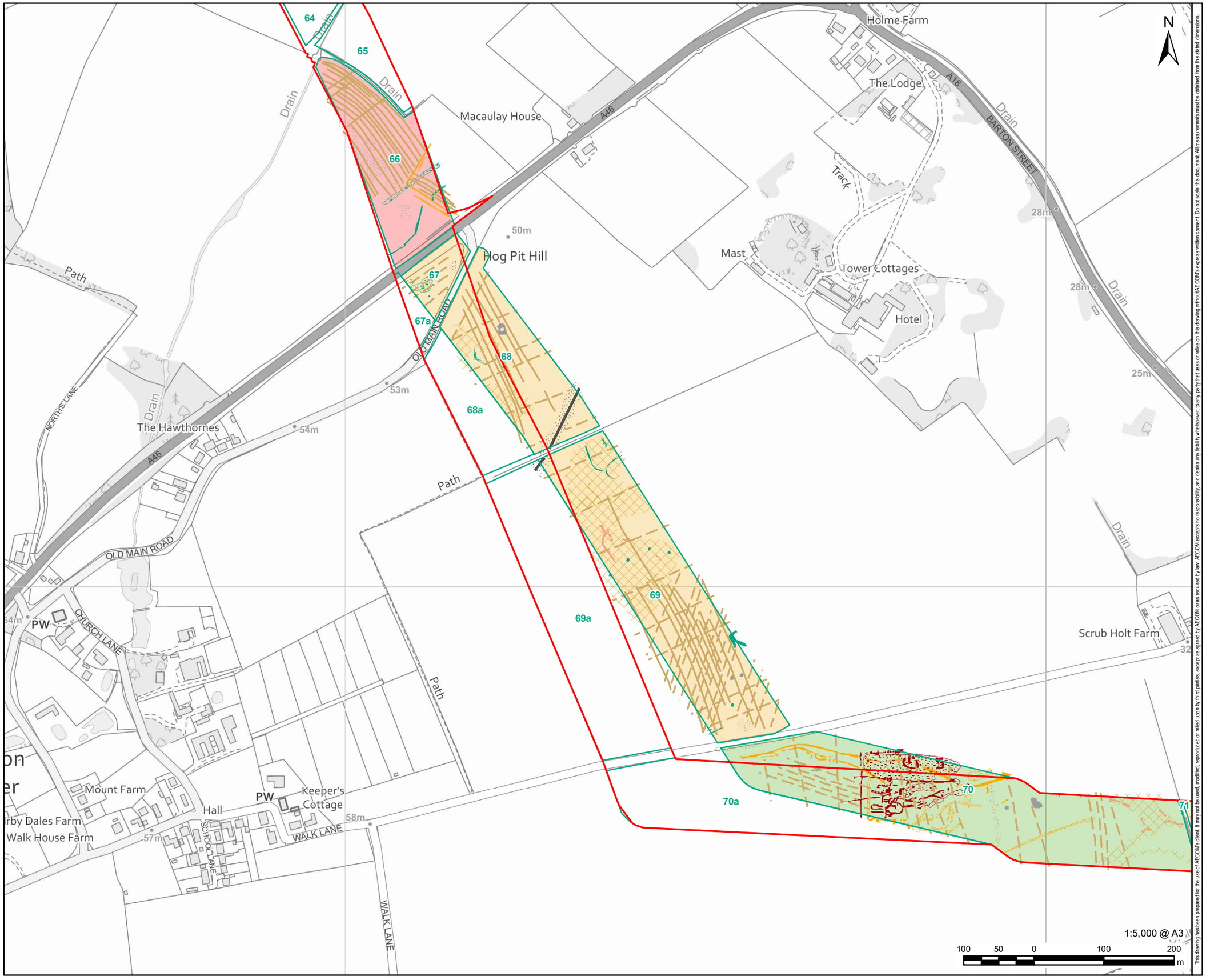

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Geology/Natural)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Agricultural)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable
- Uncertain

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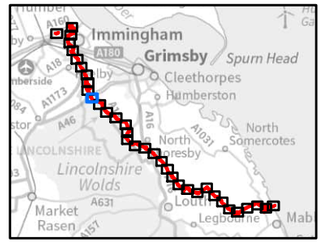

FIGURE TITLE

Figure 2 (11 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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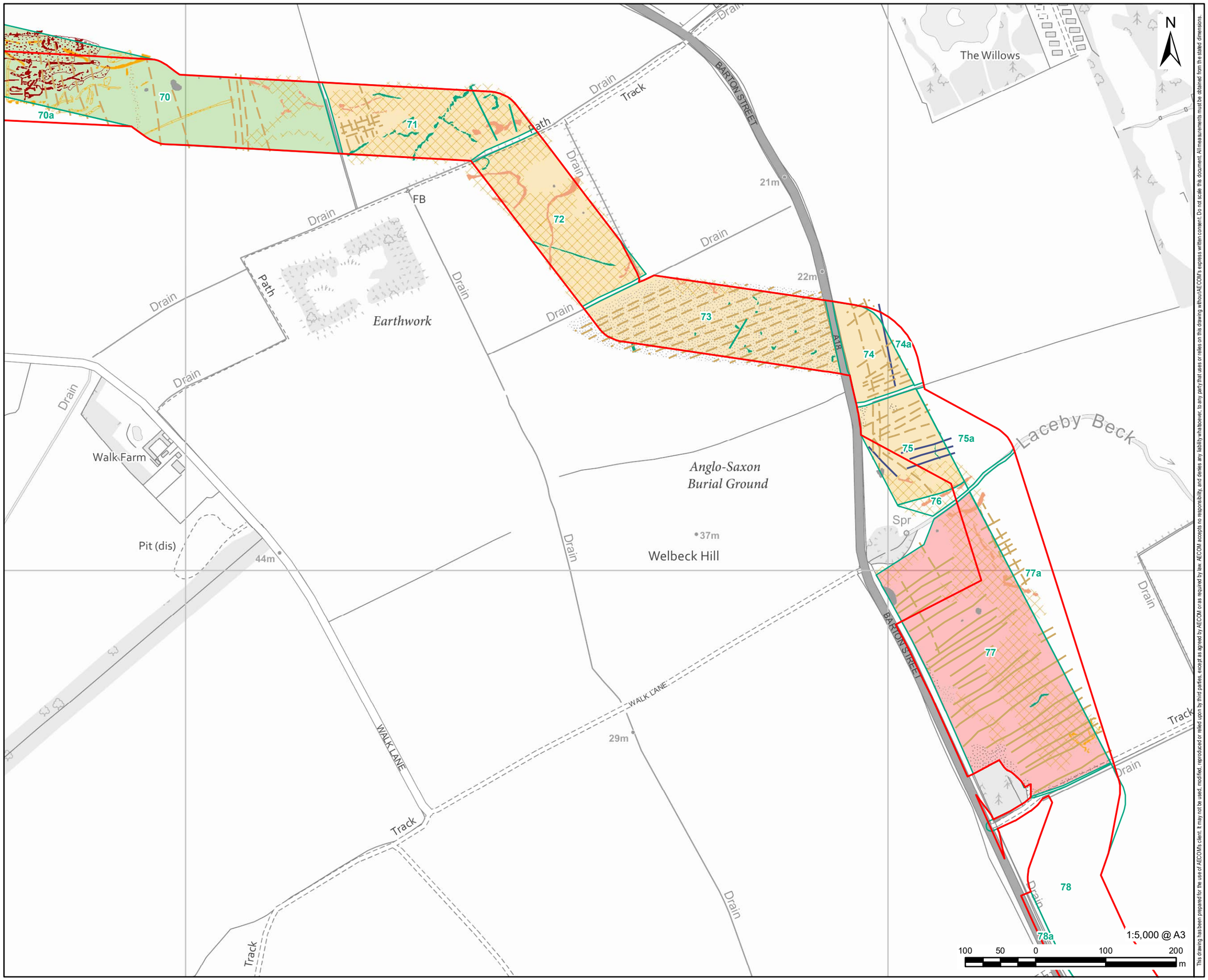

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Unclear Origin)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Agricultural)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable
- Uncertain

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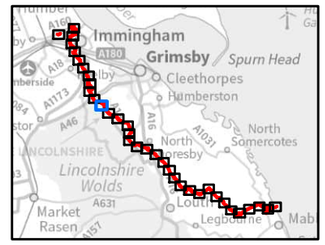

FIGURE TITLE

Figure 2 (12 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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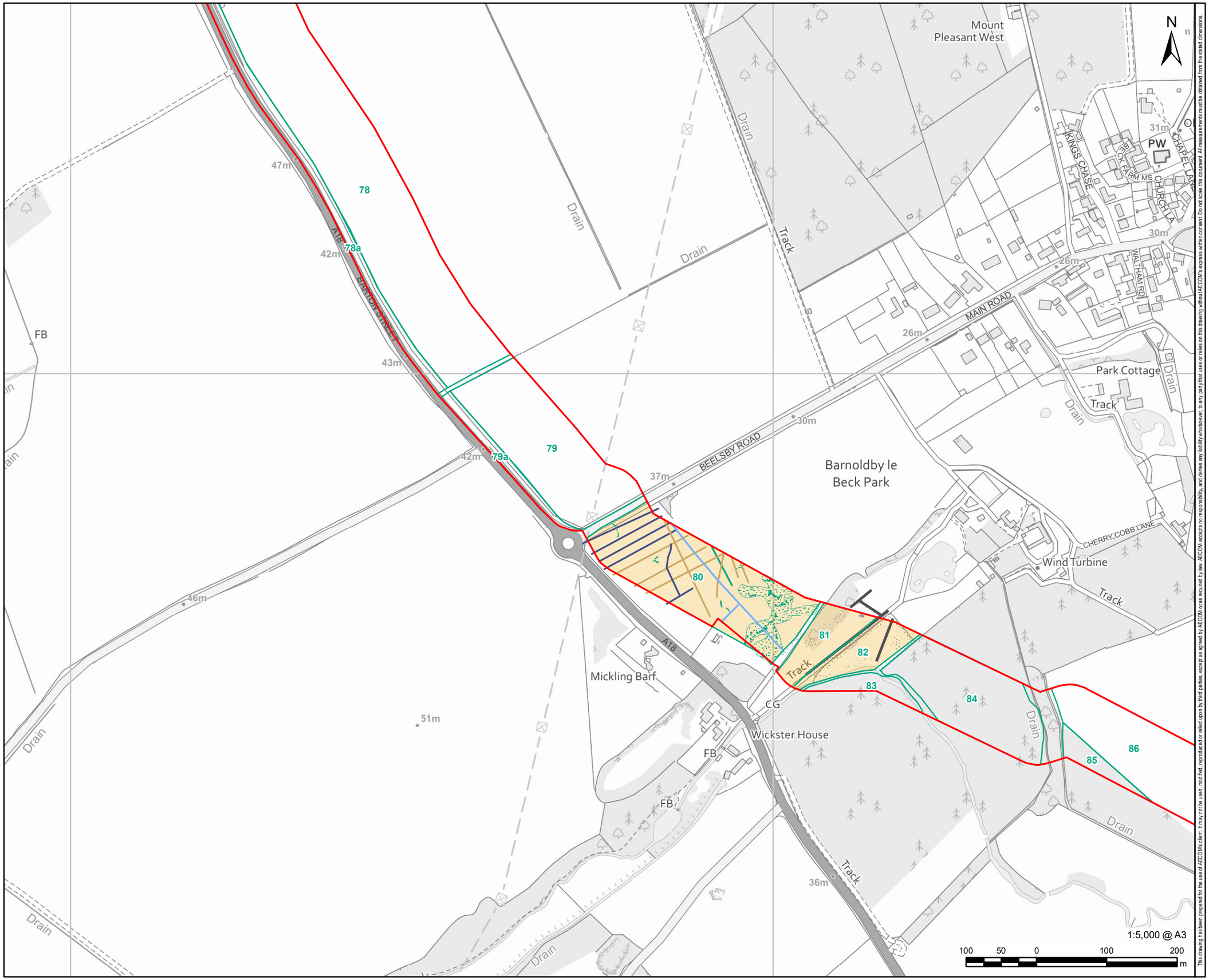

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Historic Feature)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Linear Trend (Unclear Origin)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Unreliable

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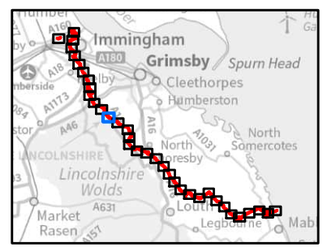

FIGURE TITLE

Figure 2 (13 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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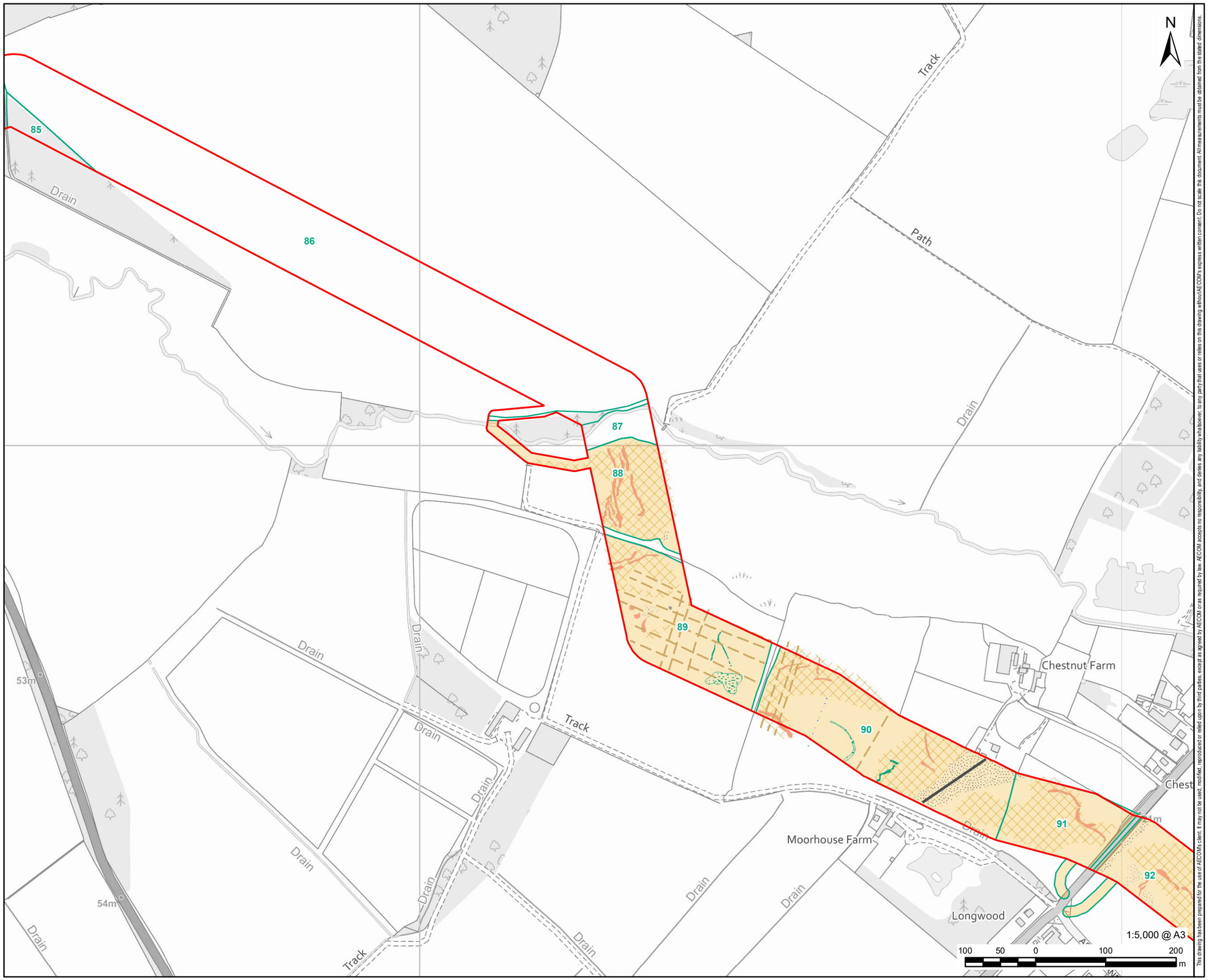

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Service)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Spread (Historic Feature)

Interpretation Confidence Rating (AOC)

- Unreliable

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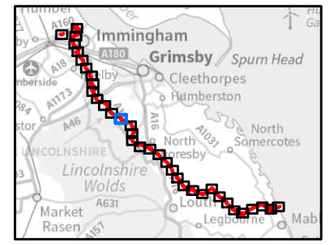

FIGURE TITLE

Figure 2 (14 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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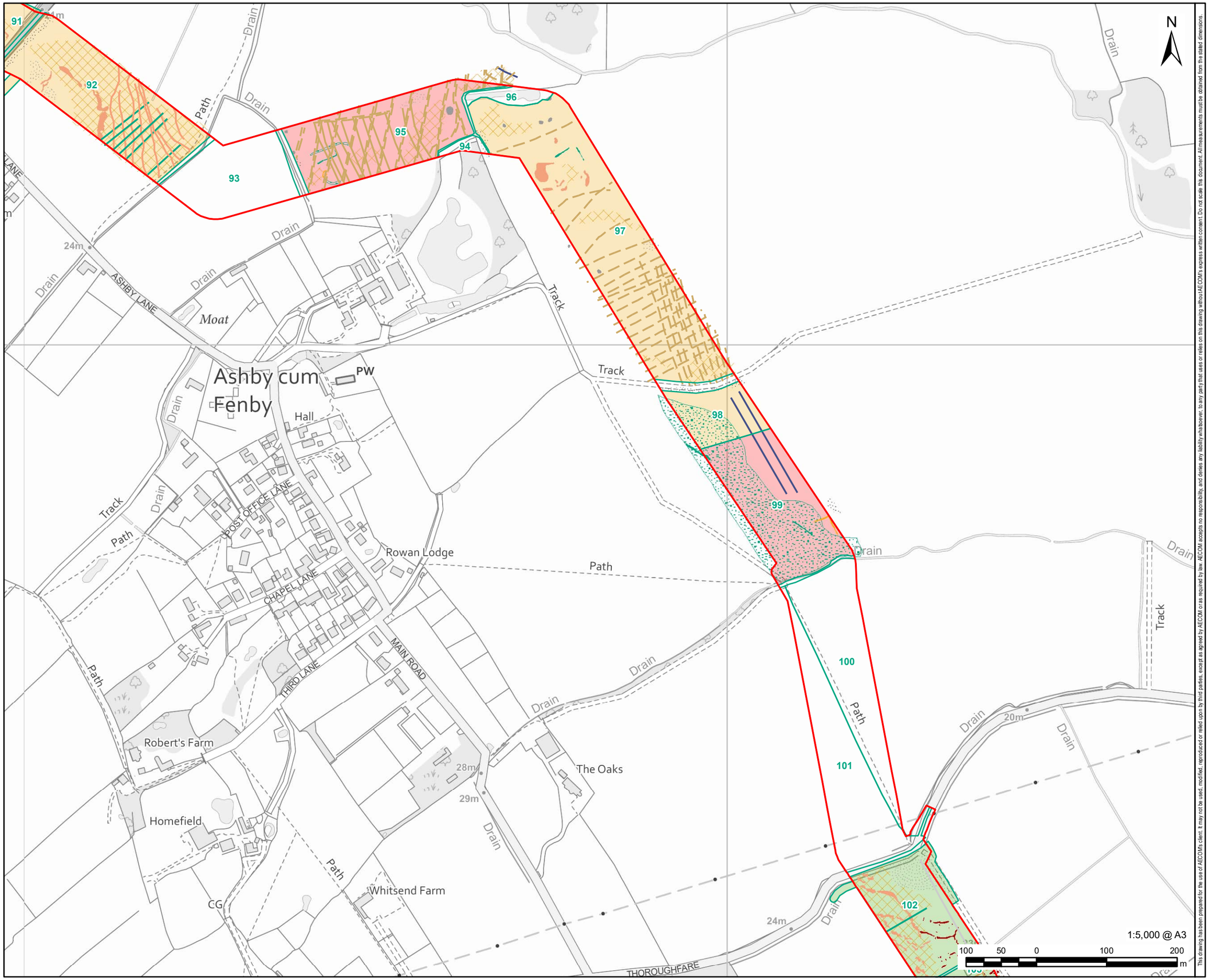

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Geology/Natural)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Ferrous/Iron Spike)
- Linear Trend (Unclear Origin)
- Anomaly (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable
- Uncertain

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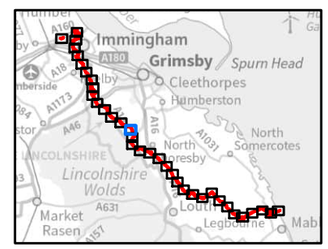

FIGURE TITLE

Figure 2 (15 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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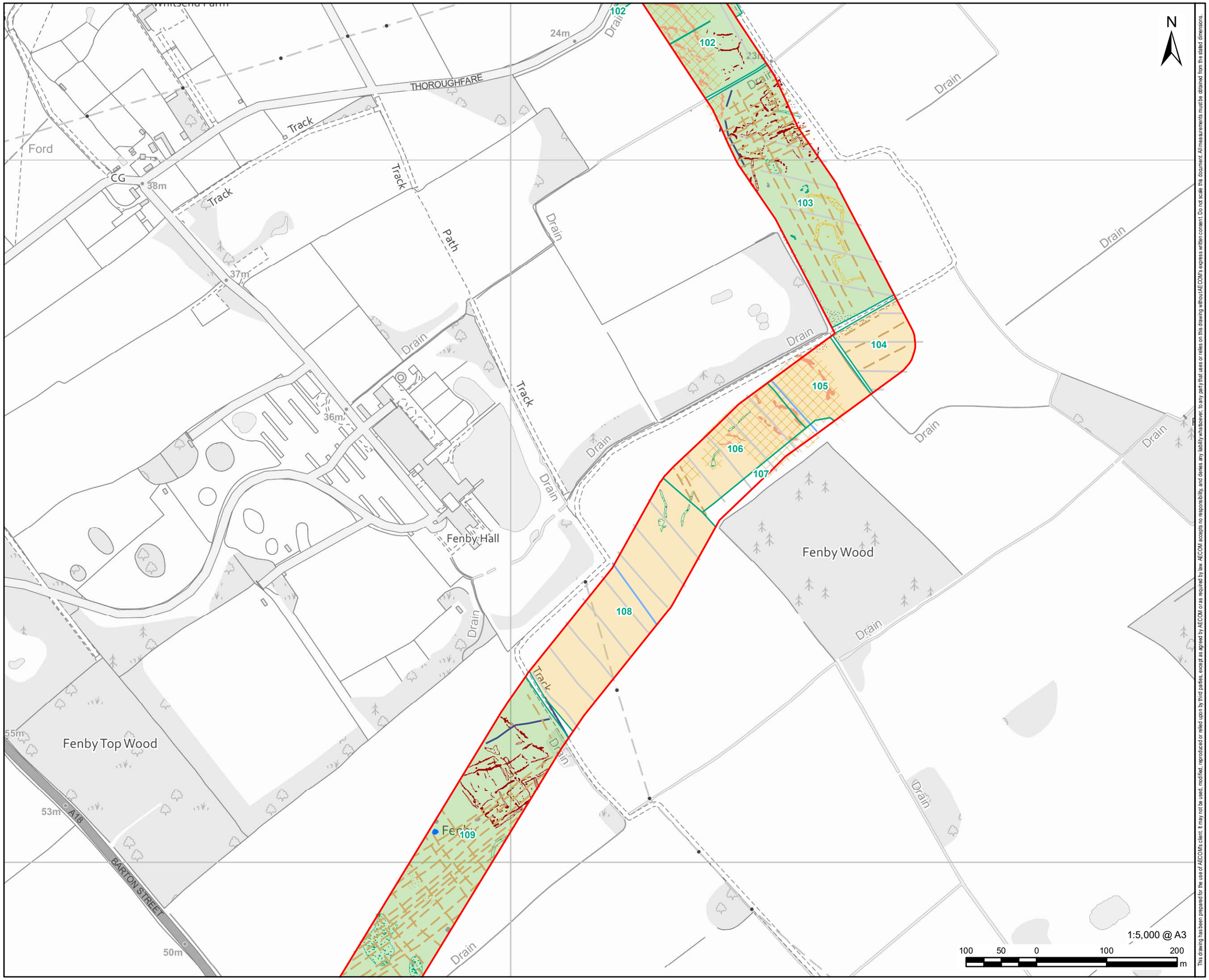

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

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

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable

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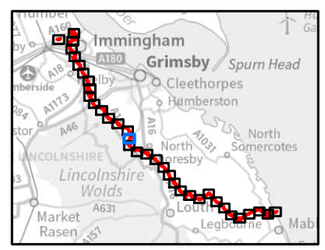

FIGURE TITLE

Figure 2 (16 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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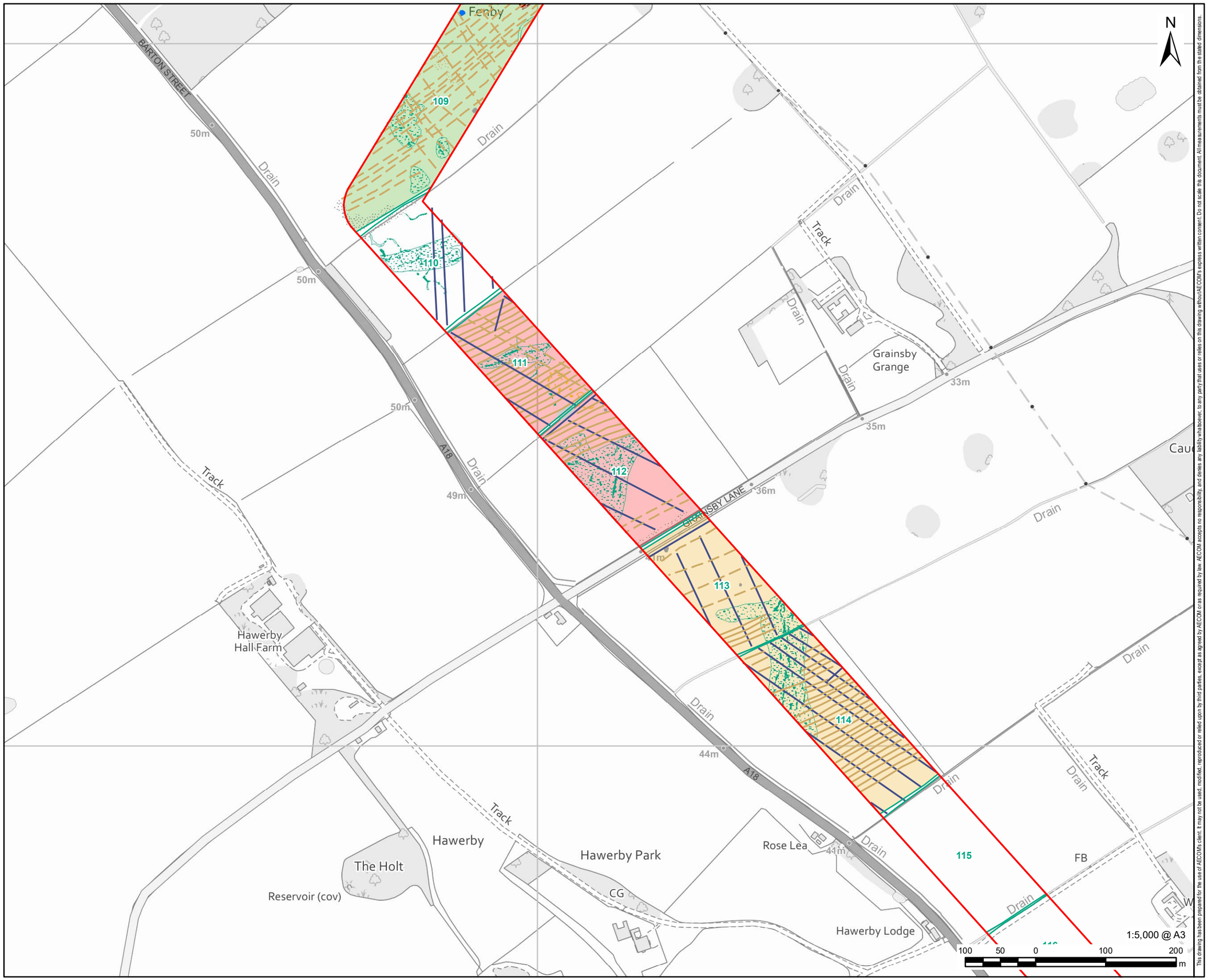

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Agricultural)
- Anomaly (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Anomaly (Historic Feature)

Interpretation Confidence Rating (AOC)

- Highly Confident
- Unreliable
- Uncertain

NOTES:

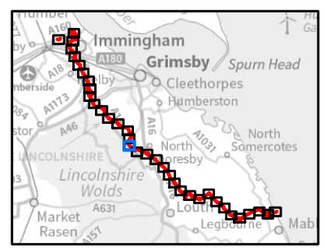

FIGURE TITLE

Figure 2 (17 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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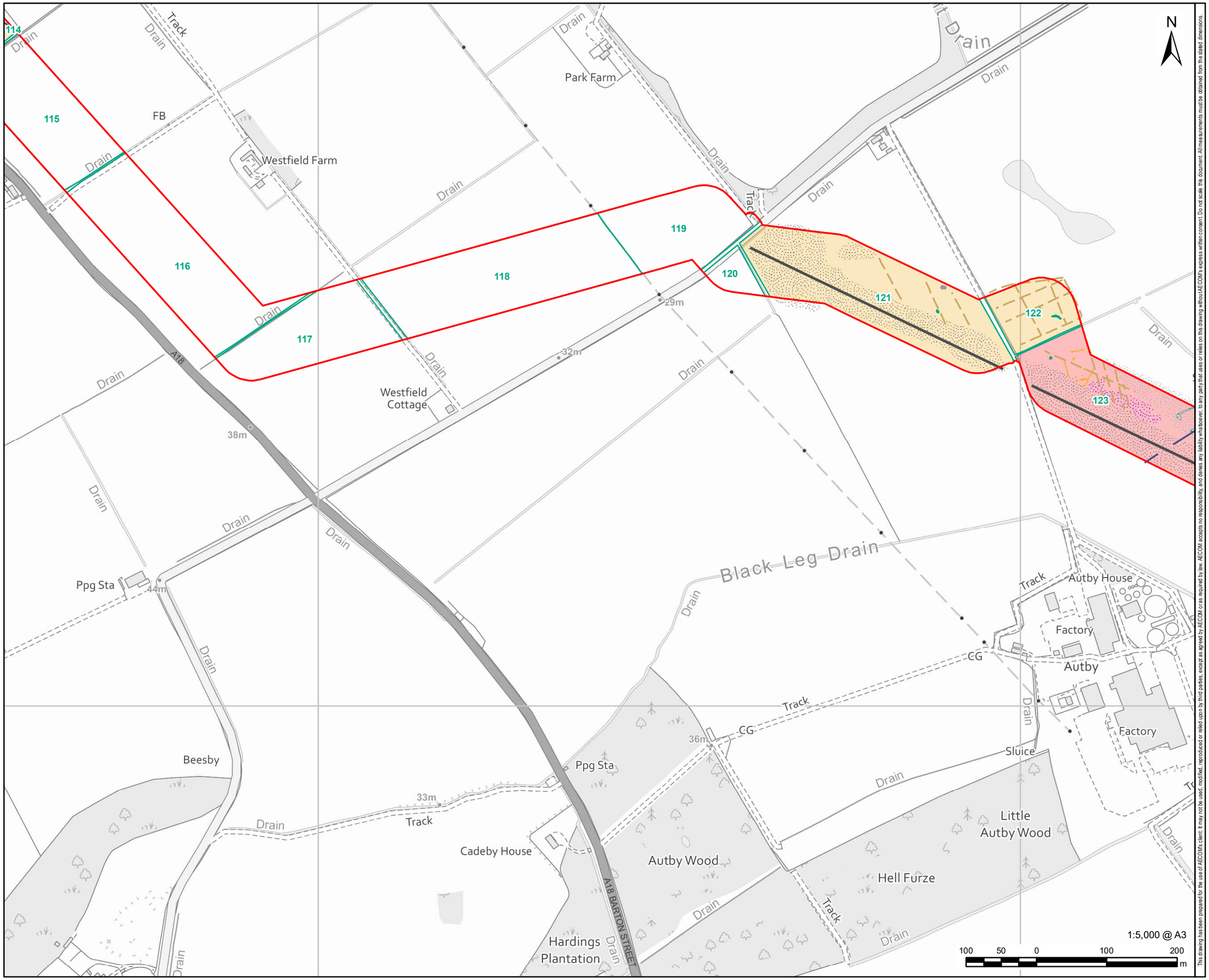

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Service)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Spread (Custom Use)

Interpretation Confidence Rating (AOC)

- Unreliable
- Uncertain

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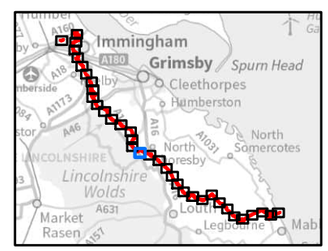


FIGURE TITLE

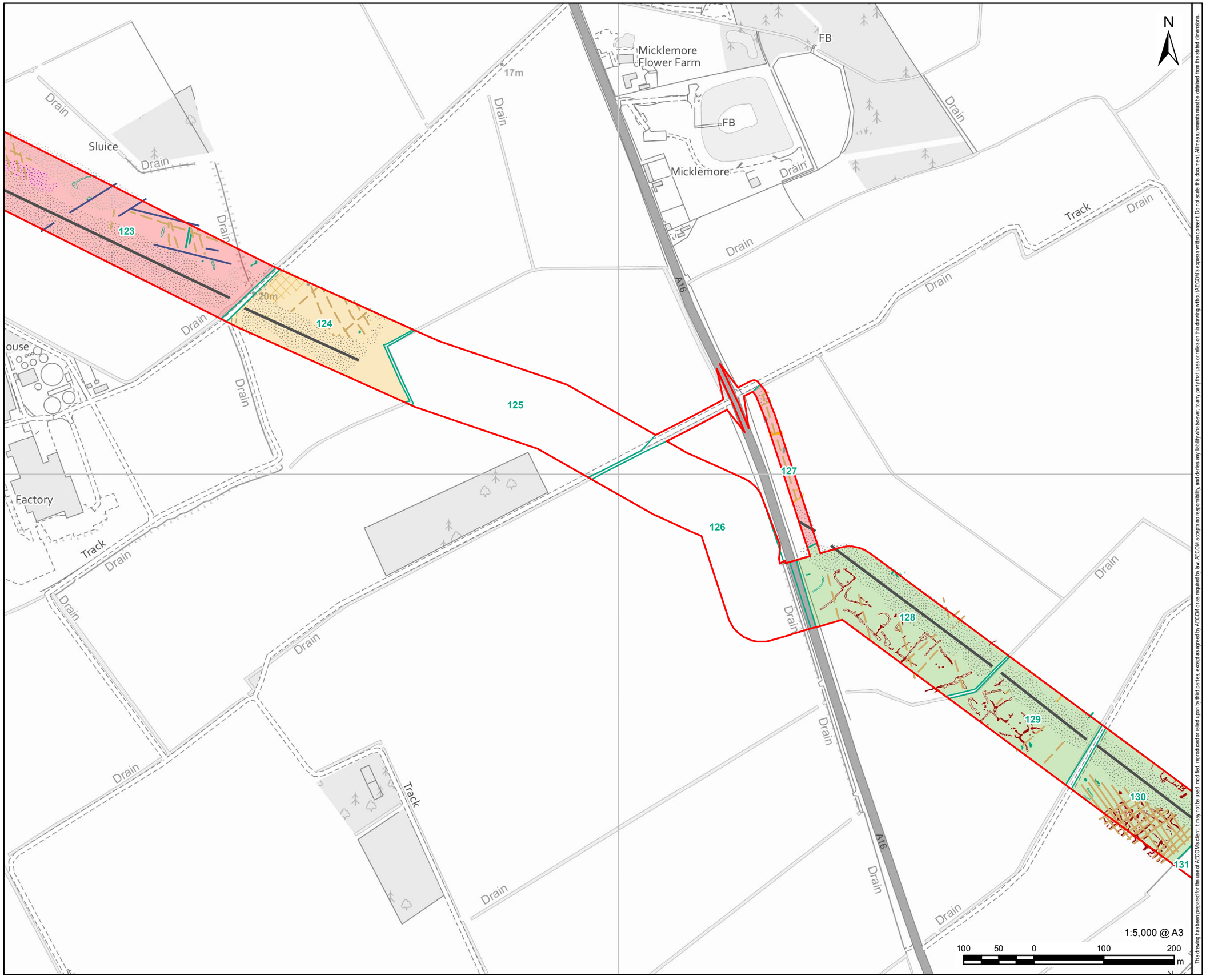
Figure 2 (18 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2



Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

🟥	DCO Site Boundary
🟩	Geophysical Survey Area - AOC Field Numbers
	Geophysical Survey Interpretation (AOC)
—	Linear Trend (Drainage)
- -	Linear Trend (Agricultural, Ploughing)
—	Linear Trend (Agricultural, Ridge and Furrow)
—	Linear Trend (Service)
—	Linear Trend (Unclear Origin)
■	Anomaly (Probable Archaeology)
▨	Spread (Probable Archaeology)
■	Anomaly (Possible Archaeology)
■	Anomaly (Magnetic Disturbance)
▨	Spread (Magnetic Disturbance)
▨	Spread (Geology/Natural)
▨	Spread (Ferrous/Iron Spike)
▨	Spread (Burned Area)
■	Anomaly (Unclear Origin)
▨	Spread (Unclear Origin)
▨	Spread (Custom Use)
	Interpretation Confidence Rating (AOC)
■	Highly Confident
■	Unreliable
■	Uncertain

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FIGURE TITLE

Figure 2 (19 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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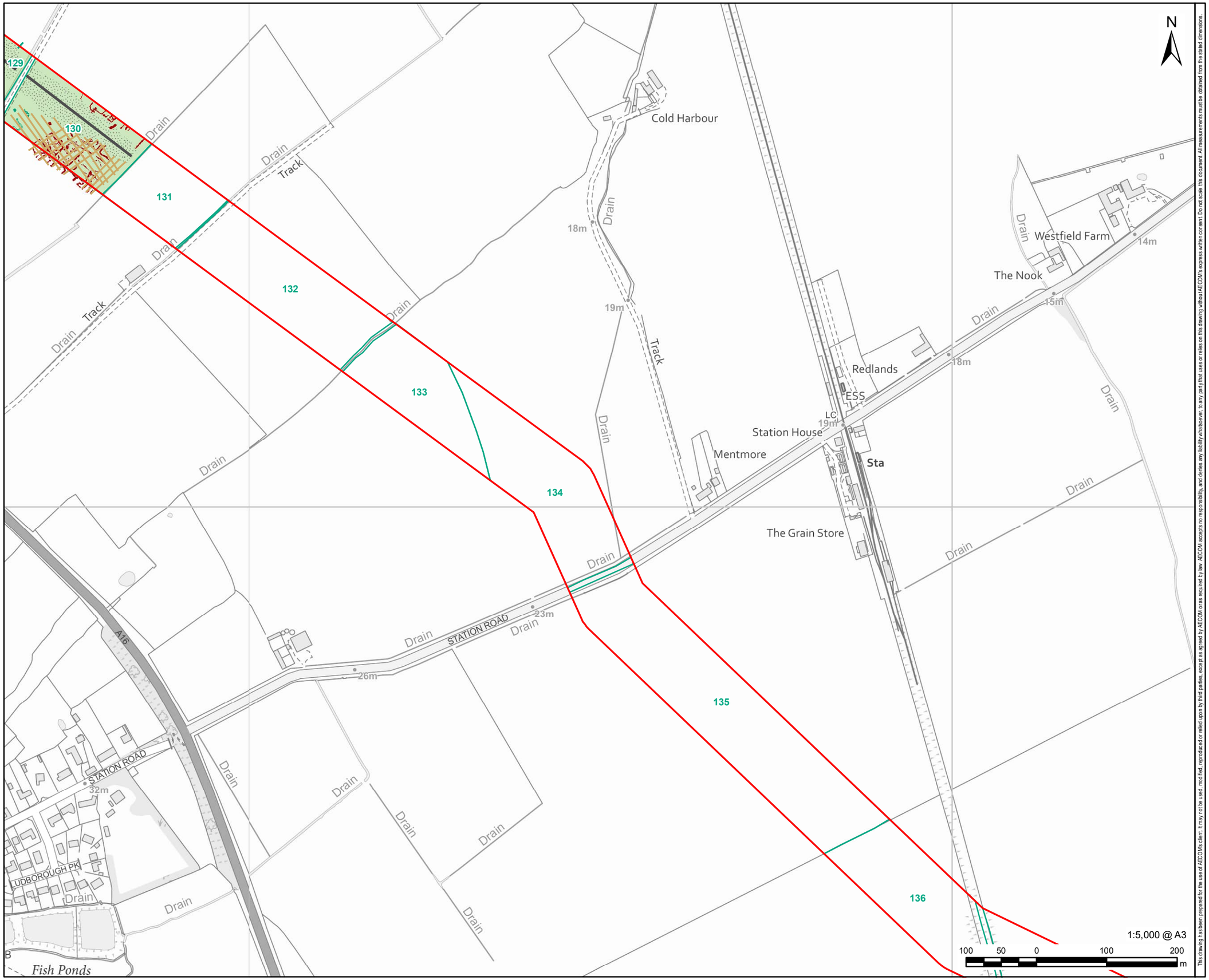

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Linear Trend (Unclear Origin)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Spread (Magnetic Disturbance)
- Spread (Burned Area)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Highly Confident

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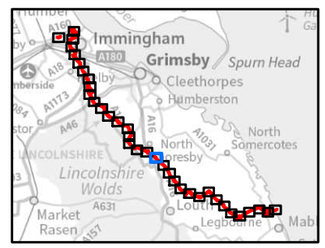

FIGURE TITLE

Figure 2 (20 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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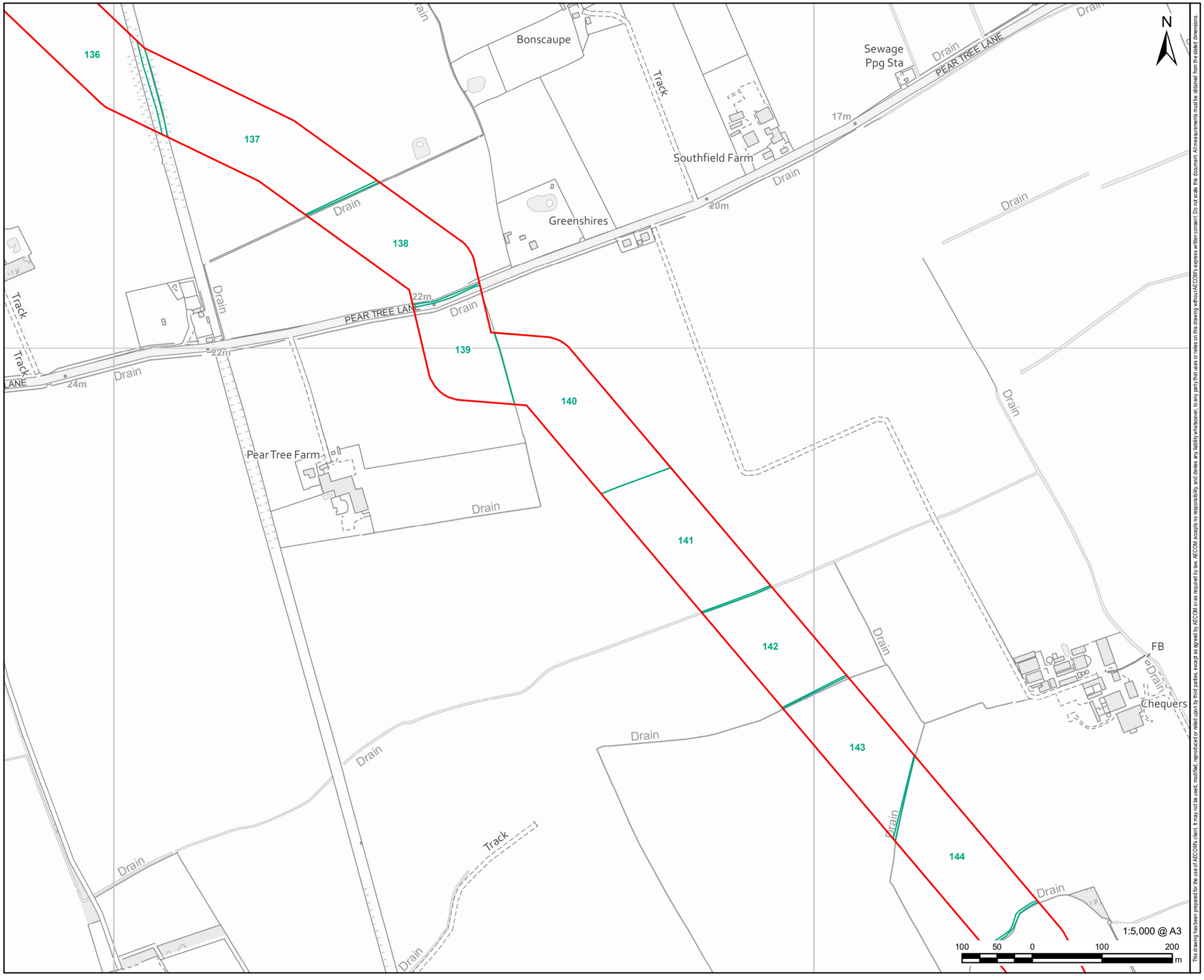

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

NOTES:

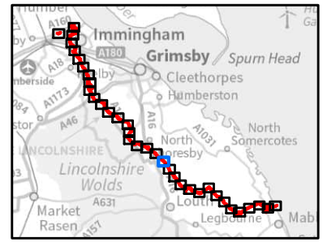

FIGURE TITLE

Figure 2 (21 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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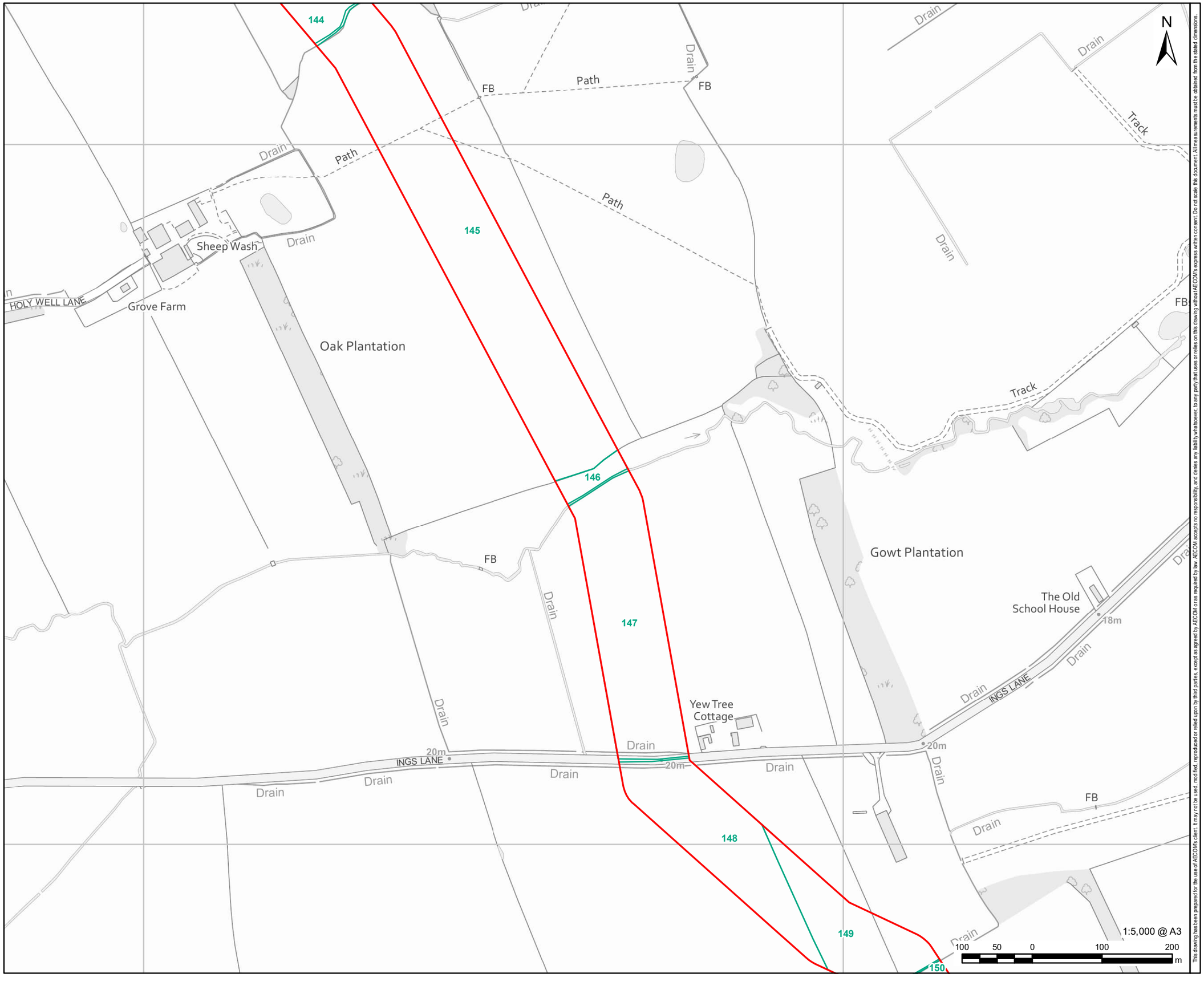

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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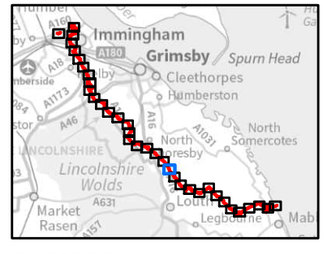

FIGURE TITLE

Figure 2 (22 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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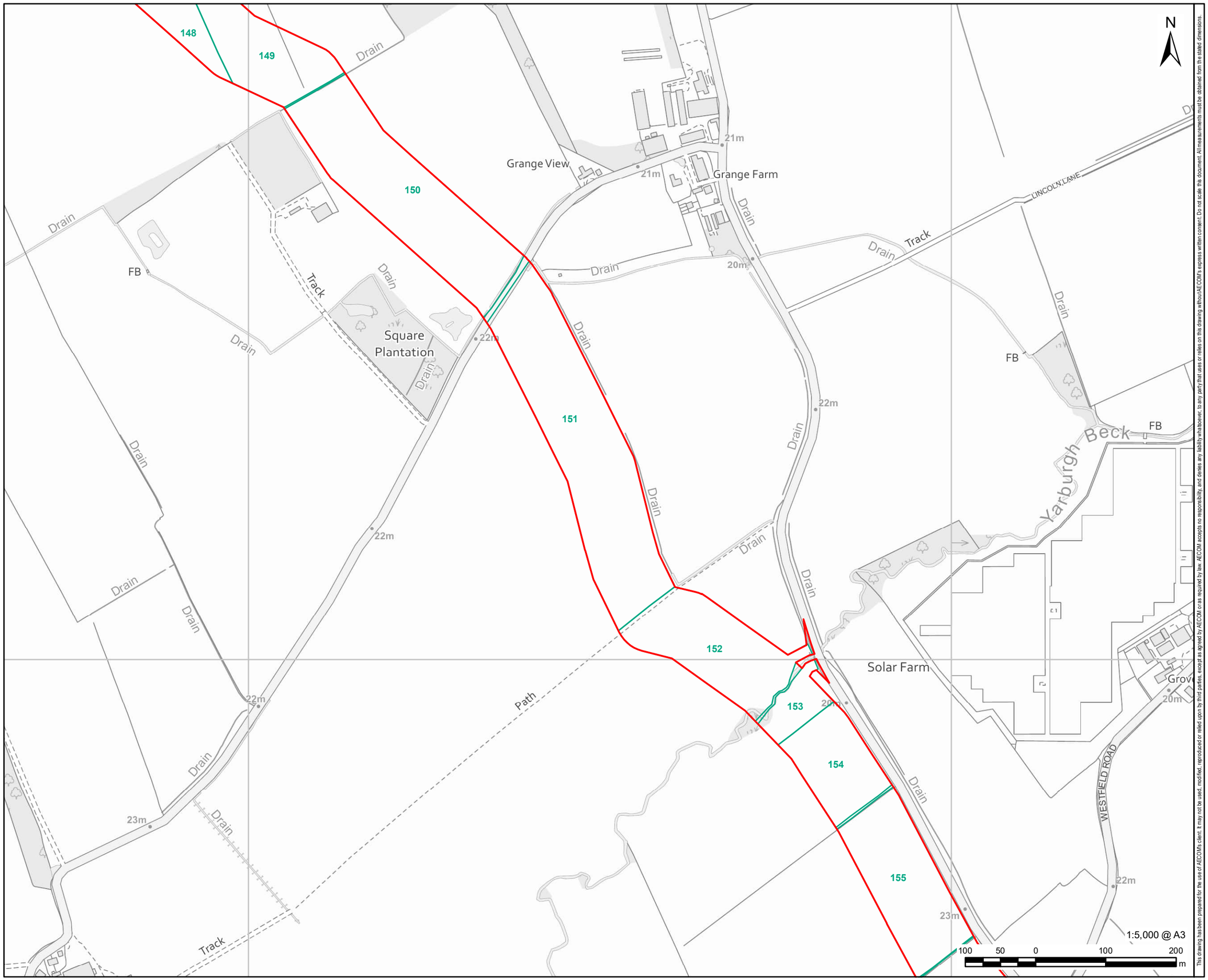

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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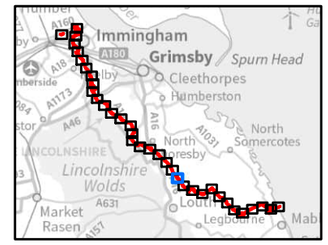

FIGURE TITLE

Figure 2 (23 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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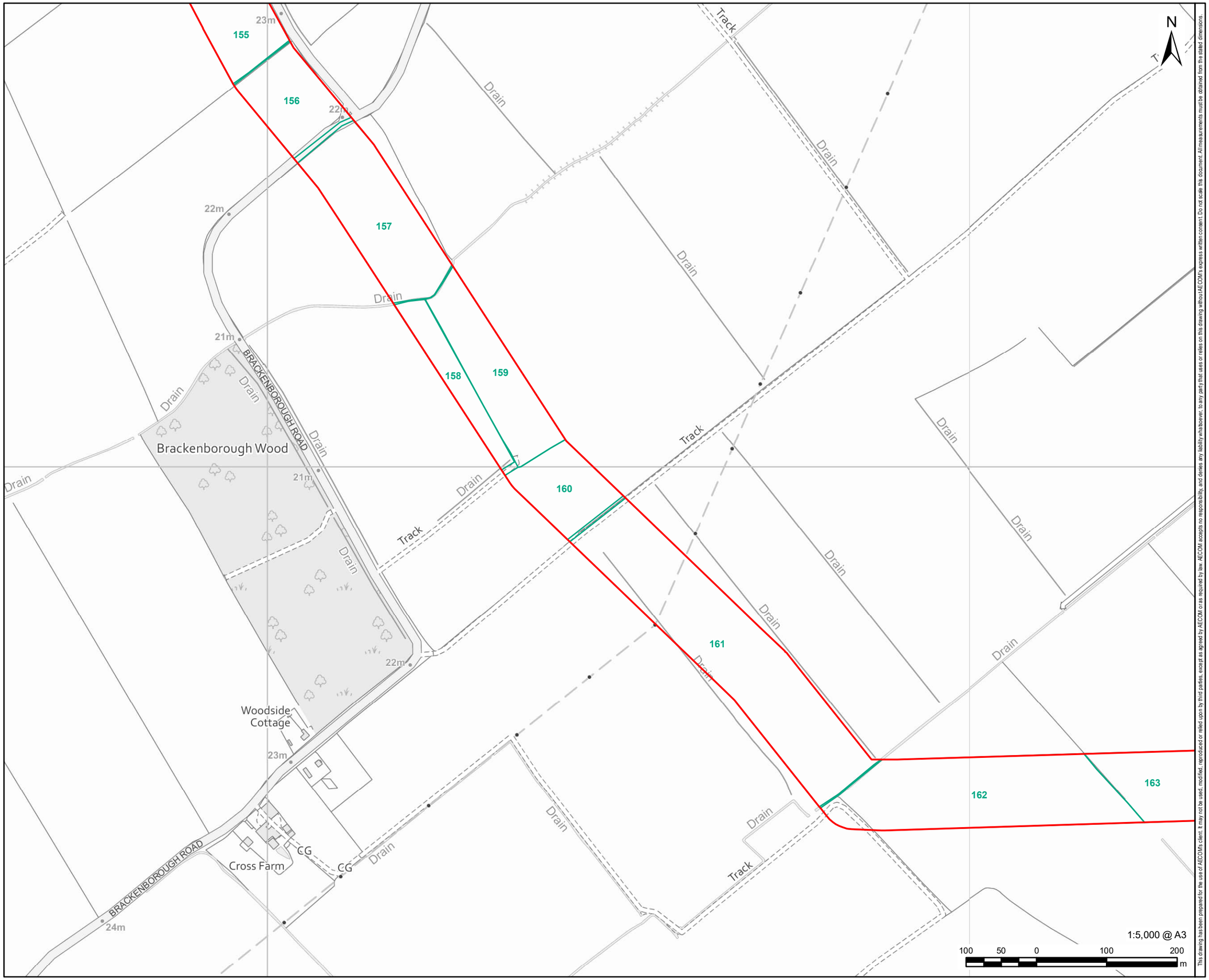

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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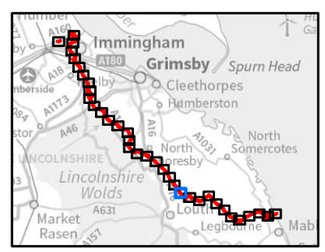

FIGURE TITLE

Figure 2 (24 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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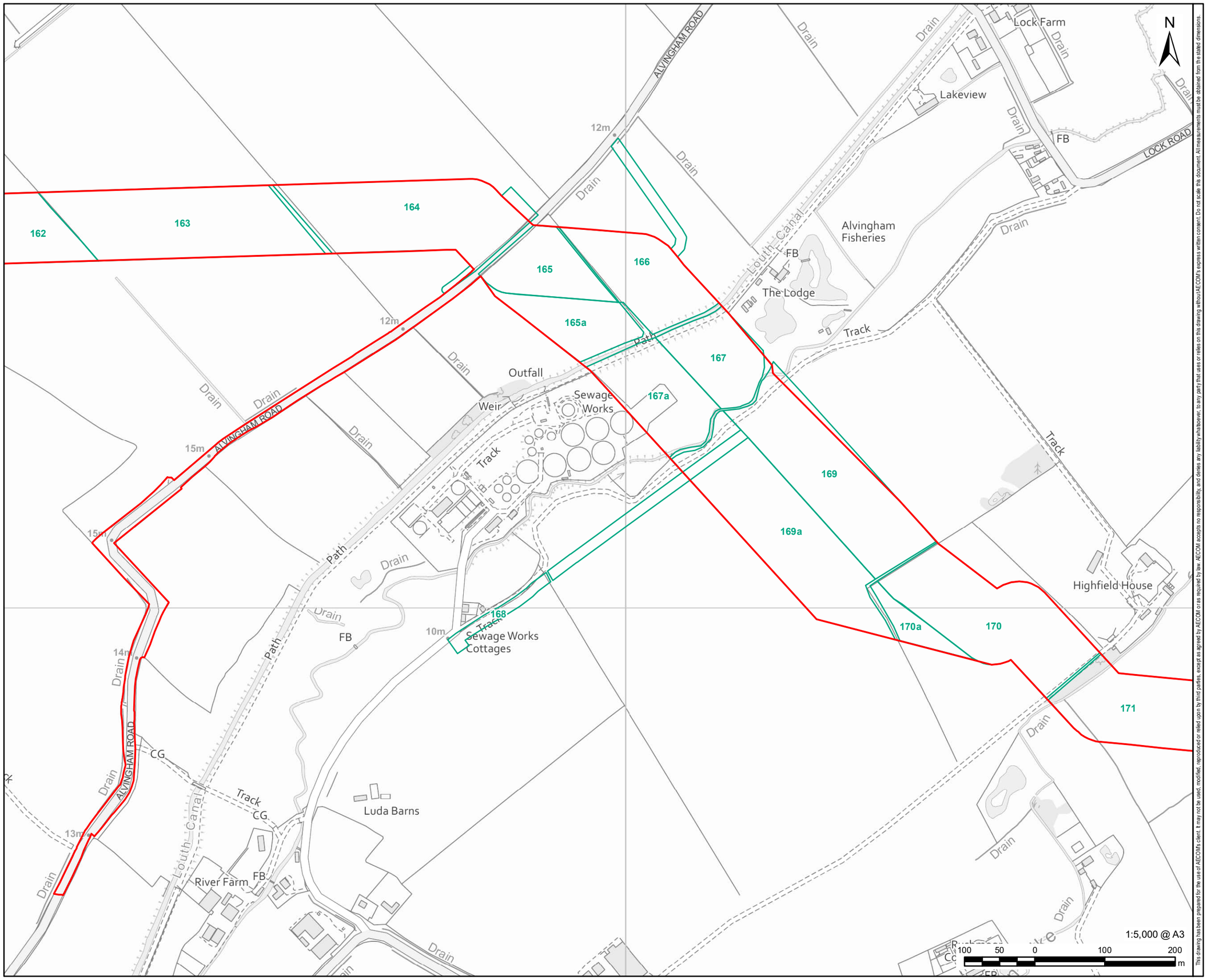

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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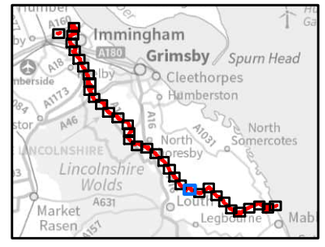

FIGURE TITLE

Figure 2 (25 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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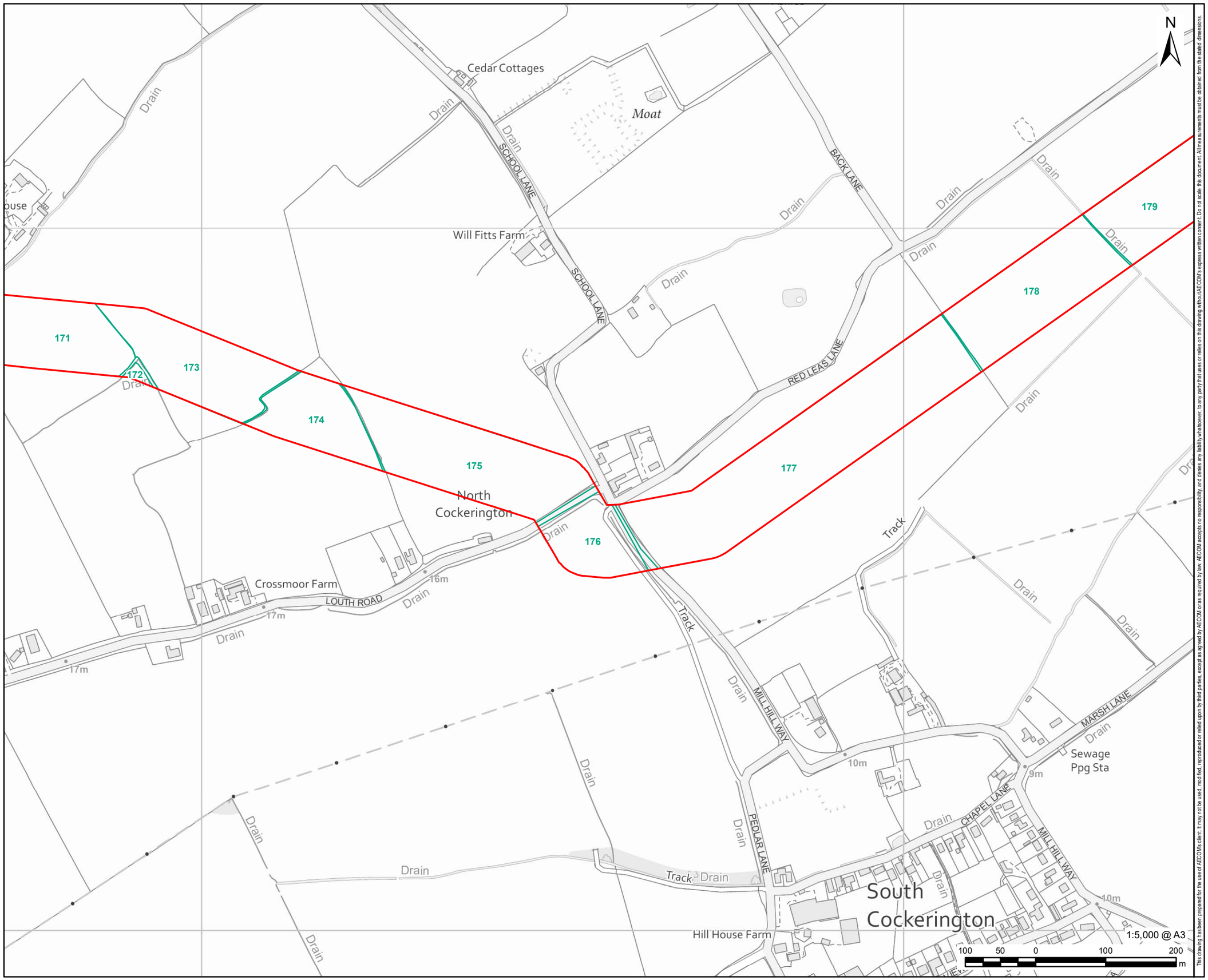

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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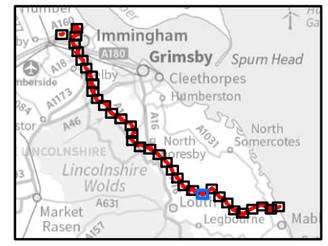

FIGURE TITLE

Figure 2 (26 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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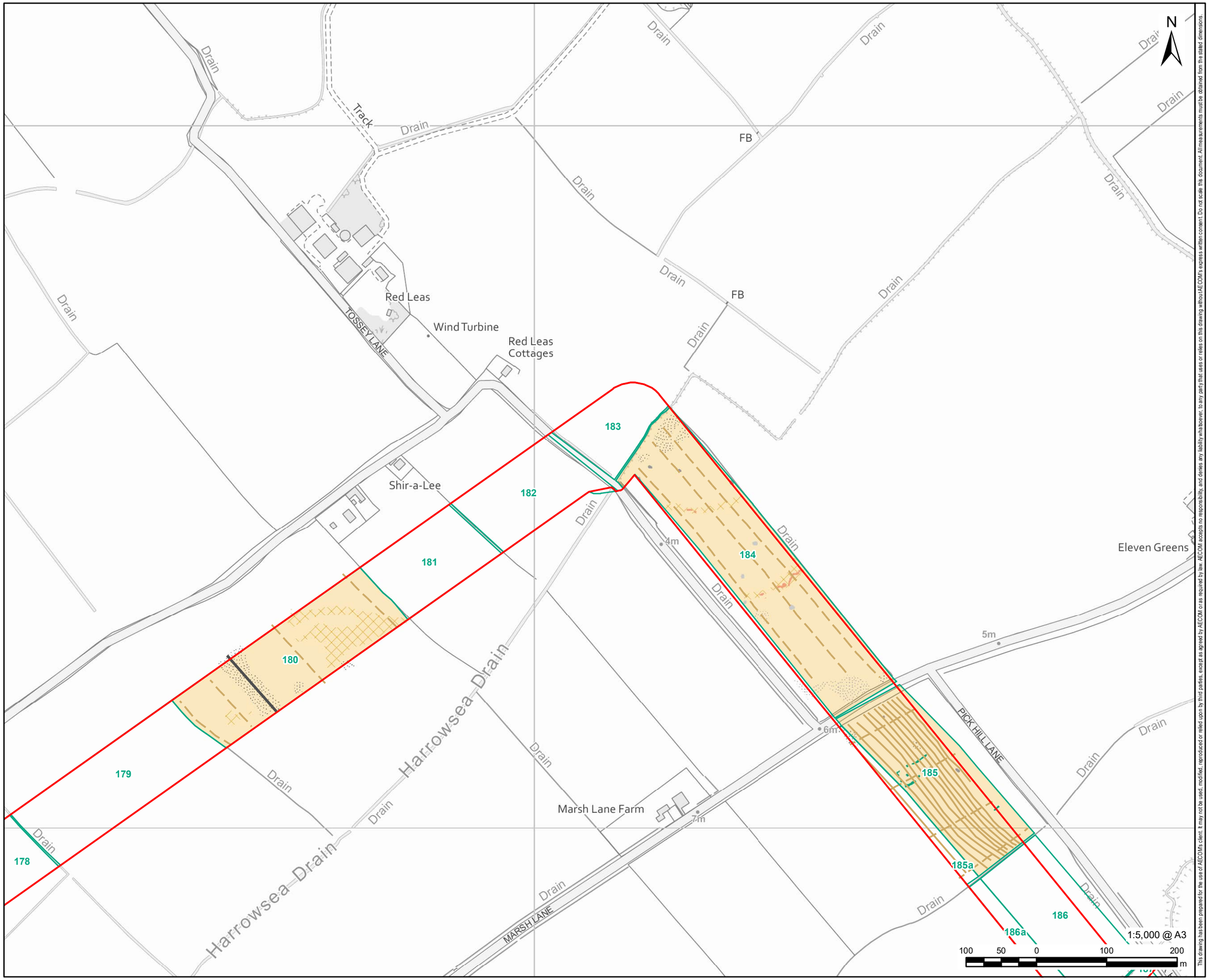

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Anomaly (Ferrous/Iron Spike)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Unreliable

NOTES:

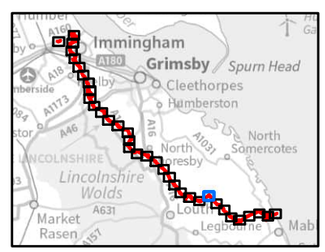

FIGURE TITLE

Figure 2 (27 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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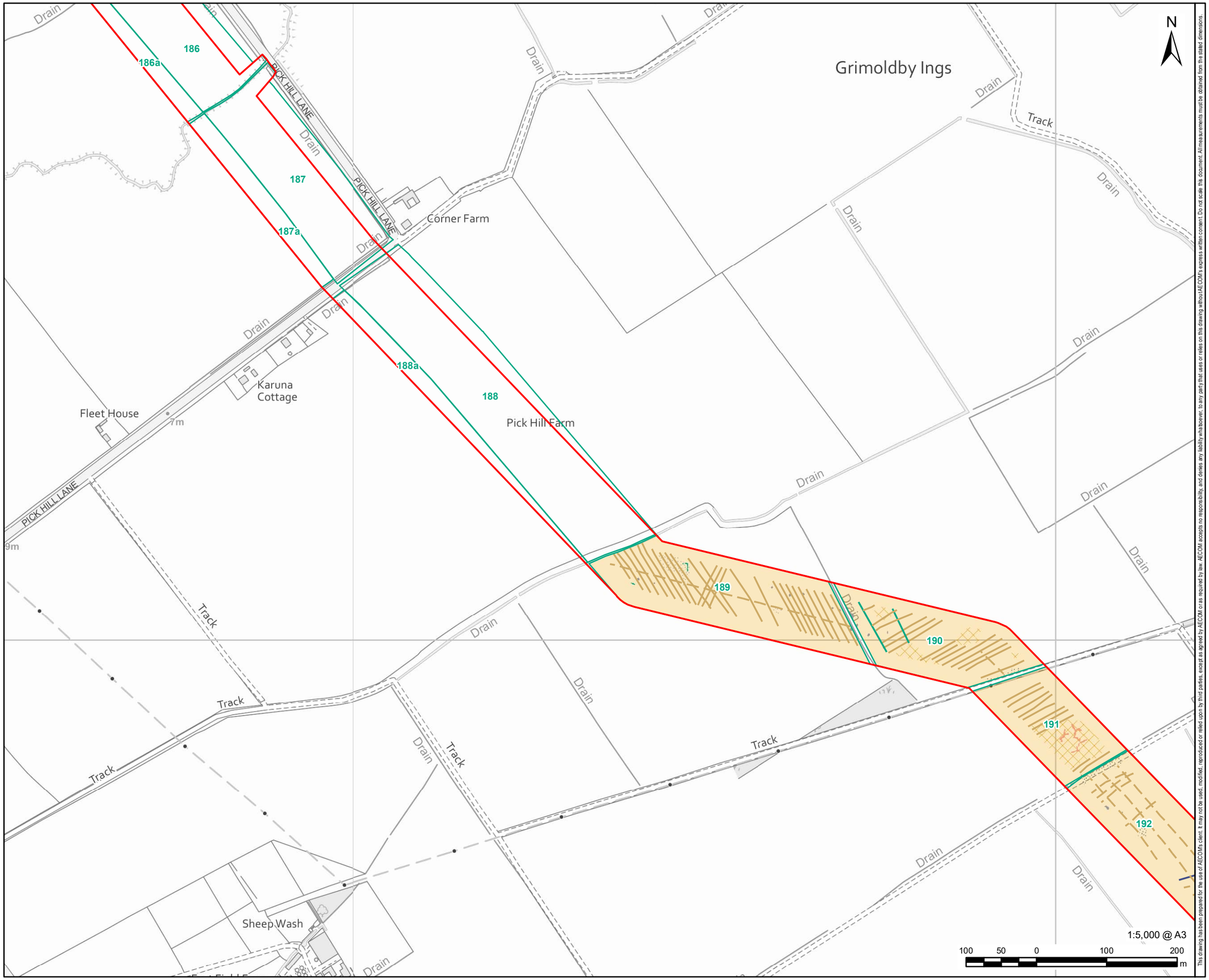

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Unclear Origin)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Unreliable

NOTES:

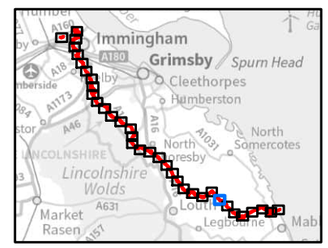

FIGURE TITLE

Figure 2 (28 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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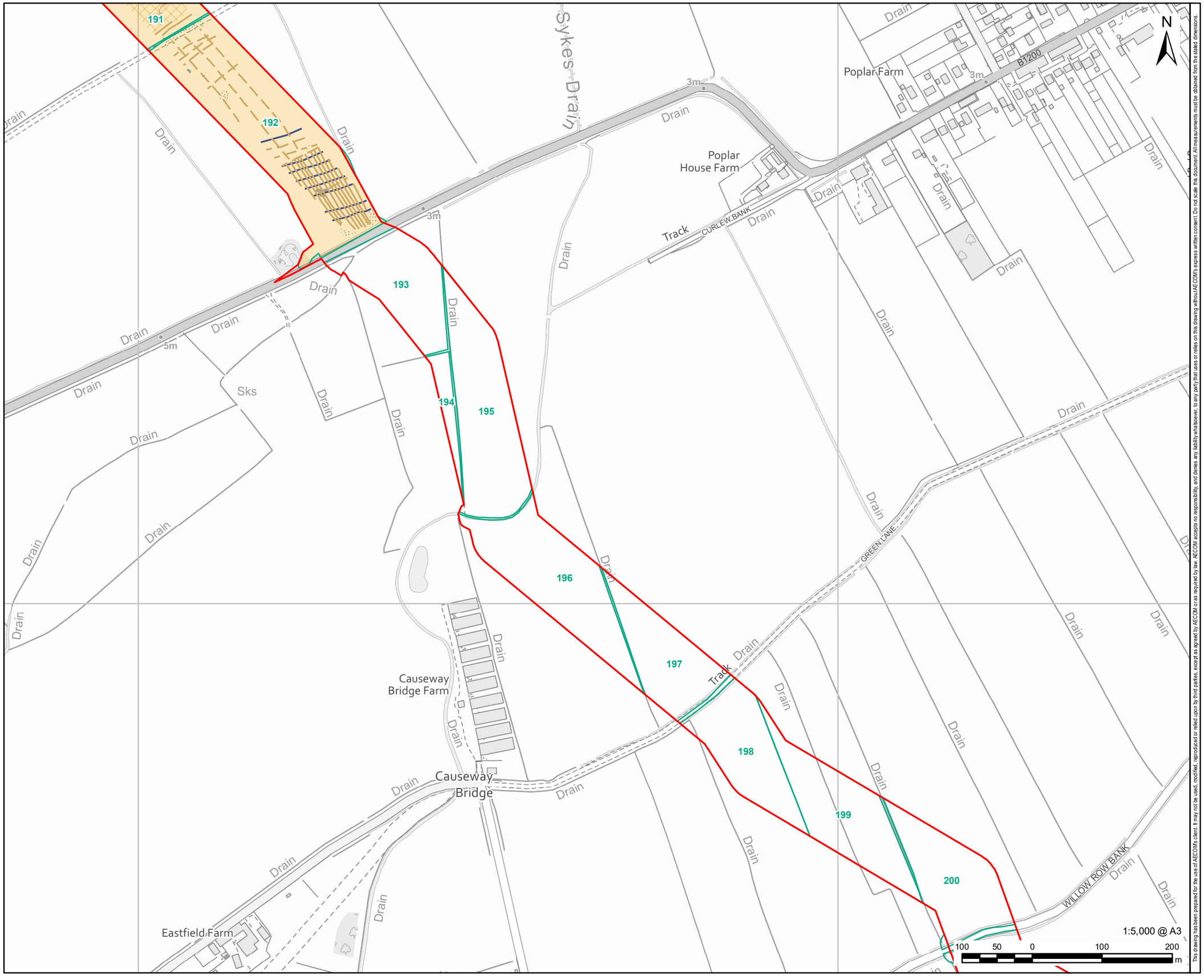

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)

Interpretation Confidence Rating (AOC)

- Unreliable

NOTES:

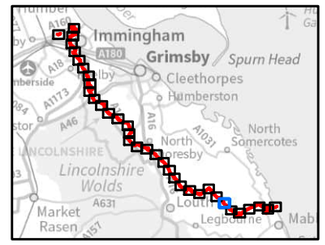

FIGURE TITLE

Figure 2 (29 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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N

199
200
201
202
203
204
205
206
207
208
209
210
211

Drain
WILLOW ROW BANK
THACKER BANK
Lordship Farm
Wind Turbine
Windswept
Walk Farm
Track
Land
2m
3m

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Geology/Natural)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)

Interpretation Confidence Rating (AOC)

- Unreliable

NOTES:

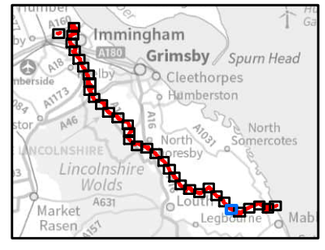

FIGURE TITLE

Figure 2 (30 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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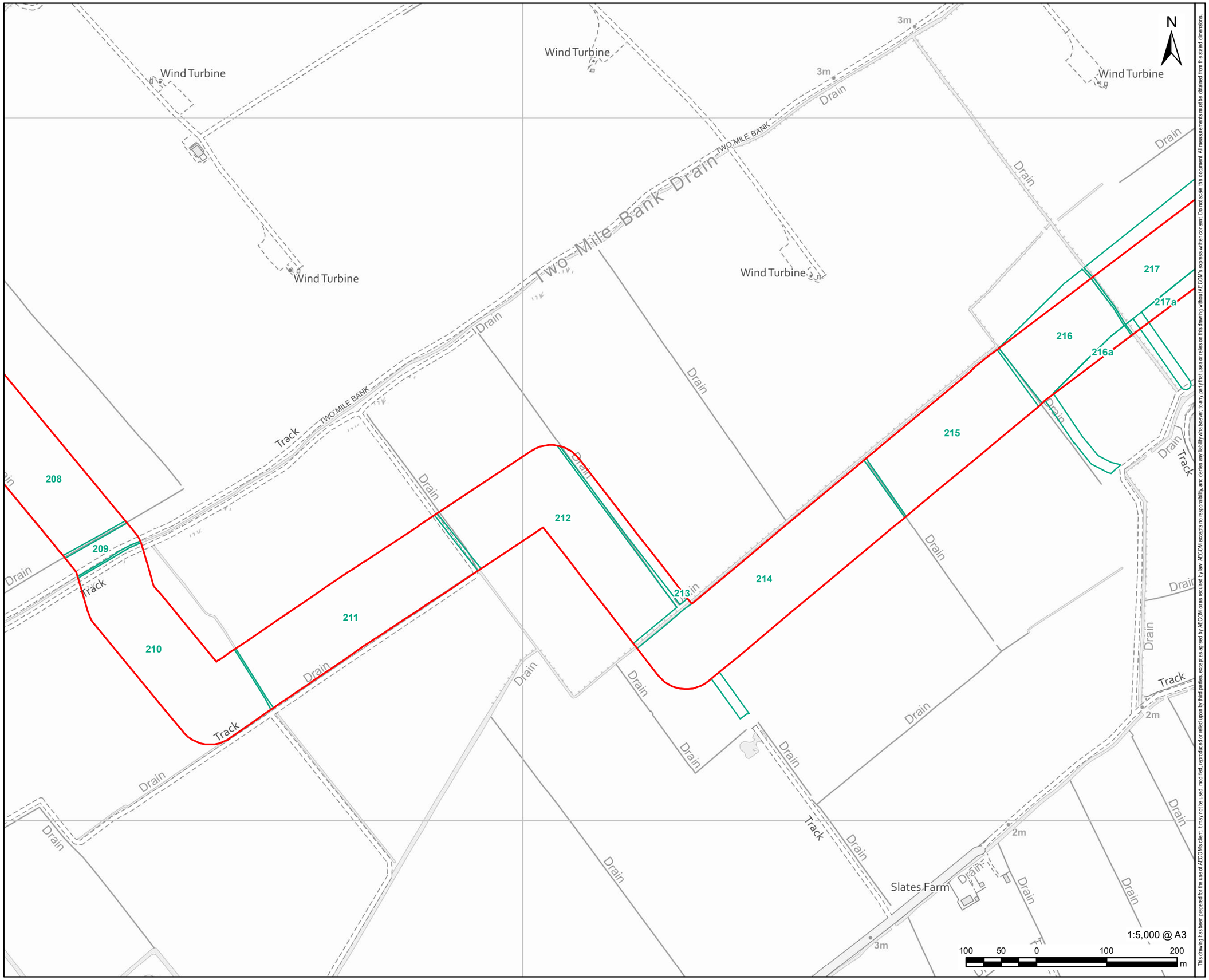

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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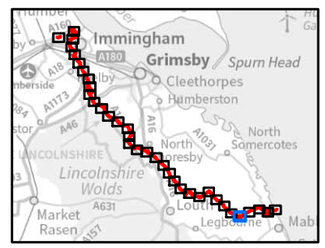

FIGURE TITLE

Figure 2 (31 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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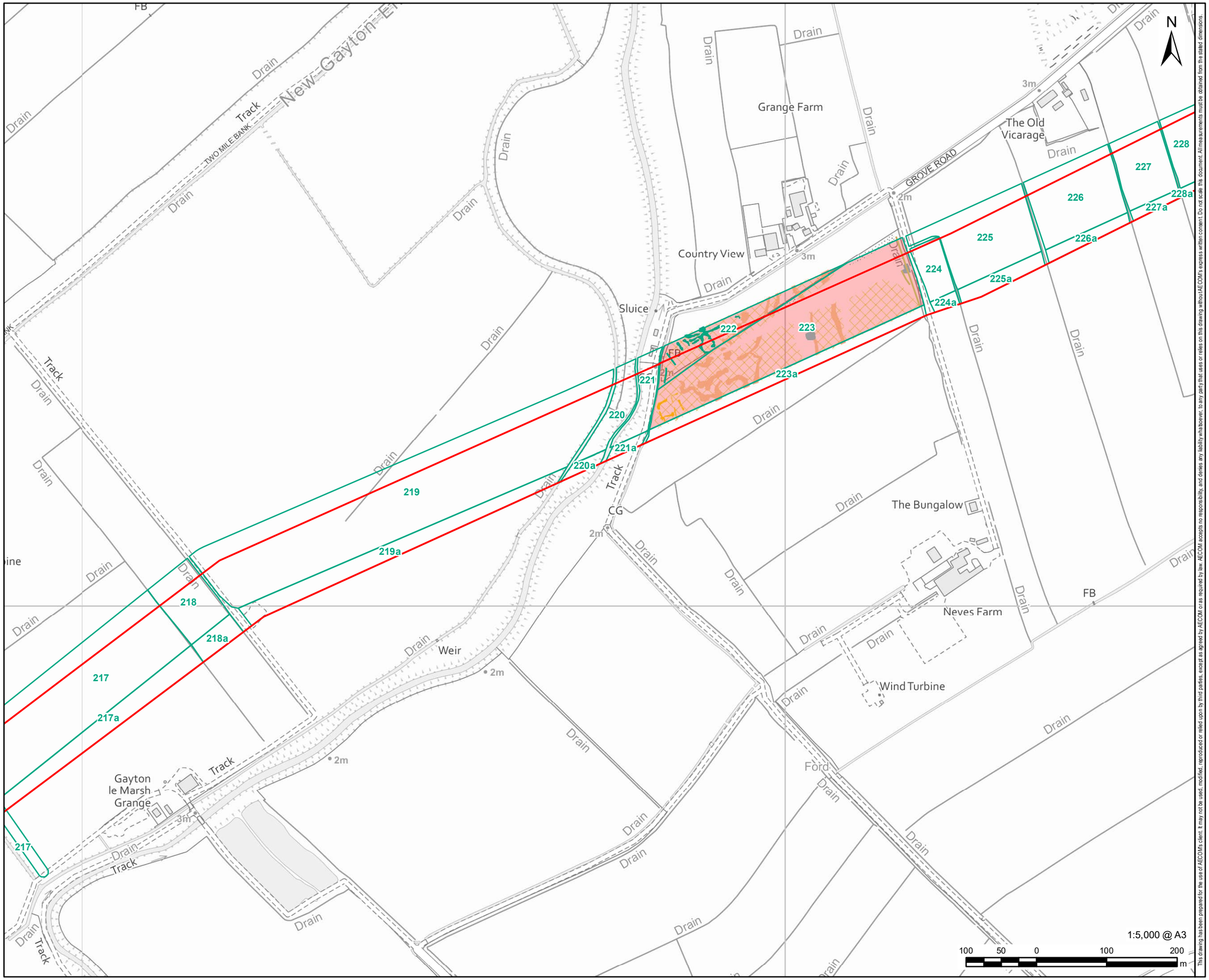

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Unclear Origin)
- Anomaly (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Anomaly (Unclear Origin)

Interpretation Confidence Rating (AOC)

- Uncertain

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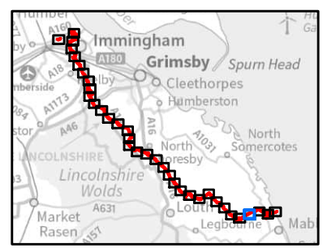

FIGURE TITLE

Figure 2 (32 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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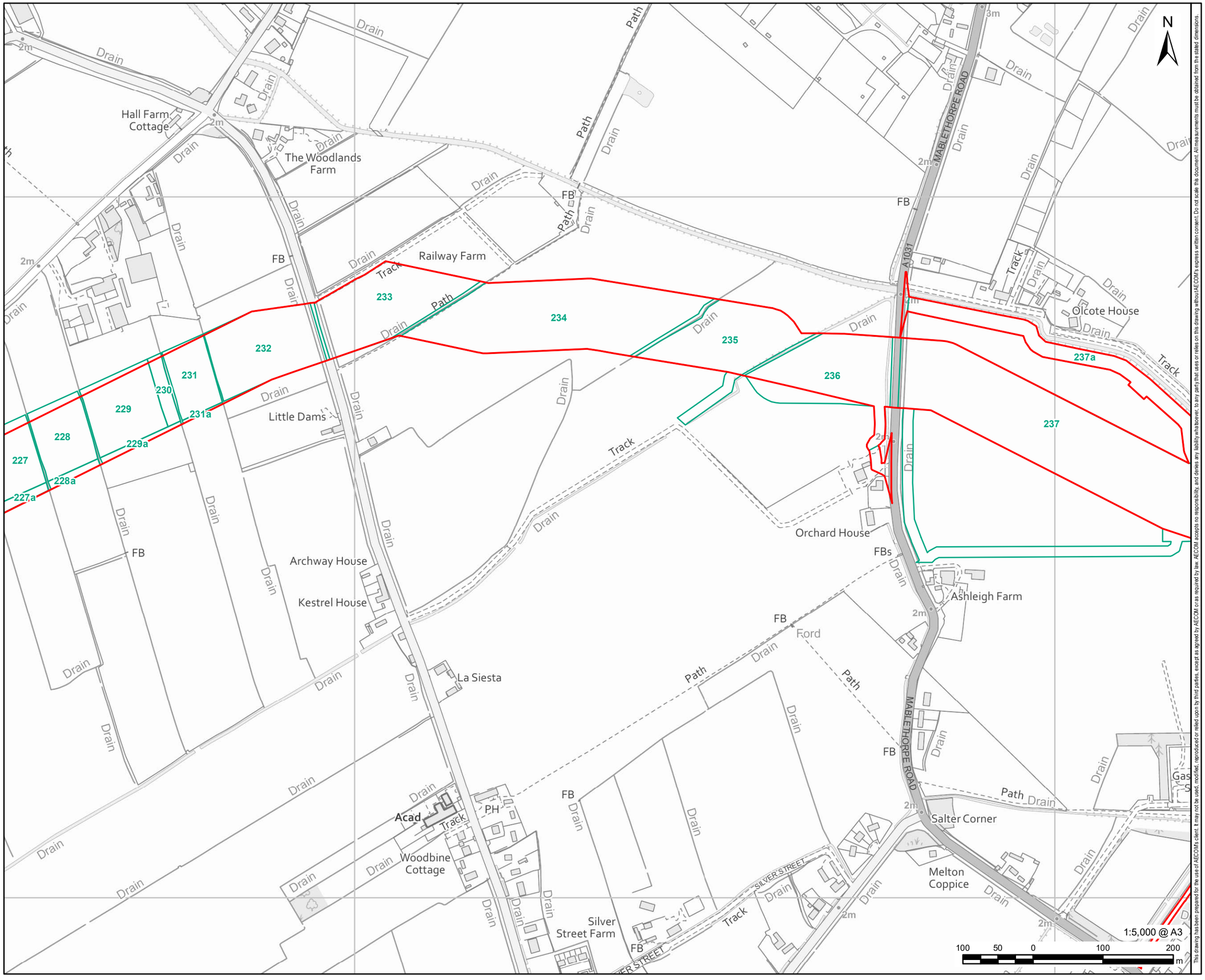

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

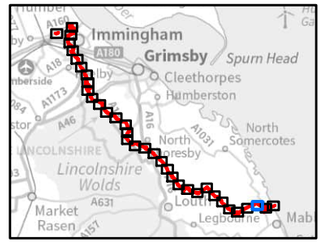

FIGURE TITLE

Figure 2 (33 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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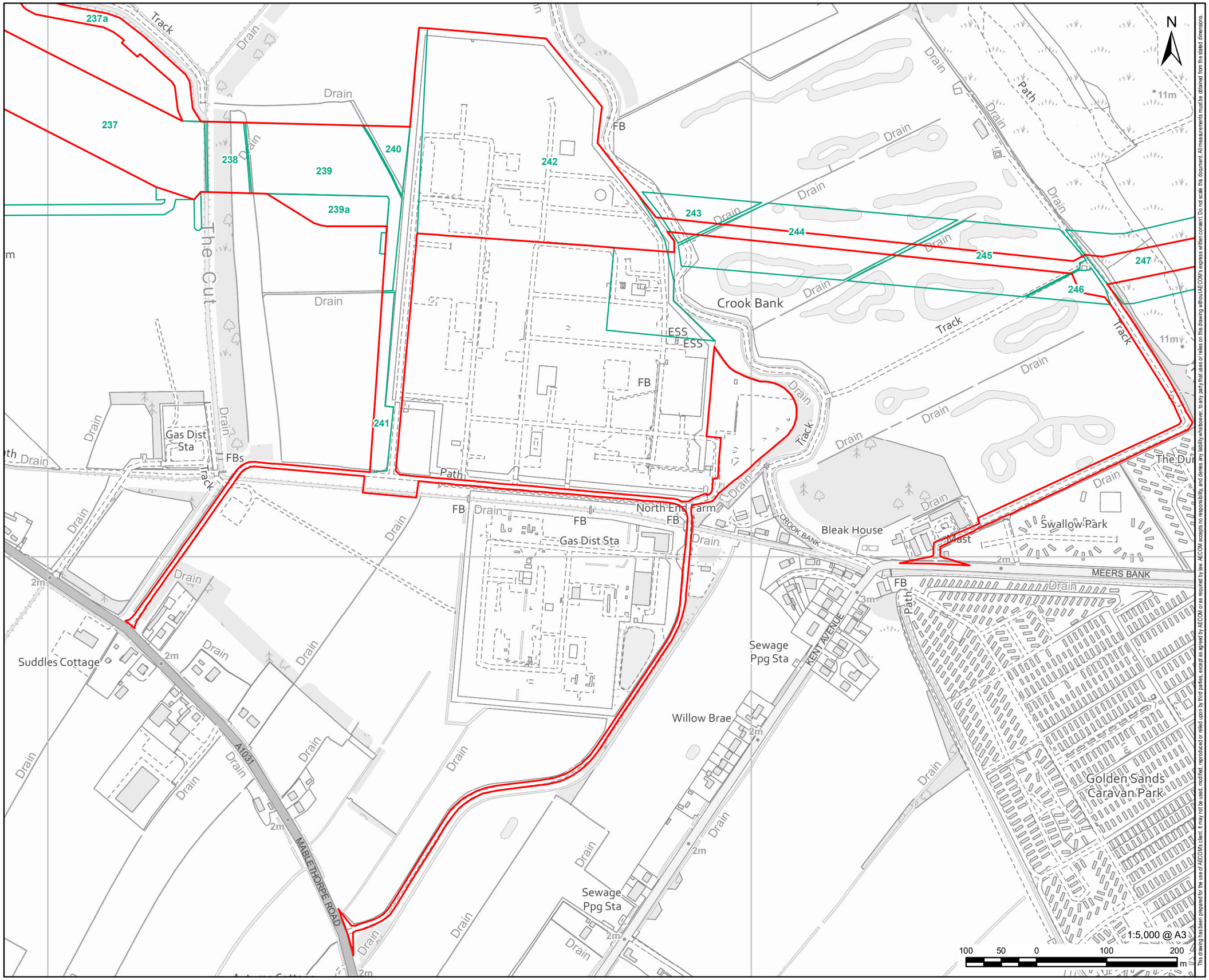

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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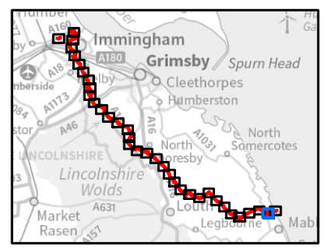

FIGURE TITLE

Figure 2 (34 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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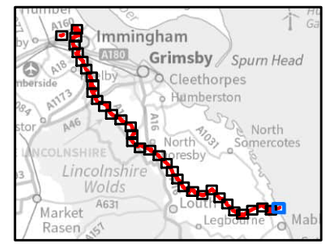

FIGURE TITLE

Figure 2 (35 of 35)
AOC Geophysical Survey Interpretation and Confidence Rating

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_2

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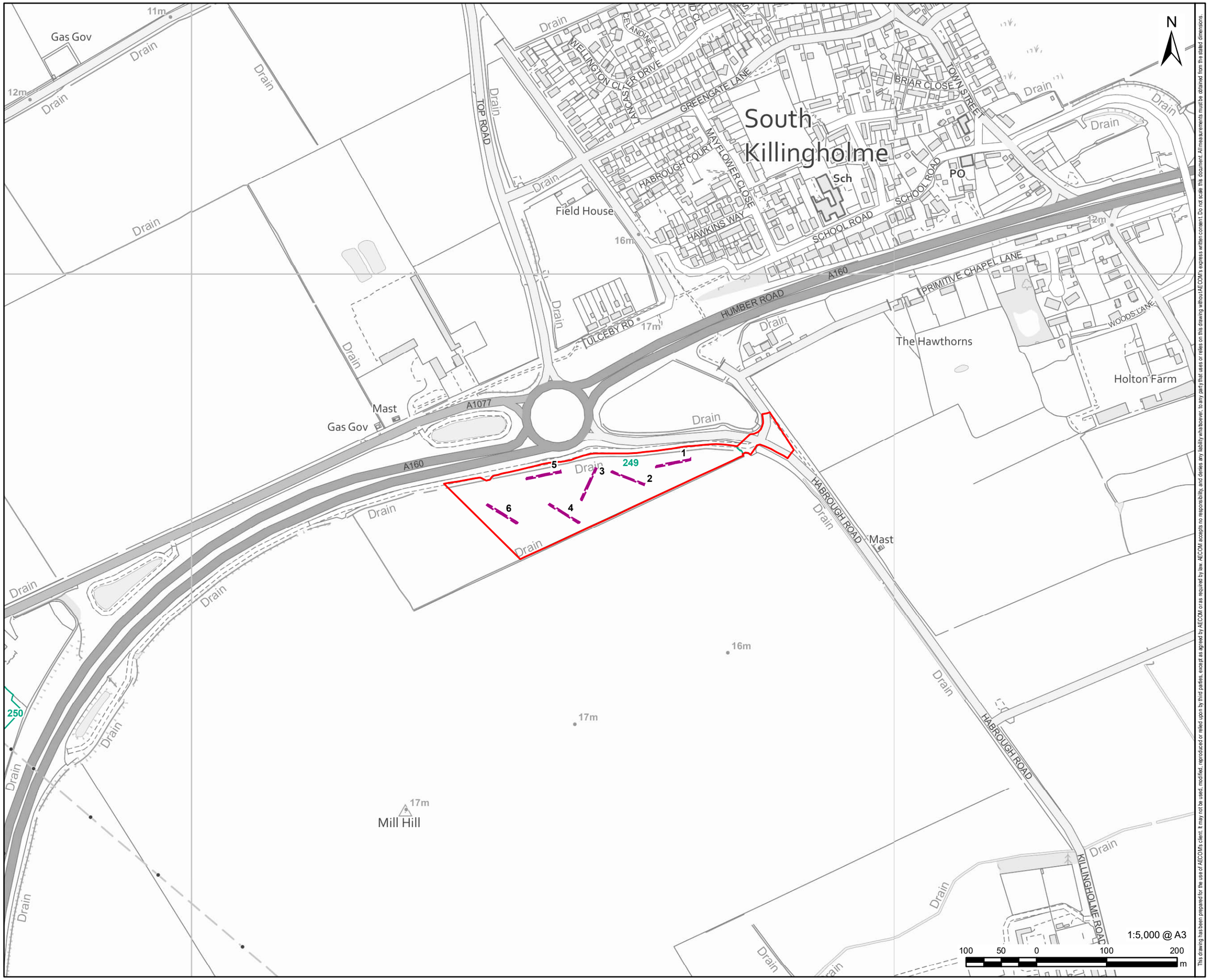

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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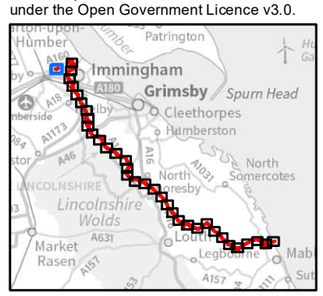

FIGURE TITLE

Figure 3 (1 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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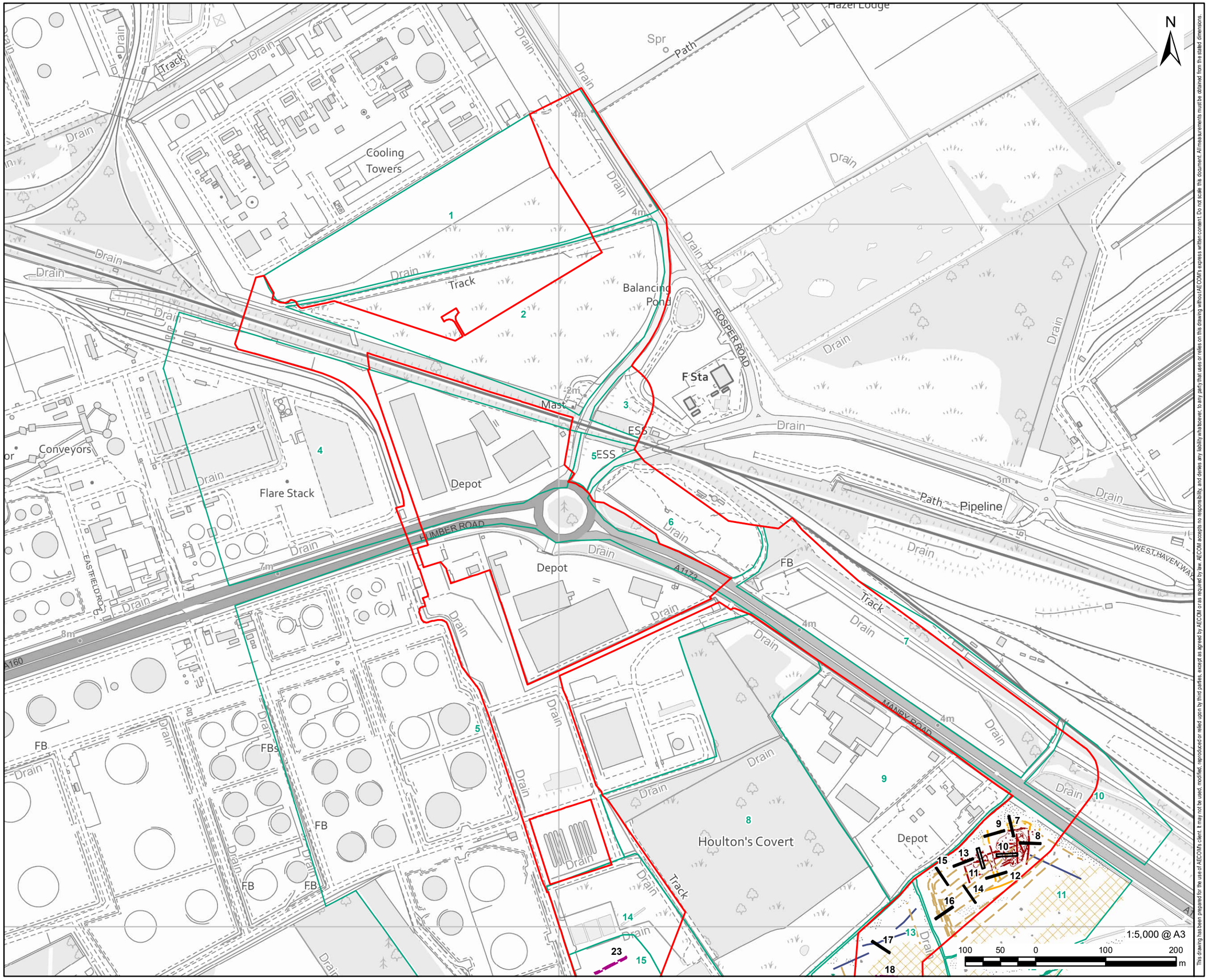

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Possible Archaeology)
- Linear Trend (Probable Archaeology)
- Anomaly (Probable
- Spread (Probable
- Anomaly (Possible
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)

NOTES:

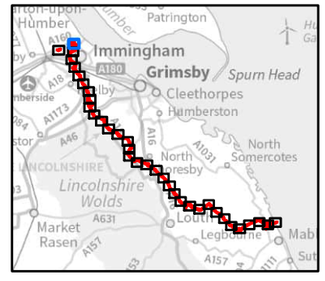

FIGURE TITLE

Figure 3 (2 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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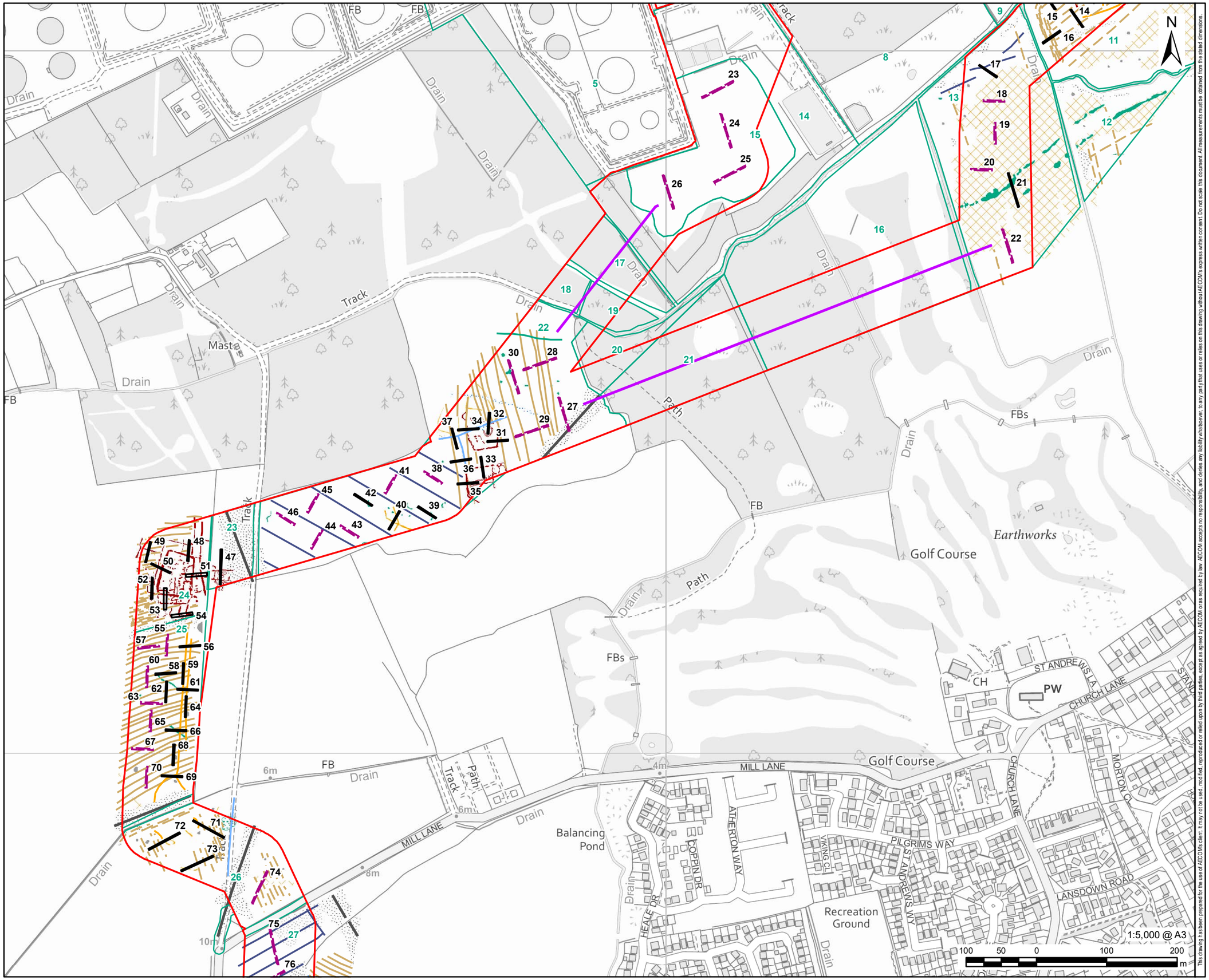

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Historic Feature)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Possible Archaeology)
- Linear Trend (Probable Archaeology)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Linear Trend (Unclear Origin)
- Anomaly (Probable
- Spread (Probable
- Anomaly (Possible
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Agricultural)
- Spread (Agricultural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Spread (Historic Feature)

NOTES:

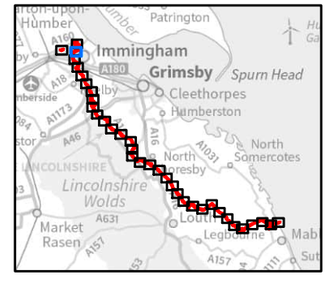

FIGURE TITLE

Figure 3 (3 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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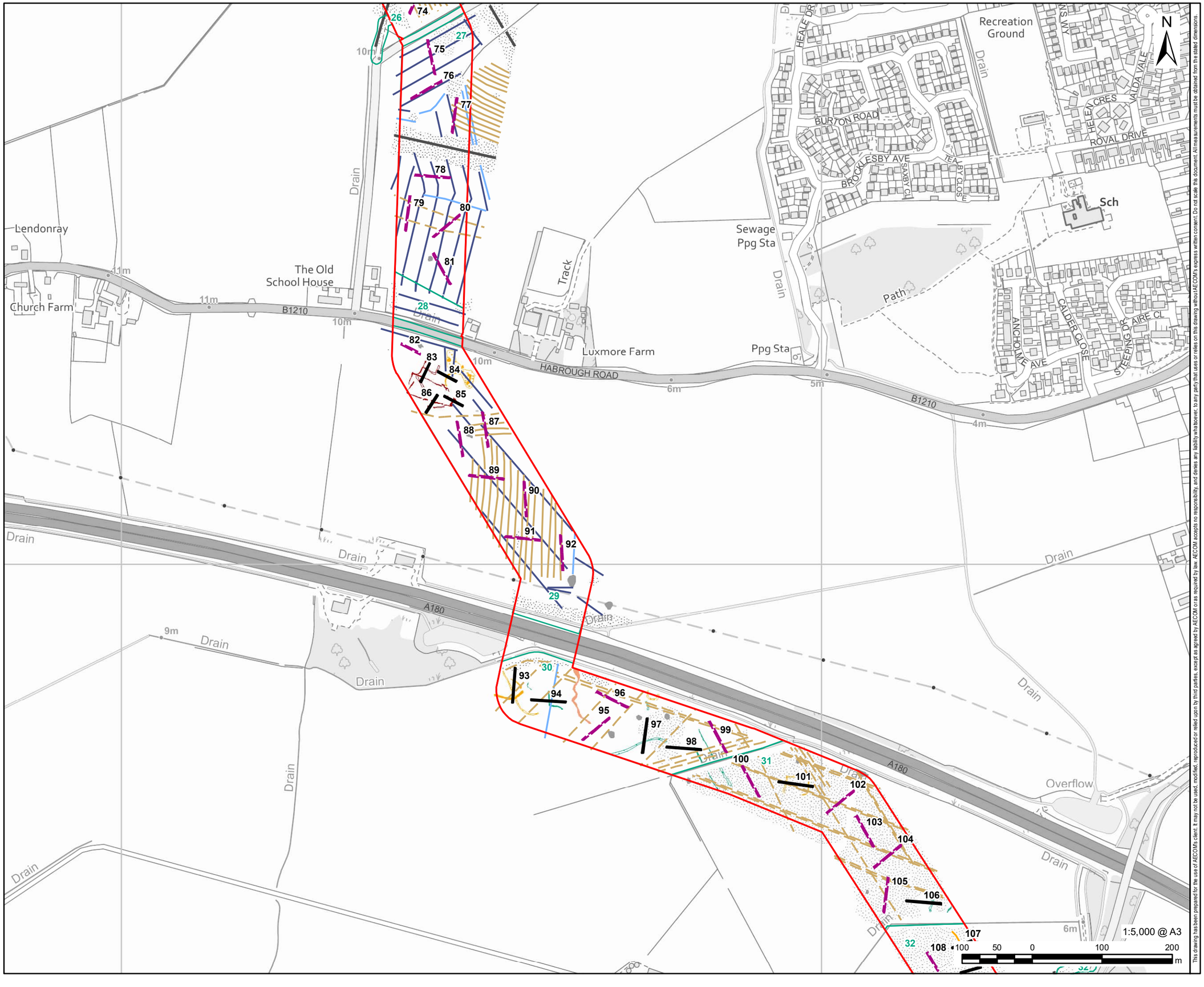

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Historic Feature)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Possible Archaeology)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Anomaly (Probable)
- Spread (Probable)
- Anomaly (Possible)
- Spread (Possible)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Anomaly (Ferrous/Iron Spike)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

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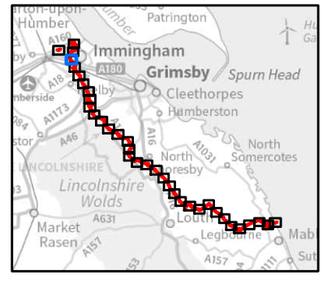


FIGURE TITLE

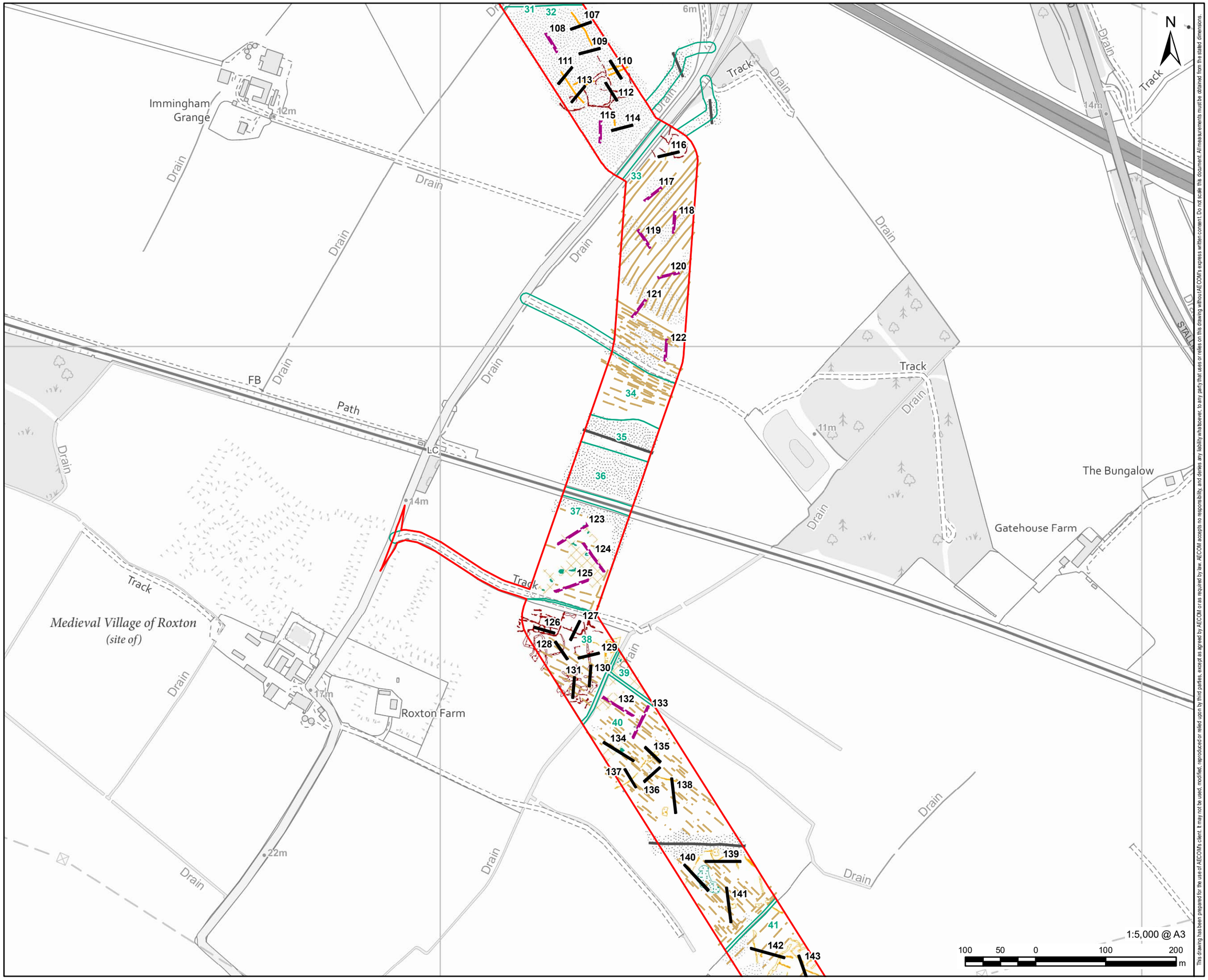
Figure 3 (4 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3



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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- 🟥 DCO Site Boundary
- 🟩 Geophysical Survey Area - AOC Field Numbers
- ▭ Indicative Trench Location - Targeted
- ▭ Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- ‐ ‐ Linear Trend (Agricultural, Ploughing)
- — Linear Trend (Possible Archaeology)
- — Linear Trend (Agricultural, Ridge and Furrow)
- — Linear Trend (Service)
- ■ Anomaly (Probable Archaeology)
- ▨ Spread (Probable Archaeology)
- ■ Anomaly (Possible Archaeology)
- ▨ Spread (Possible Archaeology)
- ■ Anomaly (Magnetic Disturbance)
- ▨ Spread (Magnetic Disturbance)
- ▨ Spread (Geology/Natural)
- ▨ Spread (Ferrous/Iron Spike)
- ■ Anomaly (Unclear Origin)
- ▨ Spread (Unclear Origin)

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FIGURE TITLE

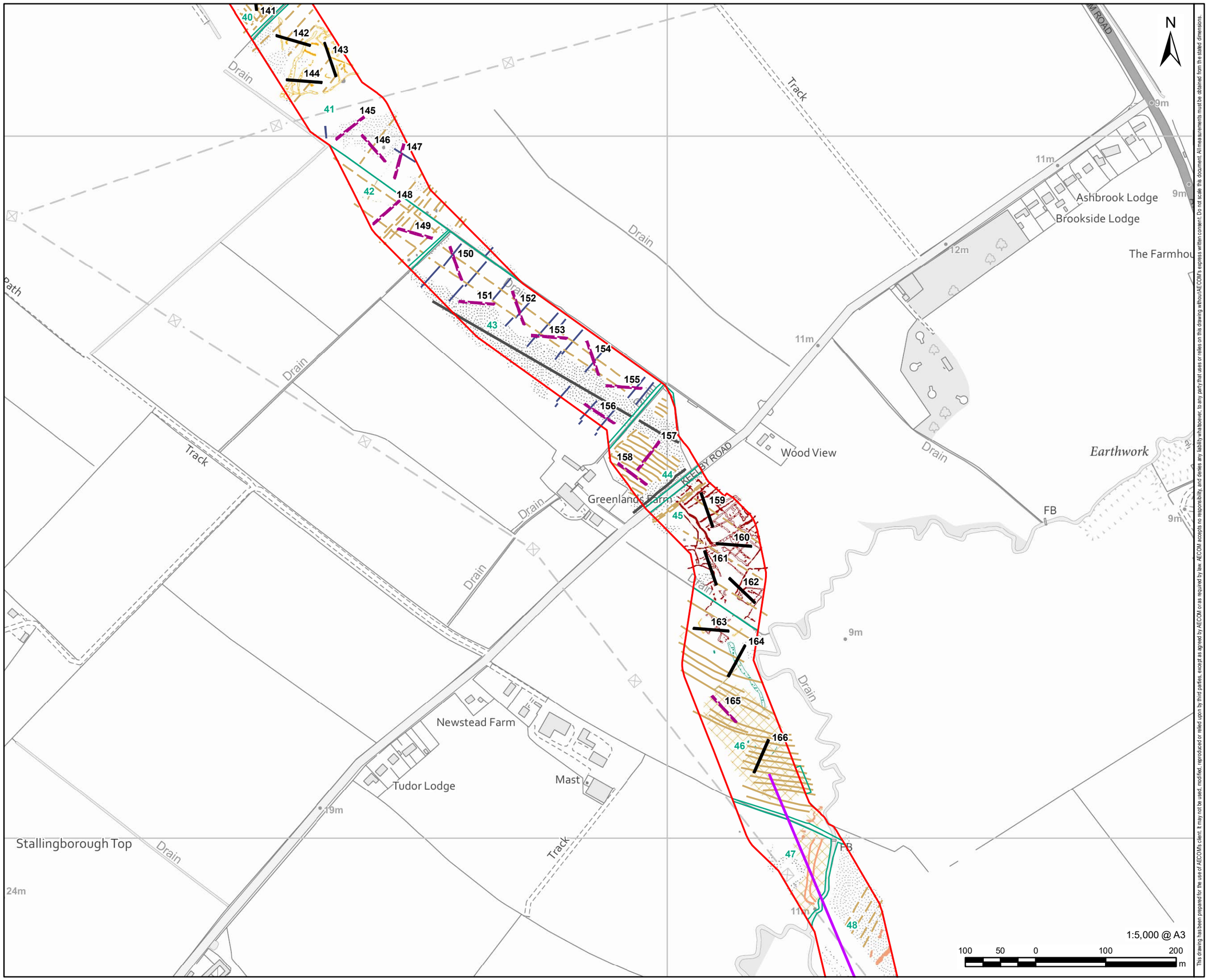
Figure 3 (5 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3



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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- ▭ DCO Site Boundary
- ▬ Proposed HDD Section
- ▭ Geophysical Survey Area - AOC Field Numbers
- ▭ Indicative Trench Location - Targeted
- ▭ Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- ▬ Linear Trend (Drainage)
- ▬ Linear Trend (Geology/Natural)
- ╌ Linear Trend (Agricultural, Ploughing)
- ▬ Linear Trend (Agricultural, Ridge and Furrow)
- ▬ Linear Trend (Service)
- ■ Anomaly (Probable
- ▨ Spread (Probable
- ■ Anomaly (Possible
- ▨ Spread (Possible
- ■ Anomaly (Magnetic Disturbance)
- ▨ Spread (Magnetic Disturbance)
- ■ Anomaly (Agricultural)
- ▨ Spread (Agricultural)
- ■ Anomaly (Geology/Natural)
- ▨ Spread (Geology/Natural)
- ▨ Spread (Ferrous/Iron Spike)
- ■ Anomaly (Unclear Origin)
- ▨ Spread (Unclear Origin)

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FIGURE TITLE

Figure 3 (6 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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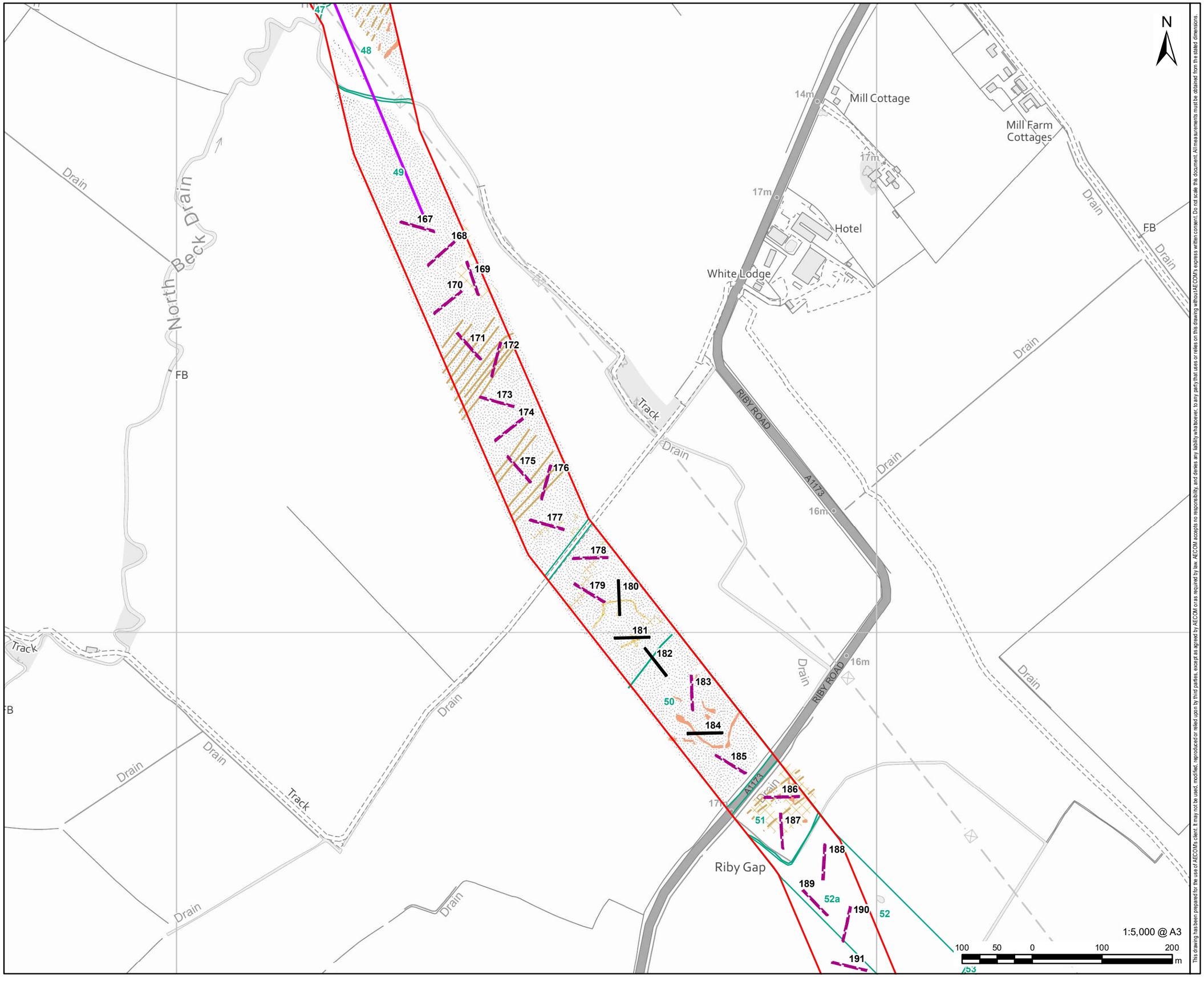

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Unclear Origin)
- Spread (Possible
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)

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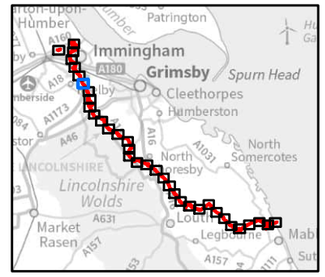

FIGURE TITLE

Figure 3 (7 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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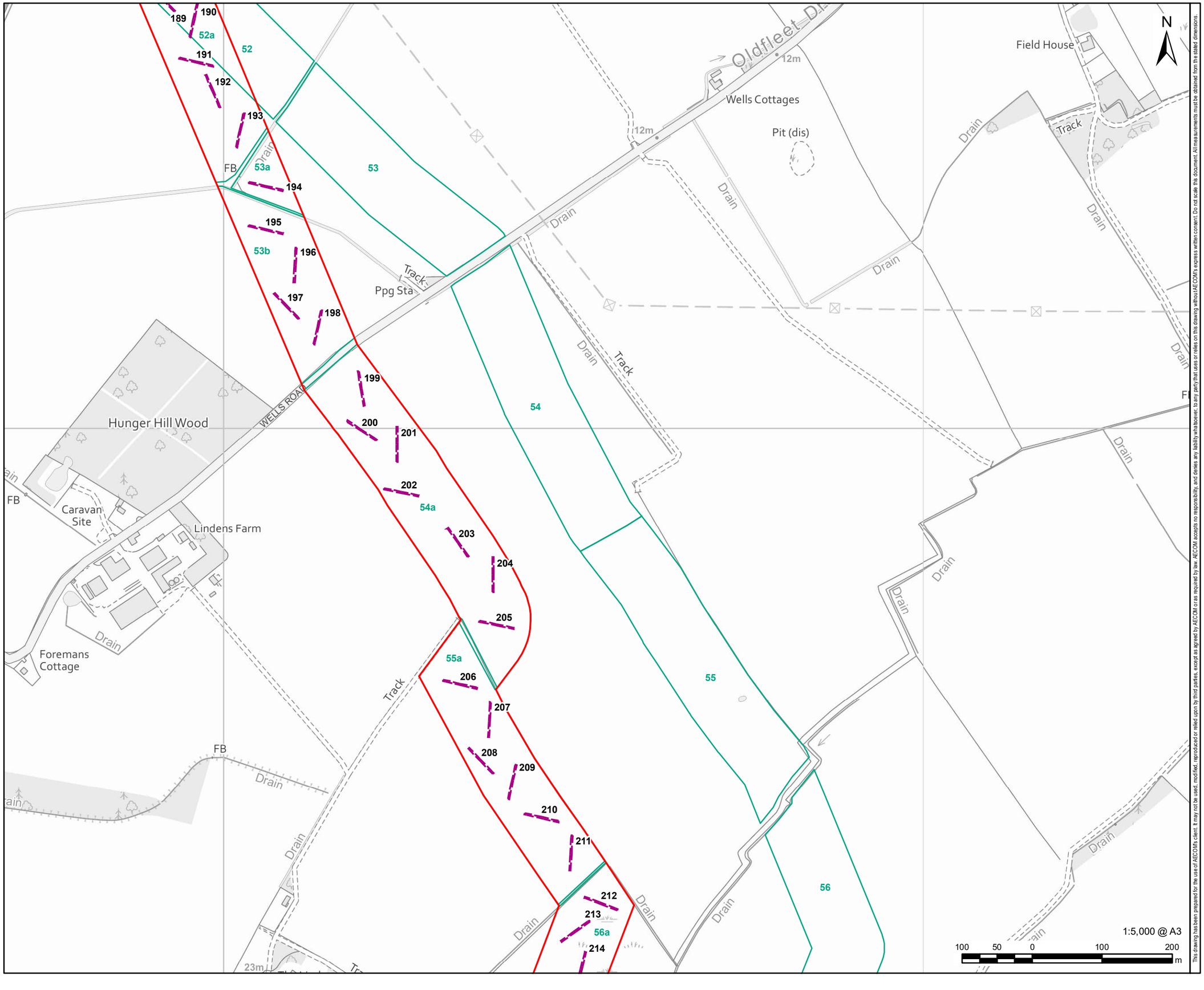

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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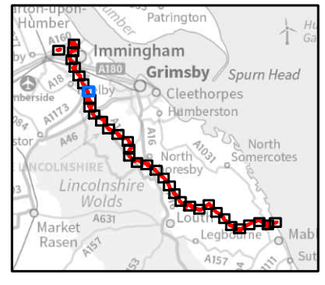

FIGURE TITLE

Figure 3 (8 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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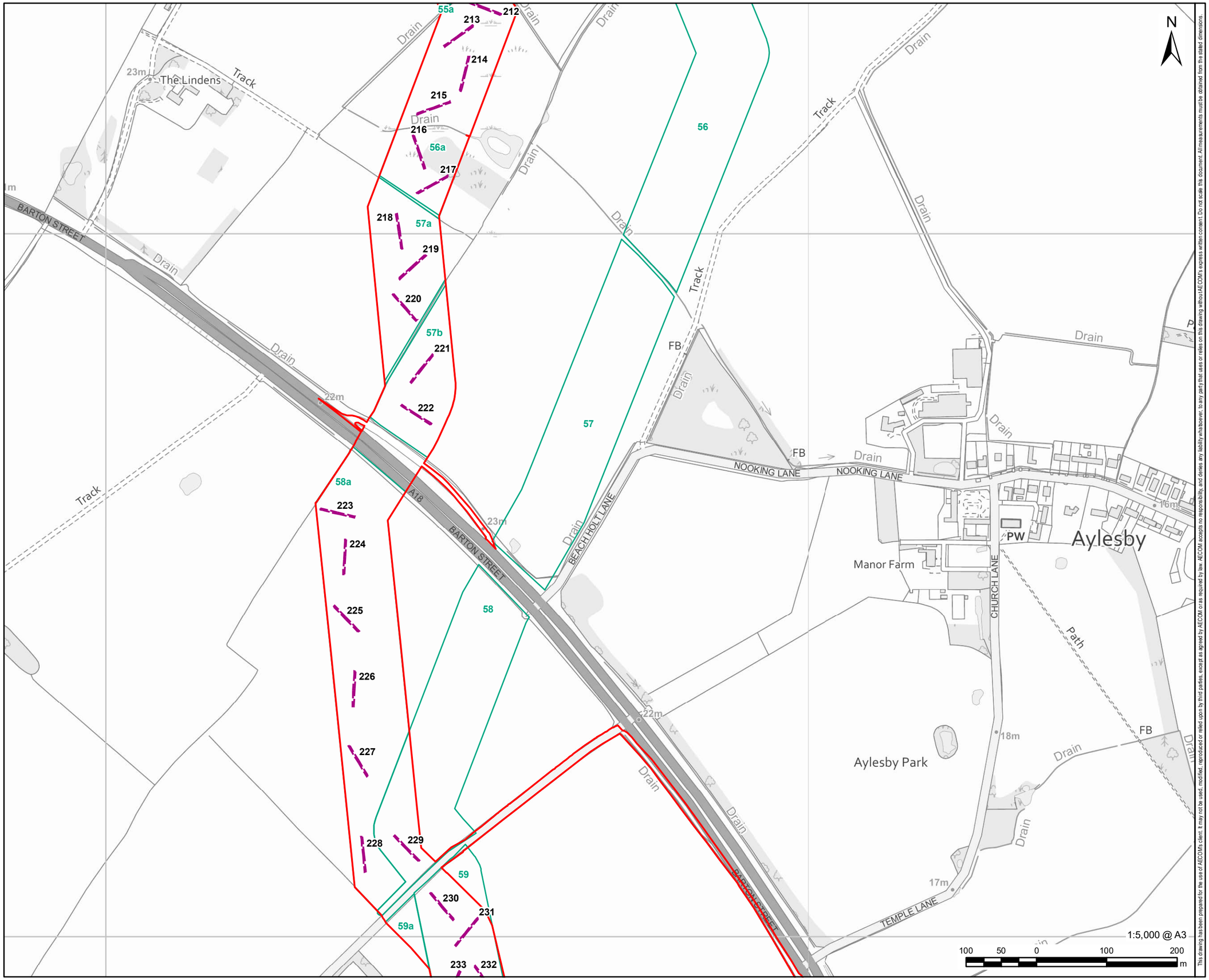

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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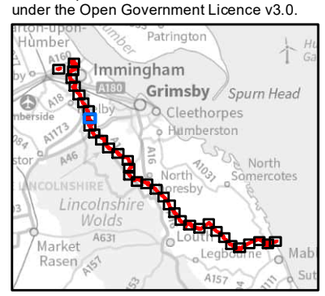

FIGURE TITLE

Figure 3 (9 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ridge and Furrow)
- Spread (Ferrous/Iron Spike)

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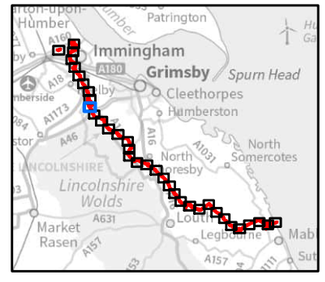

FIGURE TITLE

Figure 3 (10 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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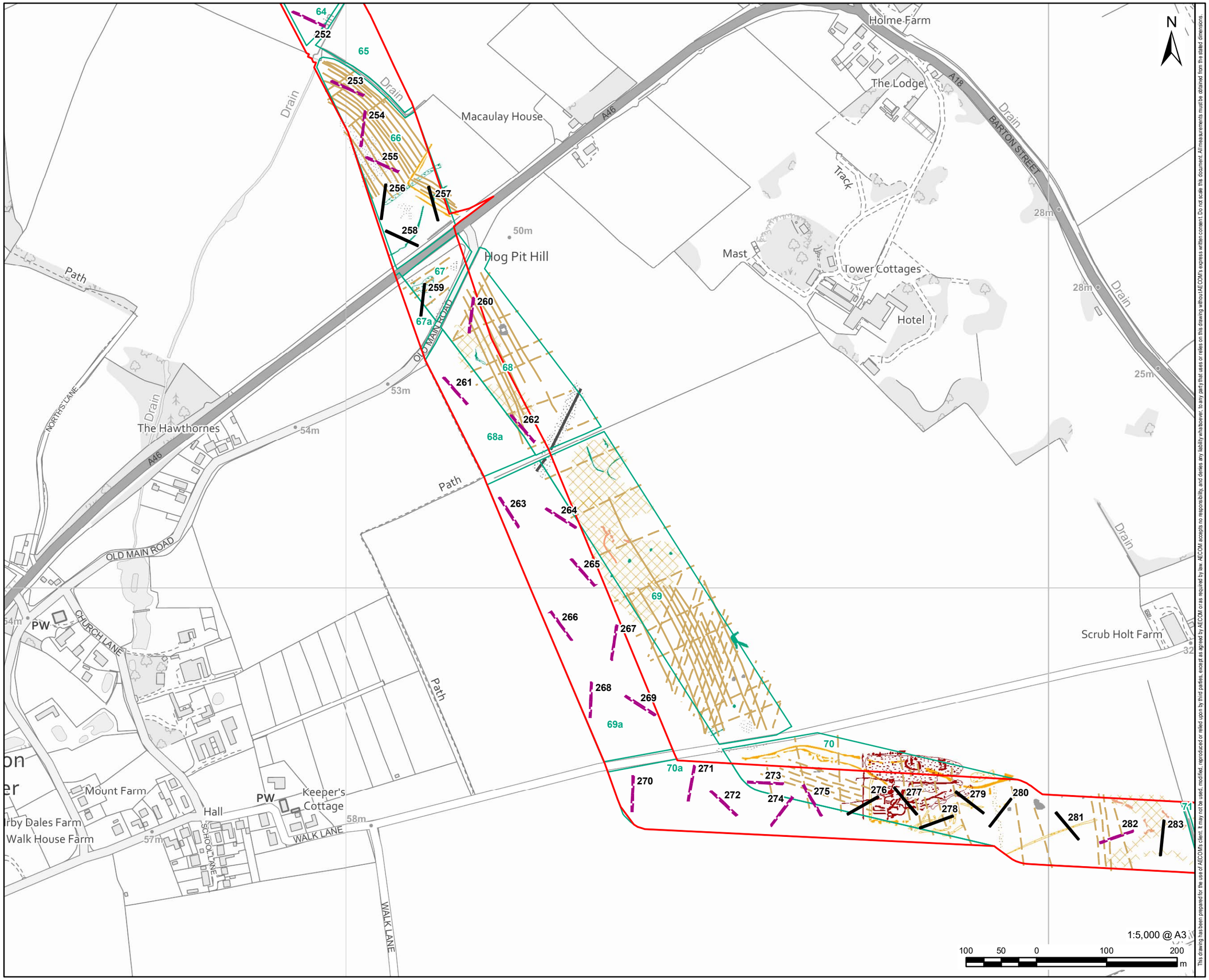

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Geology/Natural)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Anomaly (Probable)
- Spread (Probable)
- Anomaly (Possible)
- Spread (Possible)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Agricultural)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

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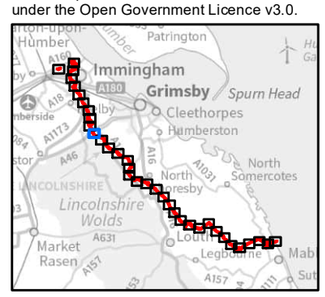

FIGURE TITLE

Figure 3 (11 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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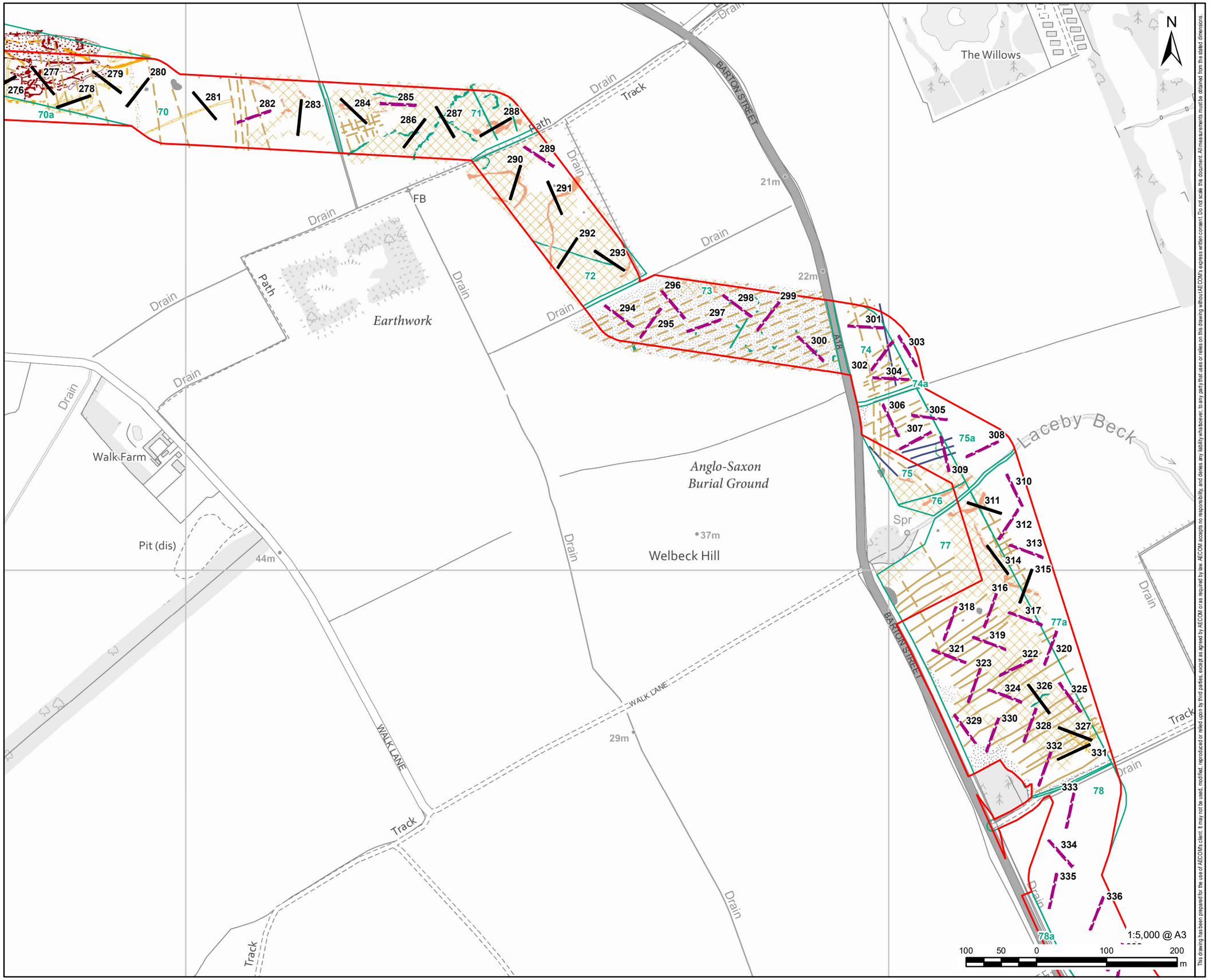

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Unclear Origin)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Agricultural)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)

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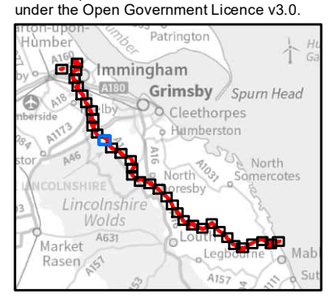

FIGURE TITLE

Figure 3 (12 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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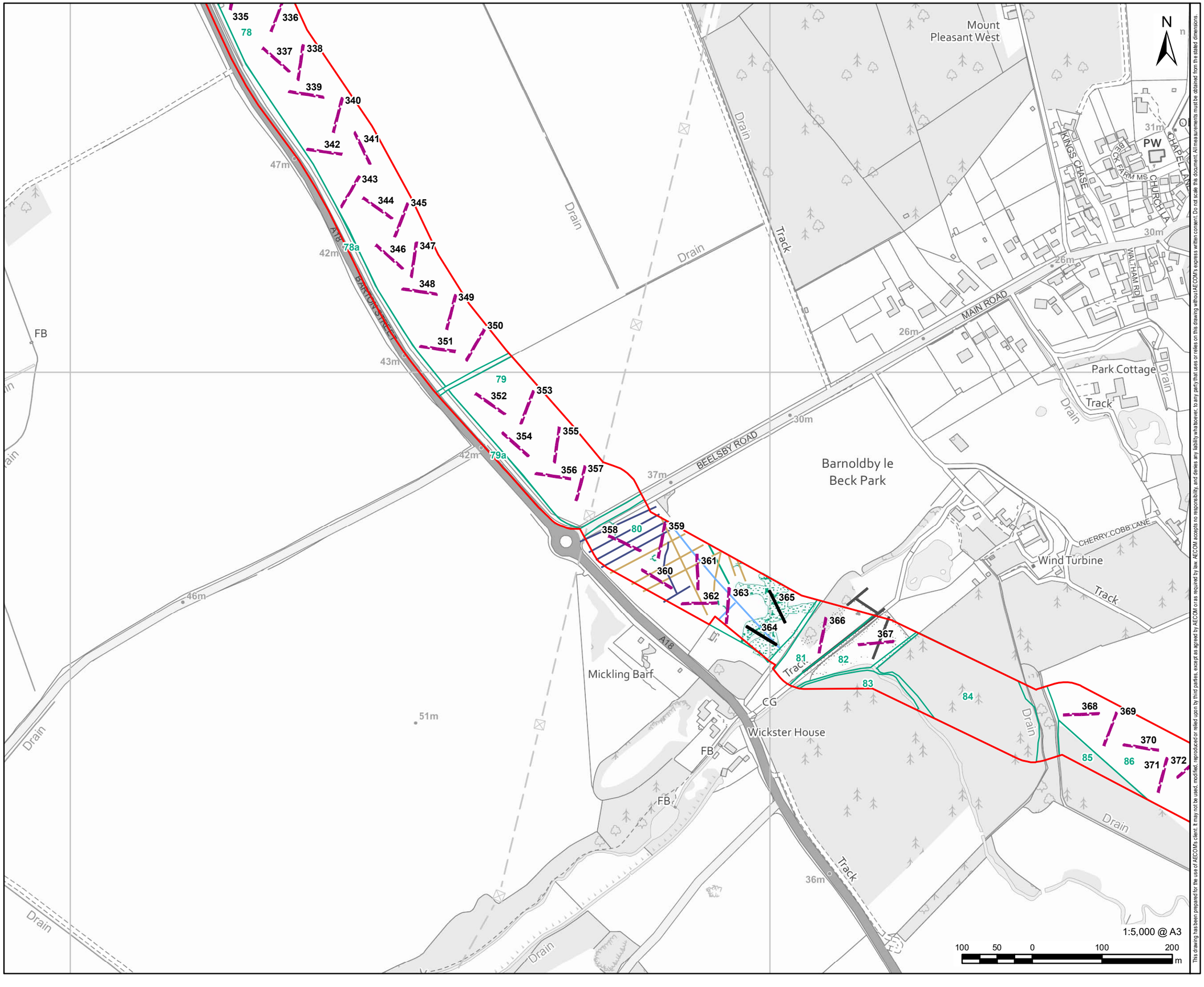

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Historic Feature)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Linear Trend (Unclear Origin)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

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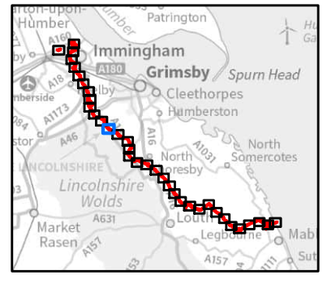

FIGURE TITLE

Figure 3 (13 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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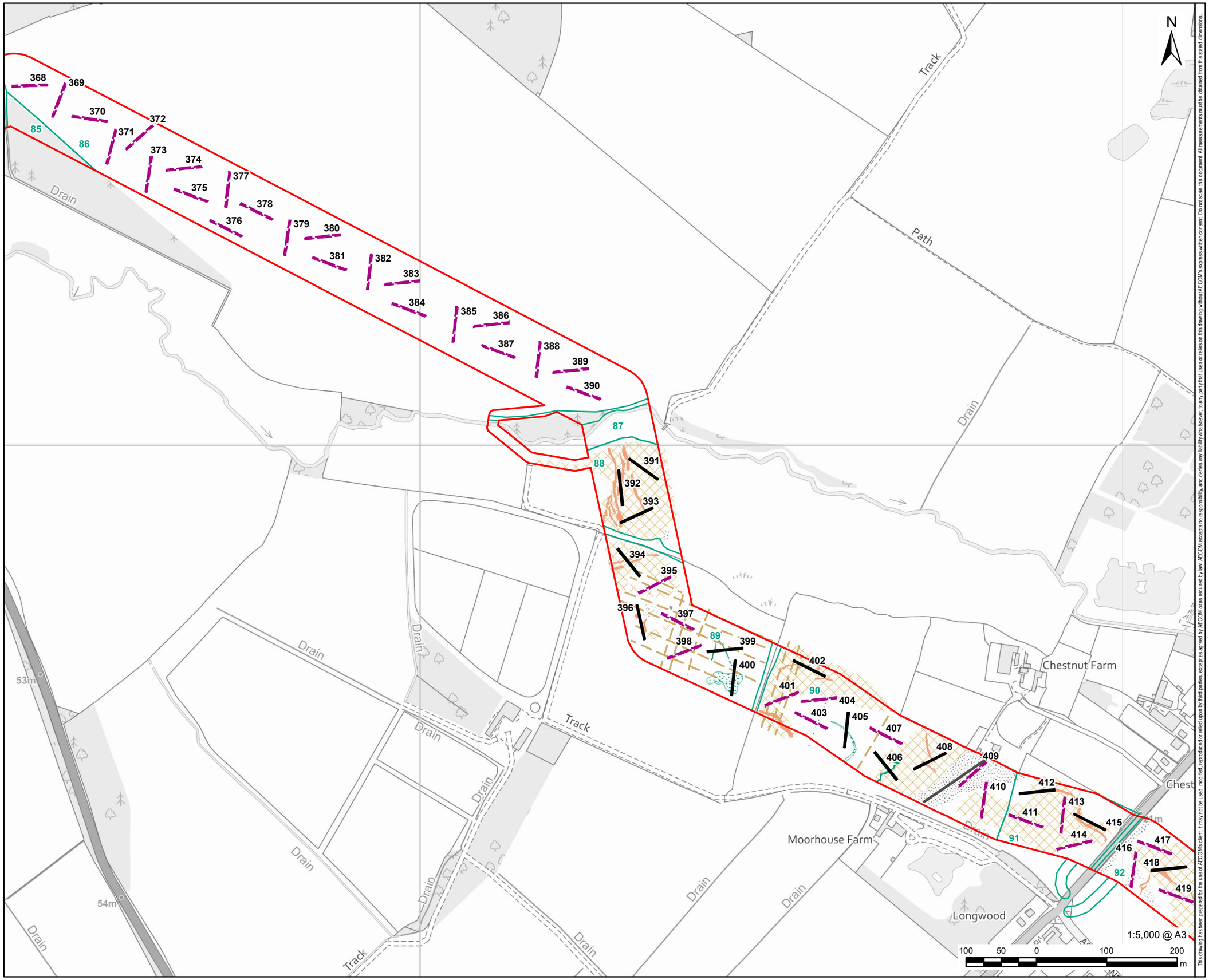

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Service)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Spread (Historic Feature)

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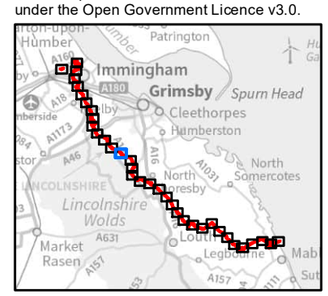

FIGURE TITLE

Figure 3 (14 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Geology/Natural)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Ferrous/Iron Spike)
- Linear Trend (Unclear Origin)
- Anomaly (Probable
- Anomaly (Possible
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

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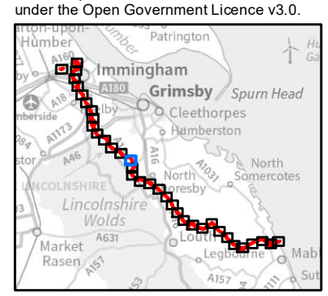

FIGURE TITLE

Figure 3 (15 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

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

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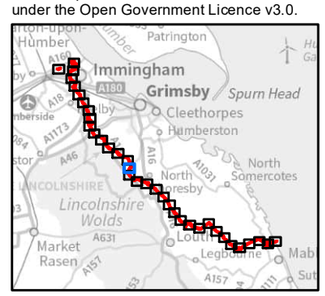

FIGURE TITLE

Figure 3 (16 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Anomaly (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Agricultural)
- Anomaly (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Anomaly (Historic Feature)

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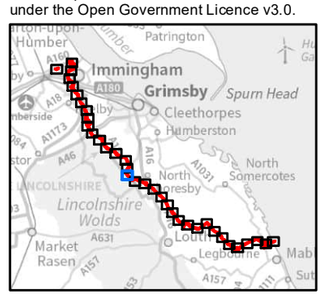

FIGURE TITLE

Figure 3 (17 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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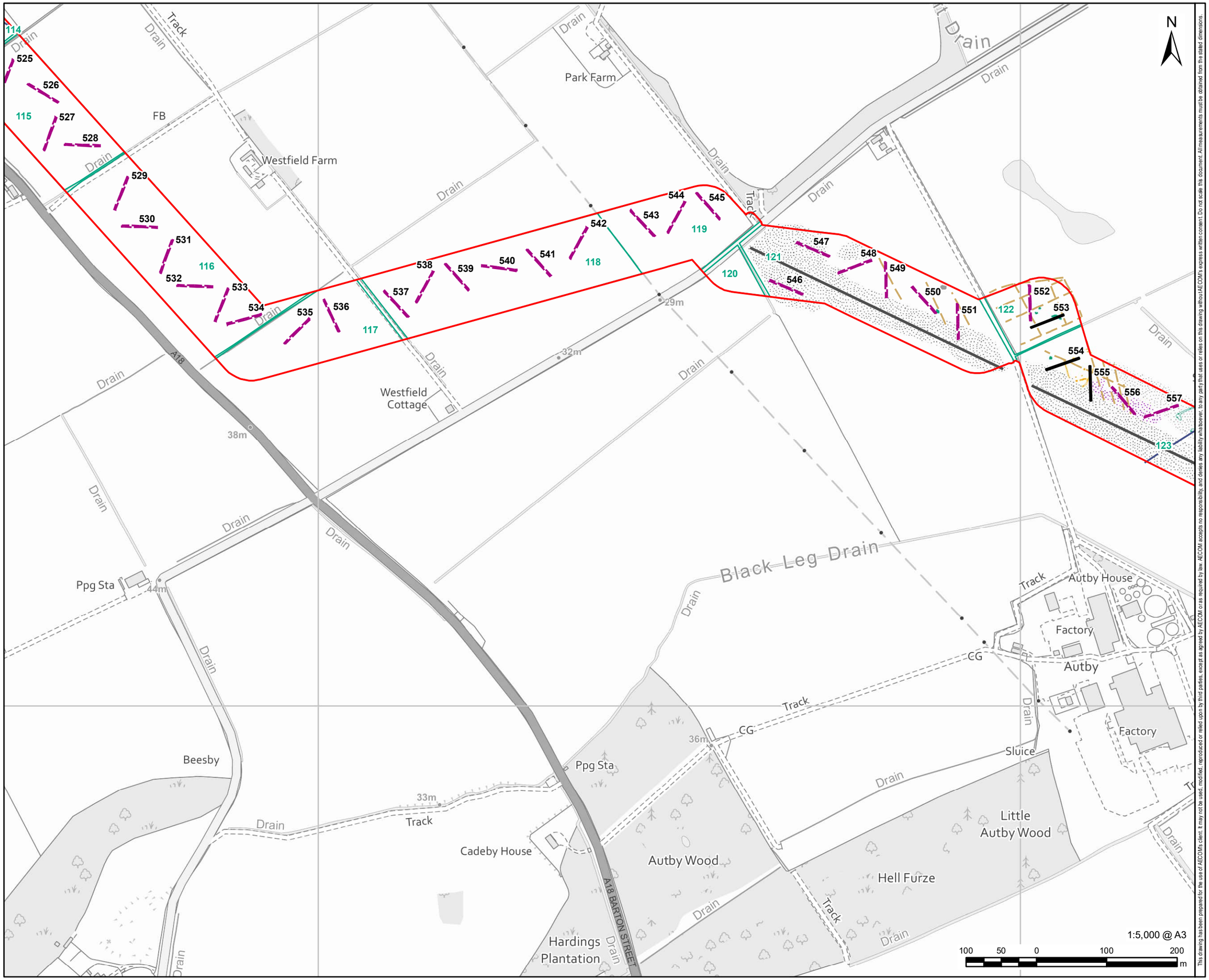

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Service)
- Anomaly (Possible Archaeology)
- Spread (Possible Archaeology)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)
- Spread (Custom Use)

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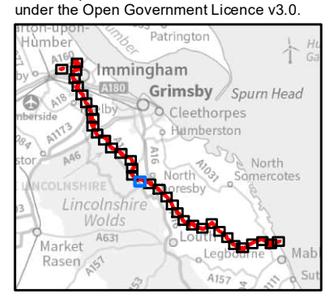


FIGURE TITLE

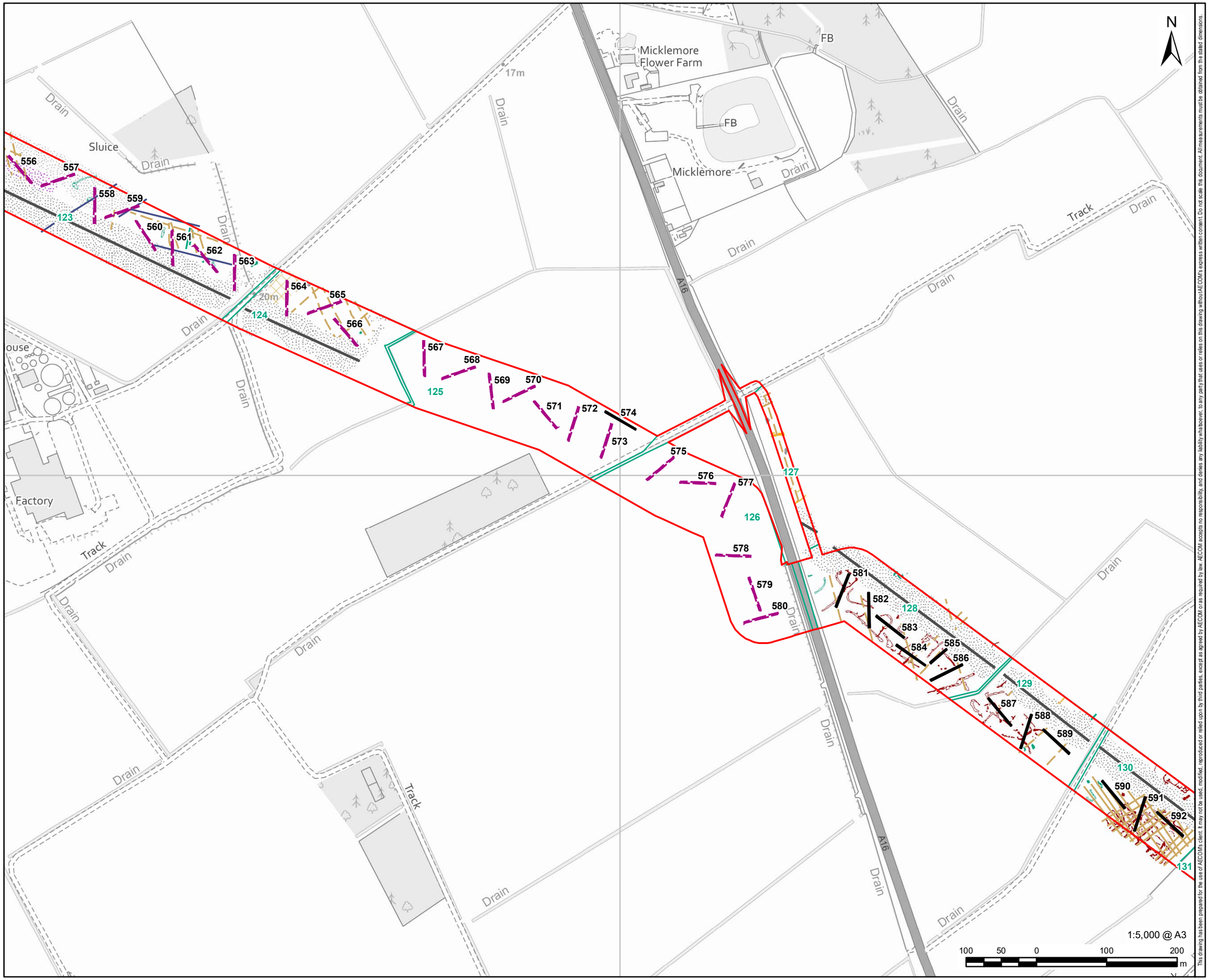
Figure 3 (18 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3



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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

▭	DCO Site Boundary
▭	Geophysical Survey Area - AOC Field Numbers
▭	Indicative Trench Location - Targeted
▭	Indicative Trench Location

Geophysical Survey Interpretation (AOC)

—	Linear Trend (Drainage)
- -	Linear Trend (Agricultural, Ploughing)
—	Linear Trend (Agricultural, Ridge and Furrow)
—	Linear Trend (Service)
—	Linear Trend (Unclear Origin)
■	Anomaly (Probable
▨	Spread (Probable
■	Anomaly (Possible
■	Anomaly (Magnetic Disturbance)
▨	Spread (Magnetic Disturbance)
▨	Spread (Geology/Natural)
▨	Spread (Ferrous/Iron Spike)
▨	Spread (Burned Area)
■	Anomaly (Unclear Origin)
▨	Spread (Unclear Origin)
▨	Spread (Custom Use)

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FIGURE TITLE

Figure 3 (19 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

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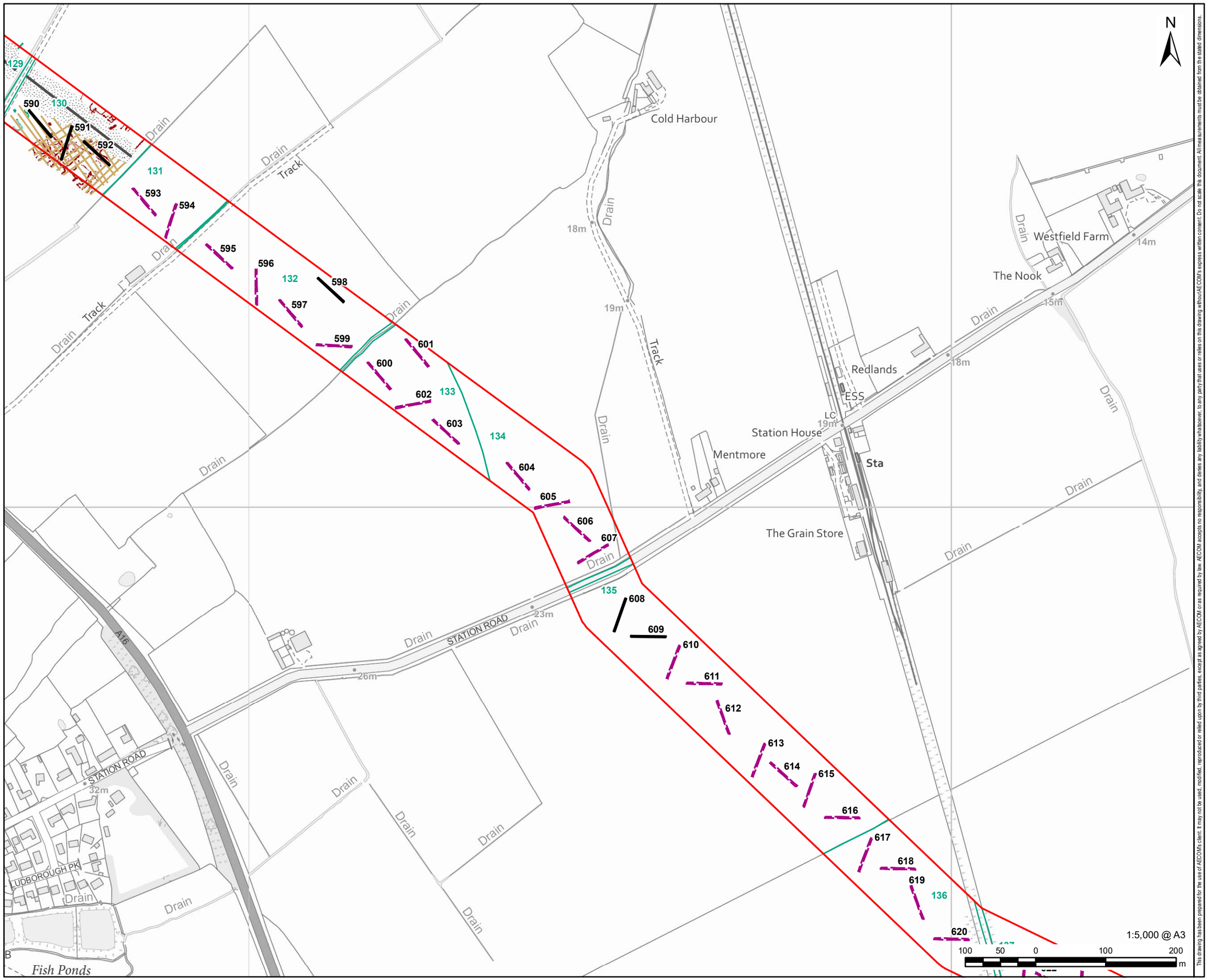

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Linear Trend (Unclear Origin)
- Anomaly (Probable Archaeology)
- Spread (Probable Archaeology)
- Spread (Magnetic Disturbance)
- Spread (Burned Area)
- Anomaly (Unclear Origin)
- Spread (Unclear Origin)

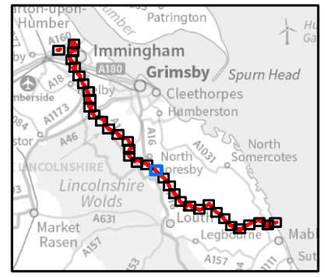

FIGURE TITLE

Figure 3 (20 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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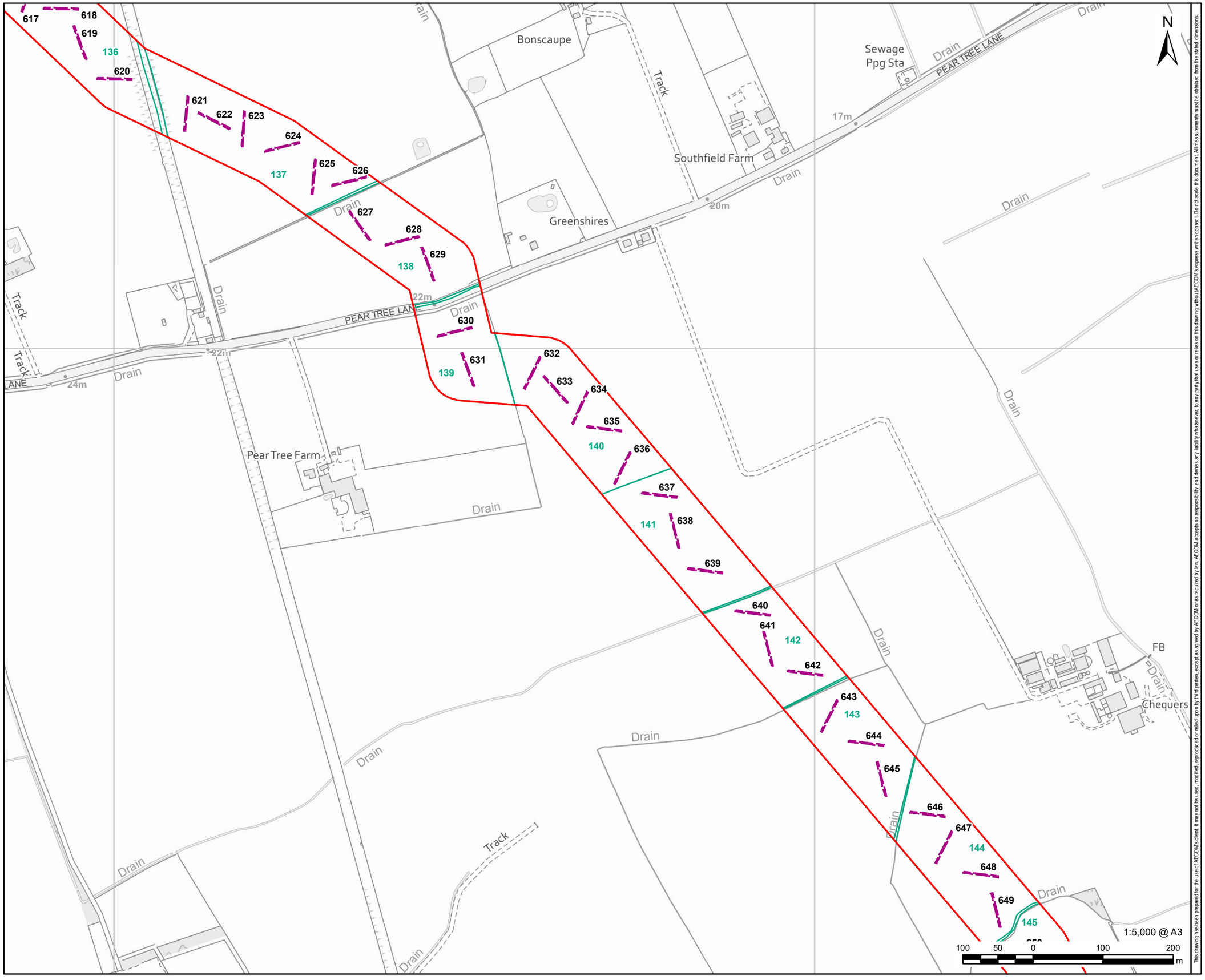

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

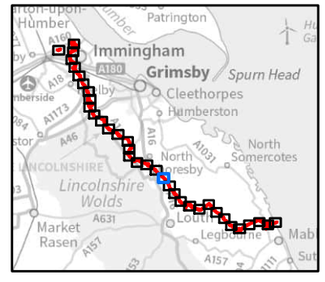

FIGURE TITLE

Figure 3 (21 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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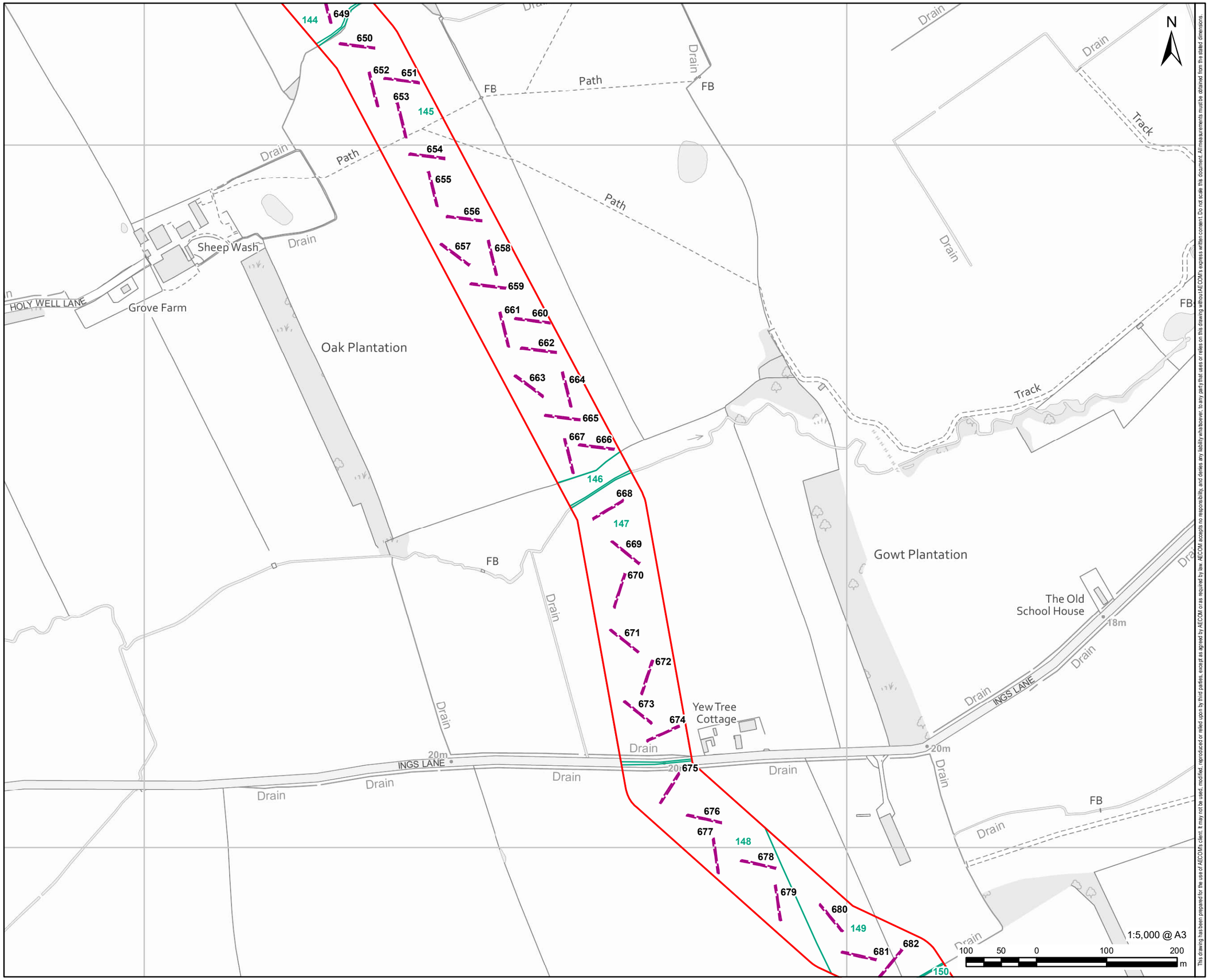

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

NOTES:

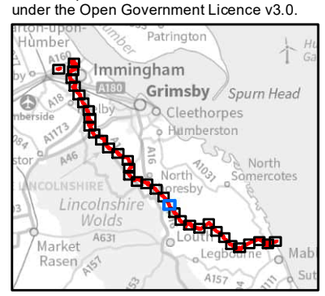

FIGURE TITLE

Figure 3 (22 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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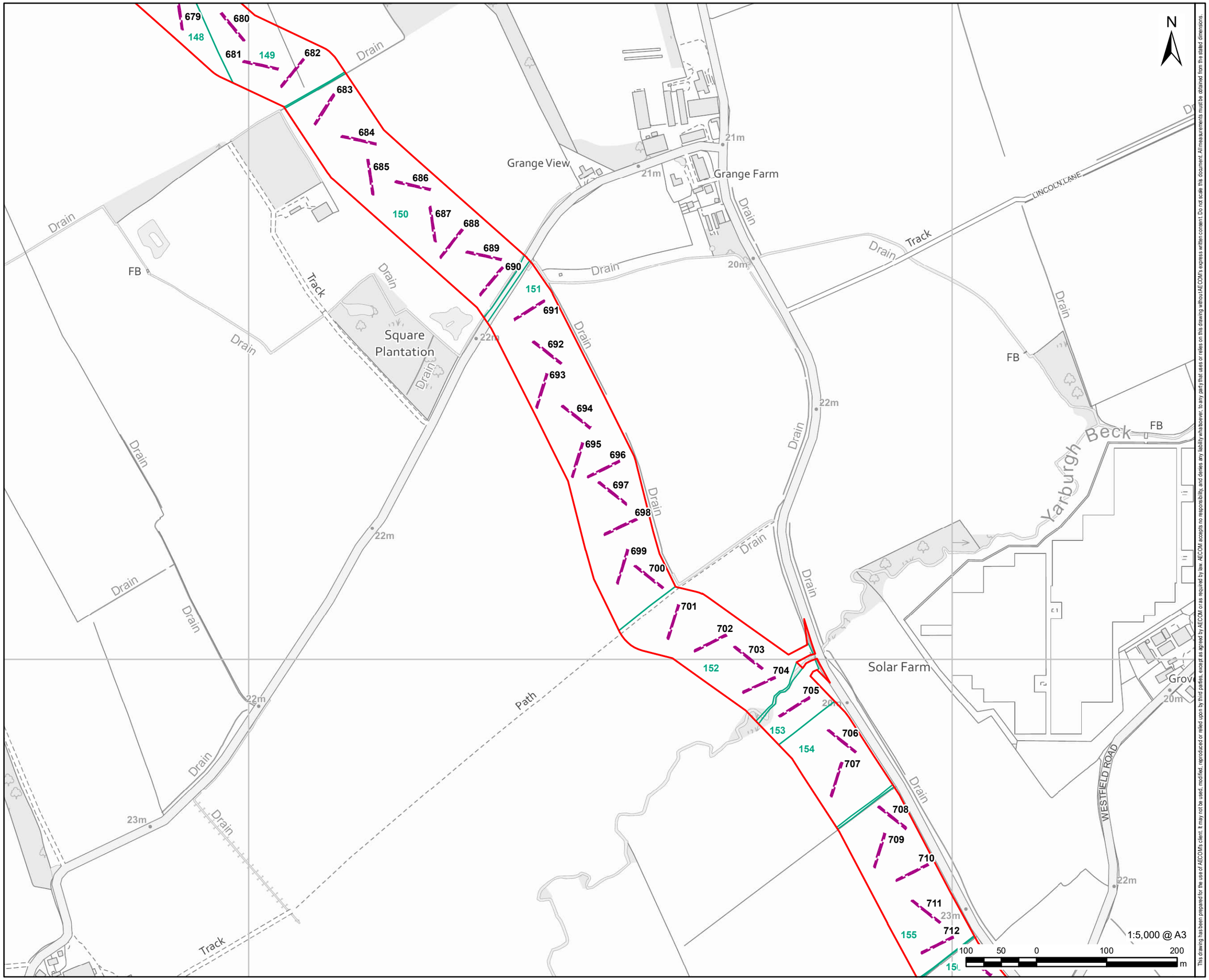

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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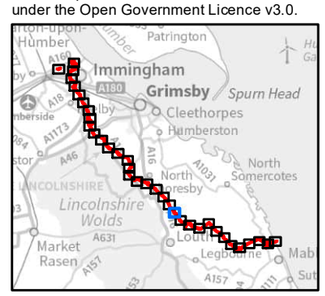

FIGURE TITLE

Figure 3 (23 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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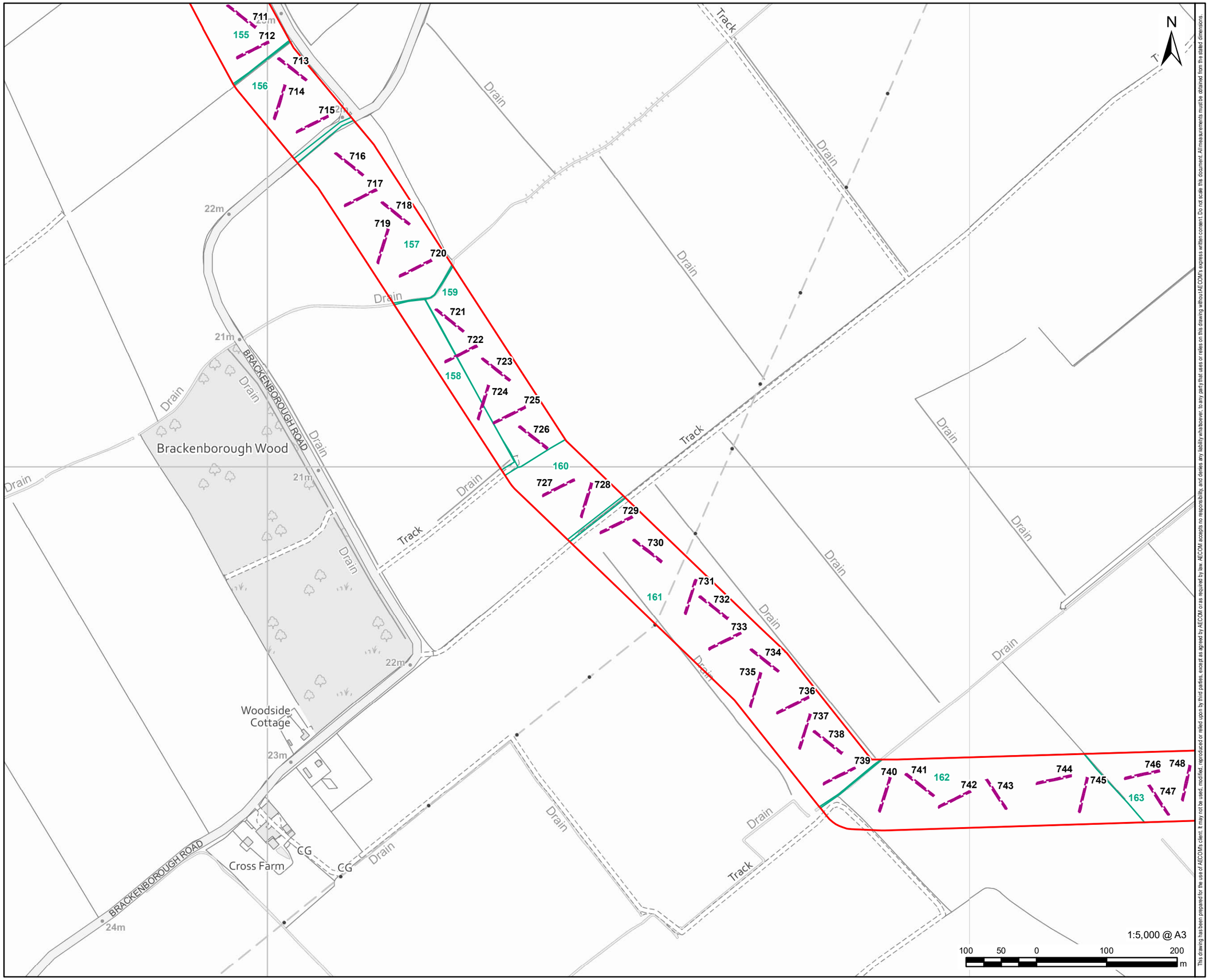

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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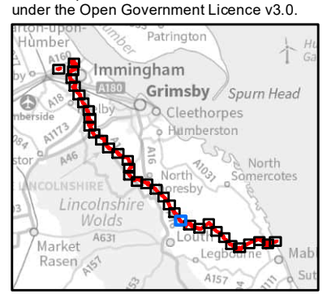


FIGURE TITLE

Figure 3 (24 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

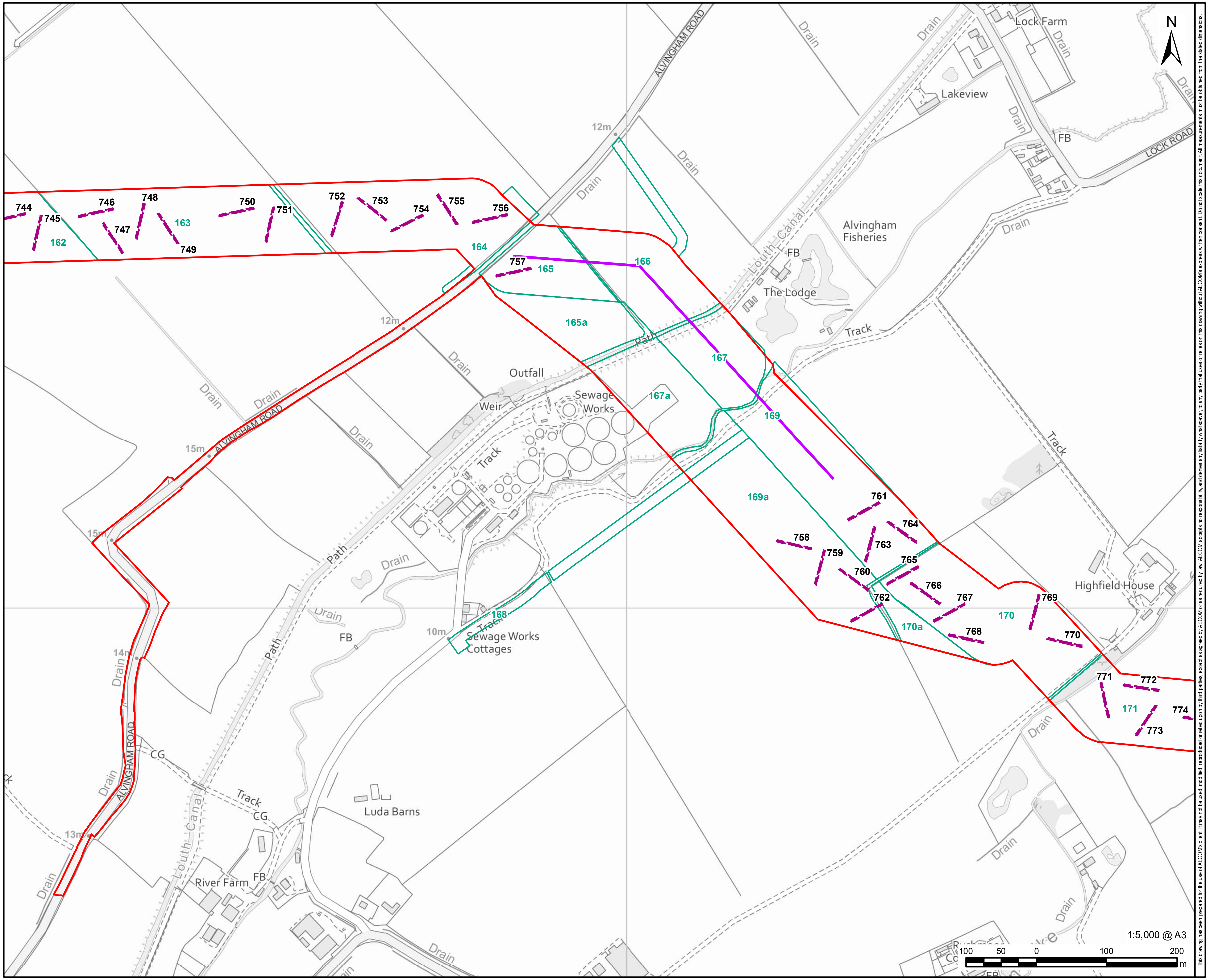
WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

1:5,000 @ A3

100 50 0 100 200 m



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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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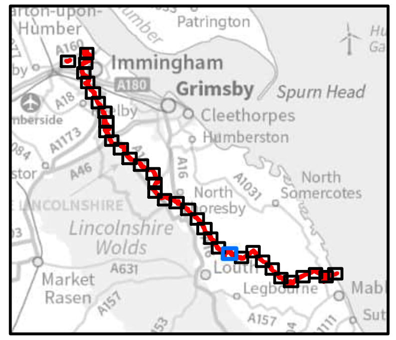

FIGURE TITLE

Figure 3 (25 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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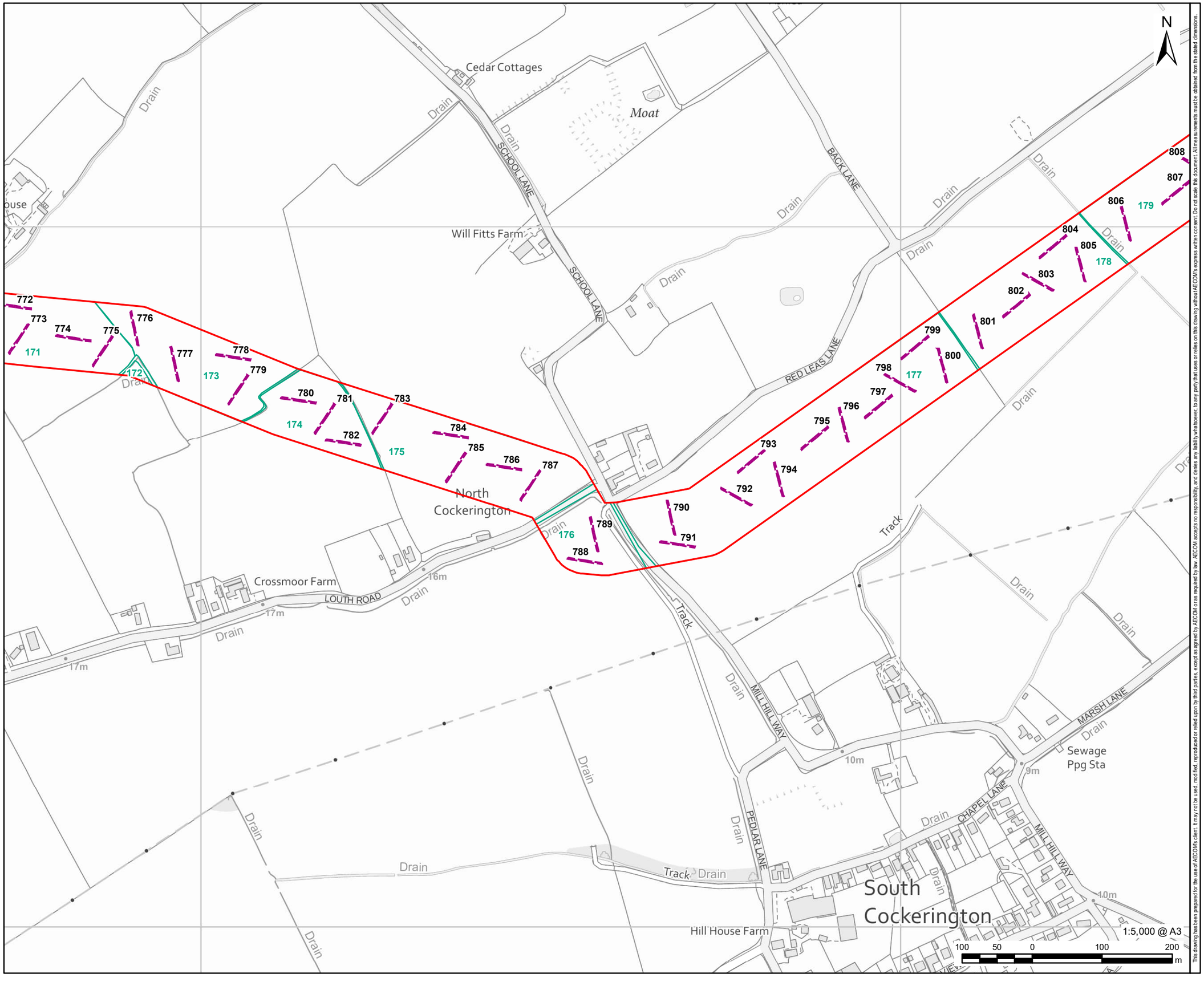

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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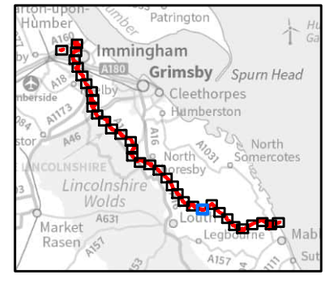

FIGURE TITLE

Figure 3 (26 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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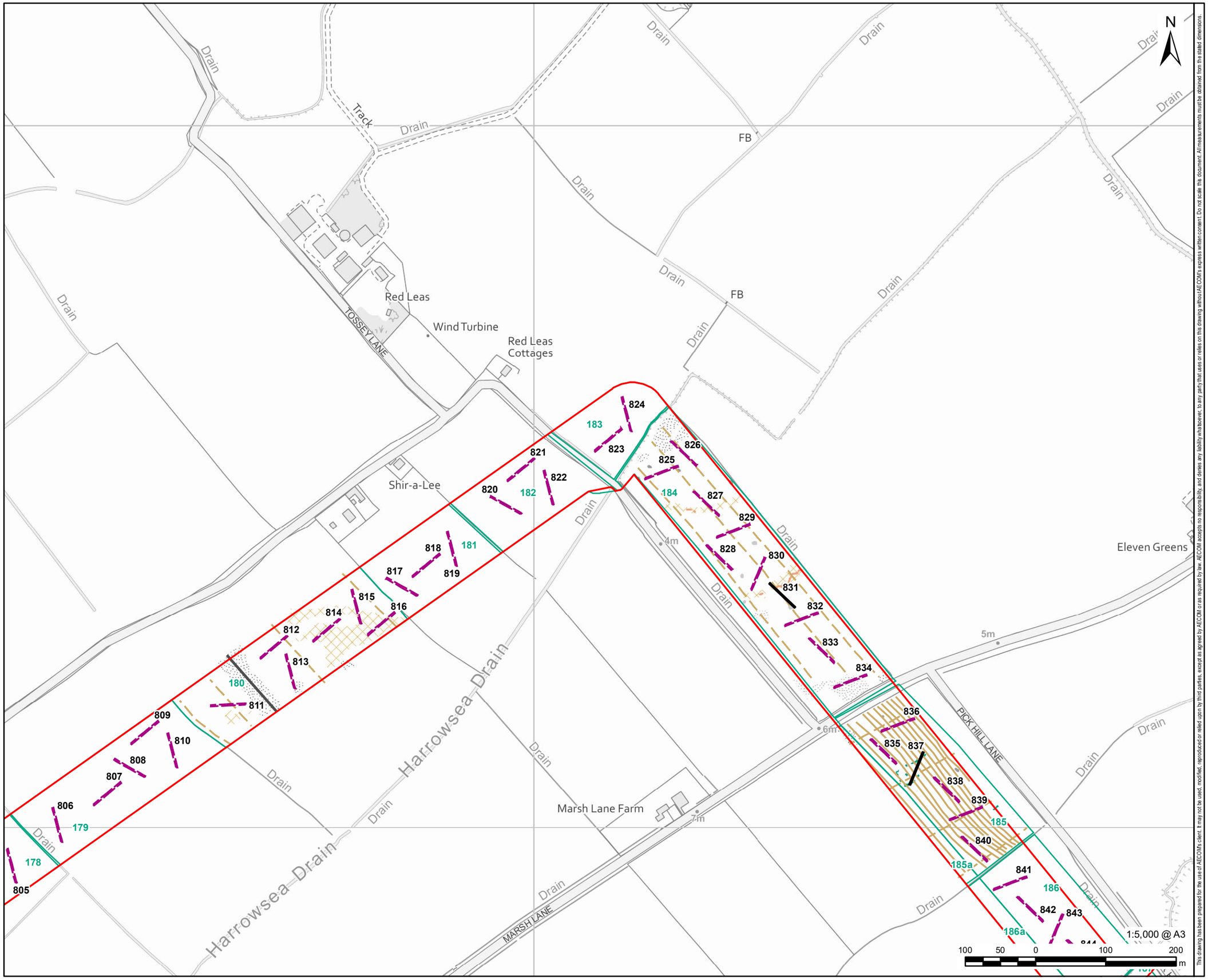

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Service)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Anomaly (Ferrous/Iron Spike)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)

NOTES:

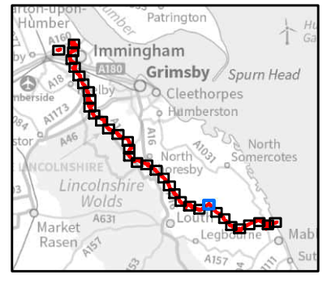

FIGURE TITLE

Figure 3 (27 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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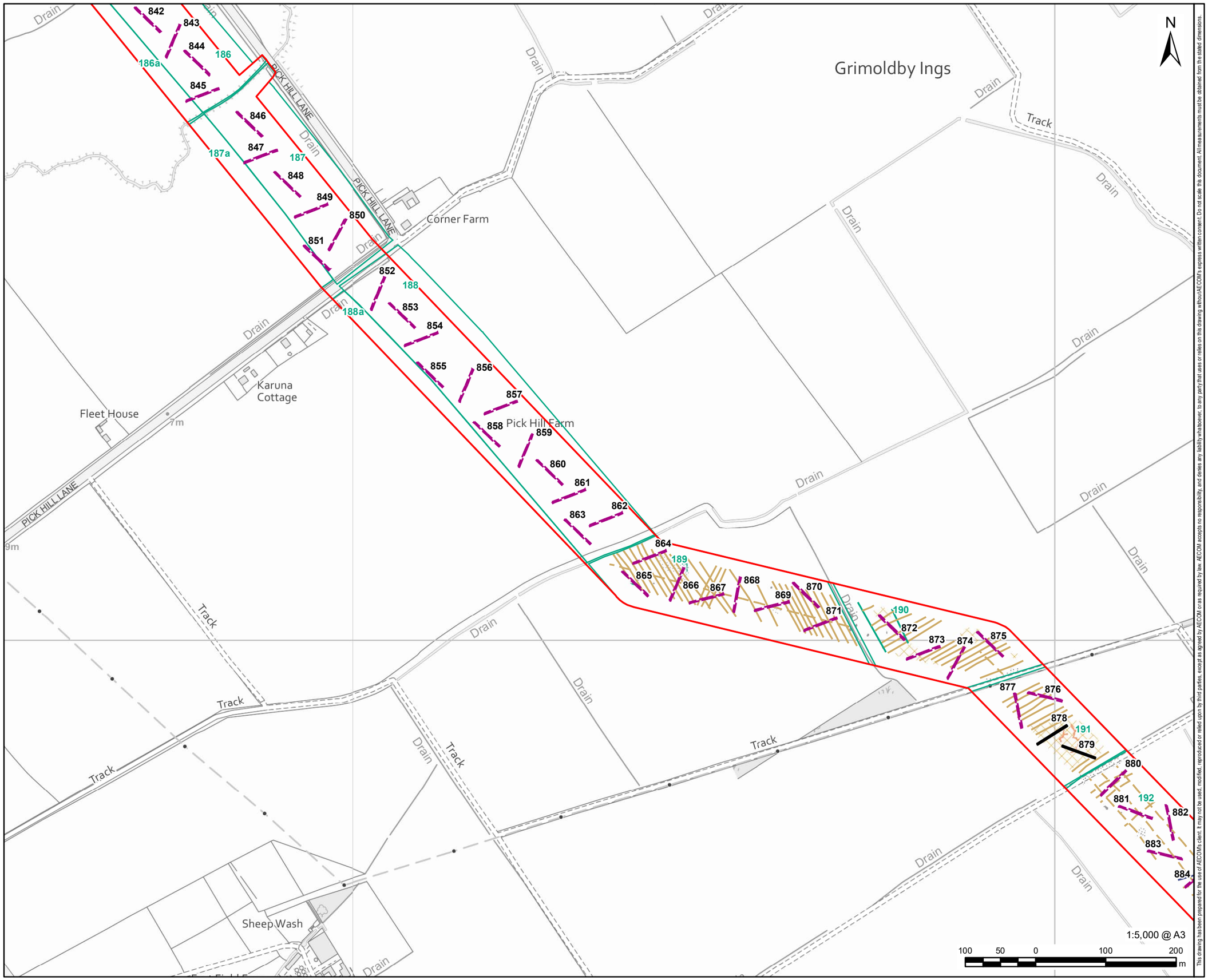

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Unclear Origin)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Spread (Ferrous/Iron Spike)
- Anomaly (Unclear Origin)

NOTES:

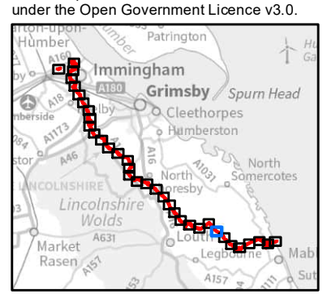

FIGURE TITLE

Figure 3 (28 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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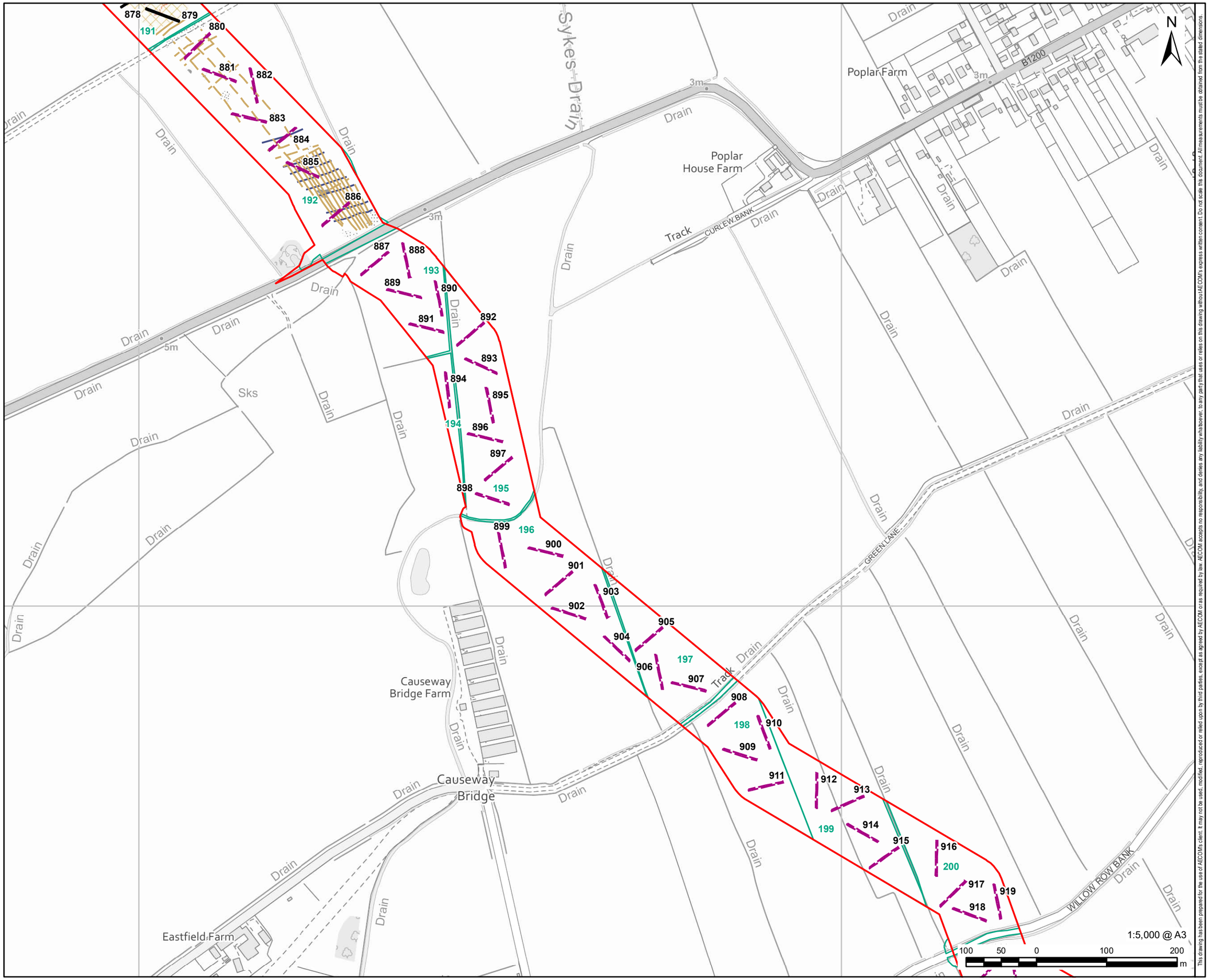

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Drainage)
- Linear Trend (Agricultural, Ploughing)
- Linear Trend (Agricultural, Ridge and Furrow)
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)

NOTES:

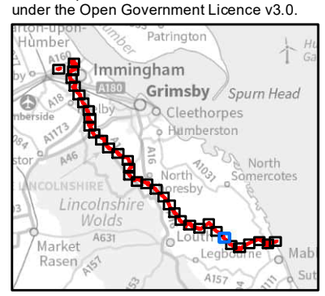

FIGURE TITLE

Figure 3 (29 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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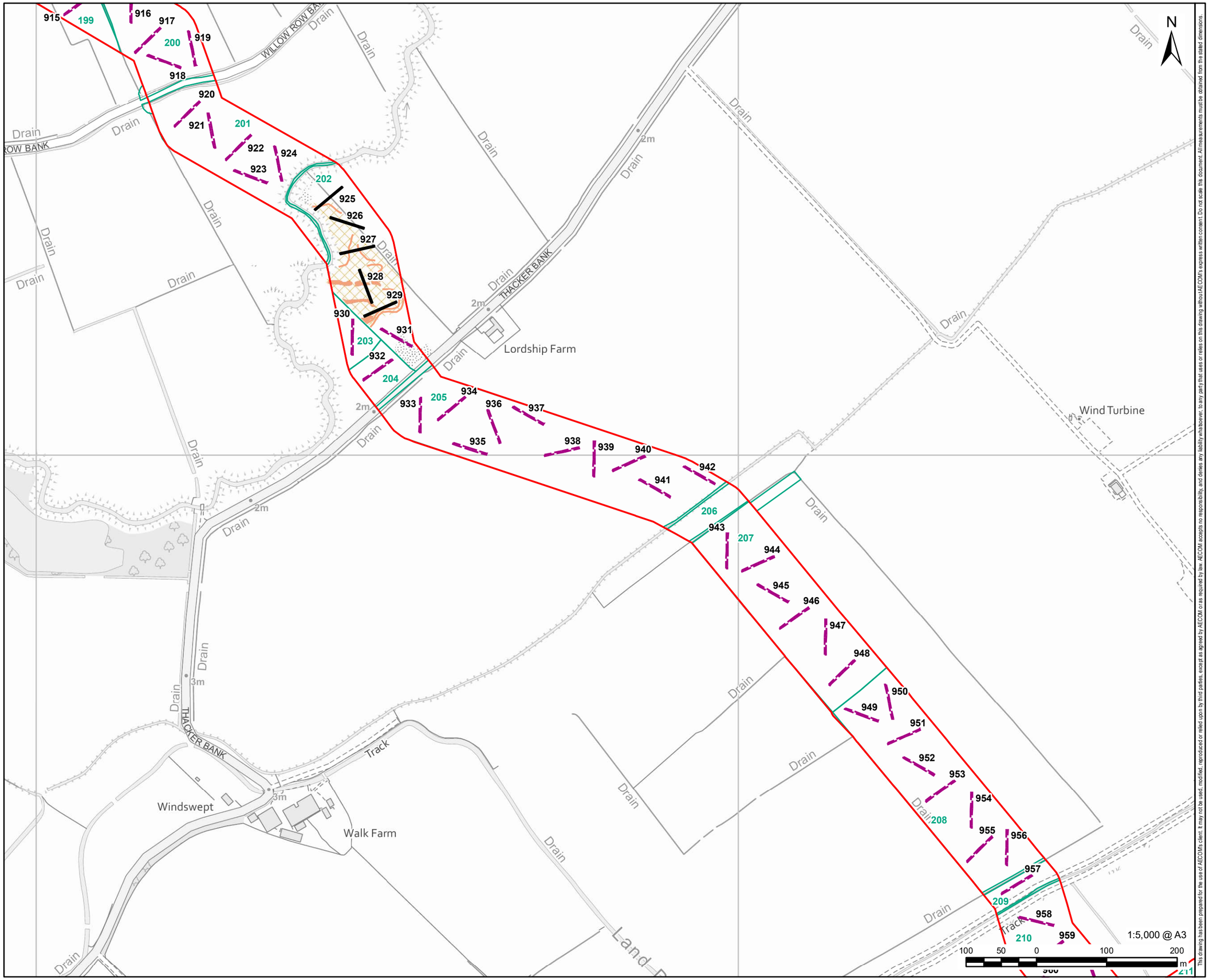

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Geology/Natural)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)

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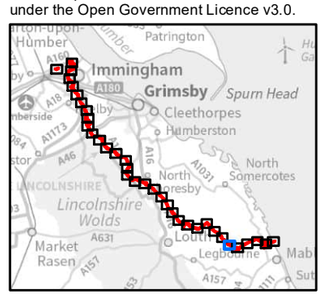

FIGURE TITLE

Figure 3 (30 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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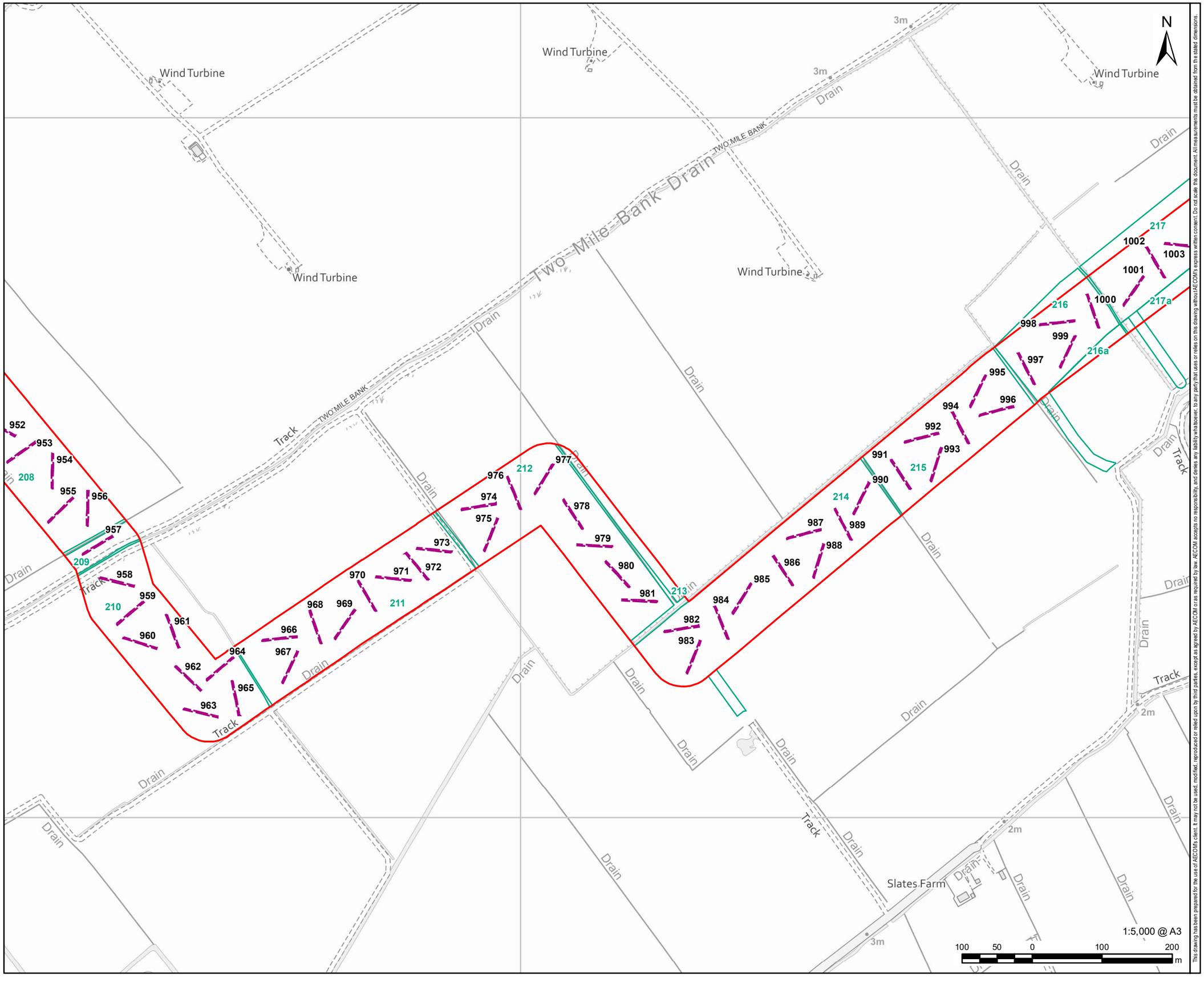

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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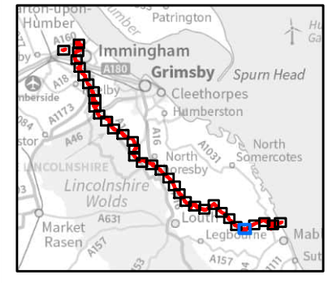

FIGURE TITLE

Figure 3 (31 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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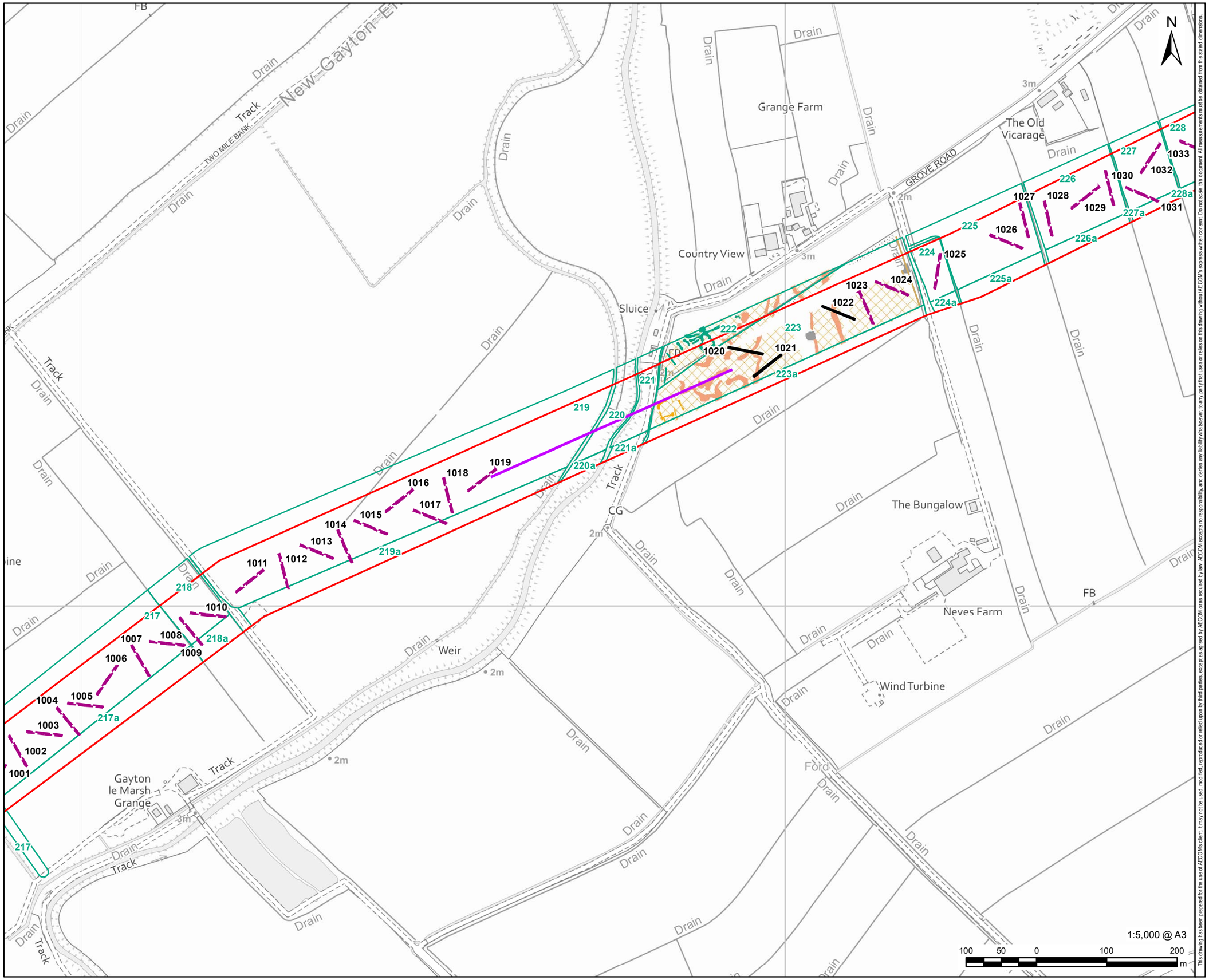

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location - Targeted
- Indicative Trench Location

Geophysical Survey Interpretation (AOC)

- Linear Trend (Agricultural, Ridge and Furrow)
- Linear Trend (Unclear Origin)
- Anomaly (Possible
- Anomaly (Magnetic Disturbance)
- Spread (Magnetic Disturbance)
- Anomaly (Geology/Natural)
- Spread (Geology/Natural)
- Anomaly (Unclear Origin)

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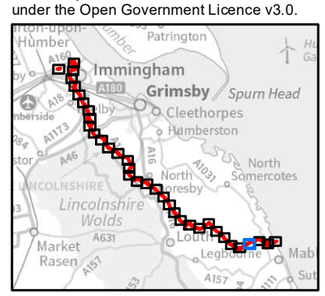

FIGURE TITLE

Figure 3 (32 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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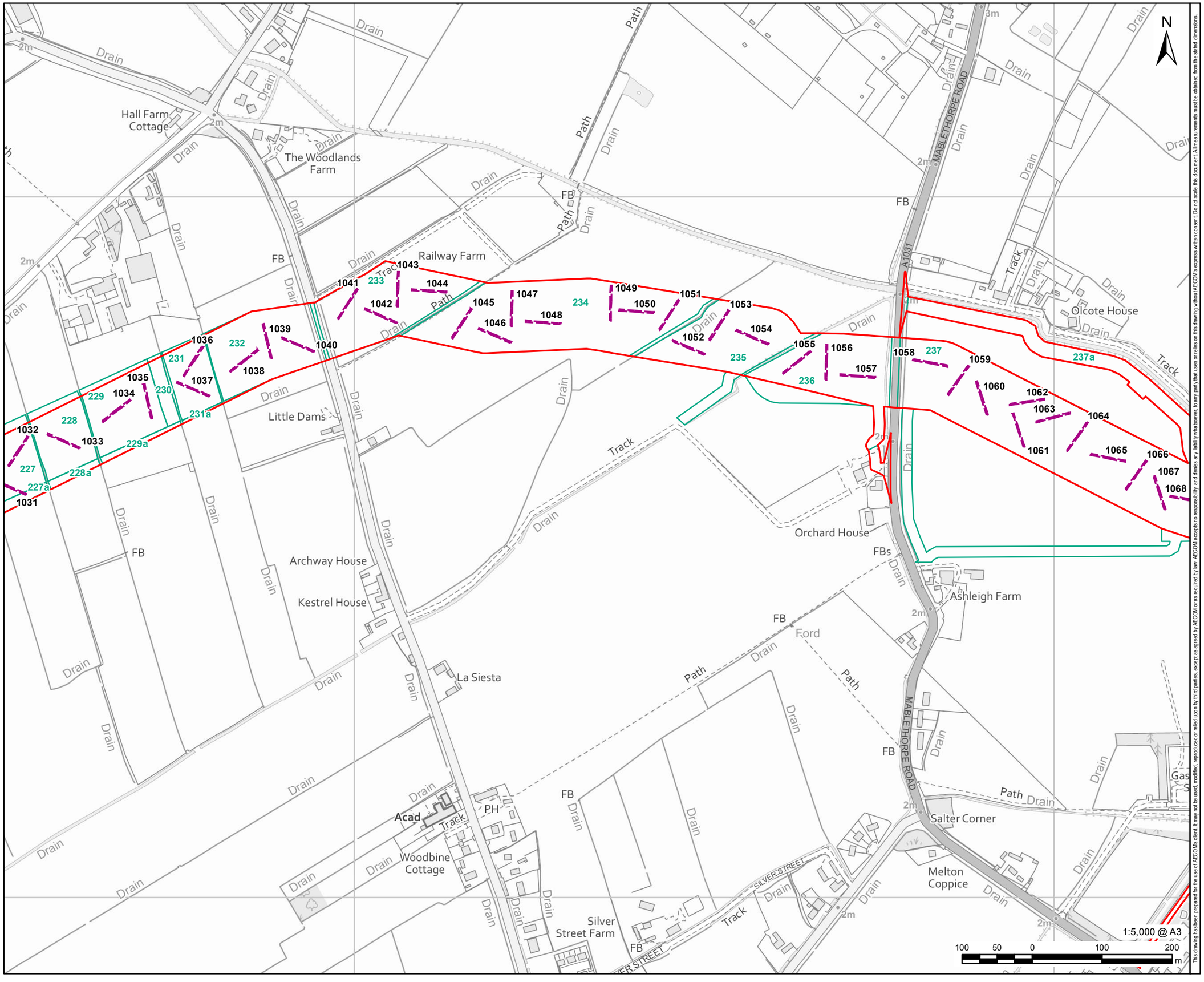

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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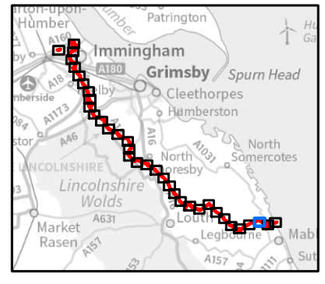

FIGURE TITLE

Figure 3 (33 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers
- Indicative Trench Location

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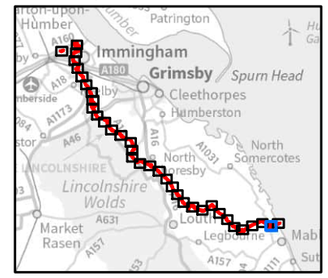

FIGURE TITLE

Figure 3 (34 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

1:5,000 @ A3

100 50 0 100 200 m

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Geophysical Survey Area - AOC Field Numbers

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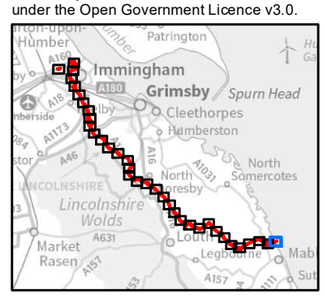

FIGURE TITLE

Figure 3 (35 of 35)
Indicative Trench Locations with AOC Geophysical Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_3

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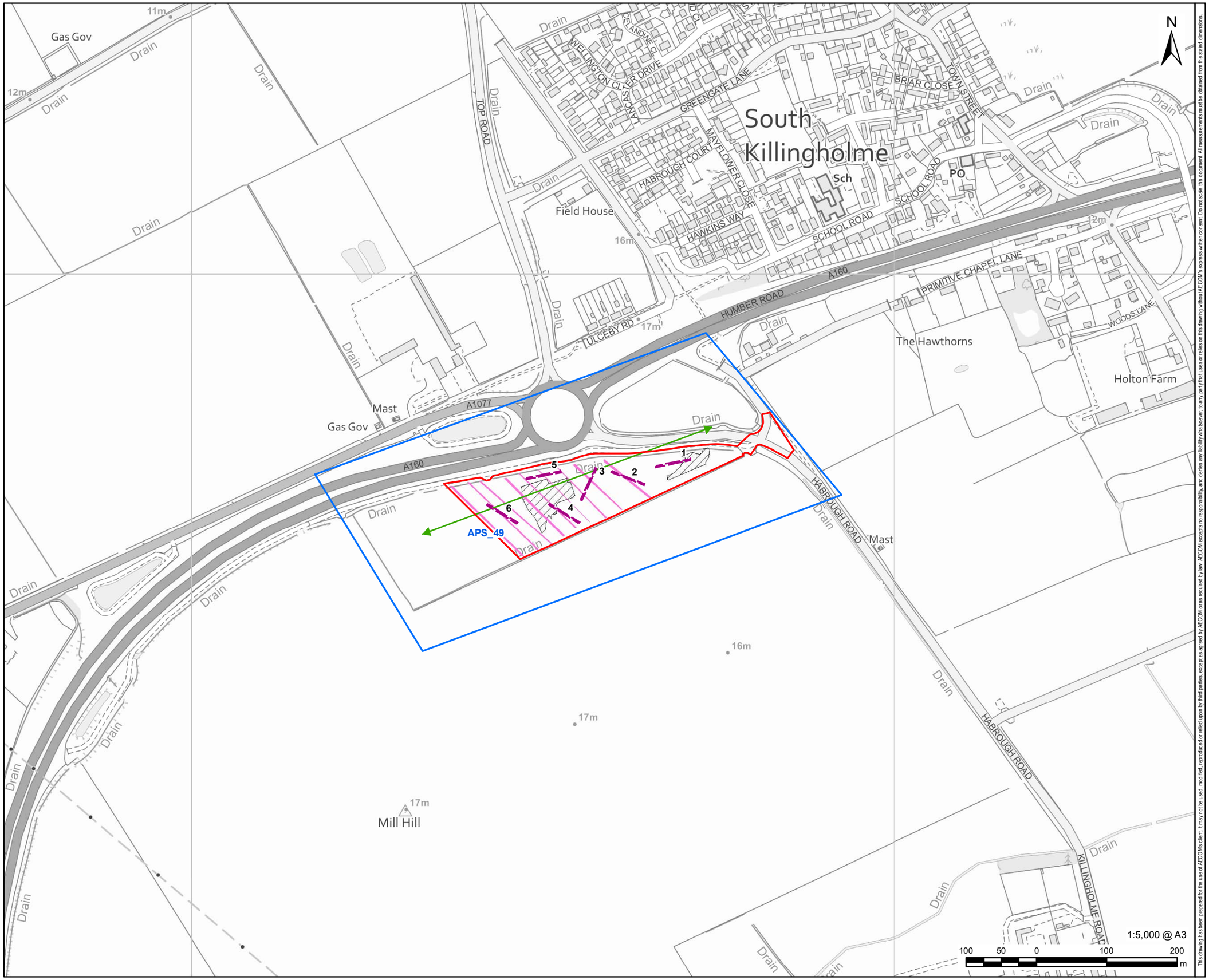

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Drainage Ditch
- Mining

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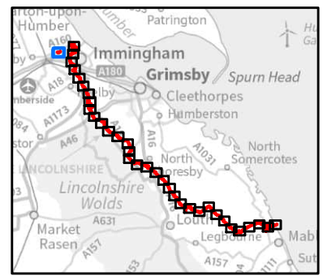

FIGURE TITLE

Figure 4 (1 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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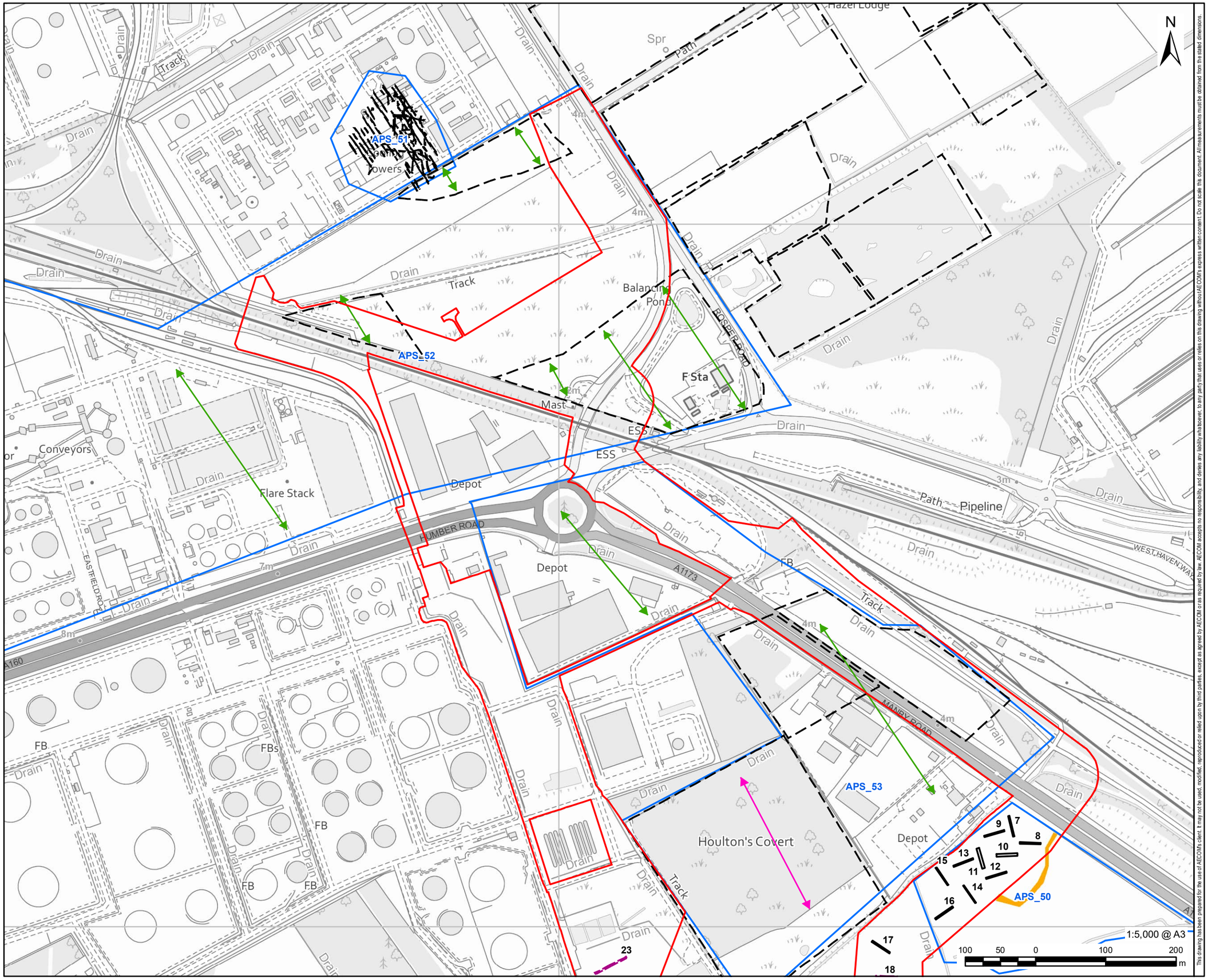

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Extant Ridge and Furrow
- Eroded Ridge and Furrow
- Ditch
- Inner Humber NMP

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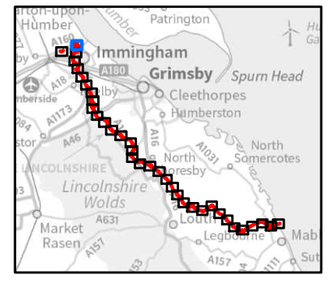

FIGURE TITLE

Figure 4 (2 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Extant Ridge and Furrow
- Eroded Ridge and Furrow
- Ditch
- Field Boundary
- Inner Humber NMP

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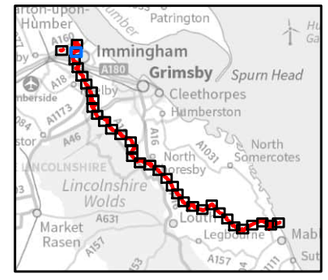

FIGURE TITLE

Figure 4 (3 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

1:5,000 @ A3

100 50 0 100 200 m

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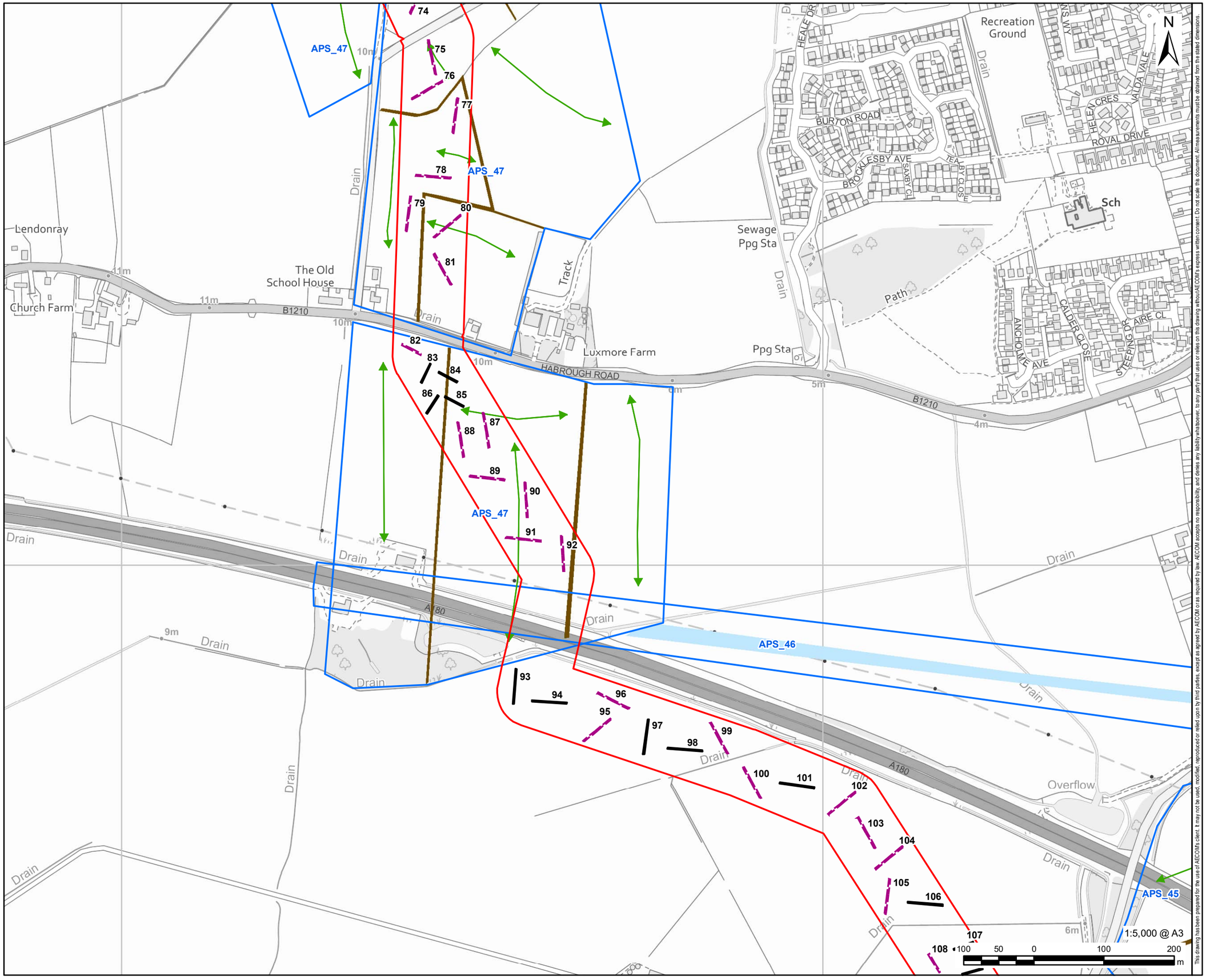

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Road

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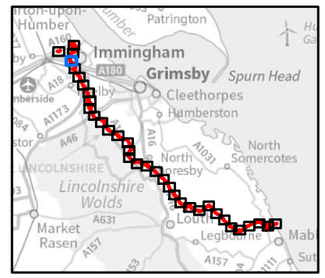

FIGURE TITLE

Figure 4 (4 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

1:5,000 @ A3

100 50 0 100 200 m

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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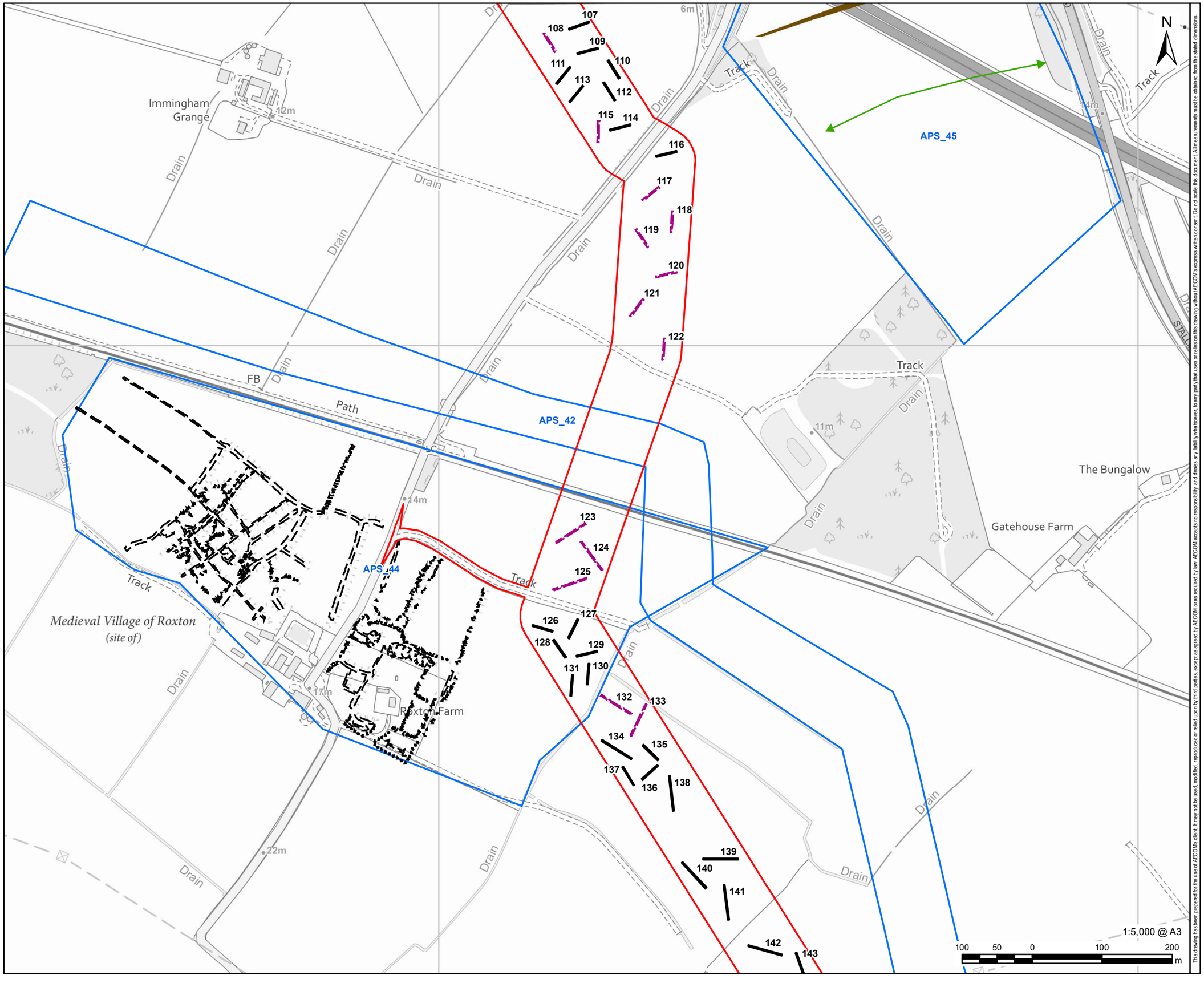

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Lincolnshire NMP

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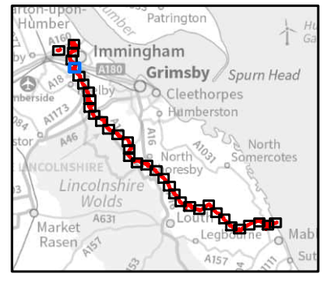

FIGURE TITLE

Figure 4 (5 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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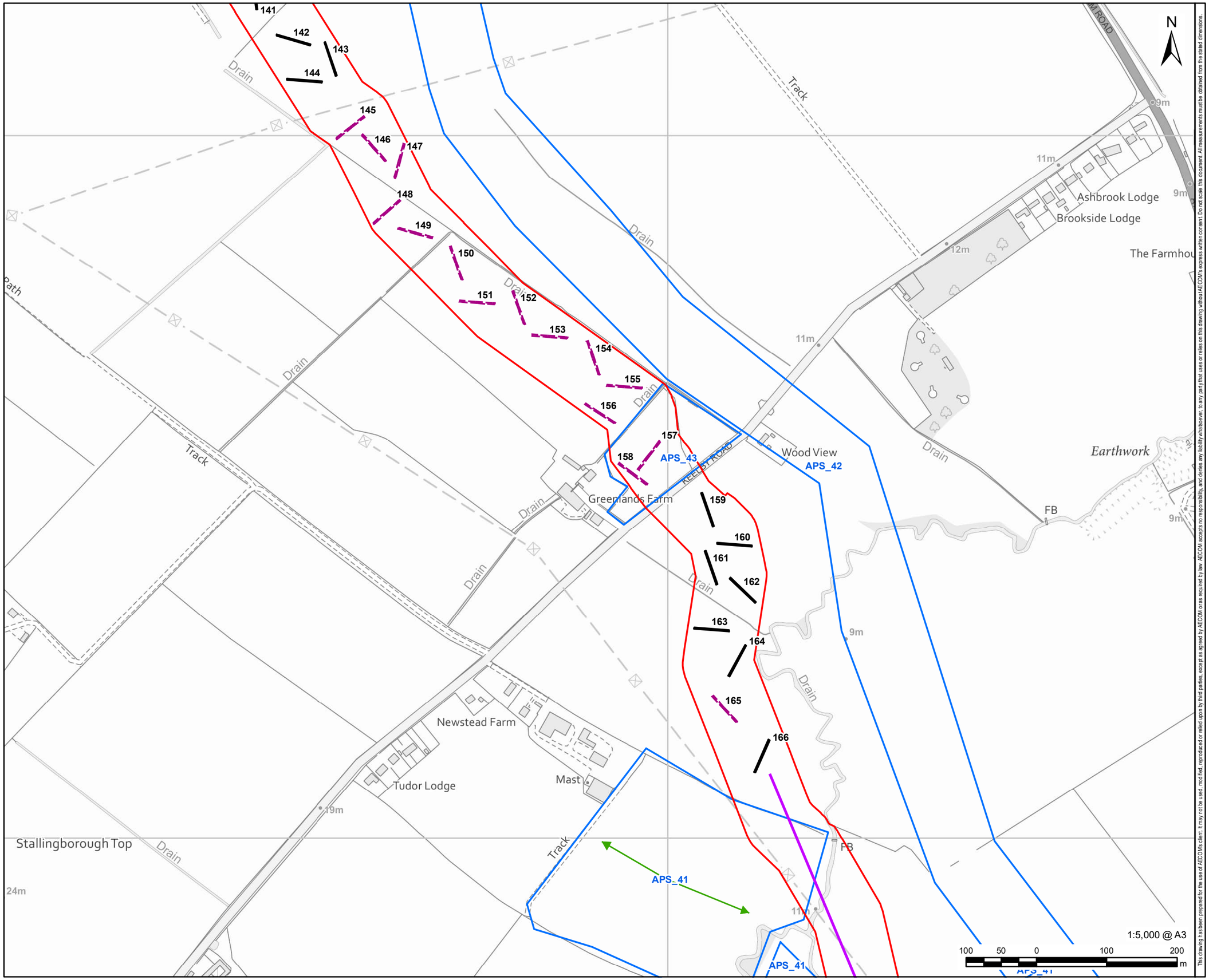

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow

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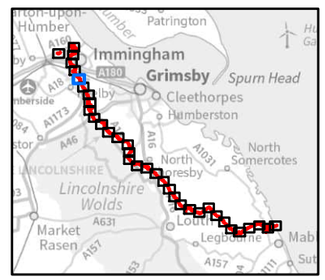

FIGURE TITLE

Figure 4 (6 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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N

APS_41
APS_41
APS_41
APS_42
APS_40
APS_36

167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191

North Beck Drain
Drain
FB
Track
RIBY ROAD
A1173
Riby Gap
Mill Cottage
Mill Farm Cottages
Hotel
White Lodge
14m
17m
16m

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Modern Service

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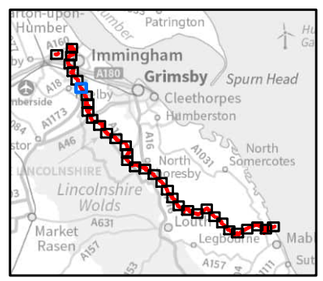

FIGURE TITLE

Figure 4 (7 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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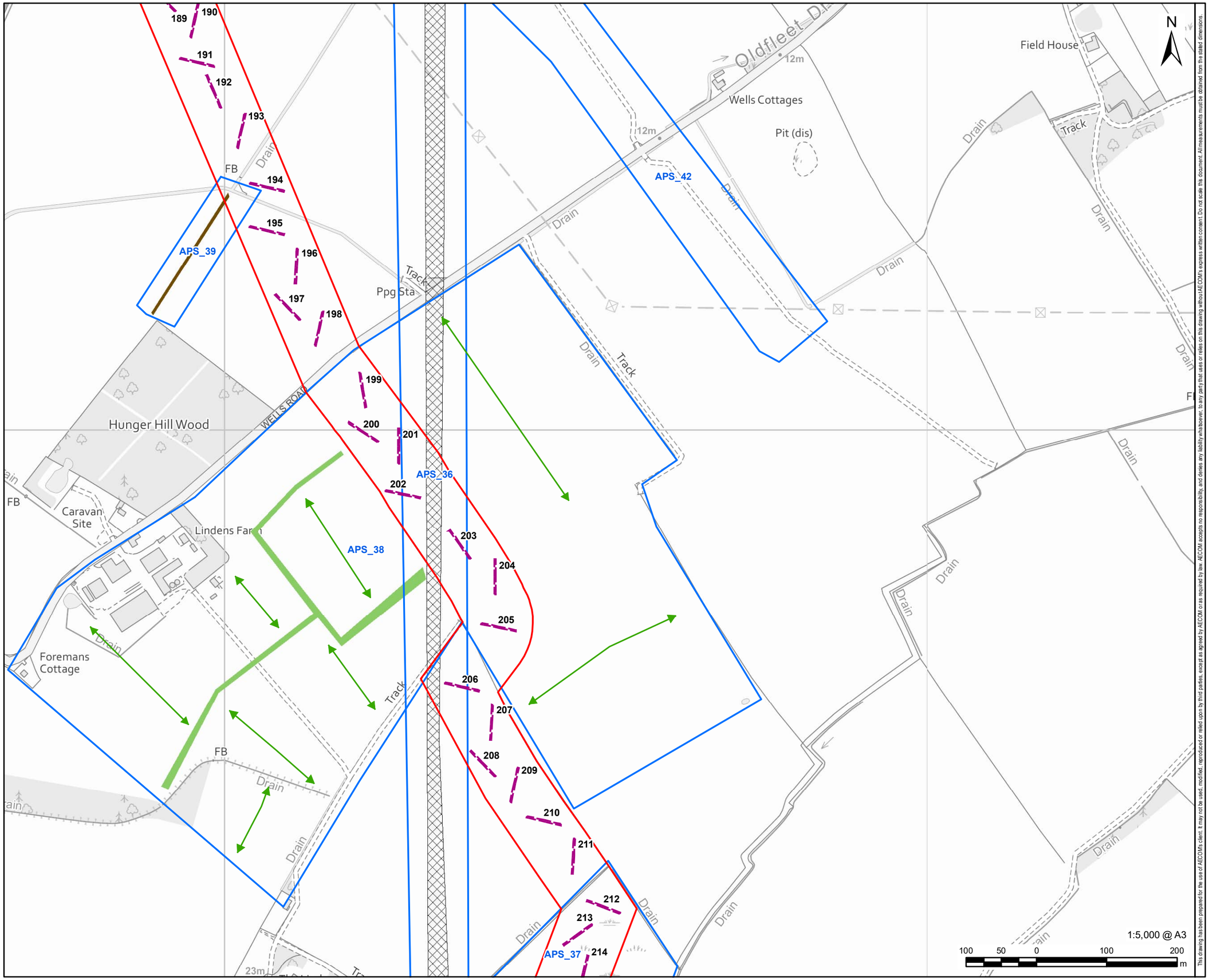

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Headland
- Modern Service

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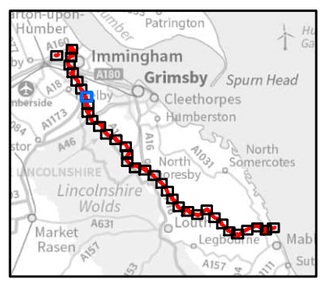

FIGURE TITLE

Figure 4 (8 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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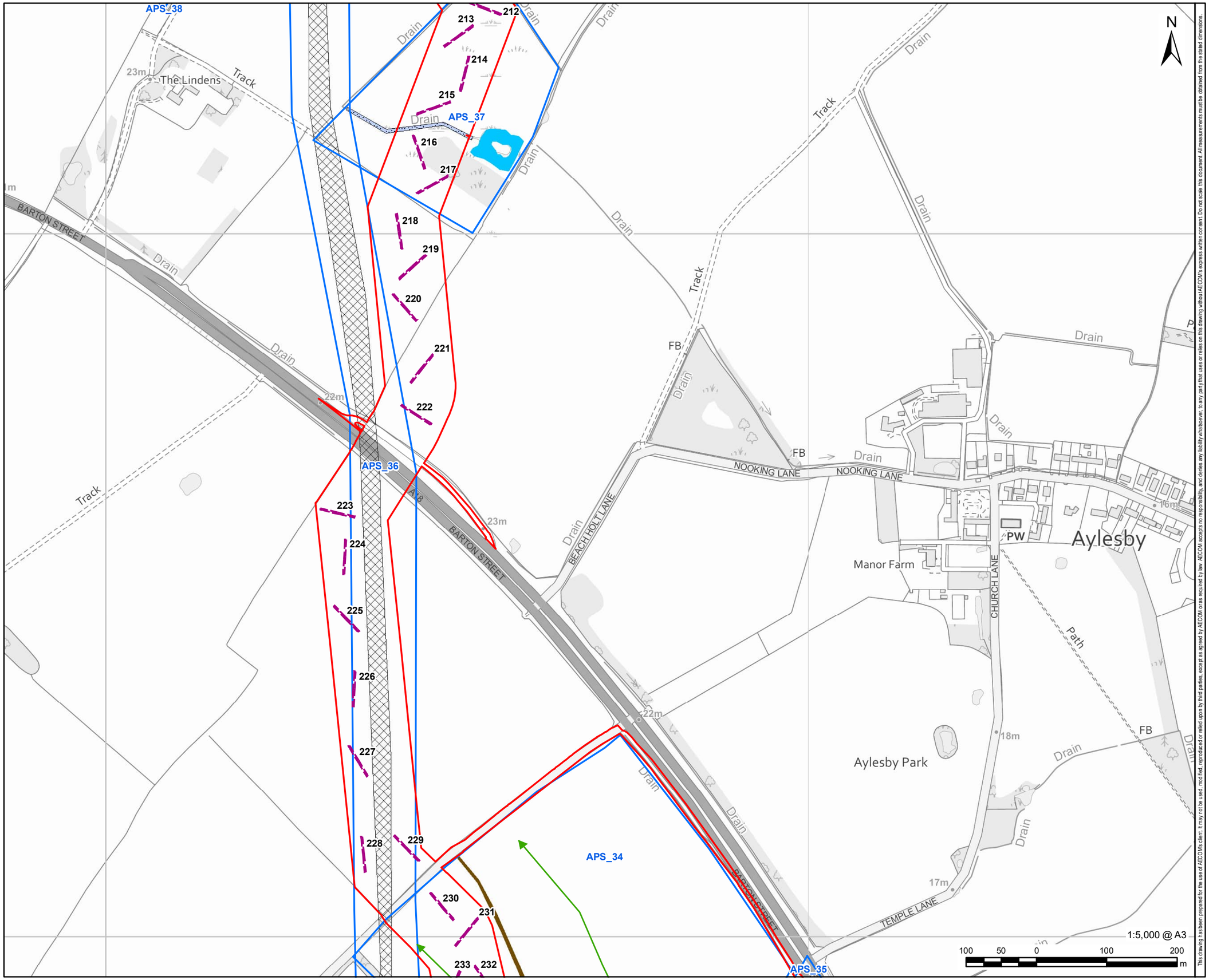

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Leat
- Mining
- Moated Site
- Modern Service

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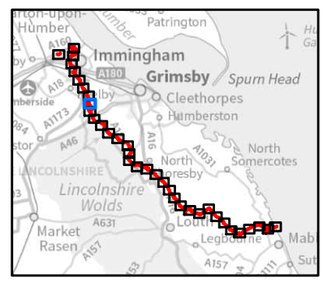

FIGURE TITLE

Figure 4 (9 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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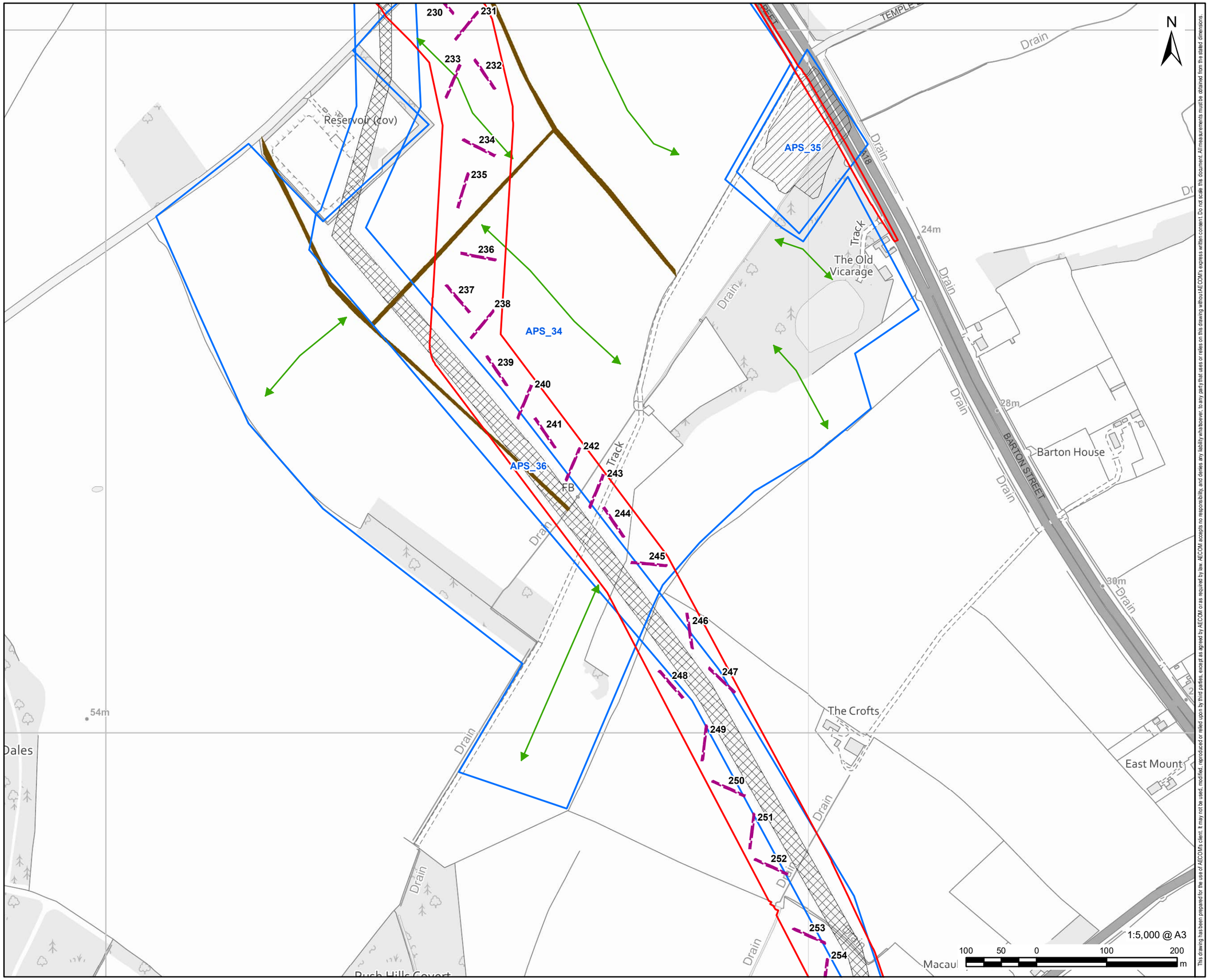

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Mining
- Modern Service

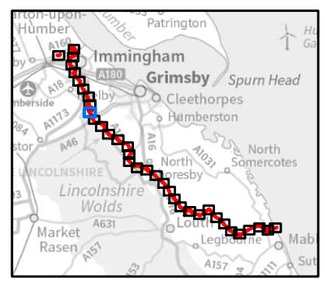

FIGURE TITLE

Figure 4 (10 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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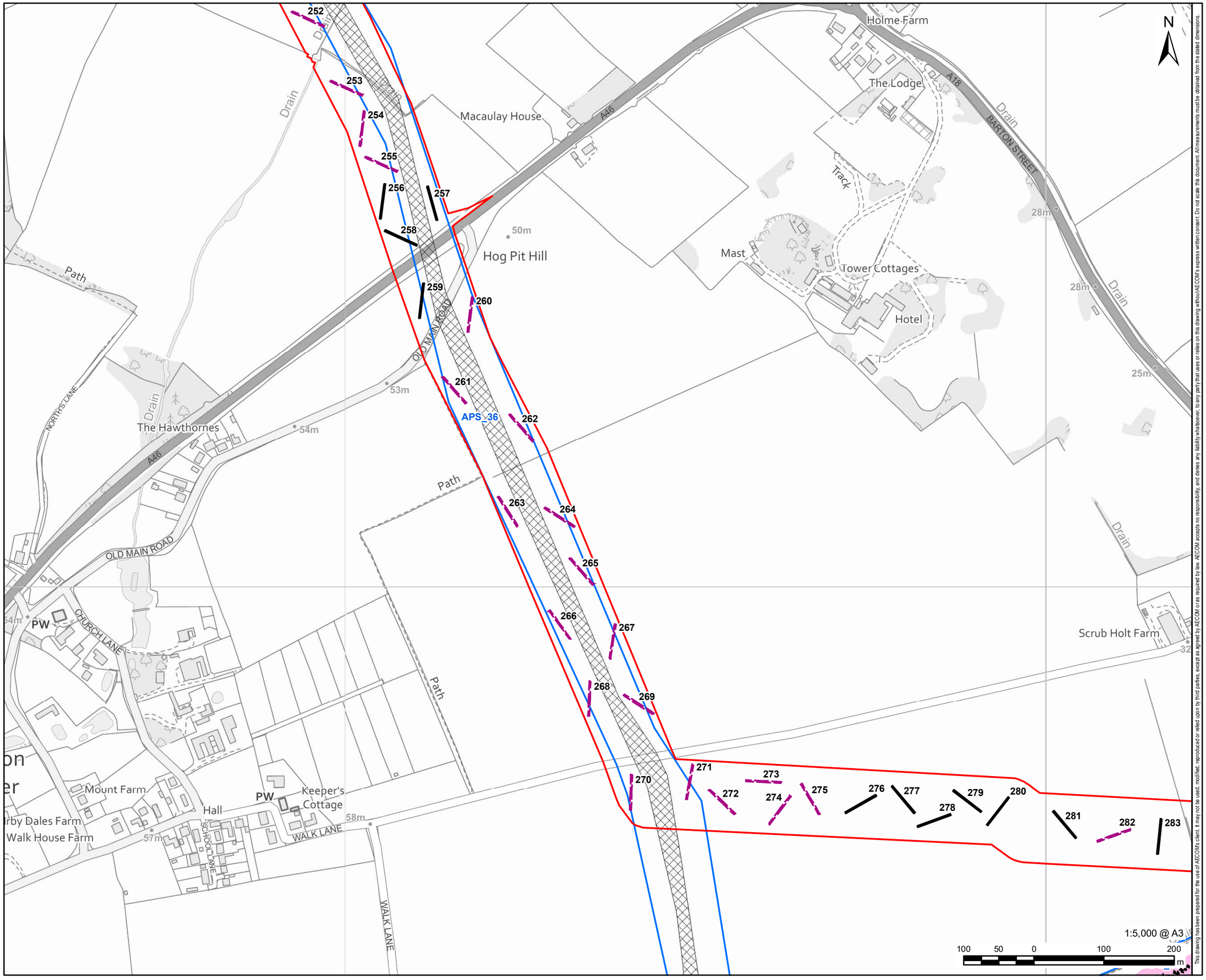

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent
- Modern Service
- Scheduled Monument
- Lincolnshire NMP

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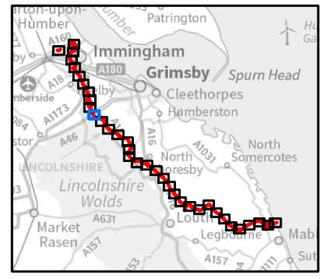

FIGURE TITLE

Figure 4 (11 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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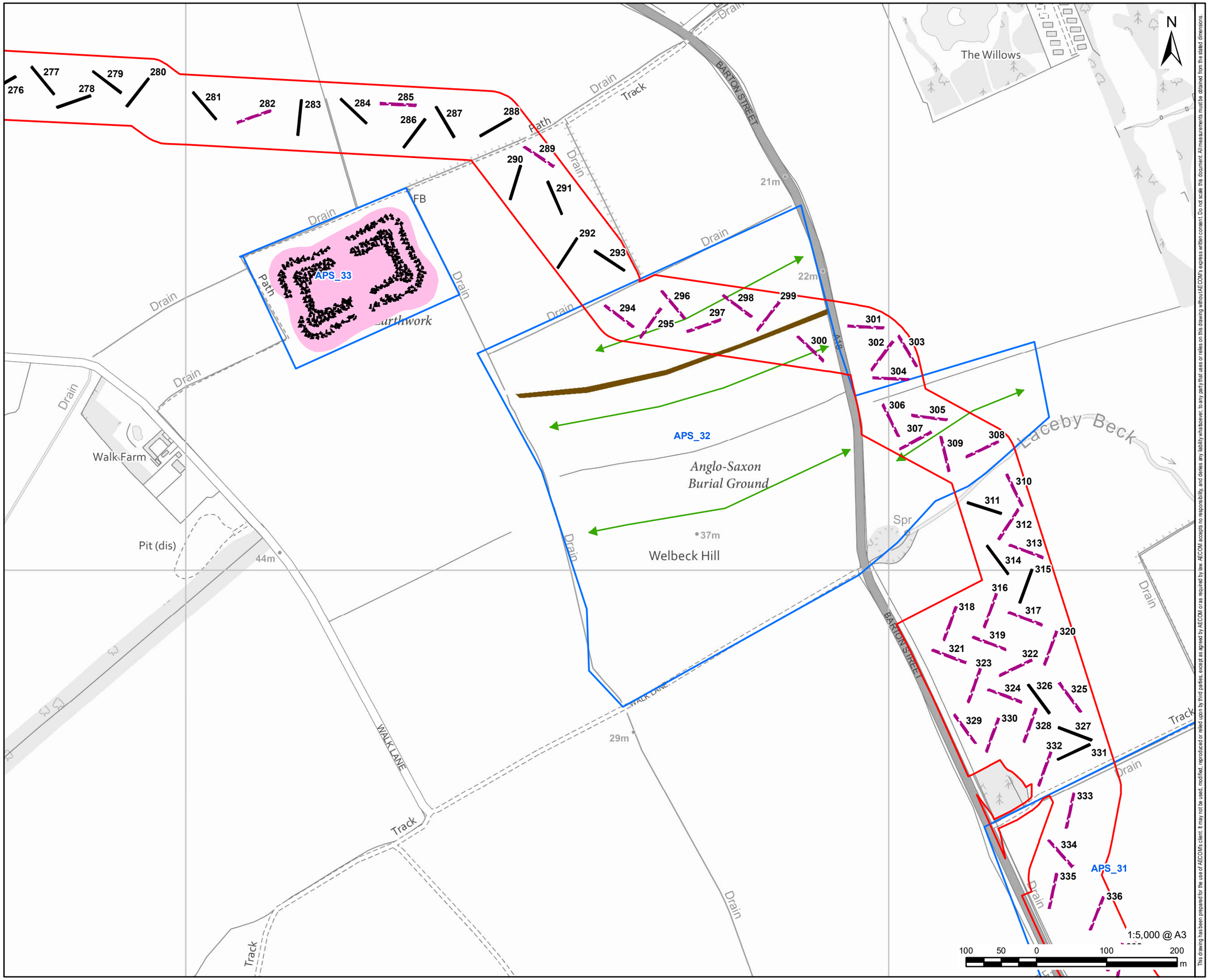

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Scheduled Monument
- Lincolnshire NMP

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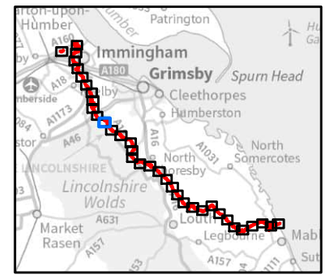

FIGURE TITLE

Figure 4 (12 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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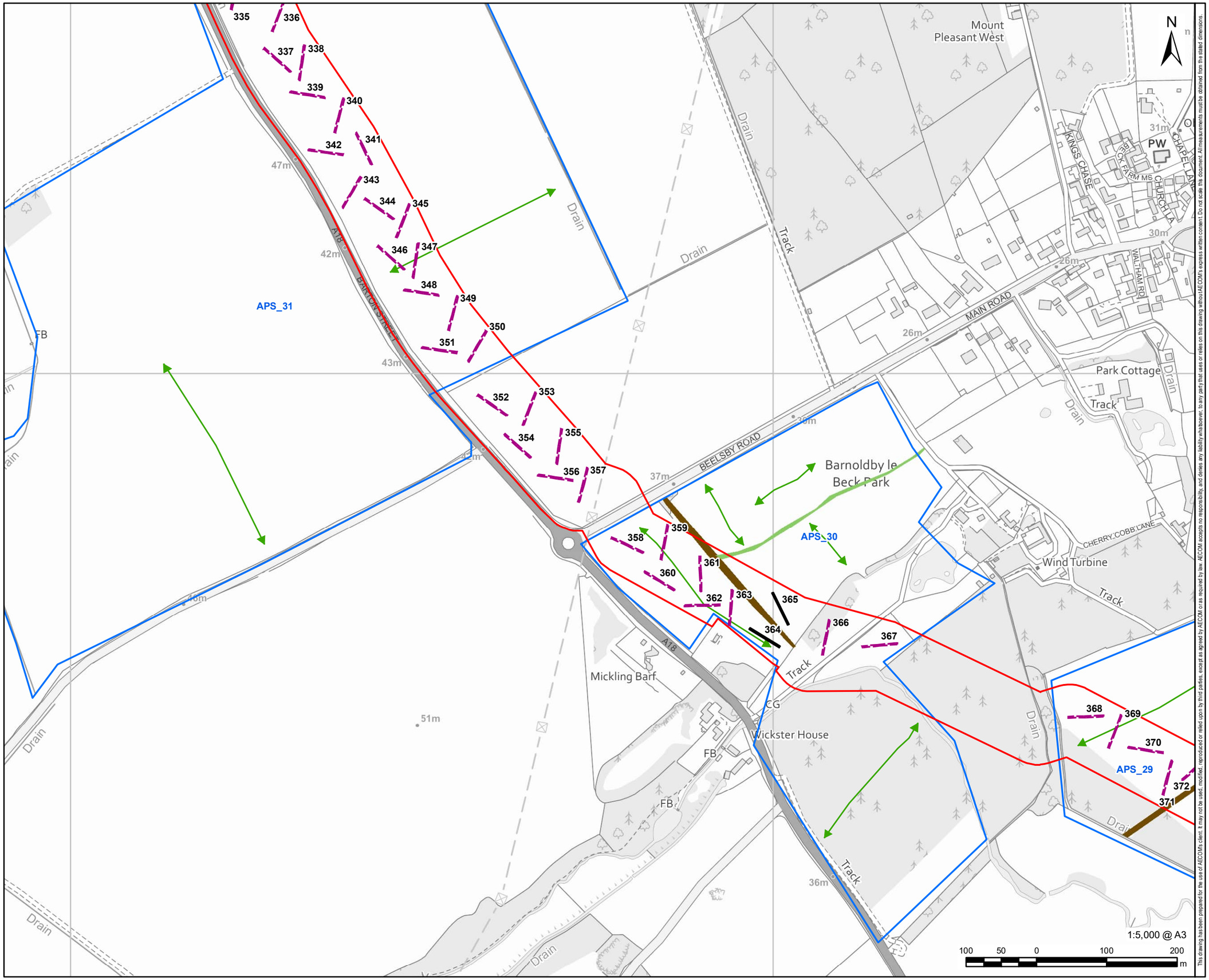

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Headland

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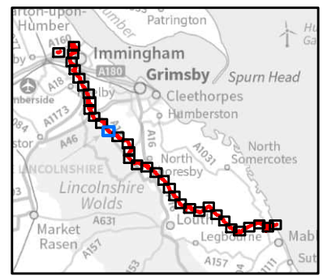

FIGURE TITLE

Figure 4 (13 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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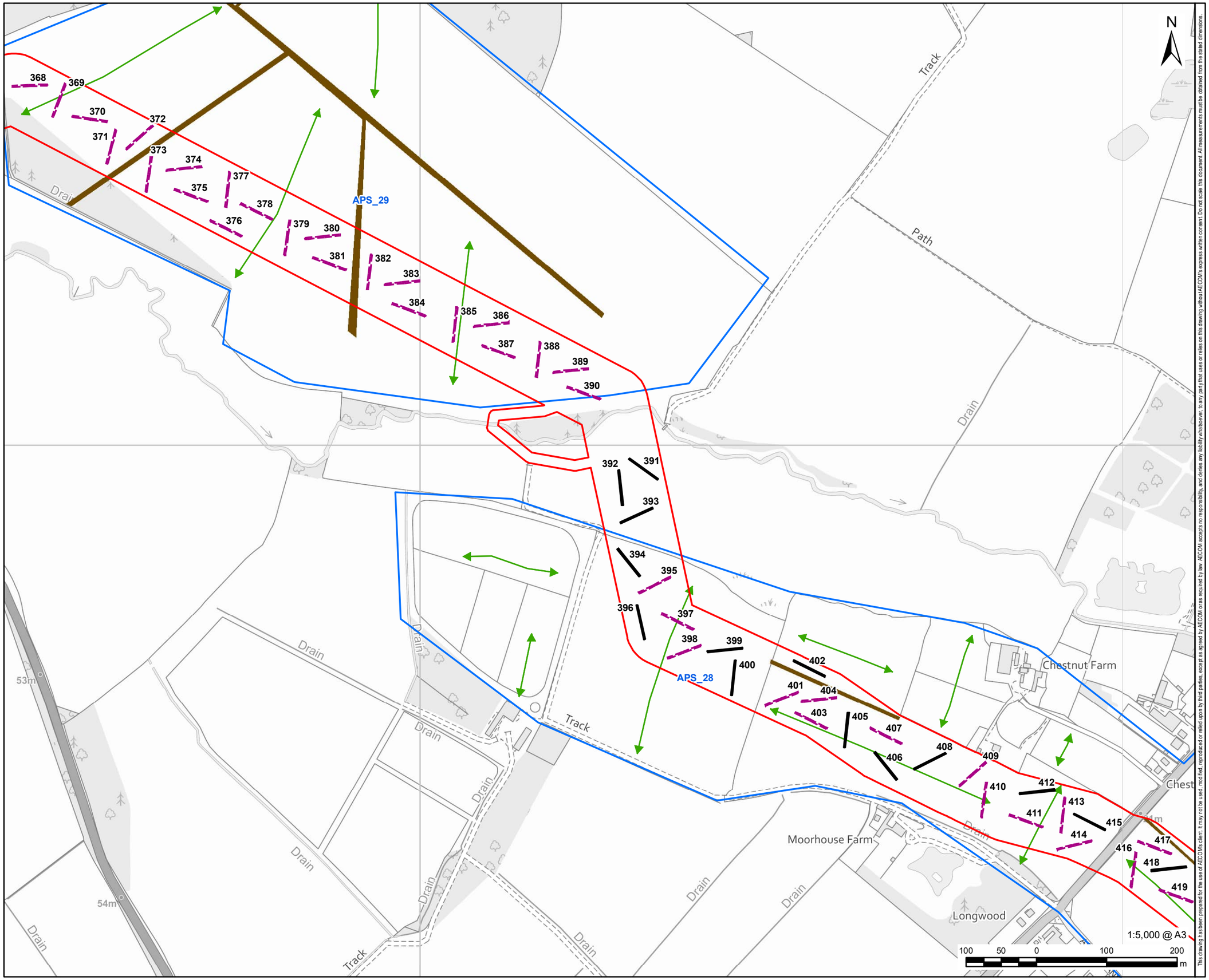

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary

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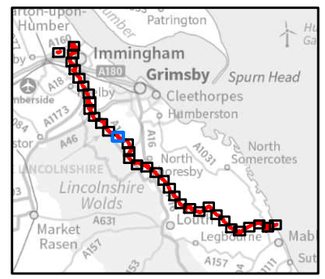

FIGURE TITLE

Figure 4 (14 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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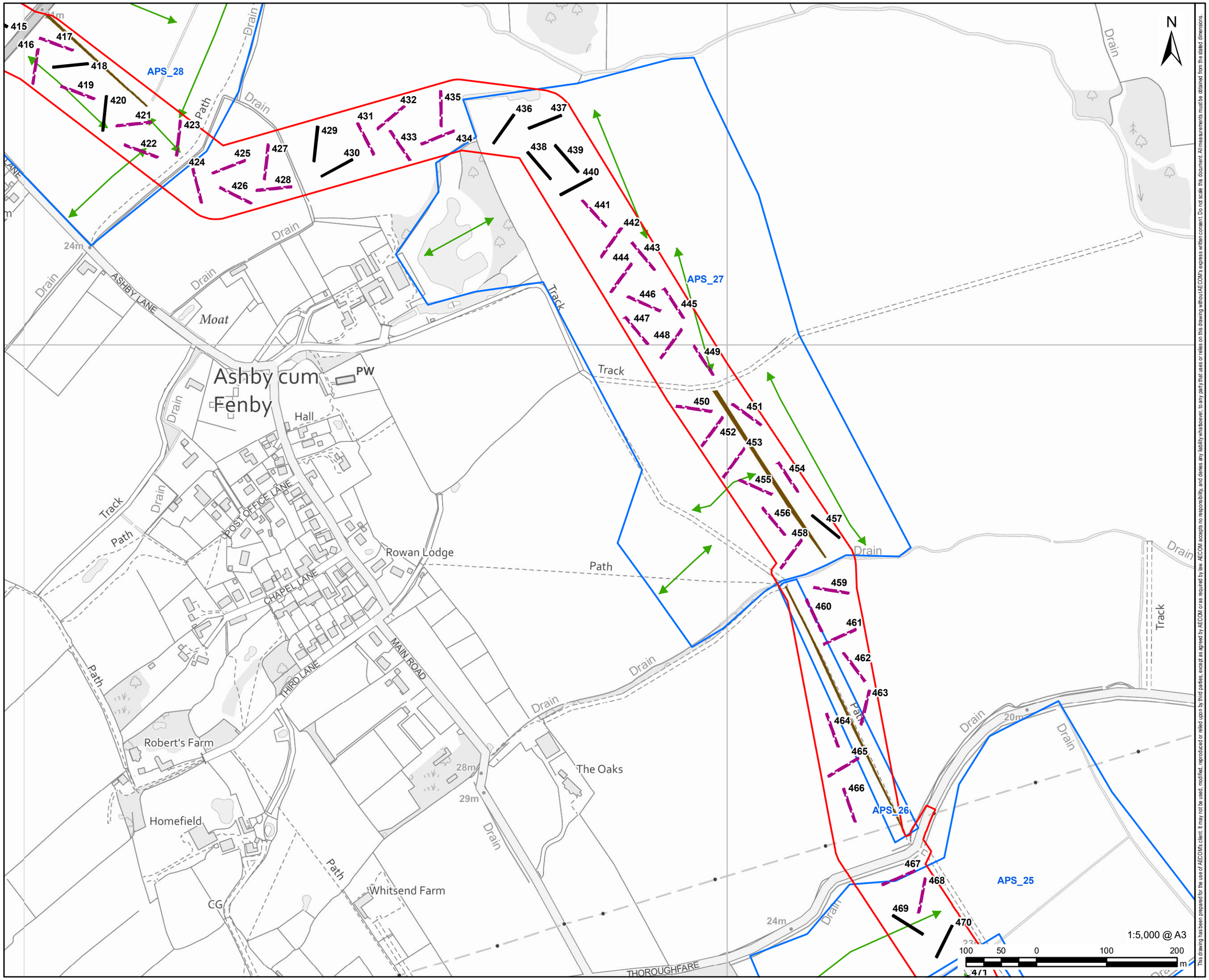

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary

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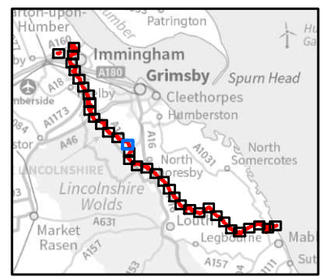

FIGURE TITLE

Figure 4 (15 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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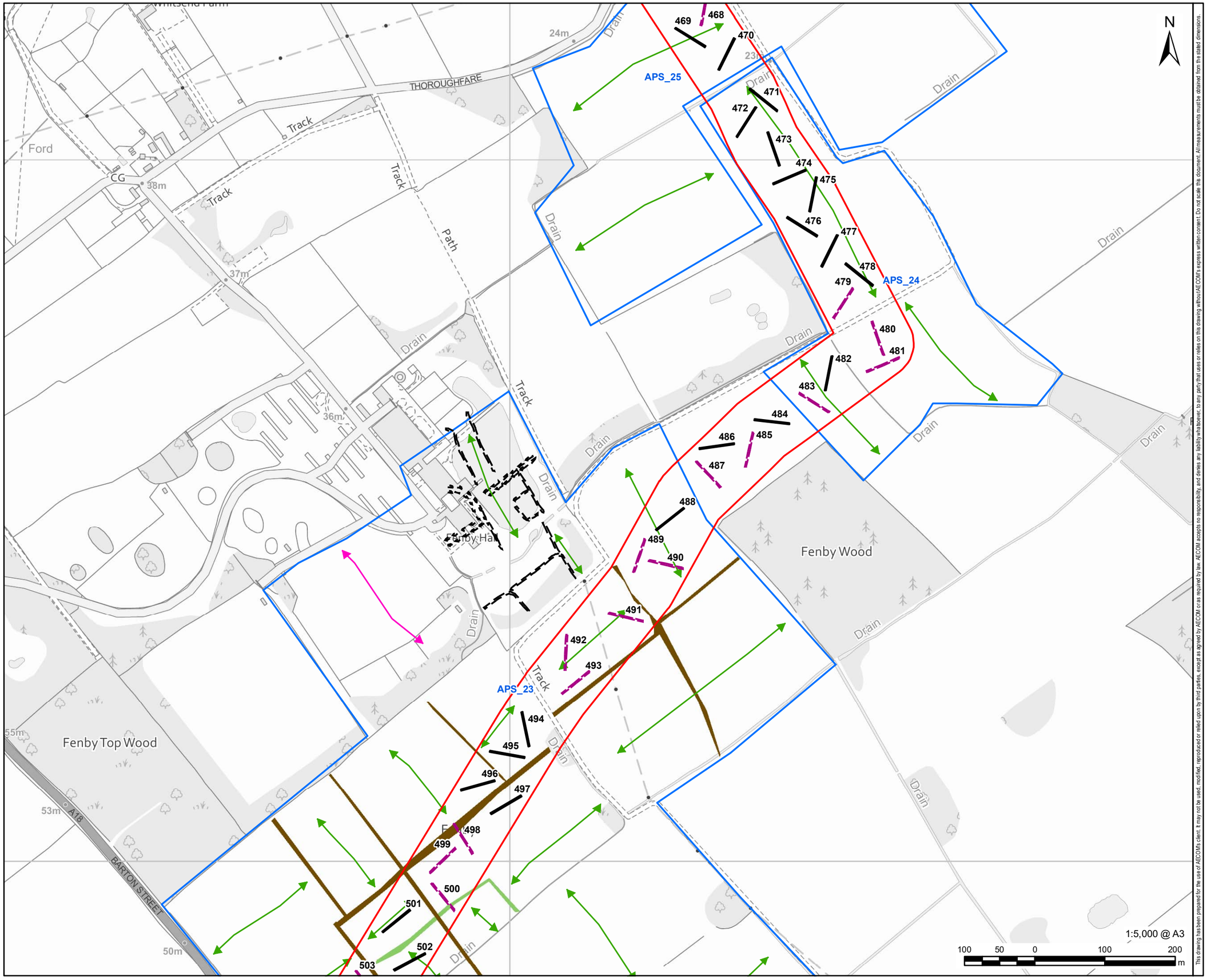


VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Extant Ridge and Furrow
- Eroded Ridge and Furrow
- Field Boundary
- Headland
- Lincolnshire NMP

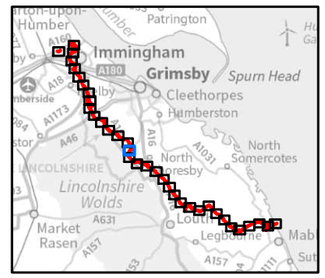


FIGURE TITLE

Figure 4 (16 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

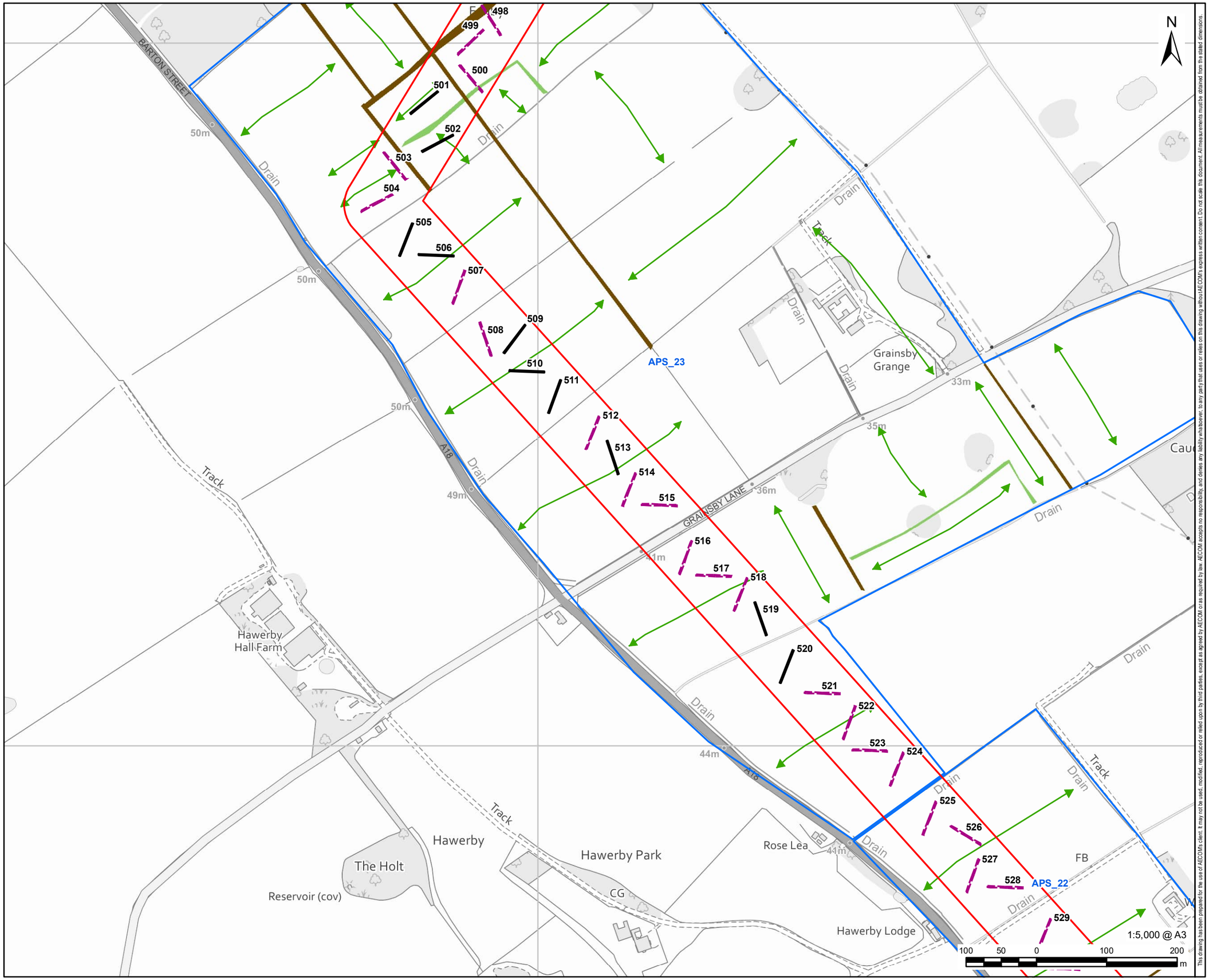
WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

Filename:\\eu.aecomnet.com\EMA\UKINCL2\Jobs\60668965 V_Net_Zero_Project\900_CAD_GIS\920_GIS\02_Maps\WSI Trail Trenching\VCCS_WSI_TT_4_APS_Interpretation_v3_230927_LC.mxd



VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Headland

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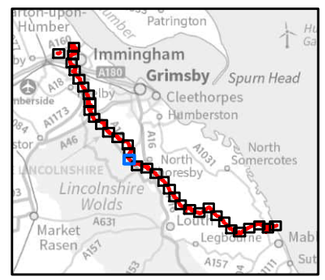

FIGURE TITLE

Figure 4 (17 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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Westfield Farm
Park Farm
Westfield Cottage
Ppg Sta
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38m
33m
29m
36m
Beesby
Cadeby House
Autby Wood
Hardings Plantation
Black Leg Drain
Autby House
Factory
Autby
Sluice
CG
Little Autby Wood
Hell Furze
A18
A18 BARTON STREET

1:5,000 @ A3

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VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Ditch
- Field Boundary

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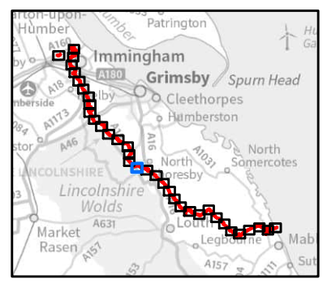


FIGURE TITLE

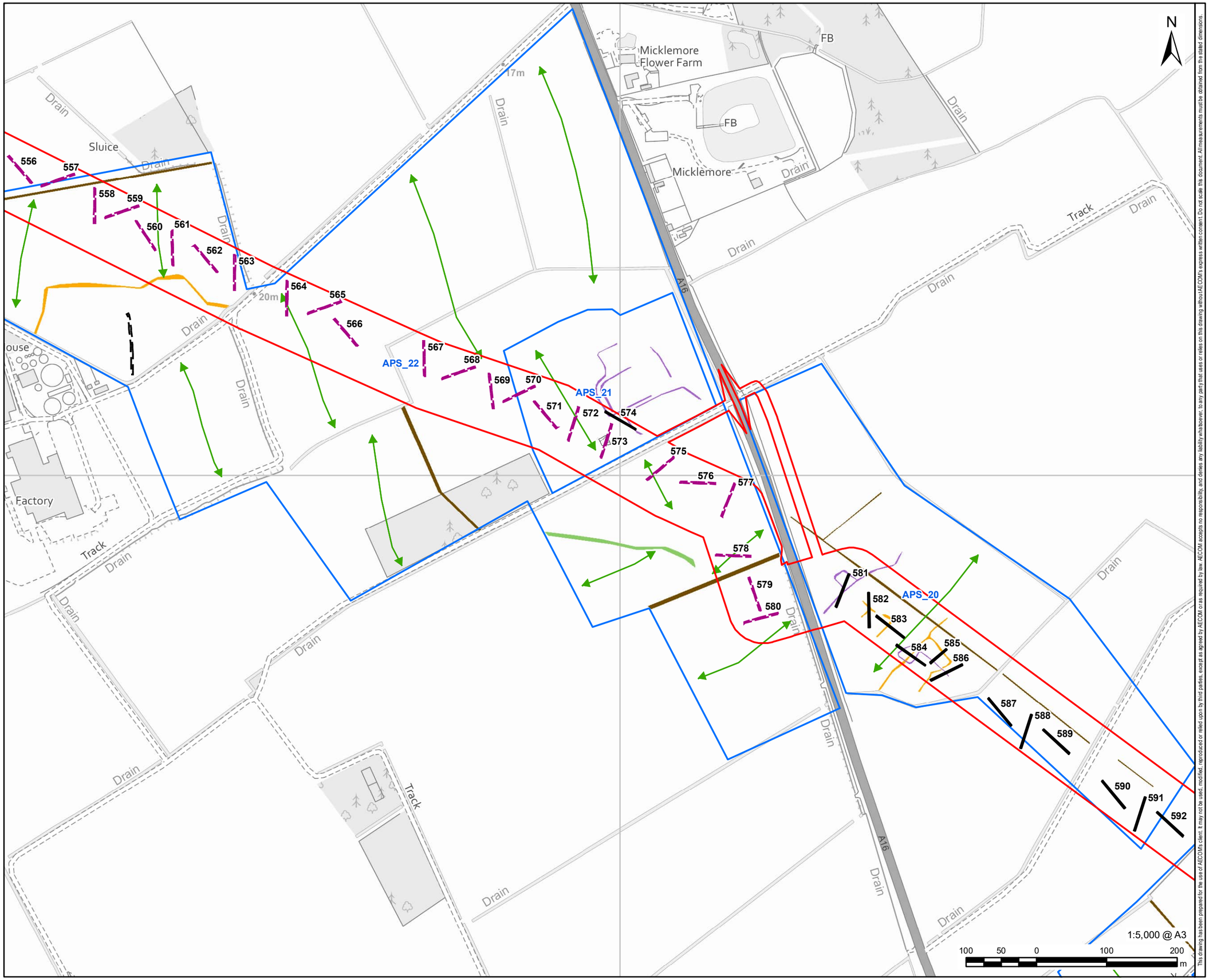
Figure 4 (18 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4



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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- 🟥 DCO Site Boundary
- ☐ Indicative Trench Location - Targeted
- ⬚ Indicative Trench Location
- 🟦 Site Extent

Air Photo Services Interpretation

- ↔ Eroded Ridge and Furrow
- 🟧 Ditch
- 🟪 Enclosure
- 🟫 Field Boundary
- 🟩 Headland
- ▨ Mining
- ⬚ Lincolnshire NMP

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FIGURE TITLE

Figure 4 (19 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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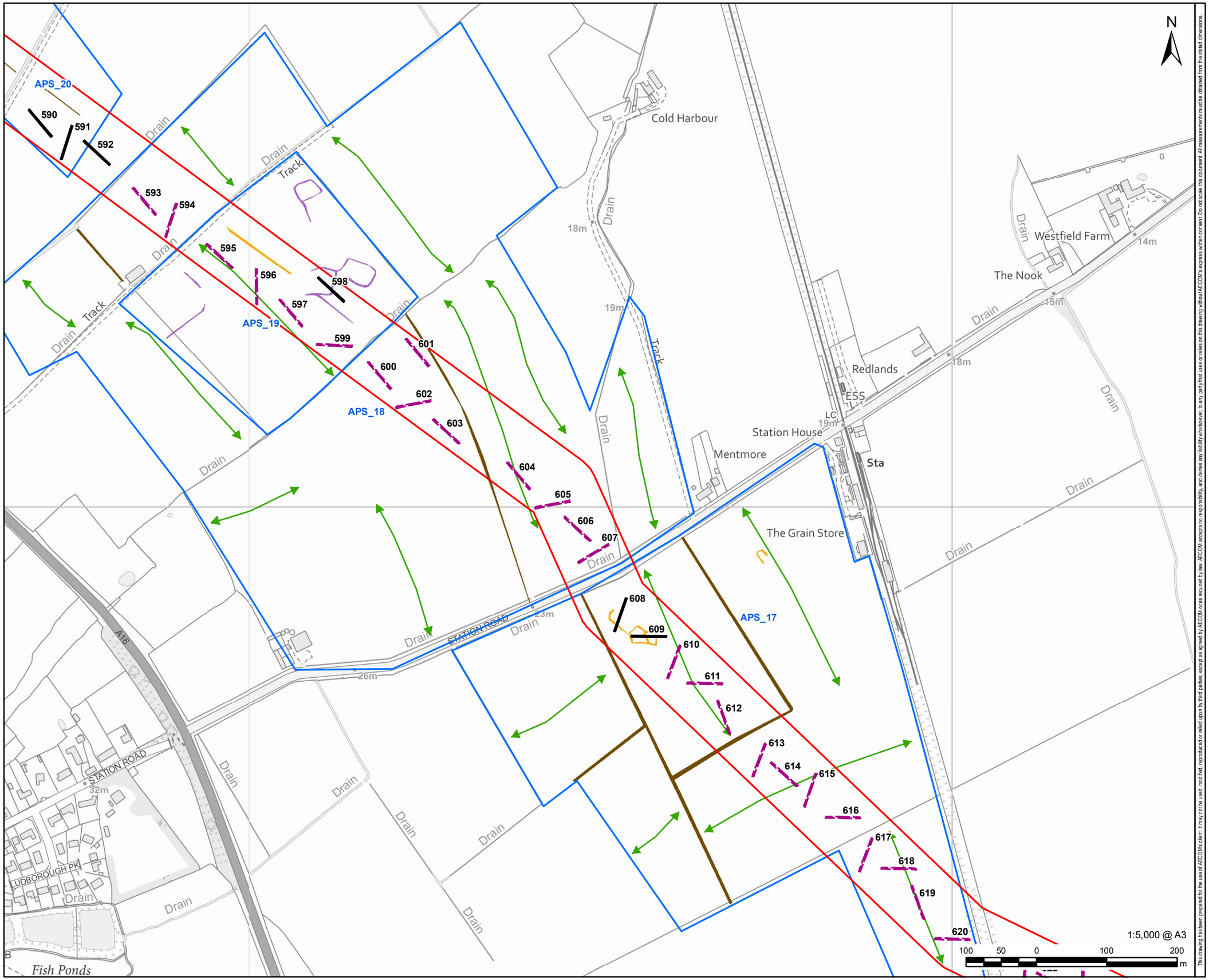

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Ditch
- Enclosure
- Field Boundary

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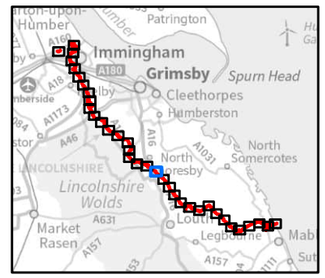

FIGURE TITLE

Figure 4 (20 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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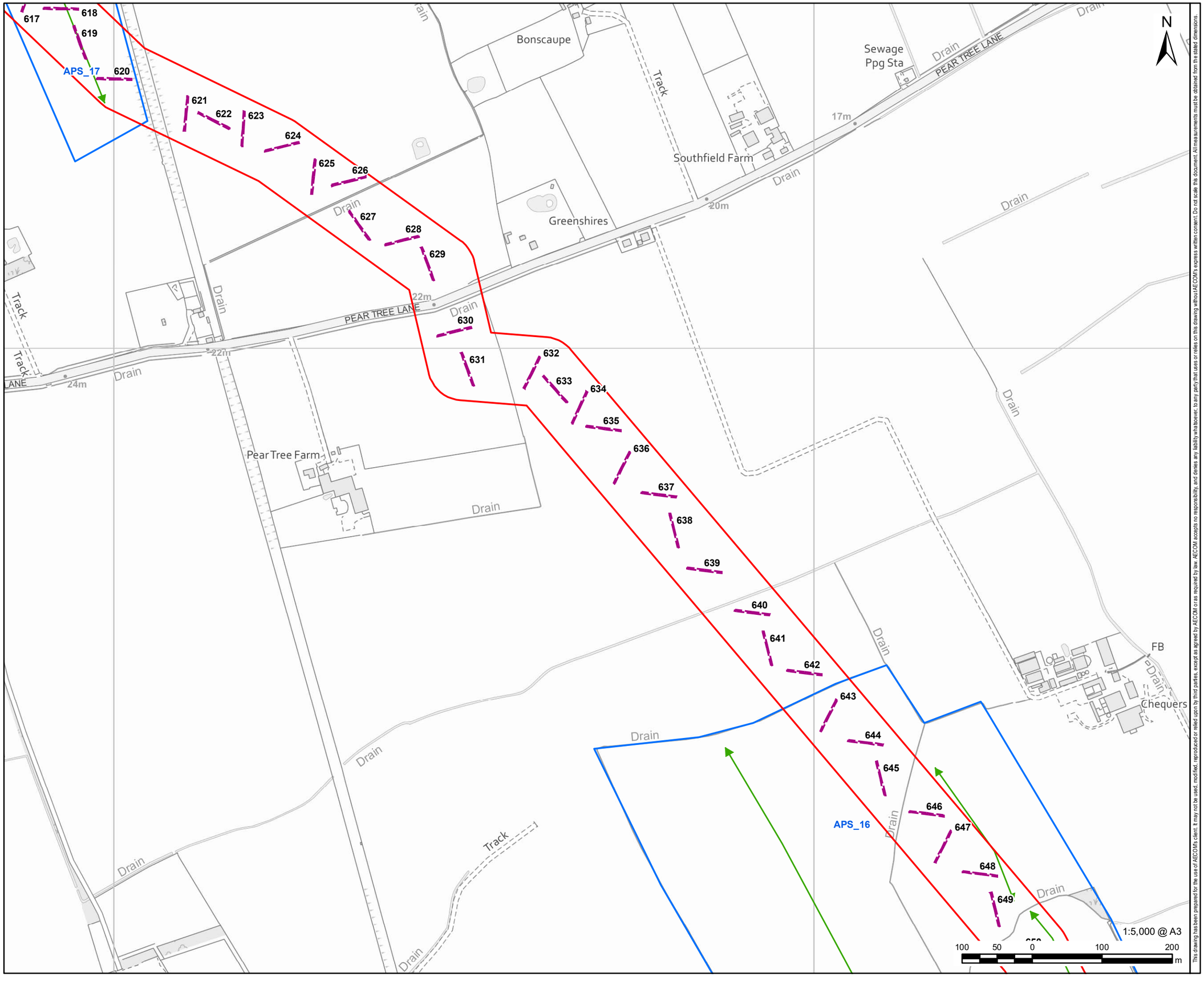

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow

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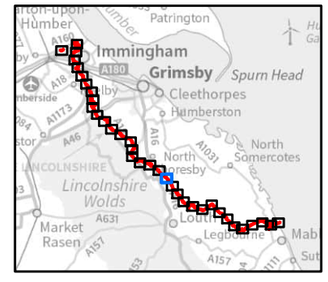

FIGURE TITLE

Figure 4 (21 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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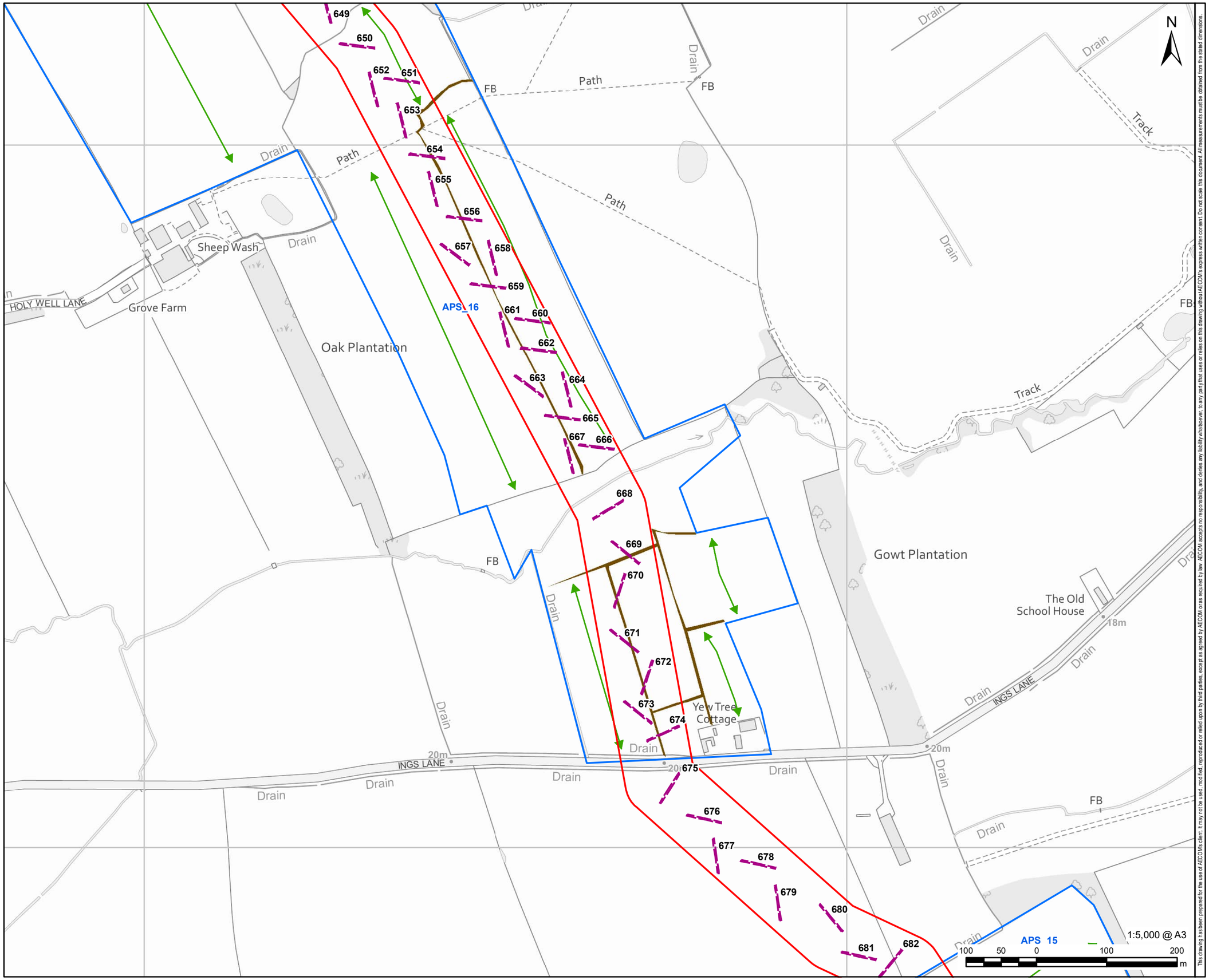

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary

NOTES:

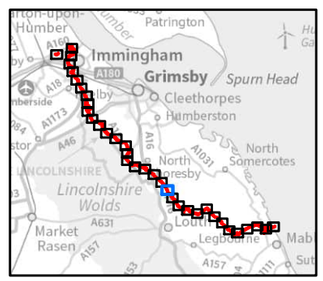

FIGURE TITLE

Figure 4 (22 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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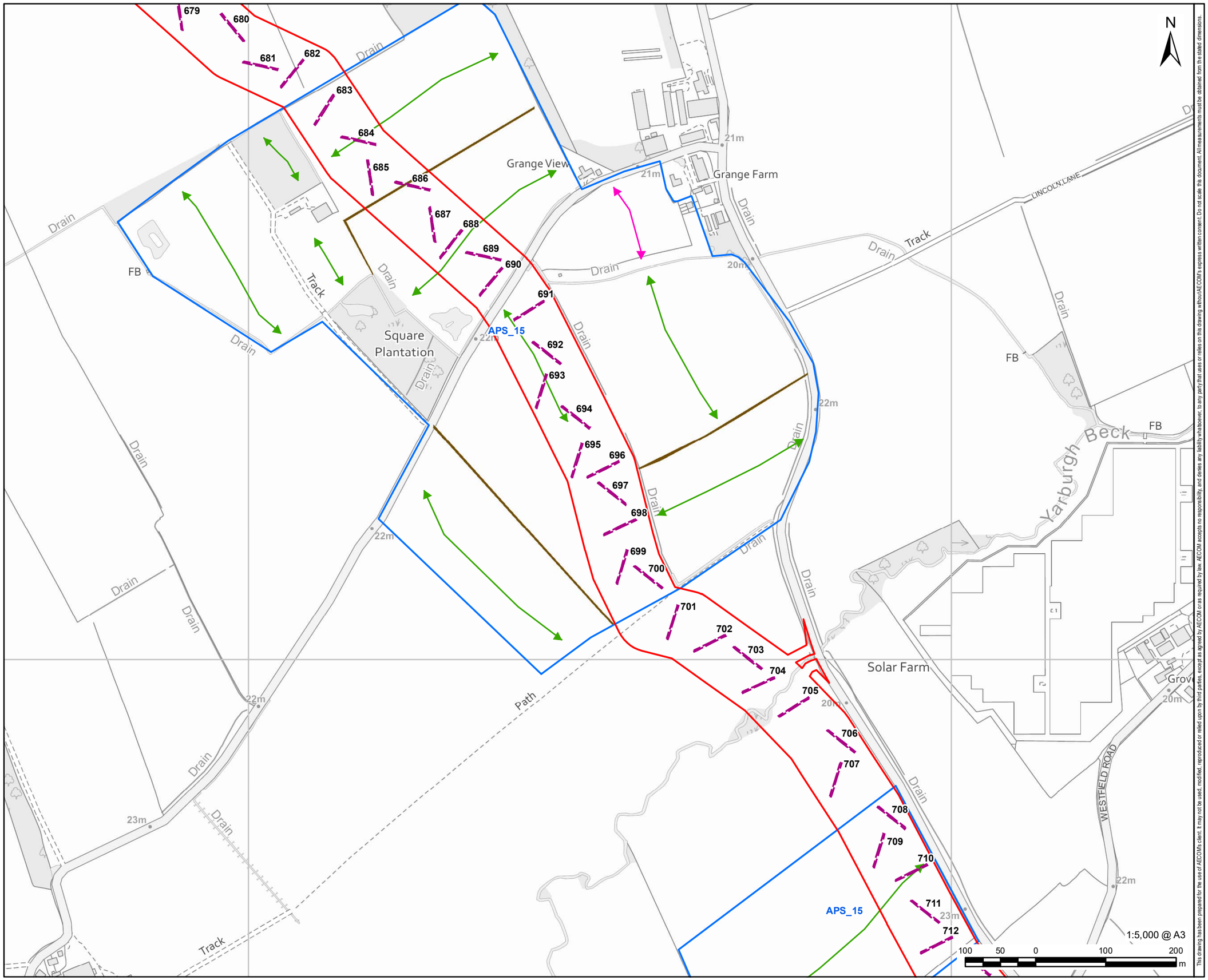

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Extant Ridge and Furrow
- Eroded Ridge and Furrow
- Field Boundary

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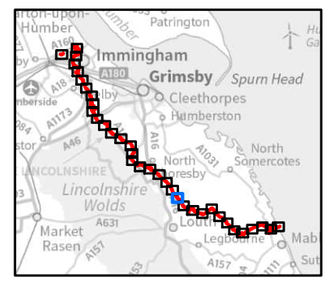

FIGURE TITLE

Figure 4 (23 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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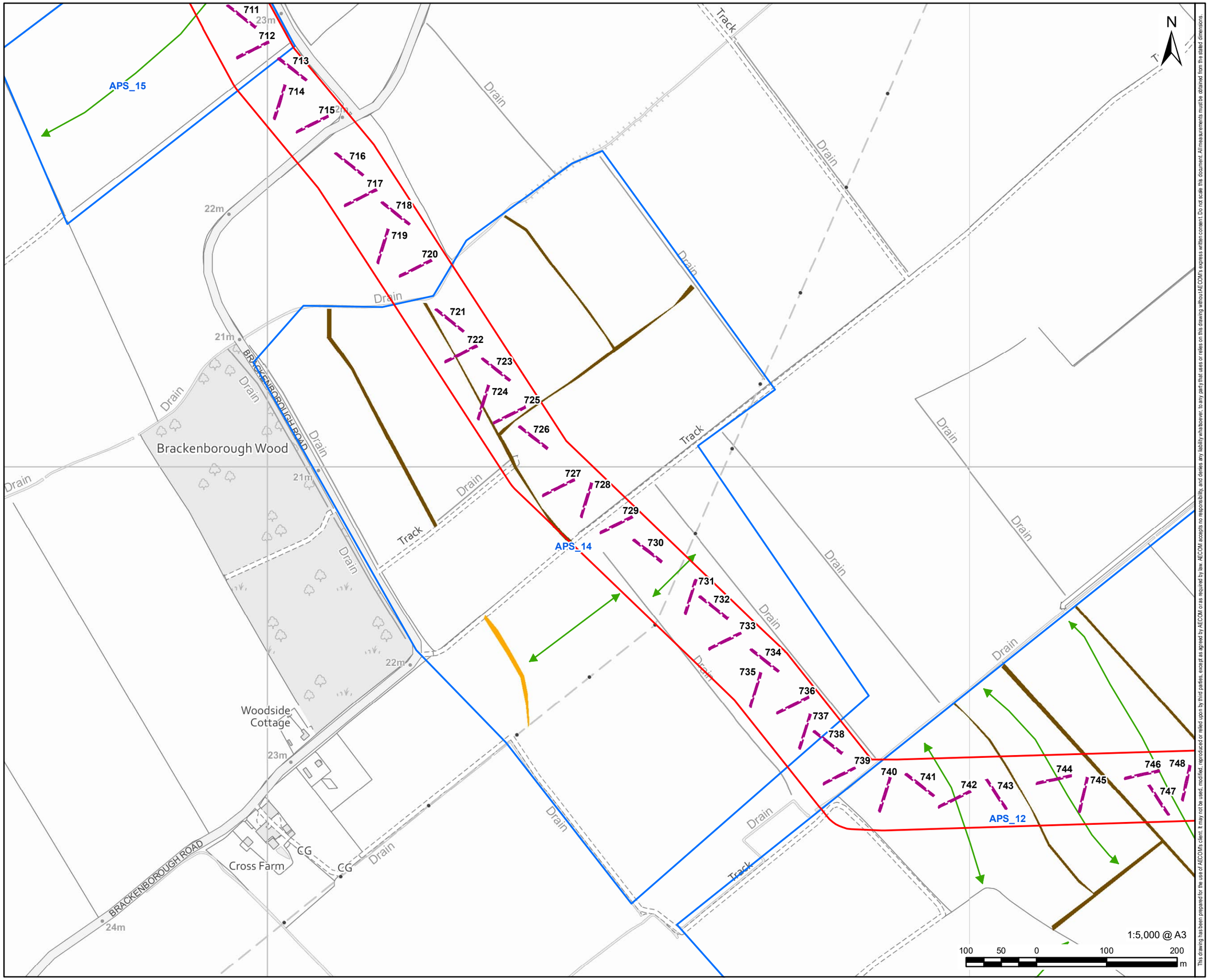

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Ditch
- Field Boundary

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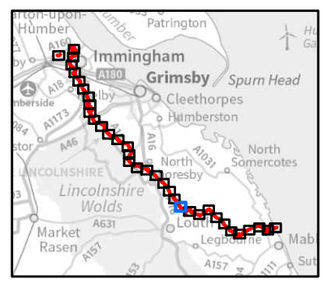

FIGURE TITLE

Figure 4 (24 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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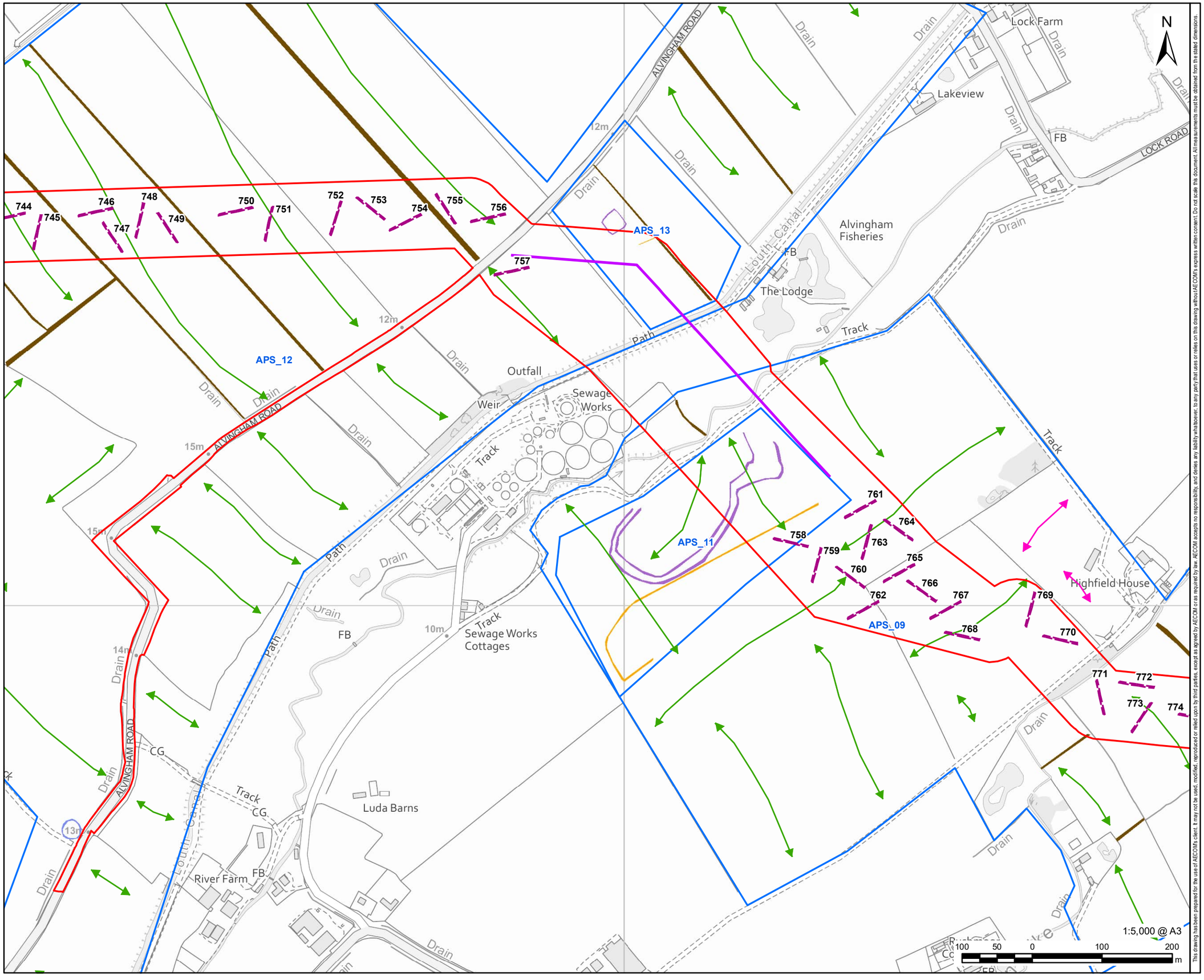

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Extant Ridge and Furrow
- Eroded Ridge and Furrow
- Barrow
- Ditch
- Enclosure
- Field Boundary

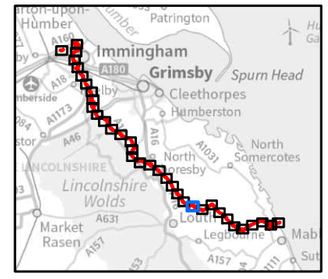

FIGURE TITLE

Figure 4 (25 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

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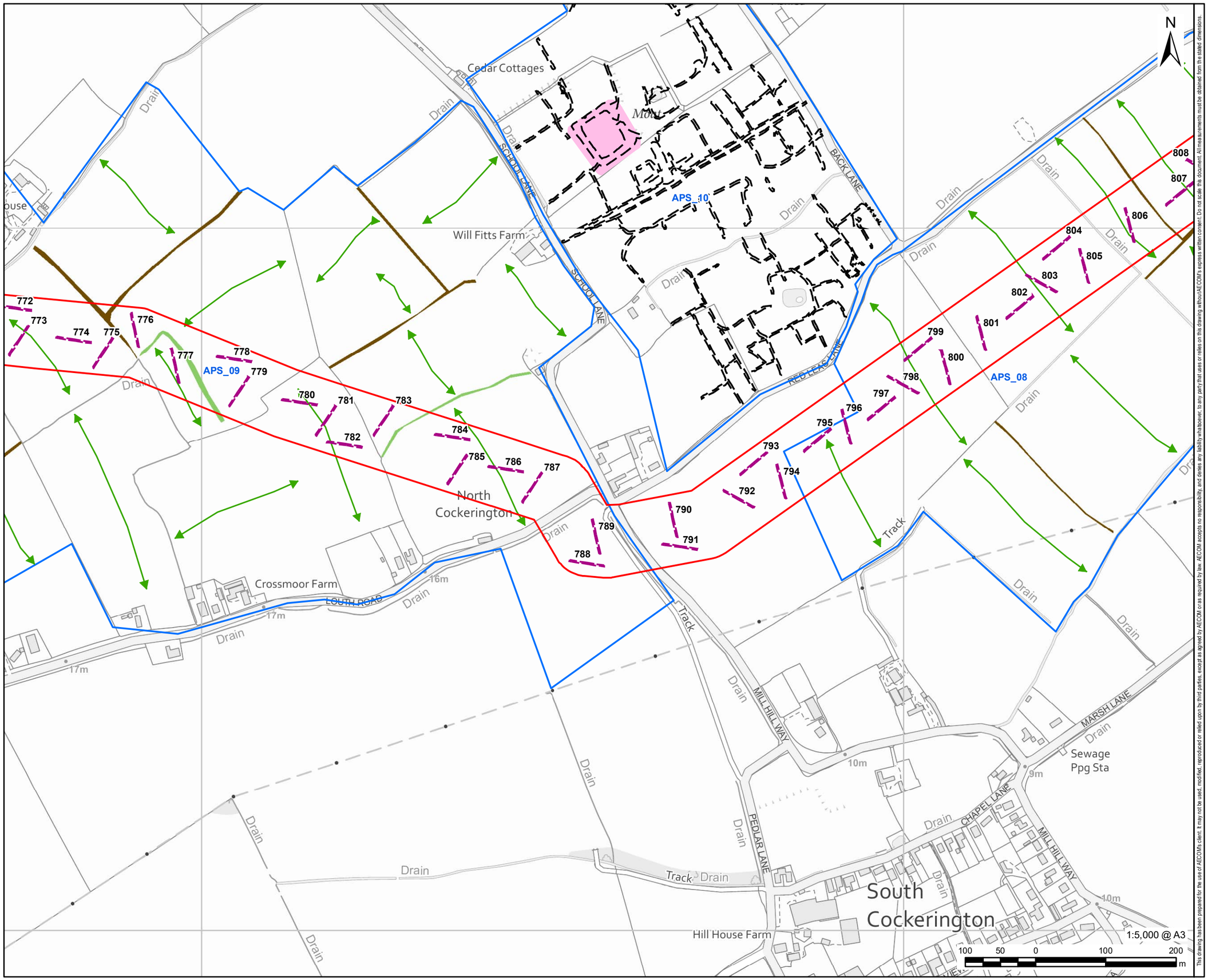

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary
- Headland
- Scheduled Monument
- Lincolnshire NMP

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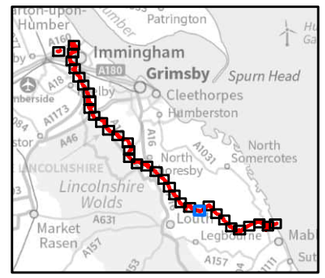

FIGURE TITLE

Figure 4 (26 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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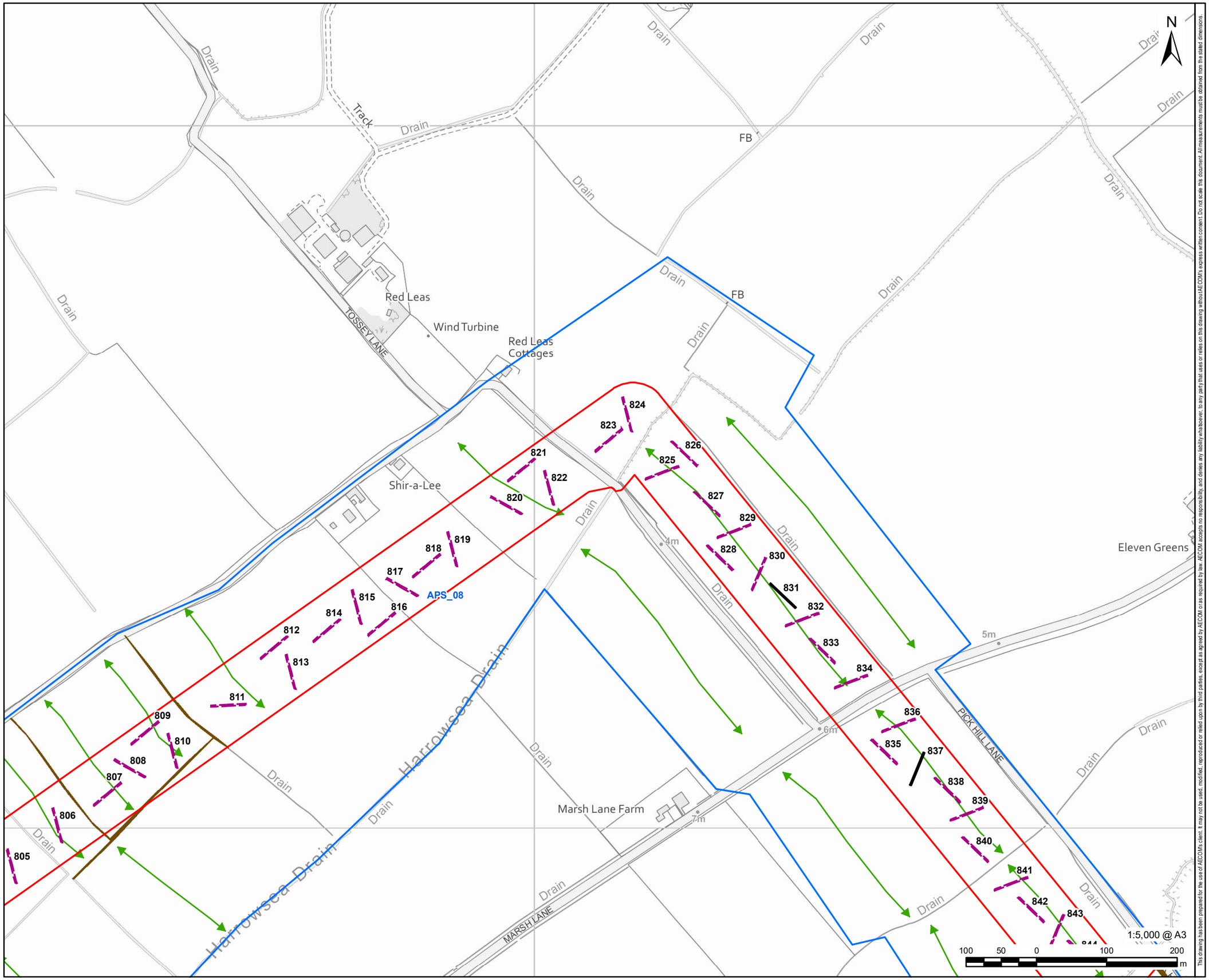

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary

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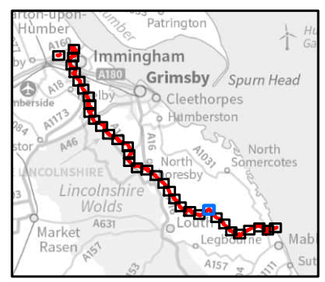

FIGURE TITLE

Figure 4 (27 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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Grimoldby Ings

Corner Farm

Pick Hill Farm

Karuna Cottage

Fleet House

Sheep Wash

PICK HILL LANE

Track

Drain

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Enclosure
- Field Boundary

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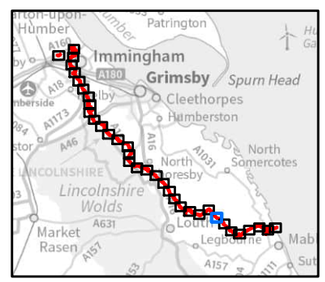

FIGURE TITLE

Figure 4 (28 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919

APS_08

APS_08

Sykes Drain

Poplar Farm

Poplar House Farm

Causeway Bridge Farm

Causeway Bridge

Eastfield Farm

Track

CURLEW BANK

GREEN LANE

WILLOW ROW BANK

B1200

Drain

Sks

3m

5m

N

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Field Boundary

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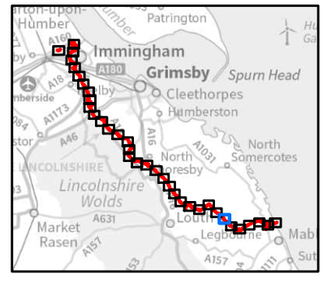

FIGURE TITLE

Figure 4 (29 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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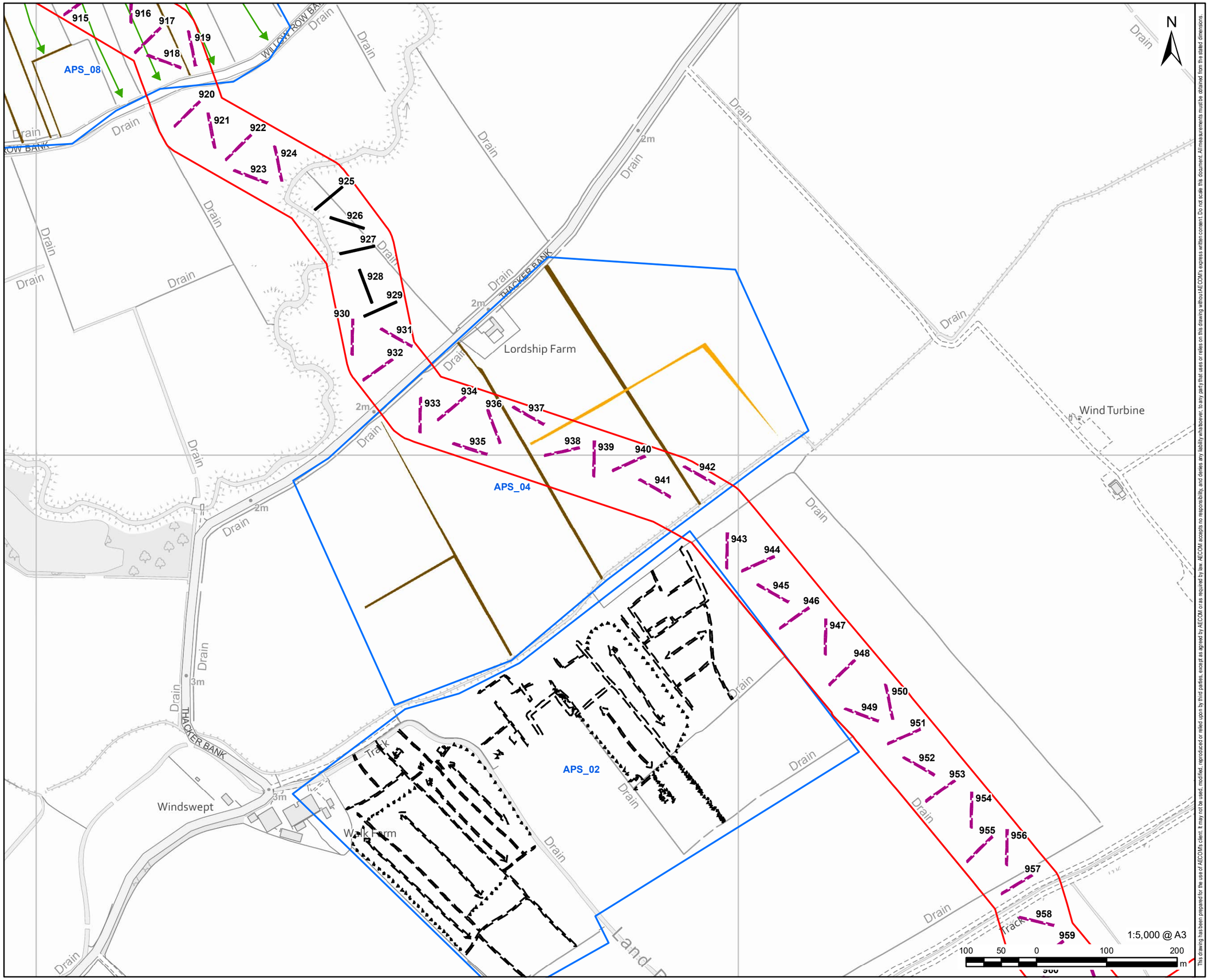

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Ditch
- Field Boundary
- Lincolnshire NMP

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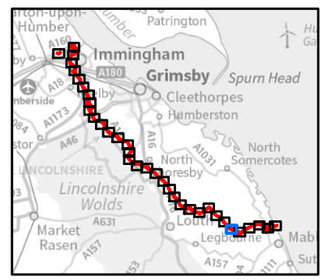

FIGURE TITLE

Figure 4 (30 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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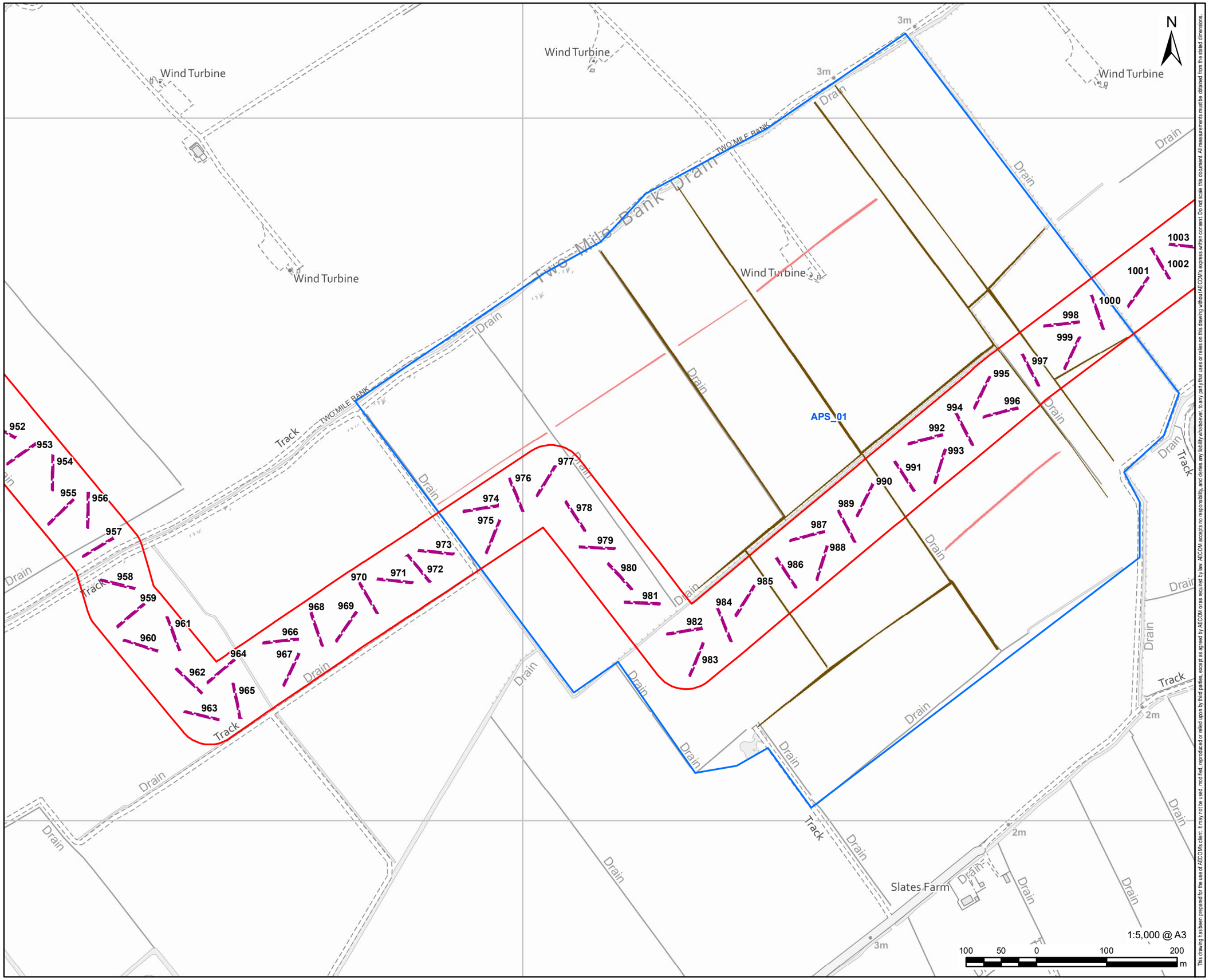

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent
- Anti Glider Ditch
- Field Boundary

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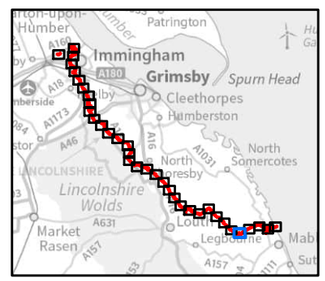

FIGURE TITLE

Figure 4 (31 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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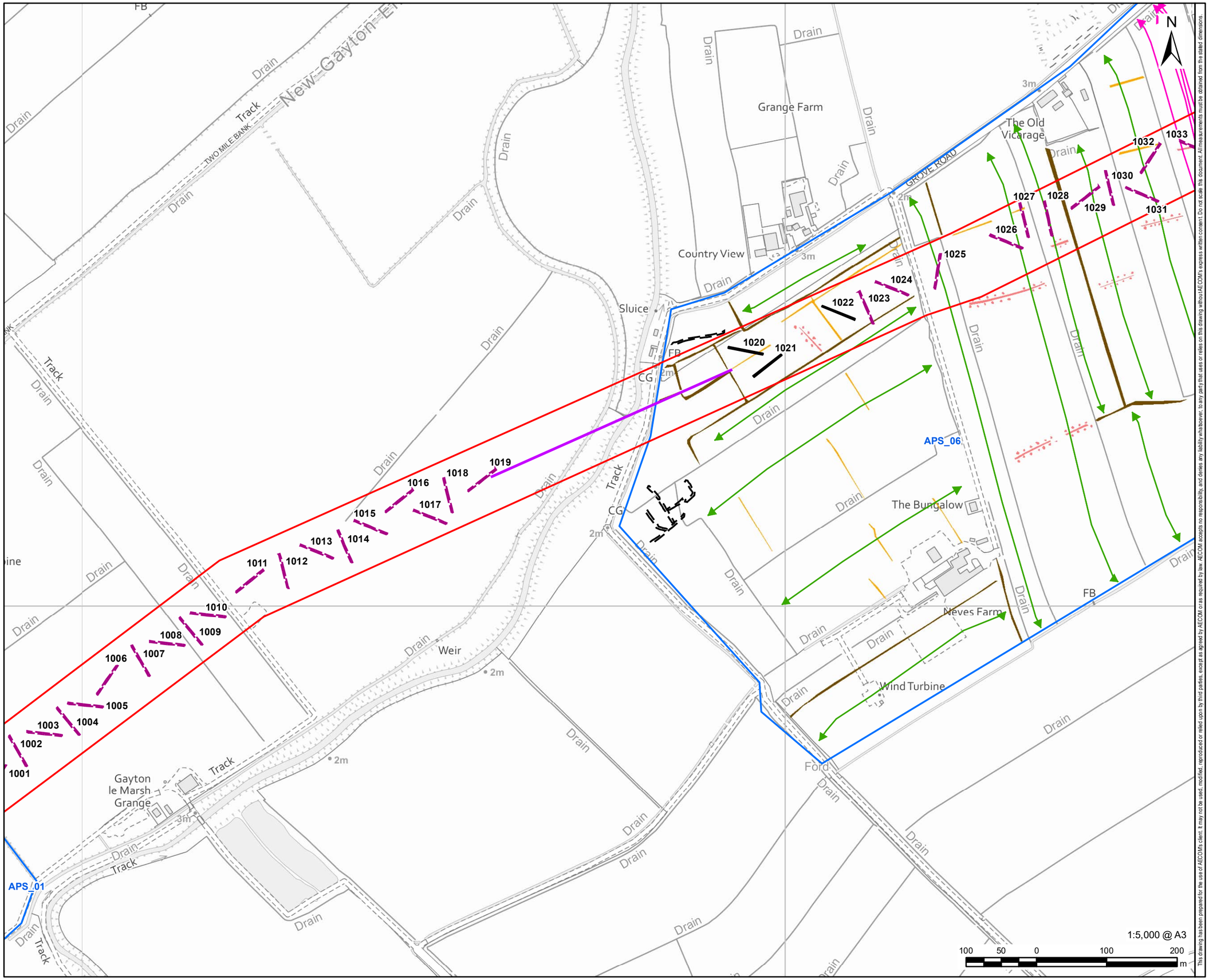

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Extant Ridge and Furrow
- Eroded Ridge and Furrow
- Anti Glider Ditch
- Ditch
- Field Boundary
- Lincolnshire NMP

NOTES:

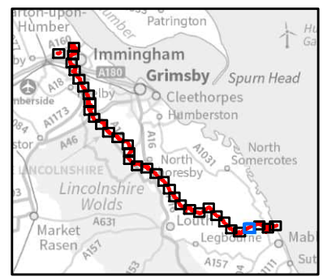

FIGURE TITLE

Figure 4 (32 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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N

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Extant Ridge and Furrow
- Eroded Ridge and Furrow
- Anti Glider Ditch
- Ditch
- Field Boundary
- Lincolnshire NMP

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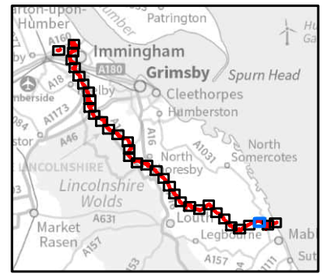

FIGURE TITLE

Figure 4 (33 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_4

1:5,000 @ A3

100 50 0 100 200 m

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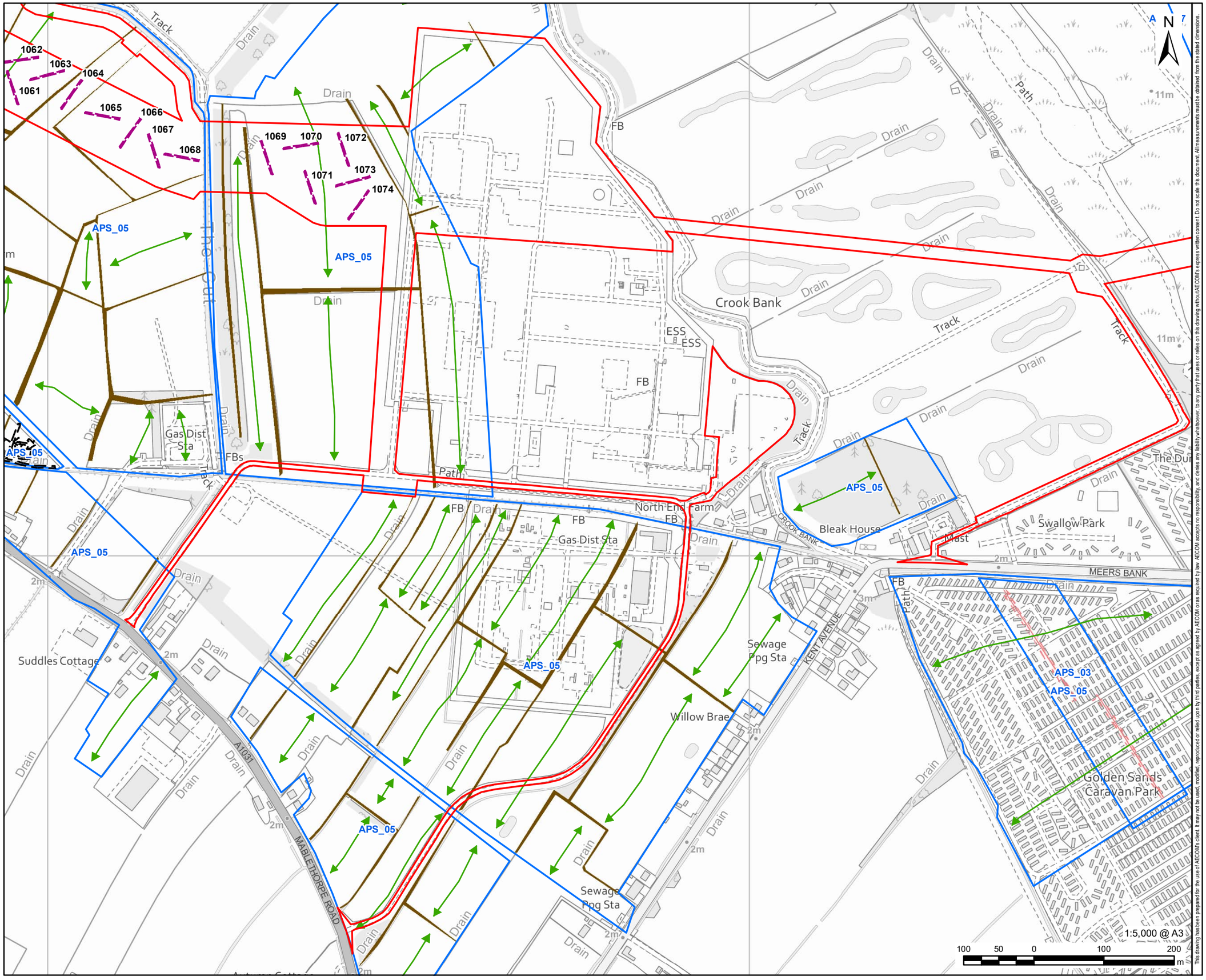

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Anti Glider Ditch
- Field Boundary
- Lincolnshire NMP

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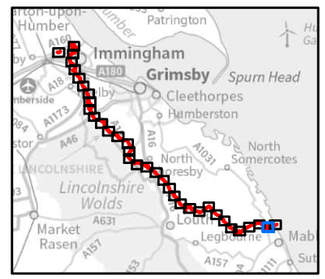

FIGURE TITLE

Figure 4 (34 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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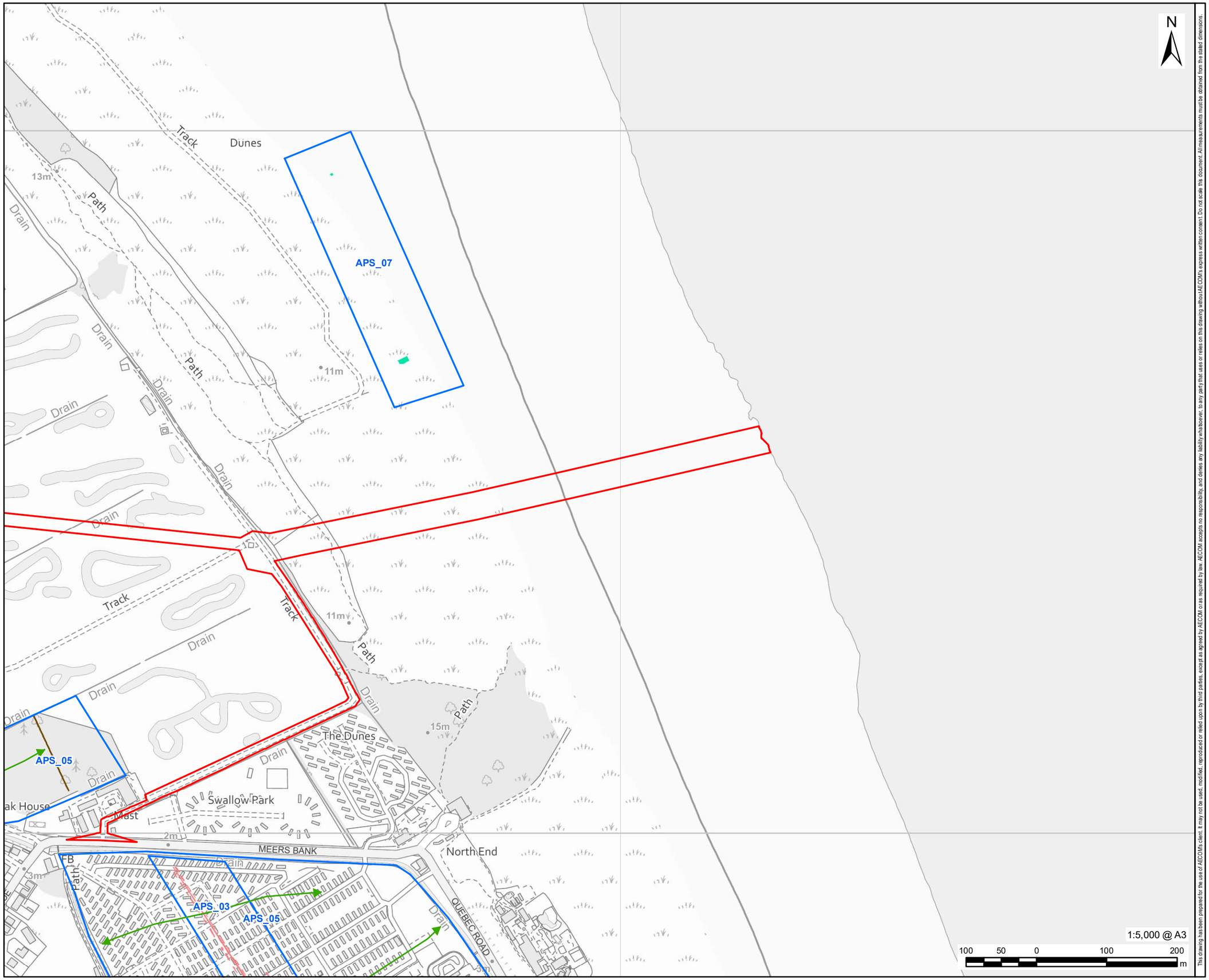

VikingCCS

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PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Site Extent

Air Photo Services Interpretation

- Eroded Ridge and Furrow
- Anti Glider Ditch
- Field Boundary
- Structure

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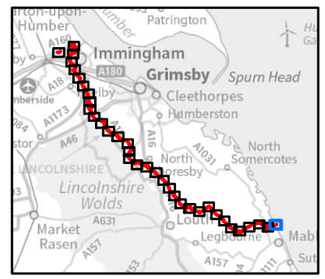

FIGURE TITLE

Figure 4 (35 of 35)
Indicative Trench Locations and Air Photo Services Survey Interpretation

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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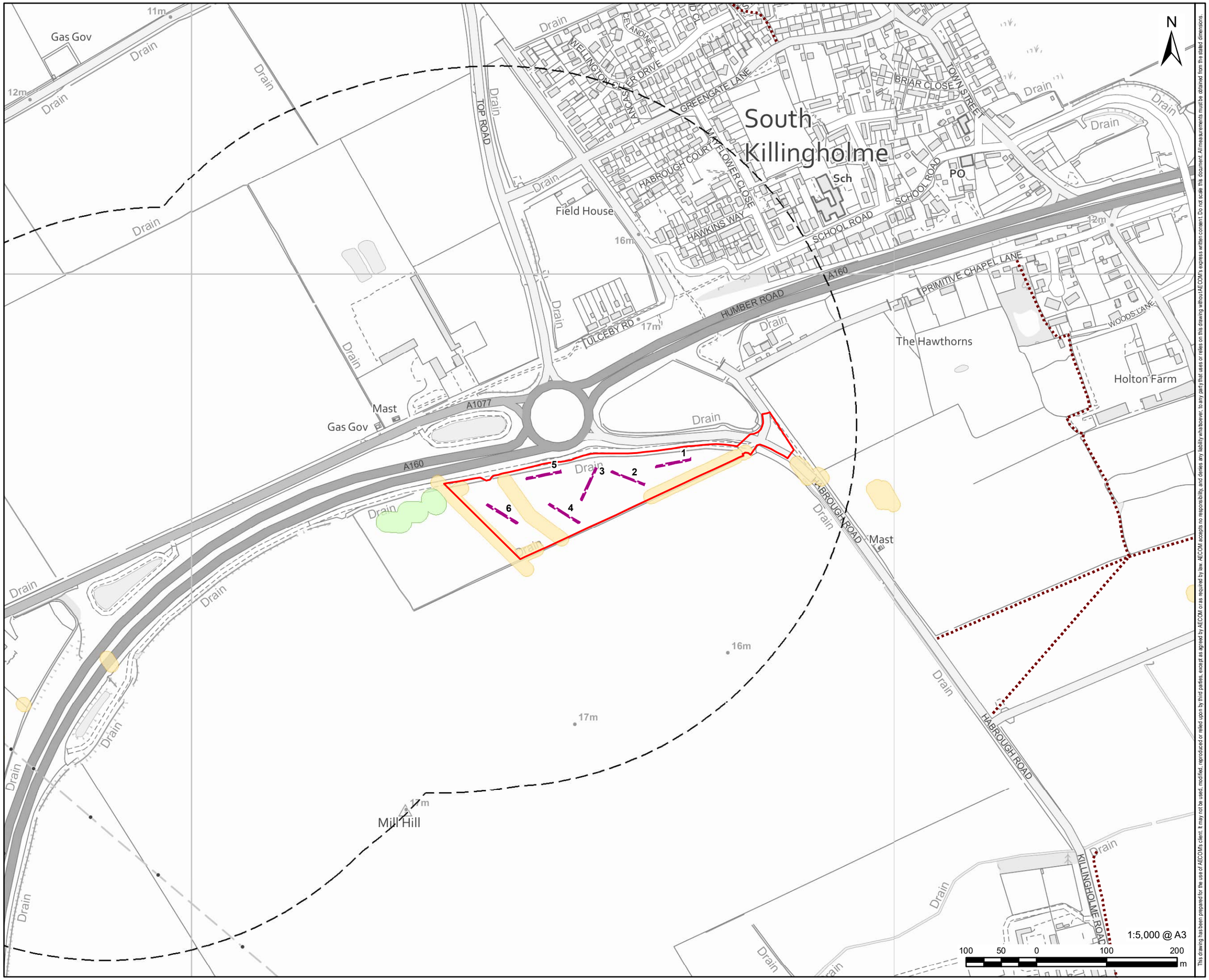

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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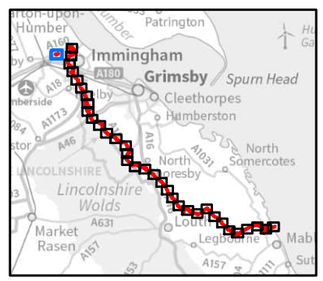

FIGURE TITLE

Figure 5 (1 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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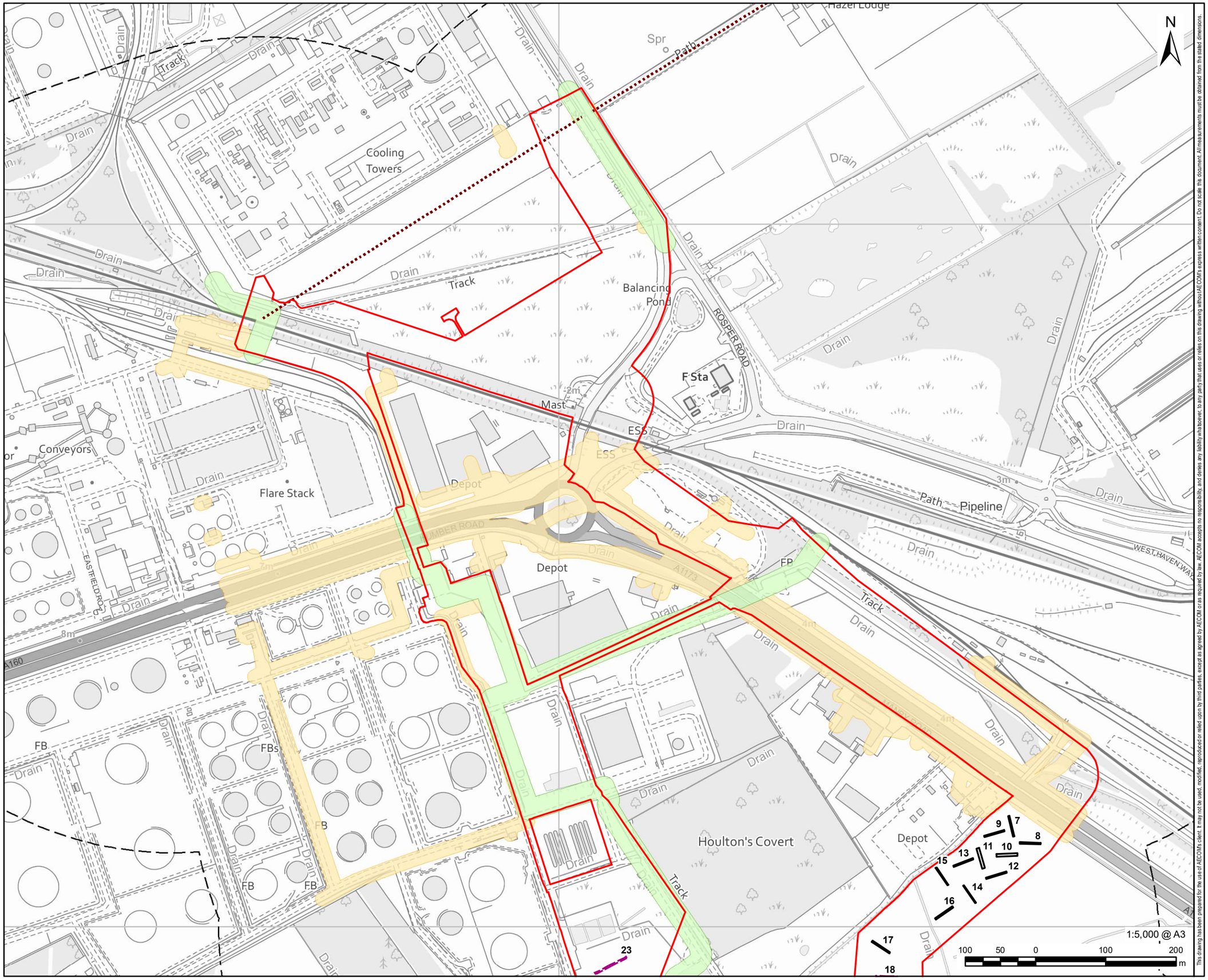

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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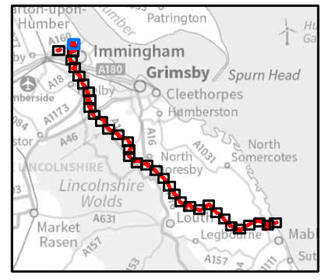

FIGURE TITLE

Figure 5 (2 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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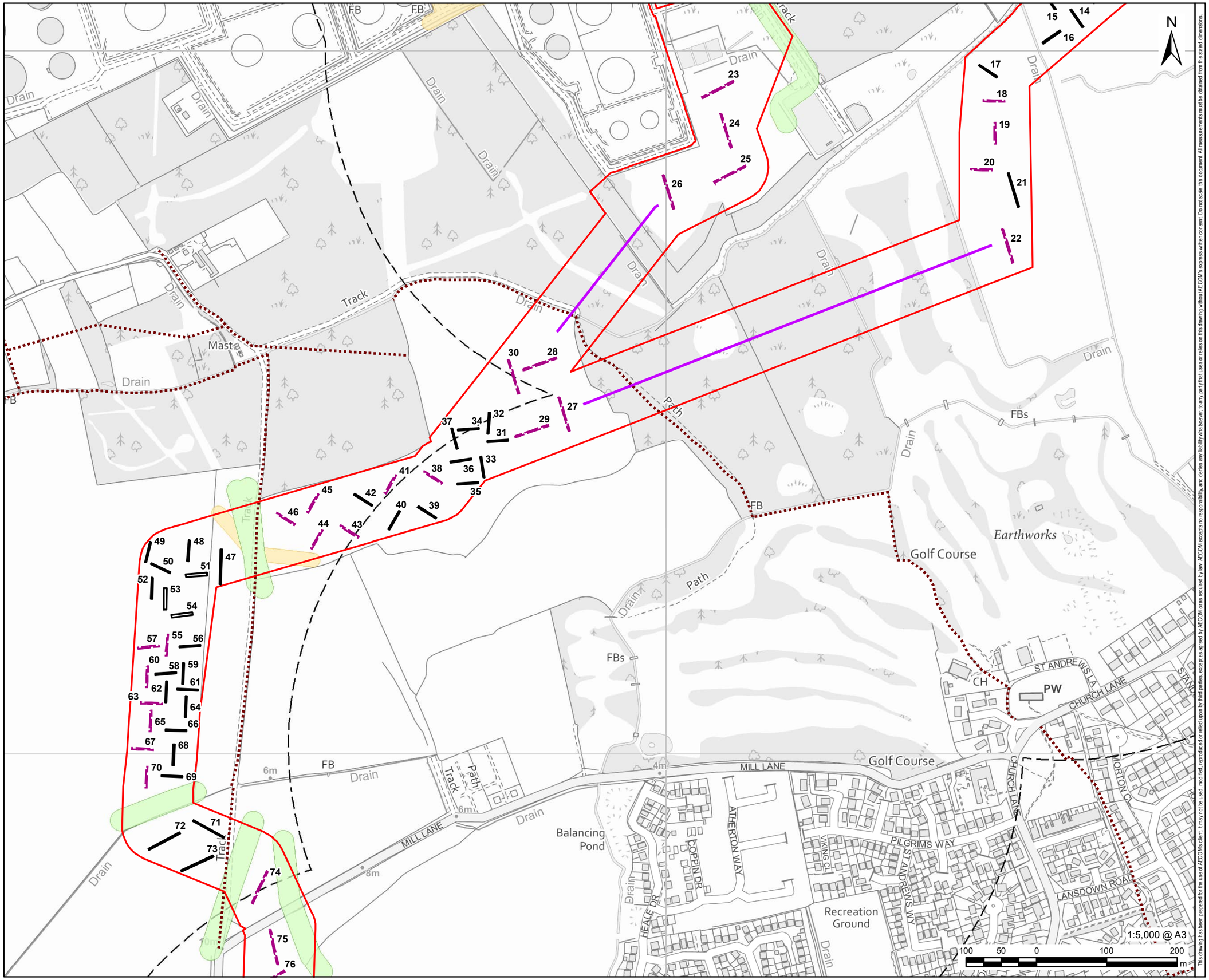

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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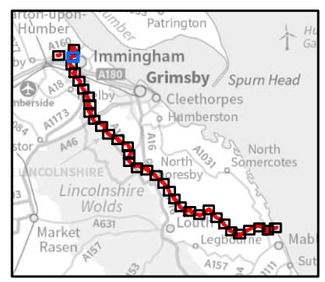

FIGURE TITLE

Figure 5 (3 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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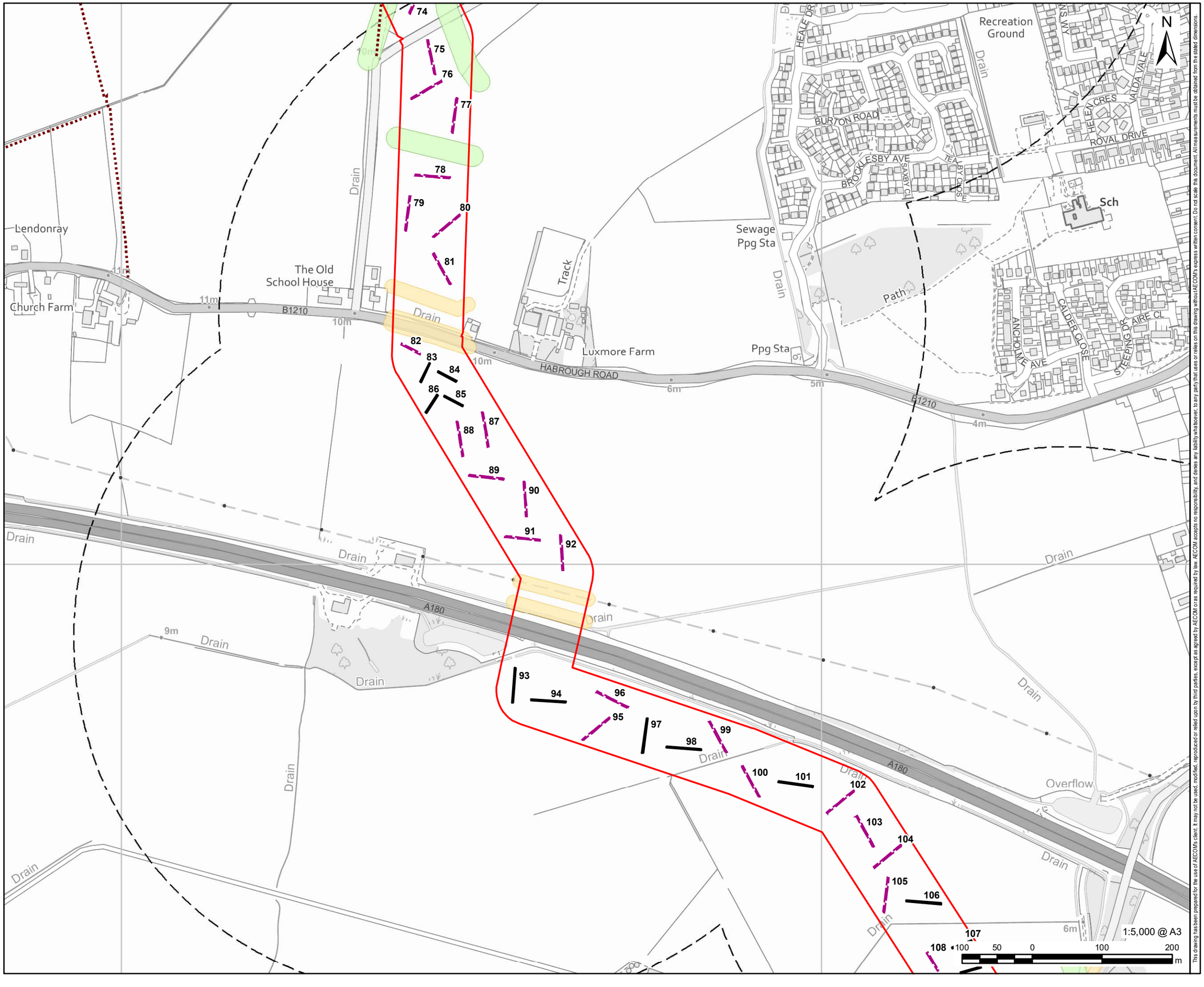

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

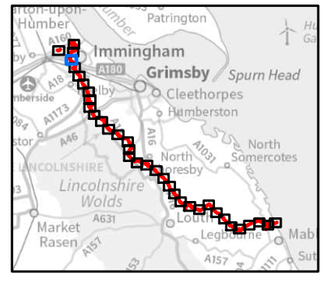

FIGURE TITLE

Figure 5 (4 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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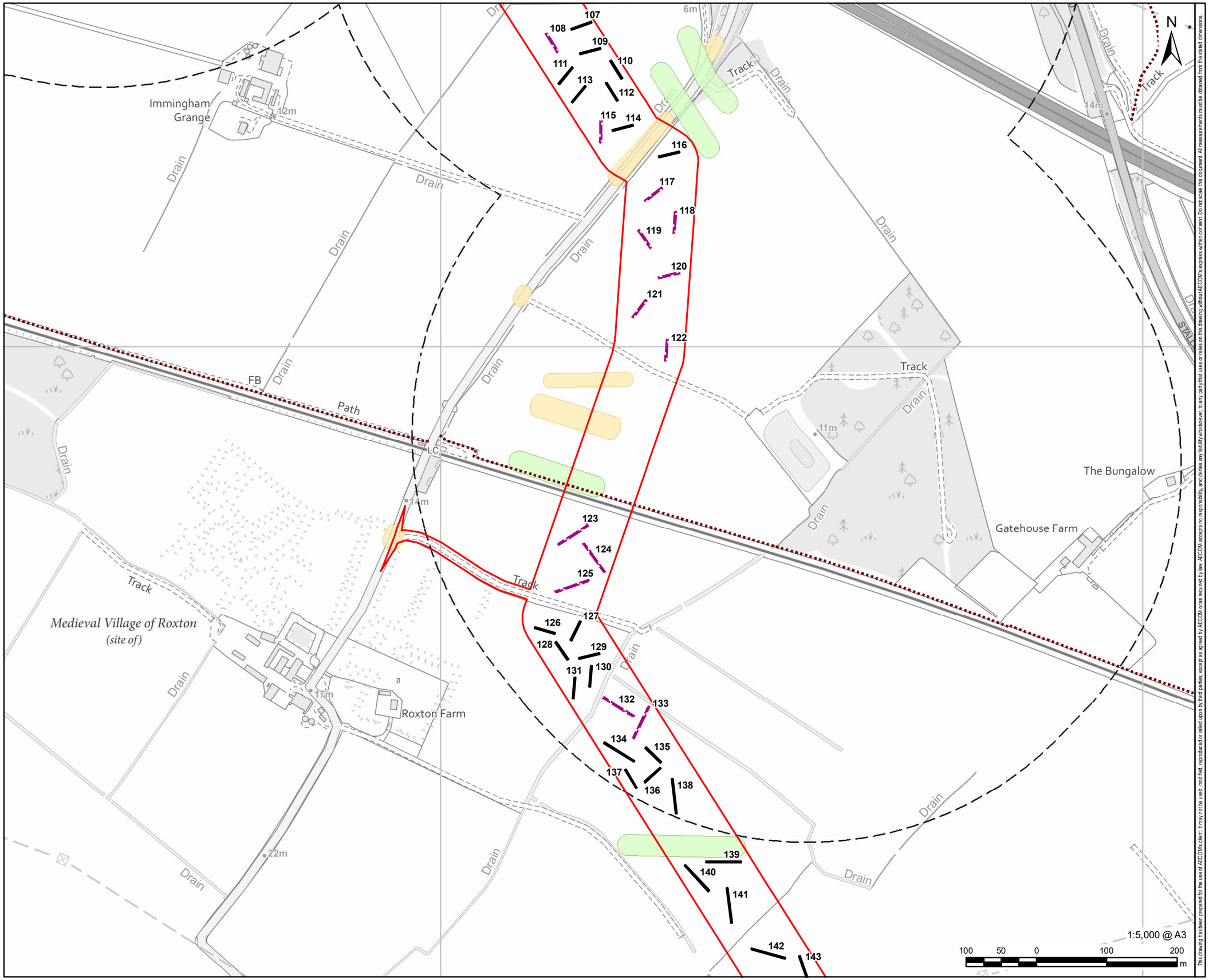

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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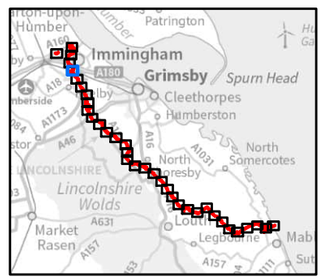

FIGURE TITLE

Figure 5 (5 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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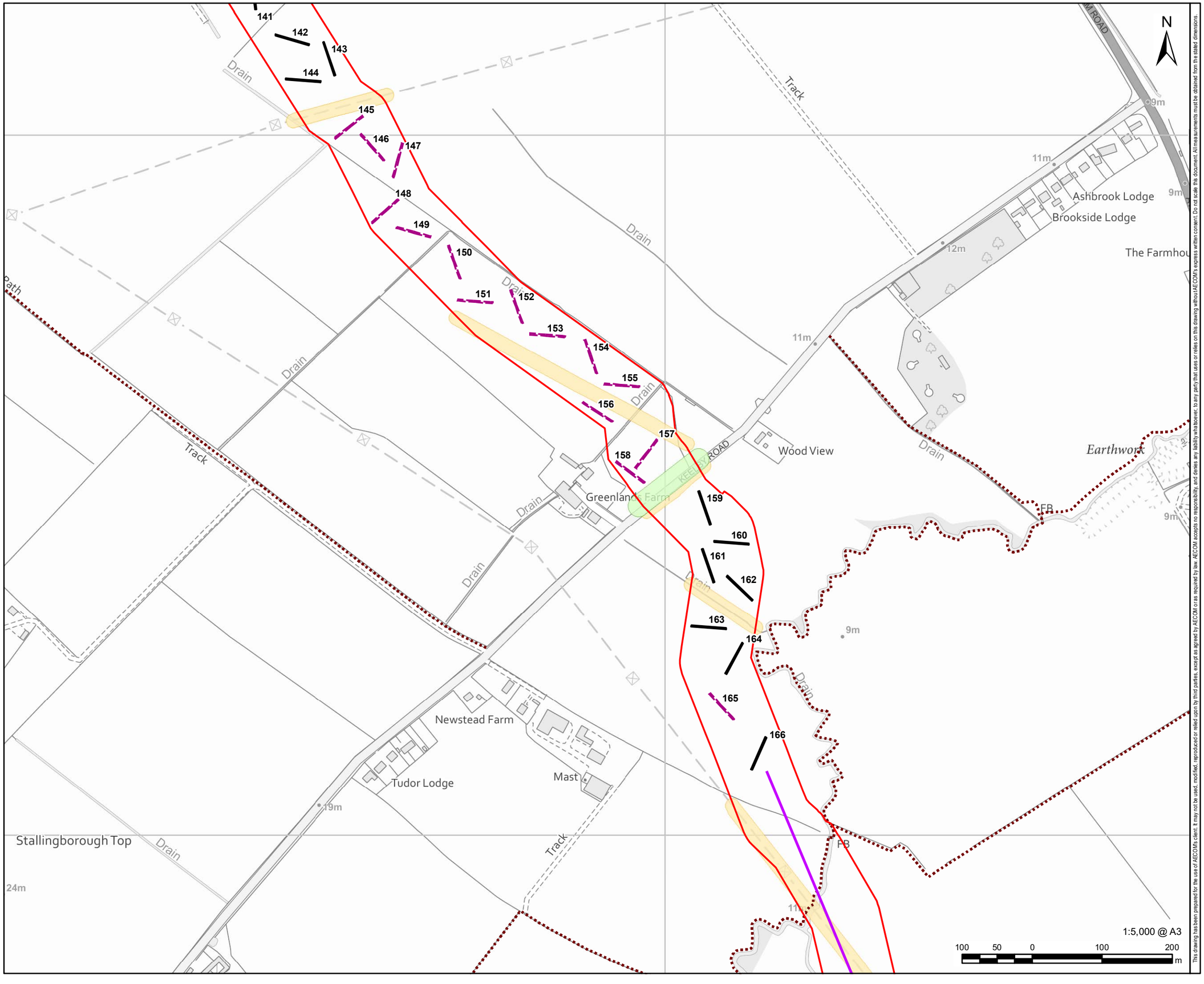

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer

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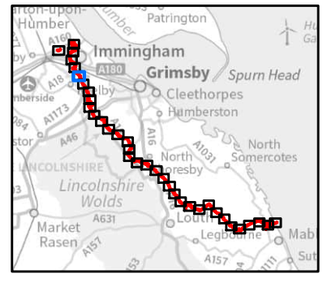

FIGURE TITLE

Figure 5 (6 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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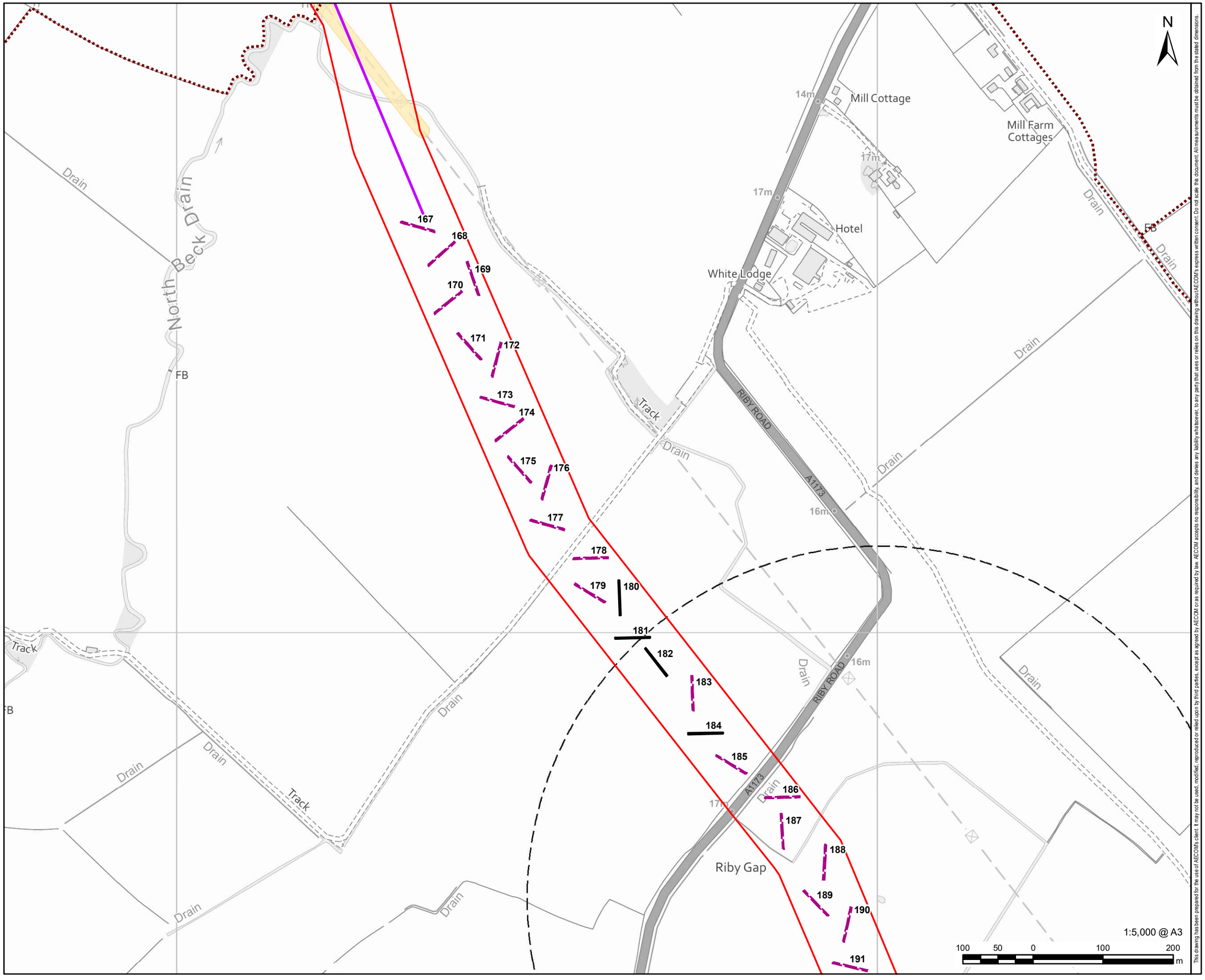

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

🟥 DCO Site Boundary

━ Proposed HDD Section

☐ Indicative Trench Location - Targeted

⬚ Indicative Trench Location

⋯ Public Right of Way

🟨 Known Utilities - 10m Buffer

⬚ Pond - 500m Buffer

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FIGURE TITLE

Figure 5 (7 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

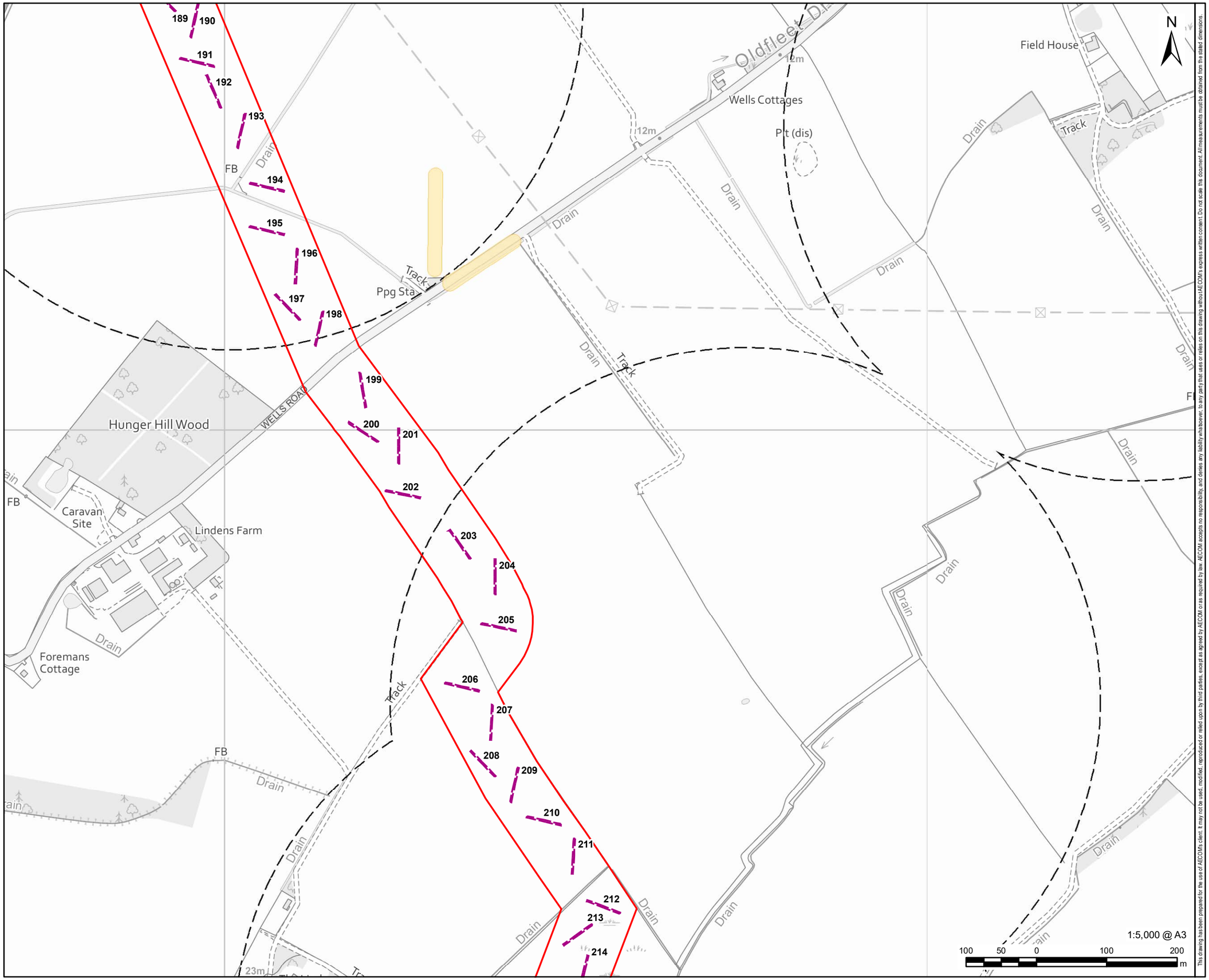
WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

Filename: \\eu.aecomnet.com\Eu Mia\UK\UKNCL2\Jobs\60668955 V_Net_Zero_Project\900_CAD_GIS\920_GIS\02_Maps\WSI Trail Trenching\VCCS_WSI_TT_5_Constraints_v3_230927_LC.mxd



VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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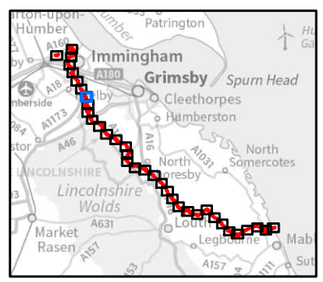

FIGURE TITLE

Figure 5 (8 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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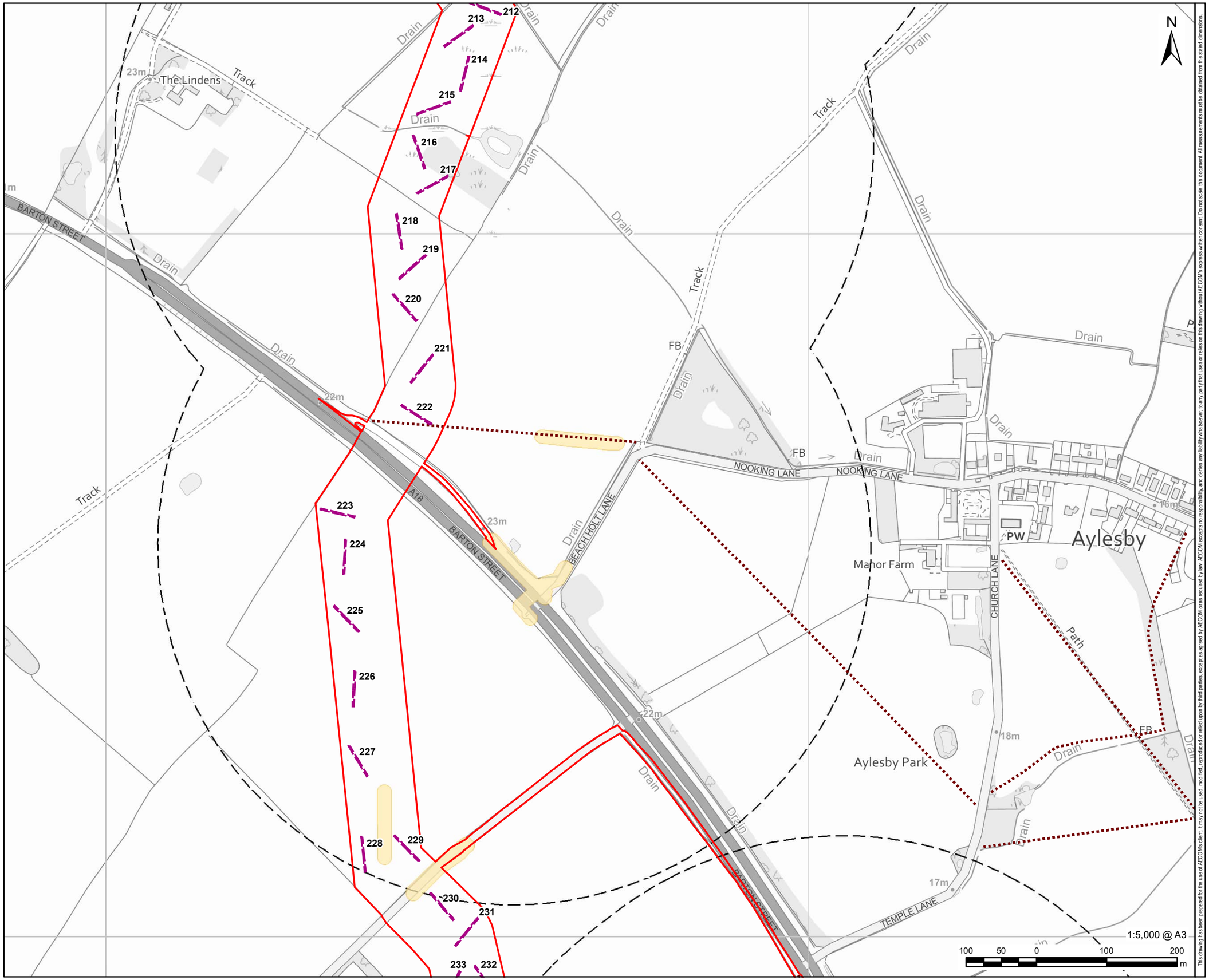

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

NOTES:

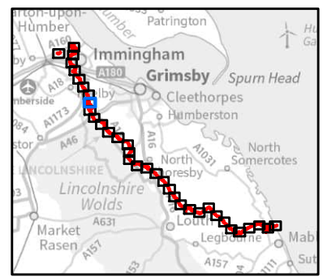

FIGURE TITLE

Figure 5 (9 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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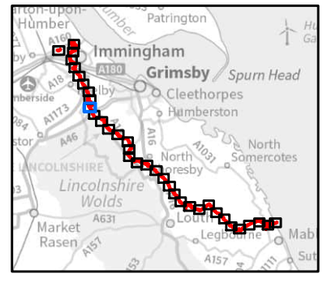

FIGURE TITLE

Figure 5 (10 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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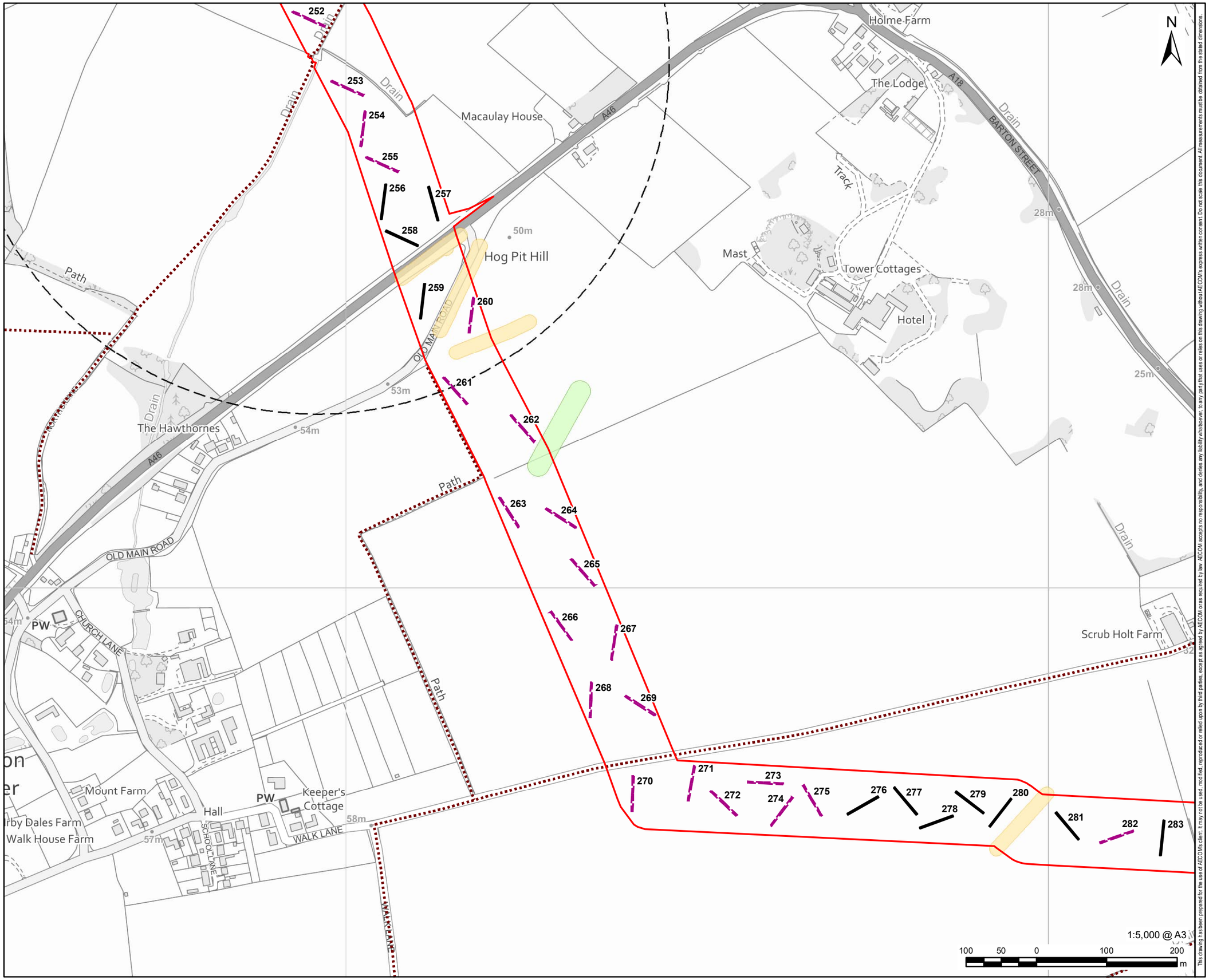

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

NOTES:

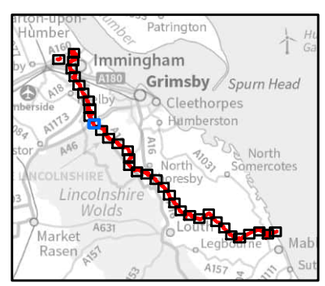

FIGURE TITLE

Figure 5 (11 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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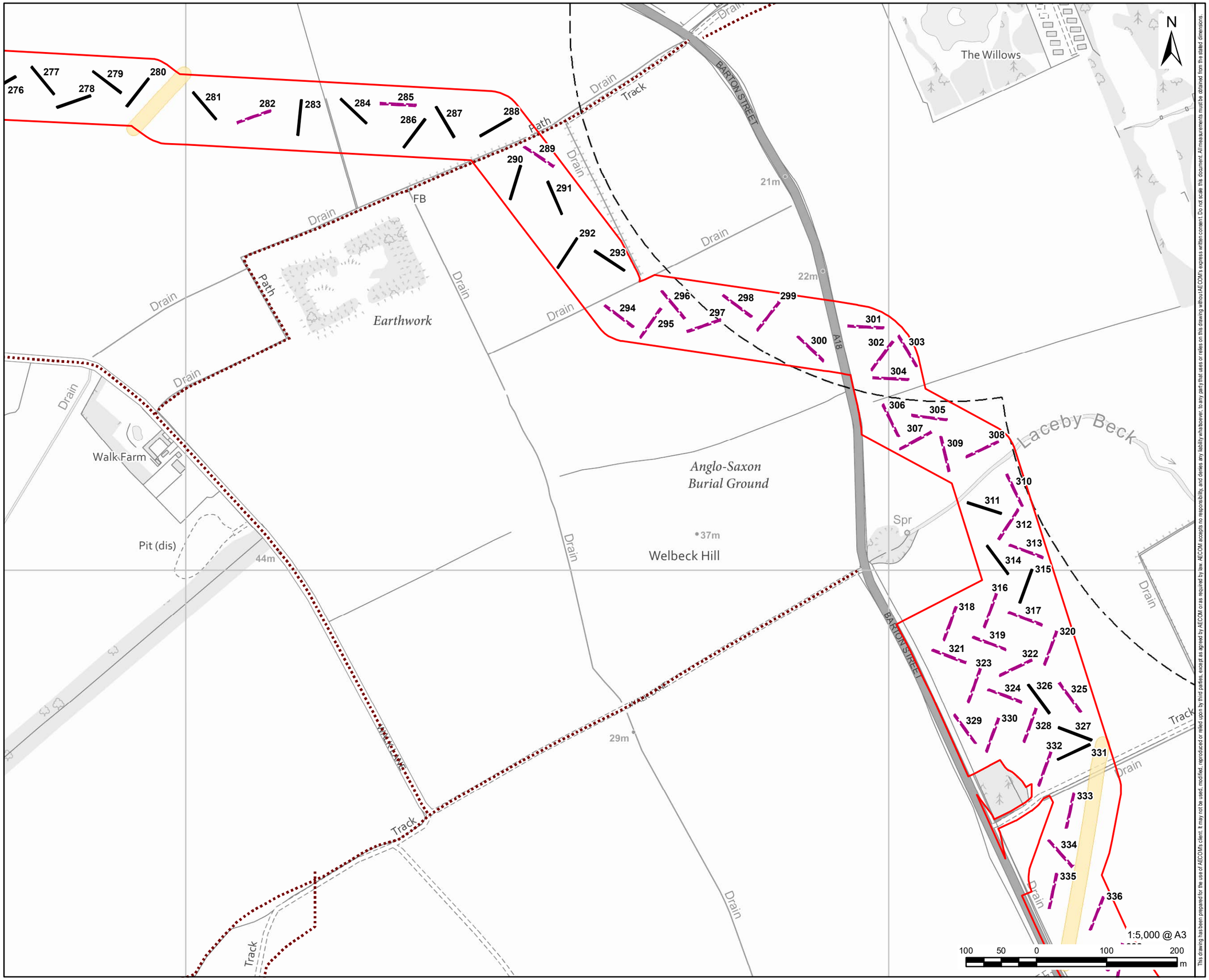

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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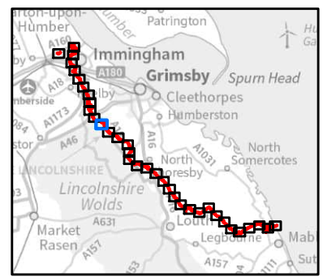

FIGURE TITLE

Figure 5 (12 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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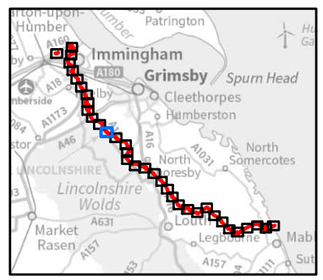

FIGURE TITLE

Figure 5 (13 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

1:5,000 @ A3

100 50 0 100 200 m

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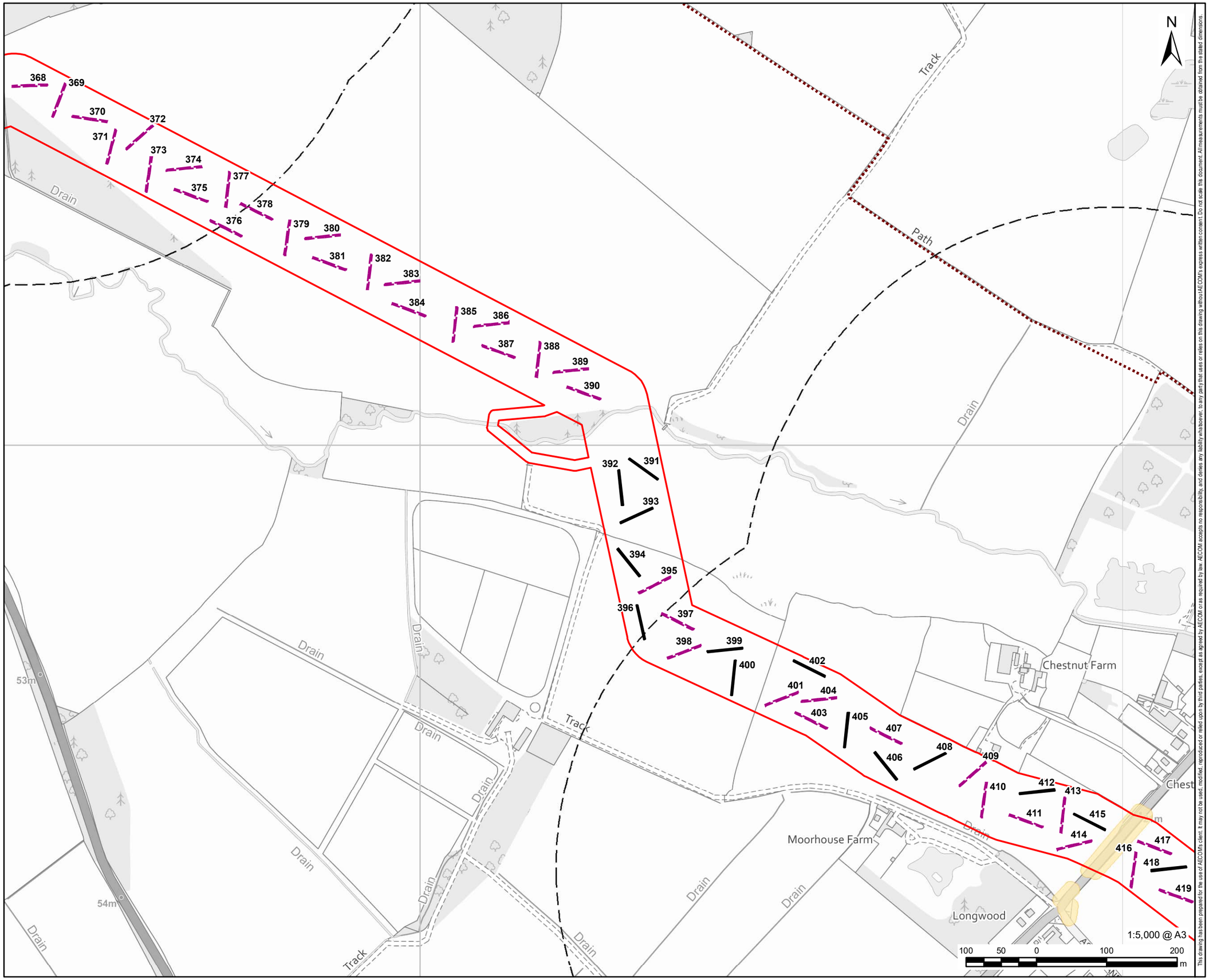

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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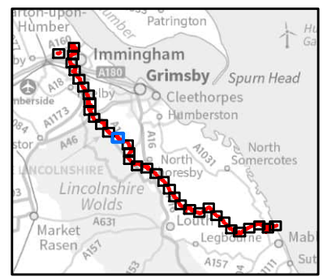

FIGURE TITLE

Figure 5 (14 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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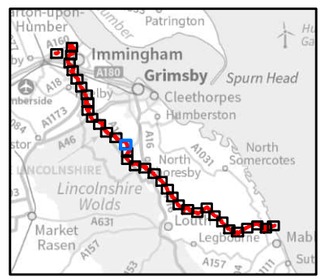


FIGURE TITLE

Figure 5 (15 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

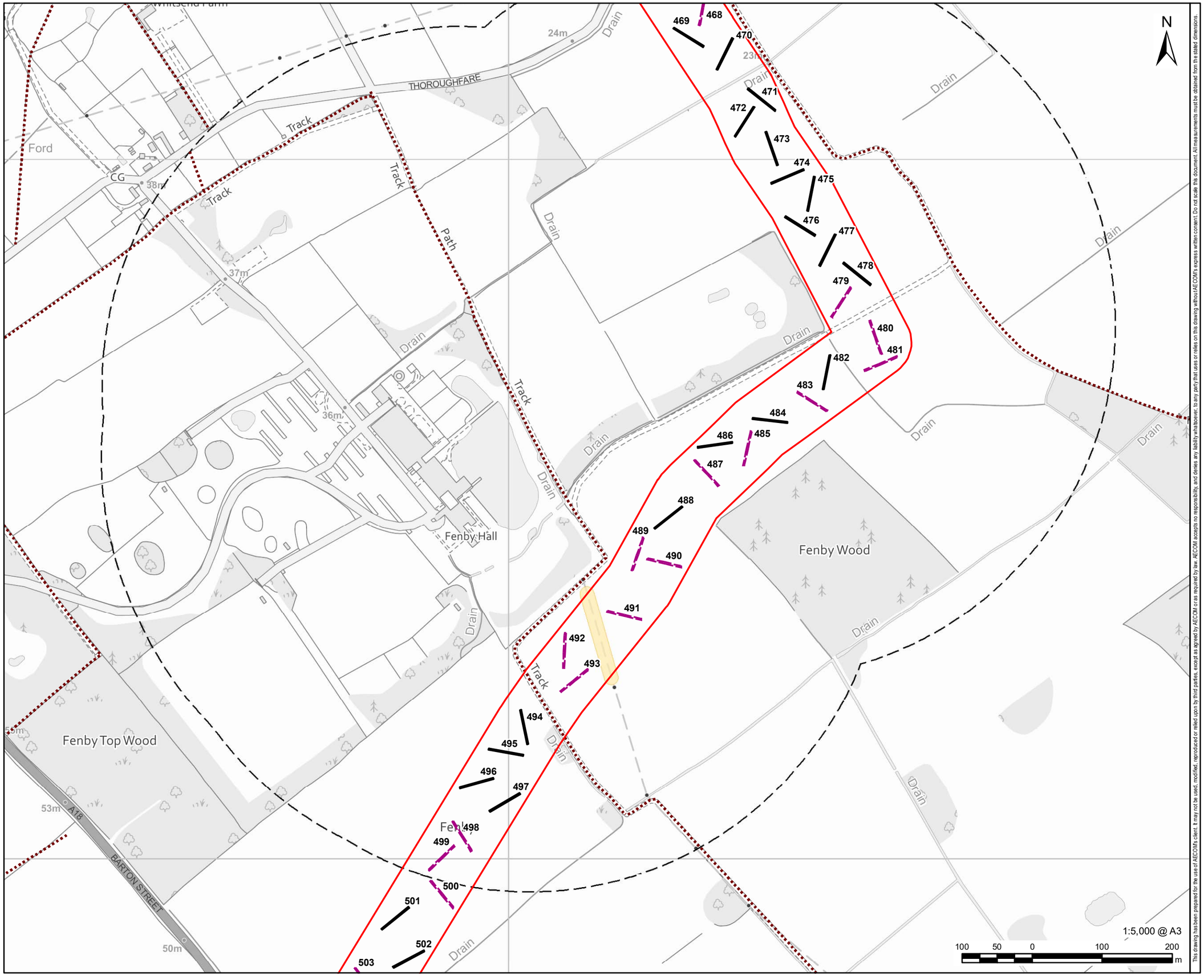
WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

1:5,000 @ A3

100 50 0 100 200 m



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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

🟥 DCO Site Boundary

▭ Indicative Trench Location - Targeted

▭ Indicative Trench Location

⋯ Public Right of Way

🟨 Known Utilities - 10m Buffer

▭ Pond - 500m Buffer

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FIGURE TITLE

Figure 5 (16 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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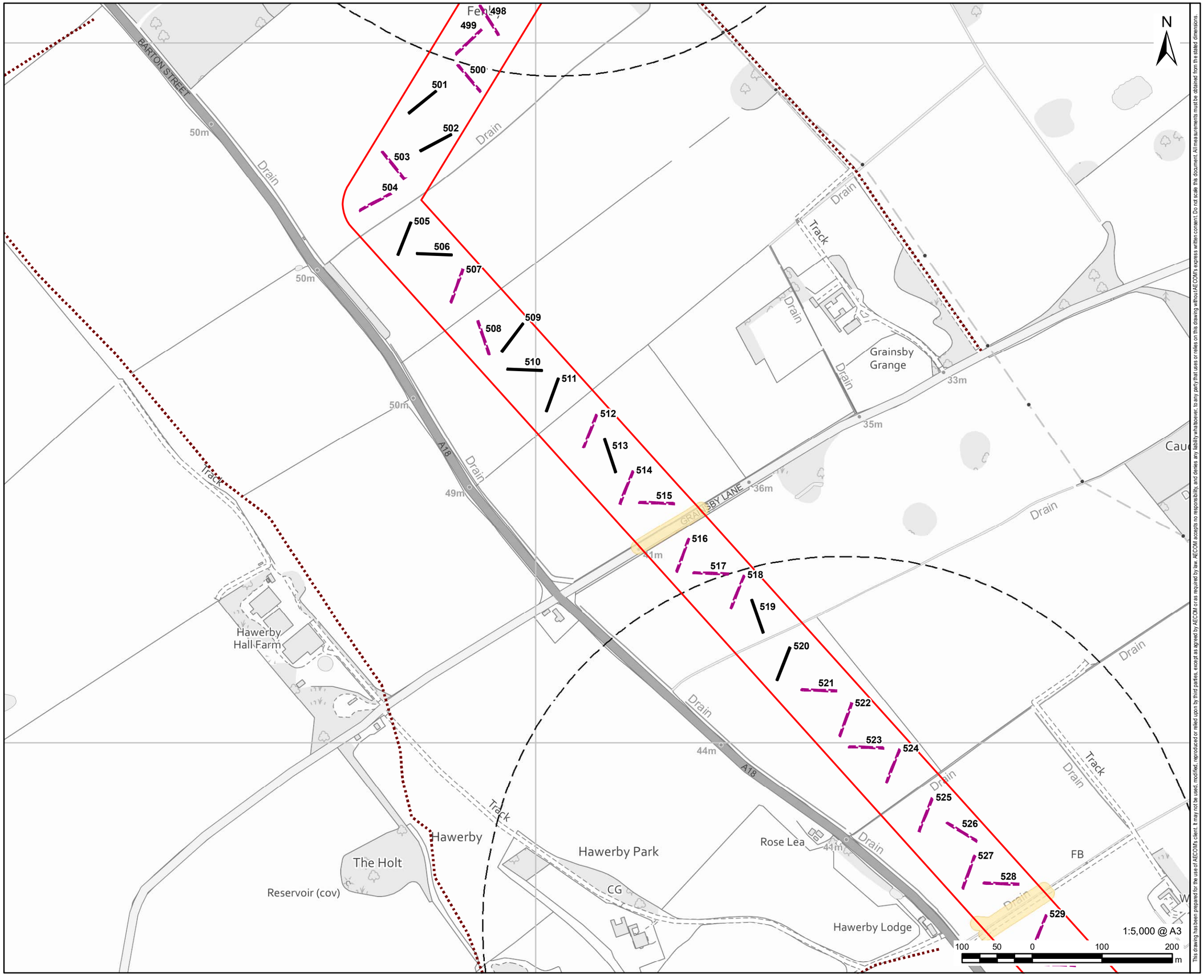

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

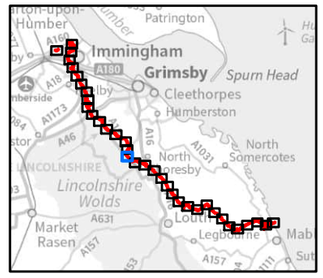

FIGURE TITLE

Figure 5 (17 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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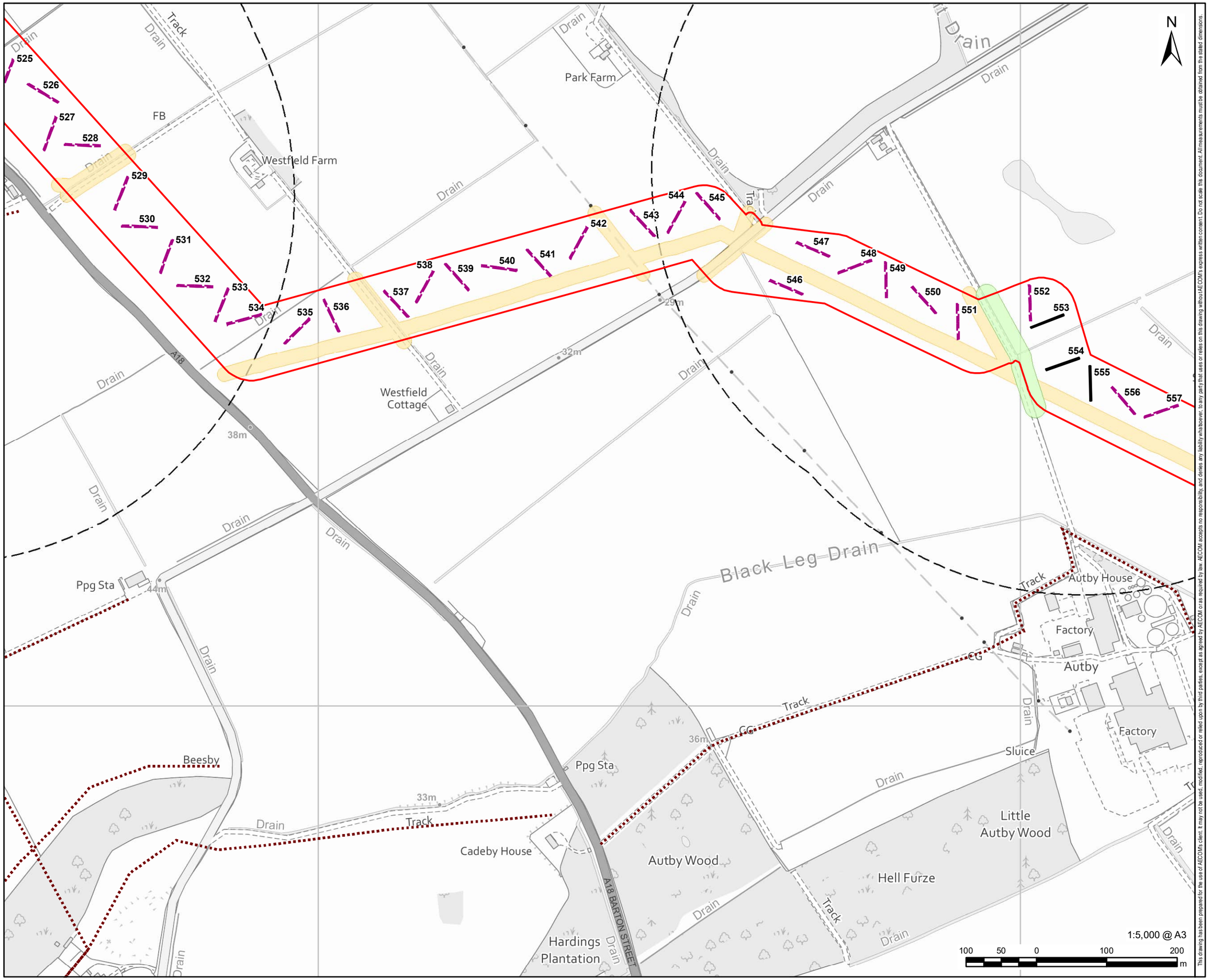


VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

NOTES:

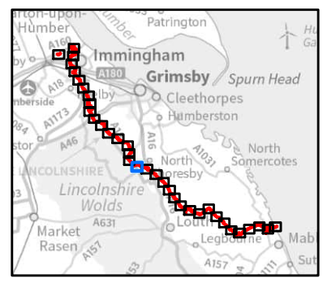


FIGURE TITLE

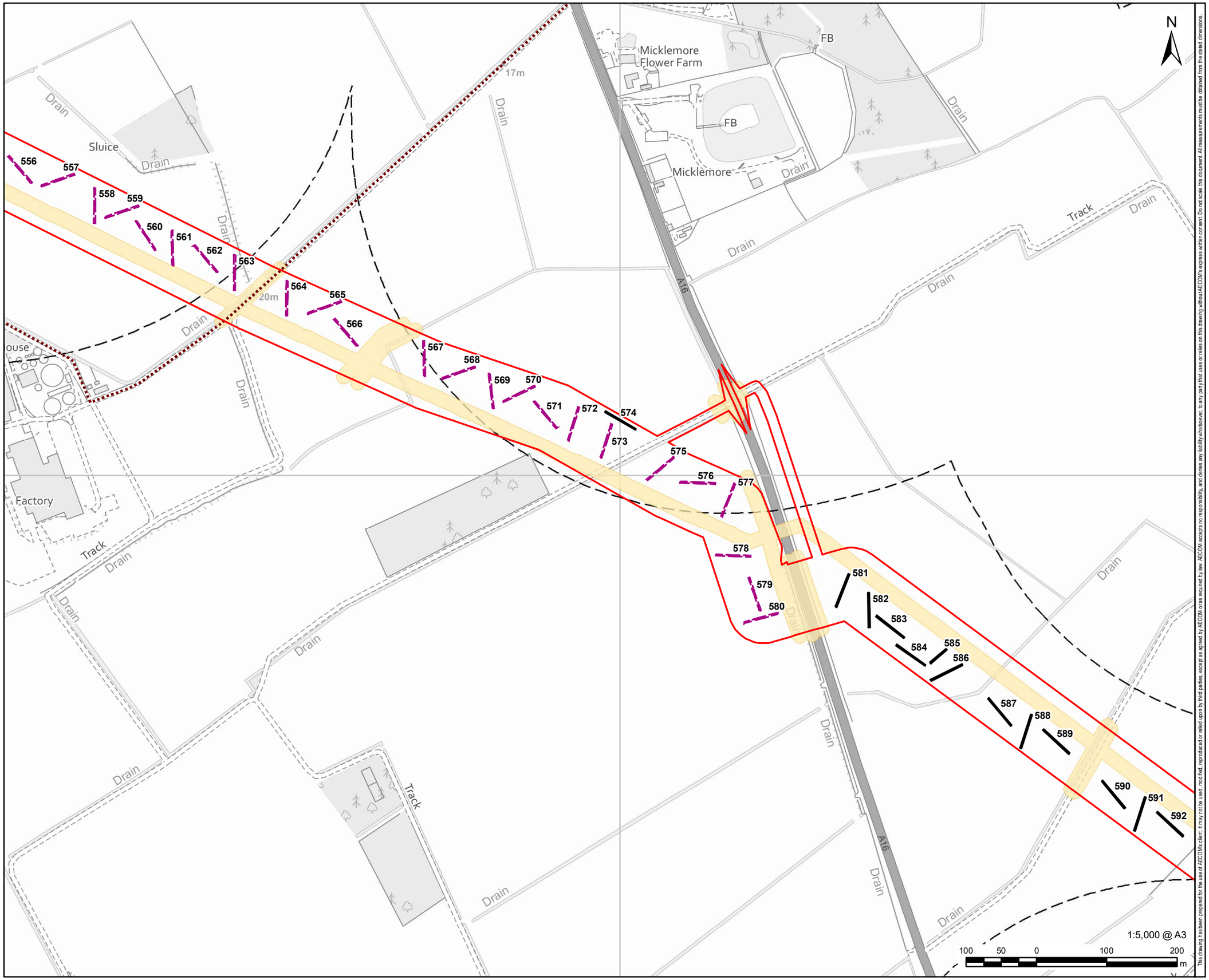
Figure 5 (18 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5



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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- 🟥 DCO Site Boundary
- ☐ Indicative Trench Location - Targeted
- ▭ Indicative Trench Location
- ⋯ Public Right of Way
- 🟨 Known Utilities - 10m Buffer
- ⌐ ¬ Pond - 500m Buffer

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FIGURE TITLE

Figure 5 (19 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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N

590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620

Drain Track Cold Harbour 18m 19m Westfield Farm 14m The Nook 15m Redlands 18m ESS LC 19m Station House Mentmore Sta The Grain Store 23m STATION ROAD 26m 32m LUDBOROUGH PK A16 B Fish Ponds

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

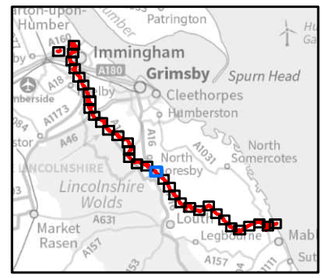

FIGURE TITLE

Figure 5 (20 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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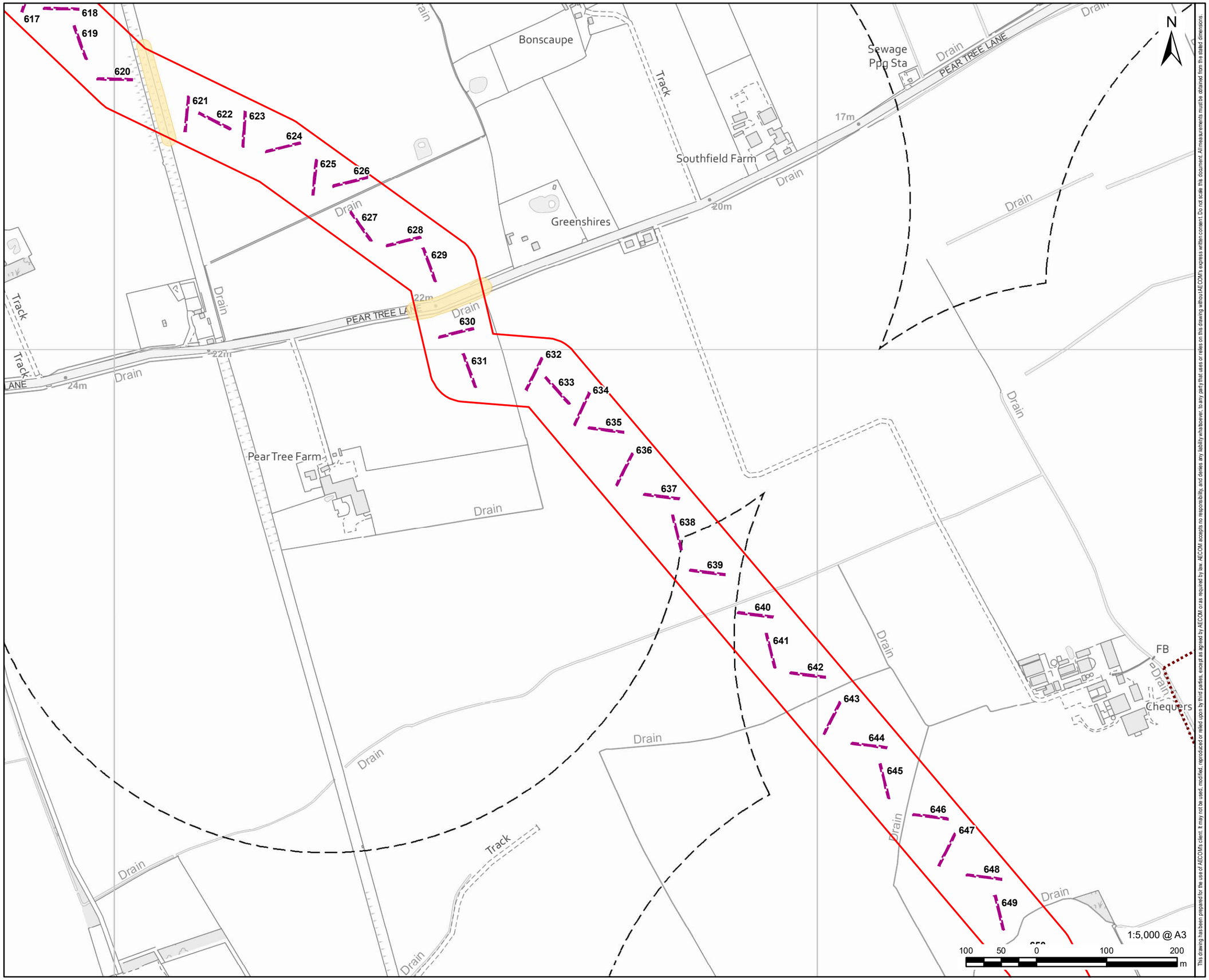

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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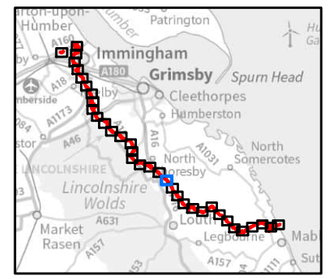

FIGURE TITLE

Figure 5 (21 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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649 650 652 651 653 654 655 656 657 658 659 661 660 662 663 664 665 667 666 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682

FB Path Drain Track Sheep Wash HOLY WELL LANE Grove Farm Oak Plantation Gowt Plantation The Old School House 18m Yew Tree Cottage INGS LANE 20m

N

1:5,000 @ A3

100 50 0 100 200 m

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

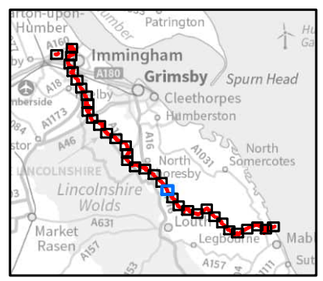

FIGURE TITLE

Figure 5 (22 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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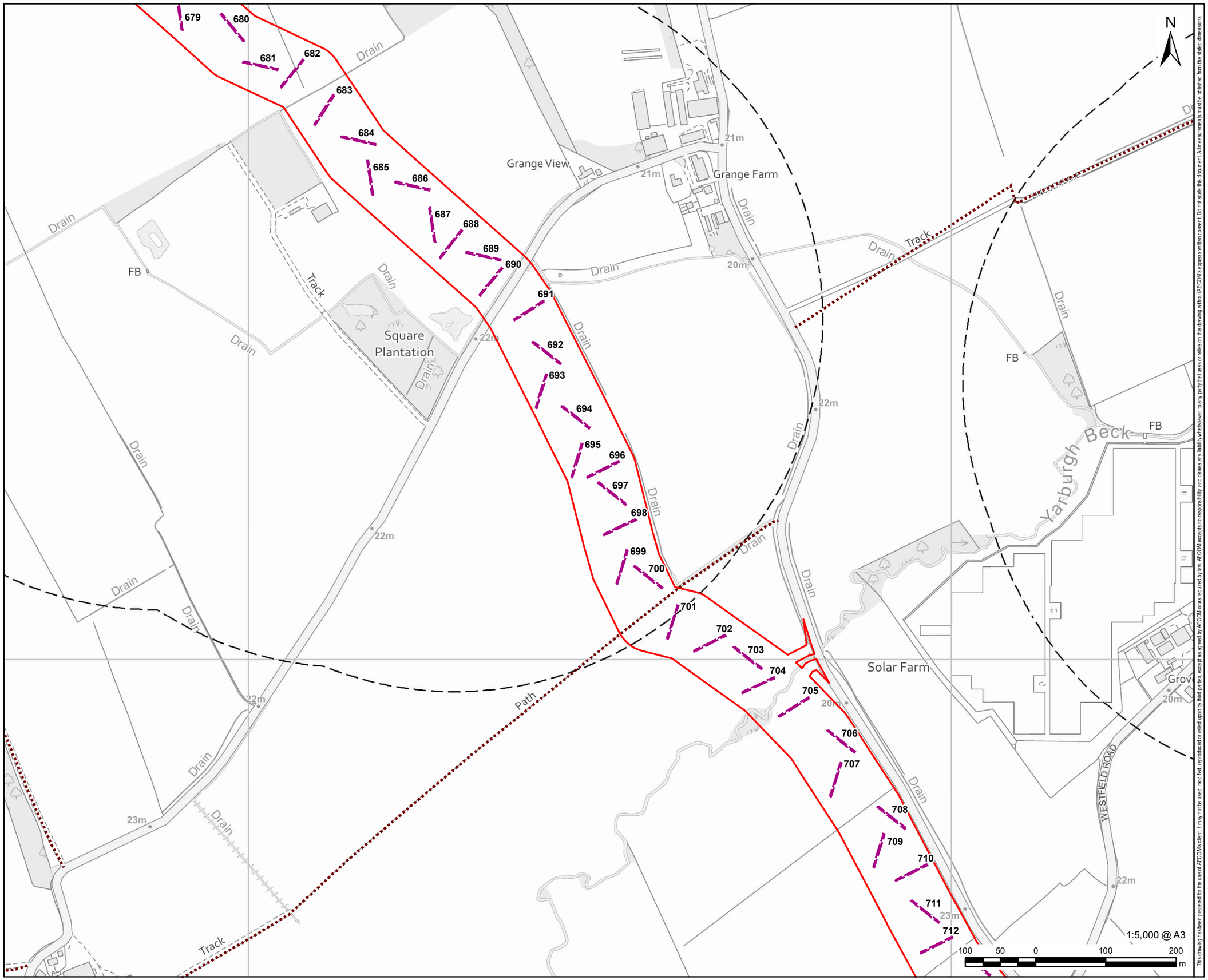

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Pond - 500m Buffer

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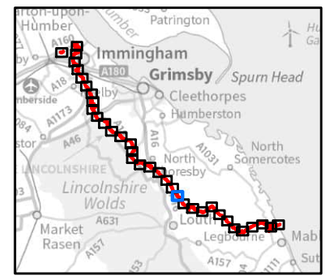


FIGURE TITLE

Figure 5 (23 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

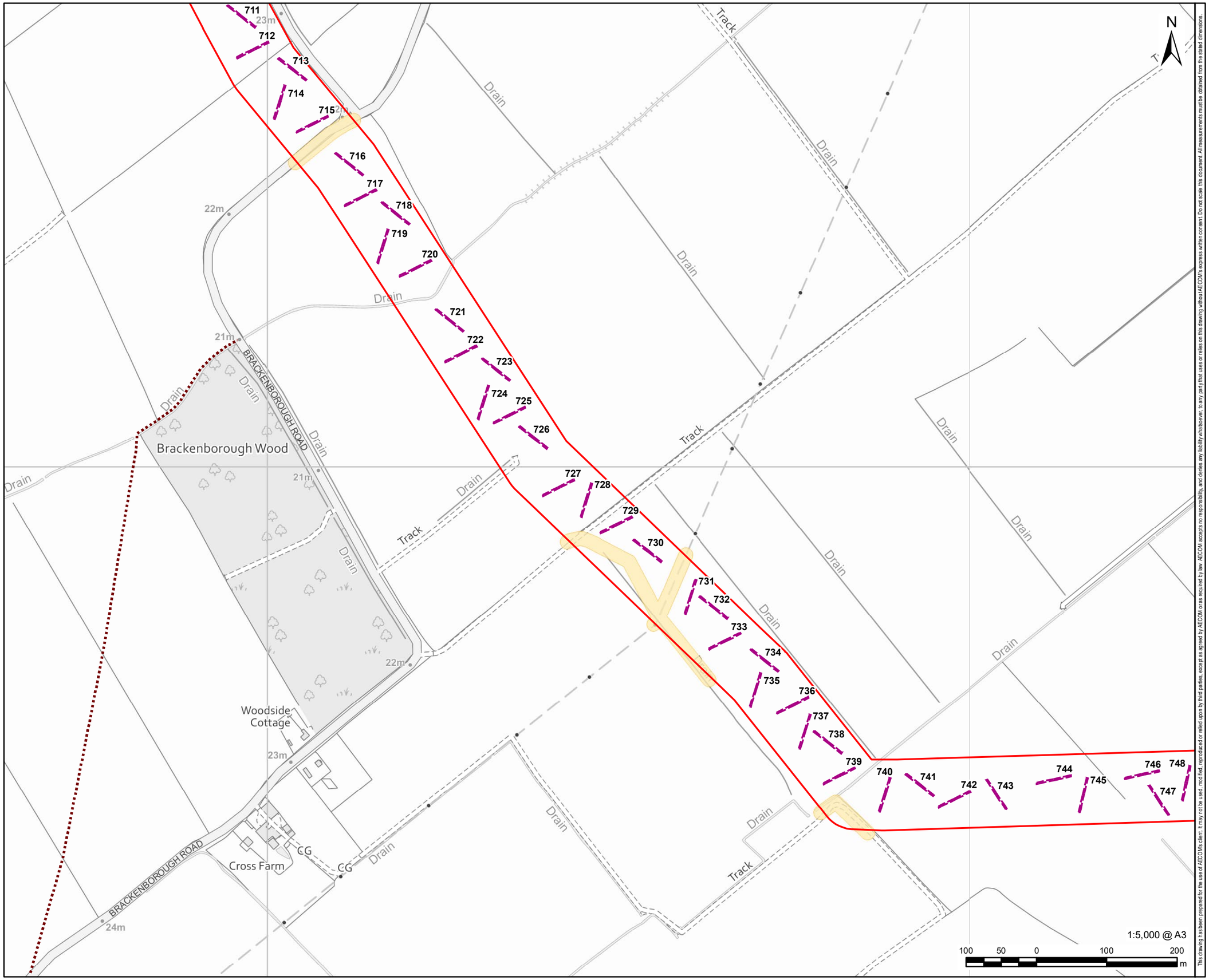
WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

Filename: \\eu.aecomnet.com\EMA\UKI\UKNCL2\Jobs\60668965 V_Net_Zero_Project\900_CAD_GIS\920_GIS\02_Maps\WSI Trail Trenching\VCCS_WSI_TT_5_Constraints_v3_230927_LC.mxd



VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer

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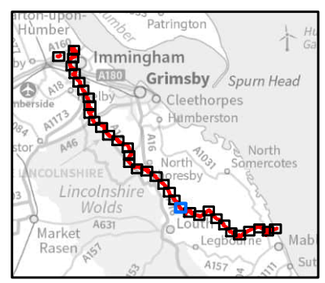


FIGURE TITLE

Figure 5 (24 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

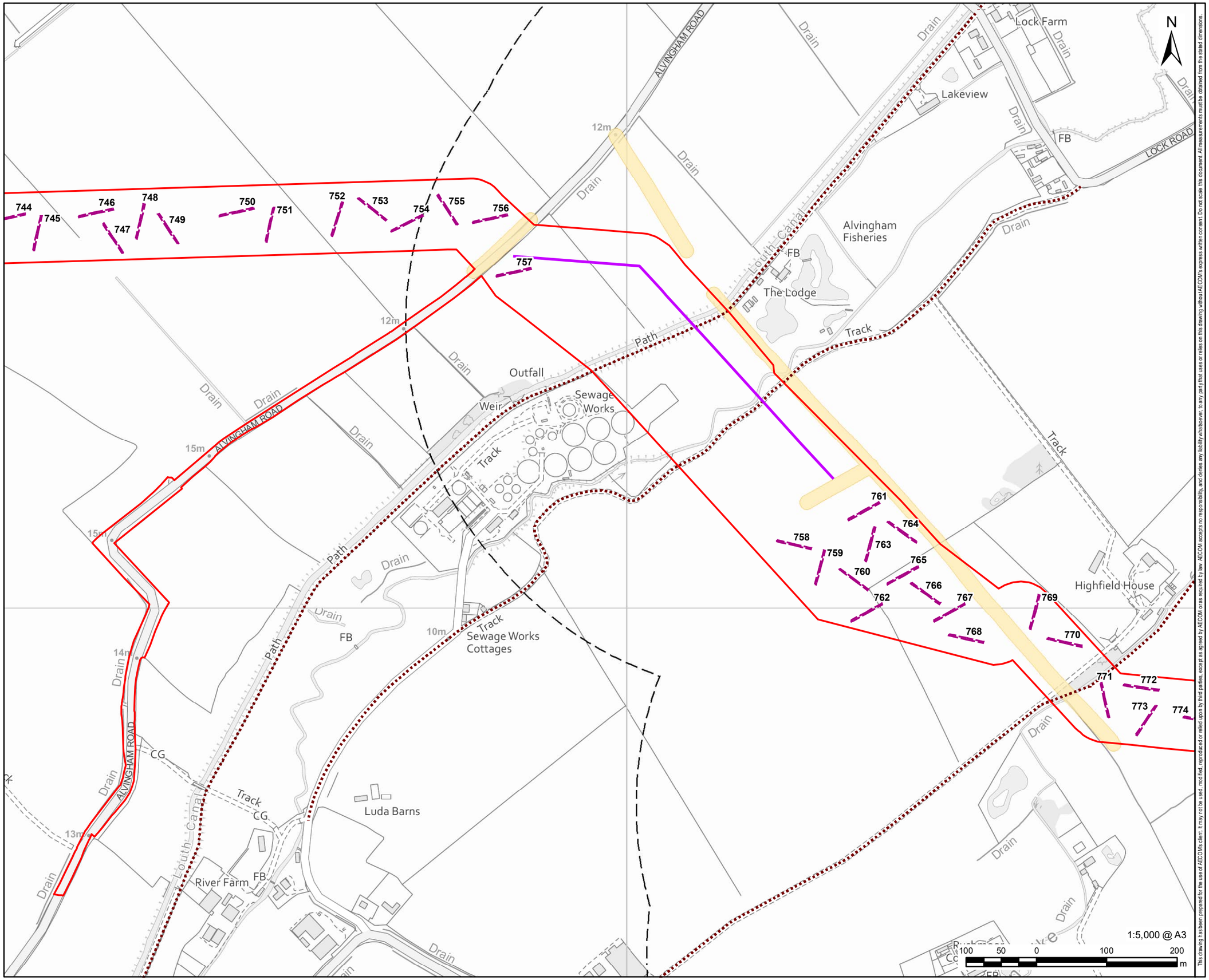
WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

Filename: \\eu.aecomnet.com\EMIA\UK\UKNCL2\Jobs\60668965 V_Net_Zero_Project\900_CAD_GIS\920_GIS\02_Maps\WSI Trail Trenching\VCCS_WSI_TT_5_Constraints_v3_230927_LC.mxd



VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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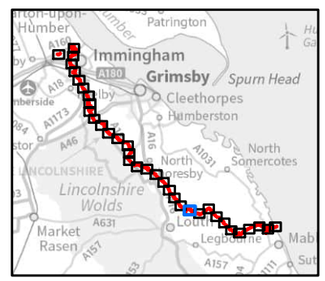

FIGURE TITLE

Figure 5 (25 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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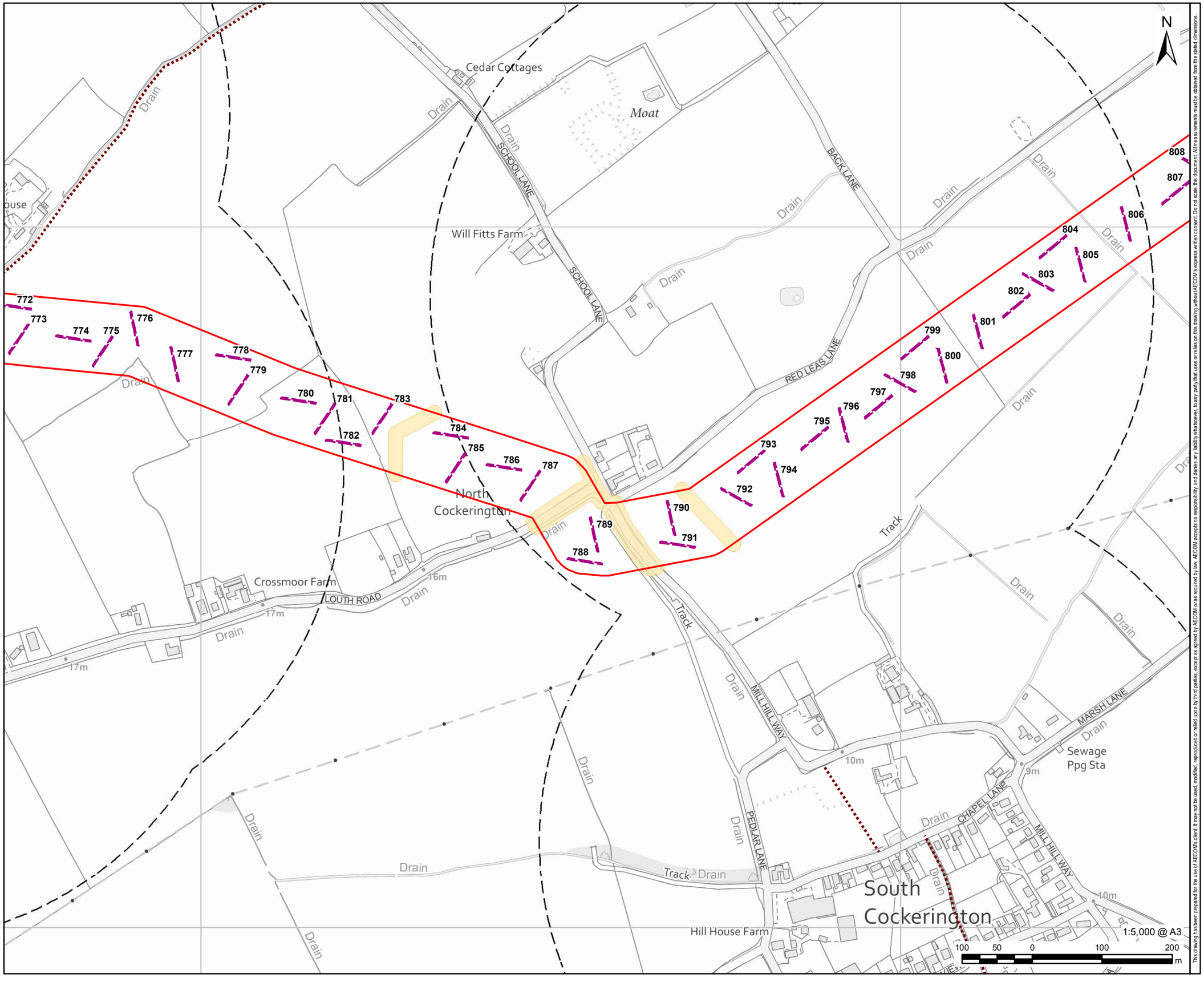

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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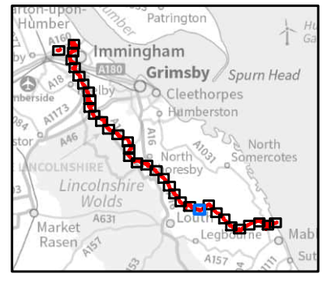

FIGURE TITLE

Figure 5 (26 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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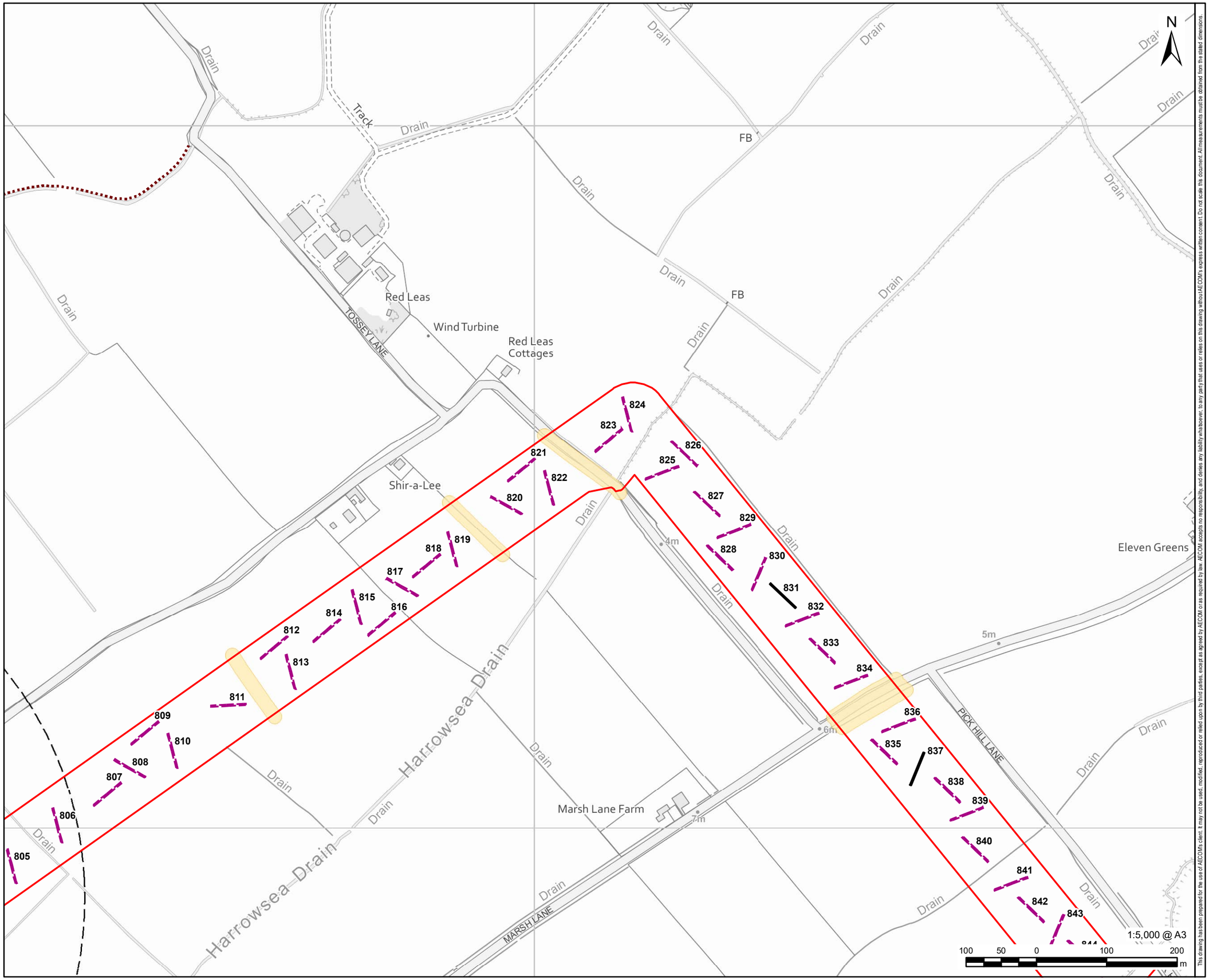

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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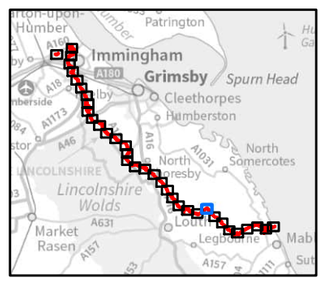

FIGURE TITLE

Figure 5 (27 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-09-27

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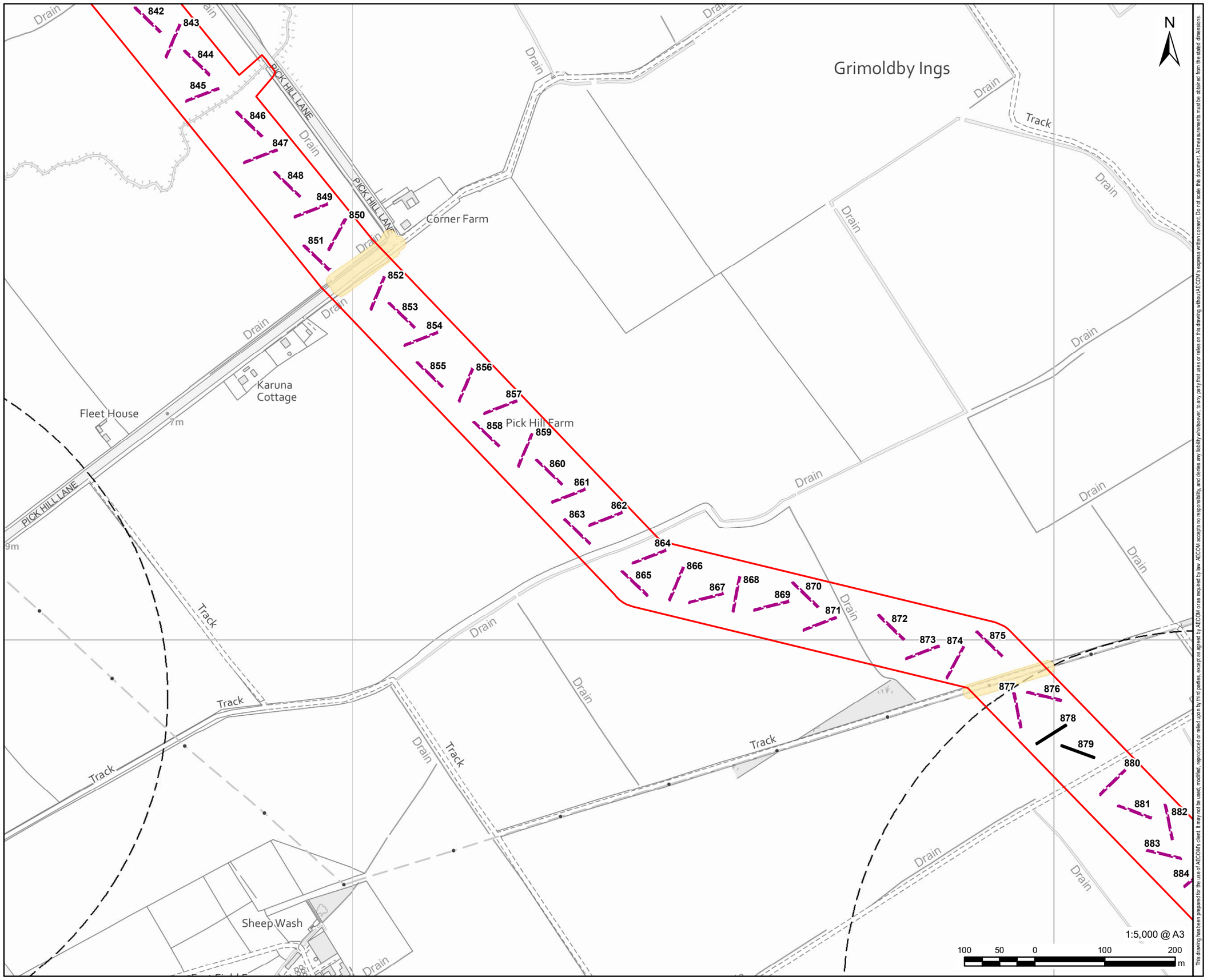

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

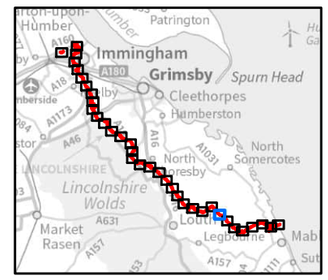

FIGURE TITLE

Figure 5 (28 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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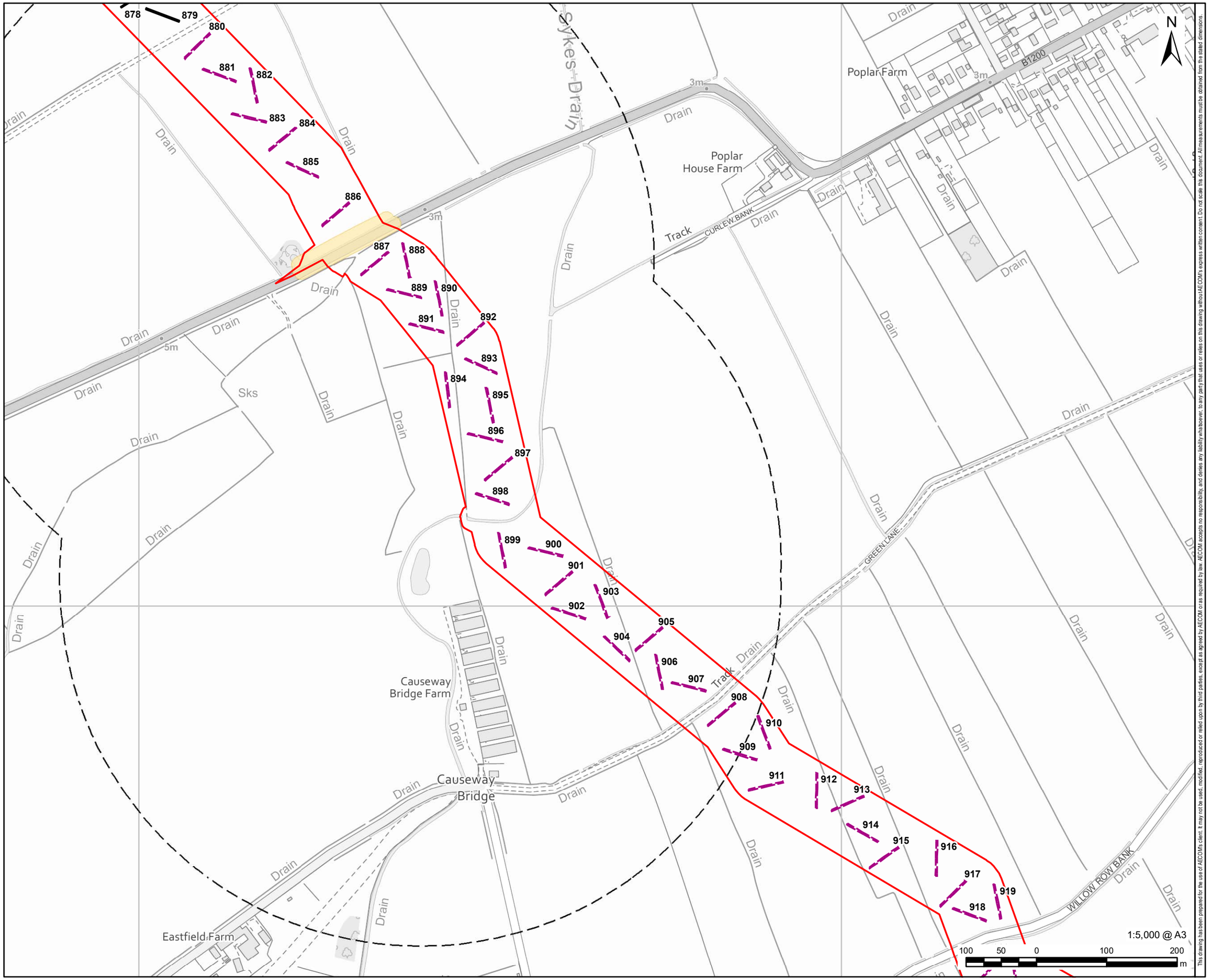

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

NOTES:

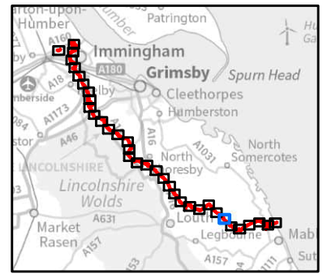

FIGURE TITLE

Figure 5 (29 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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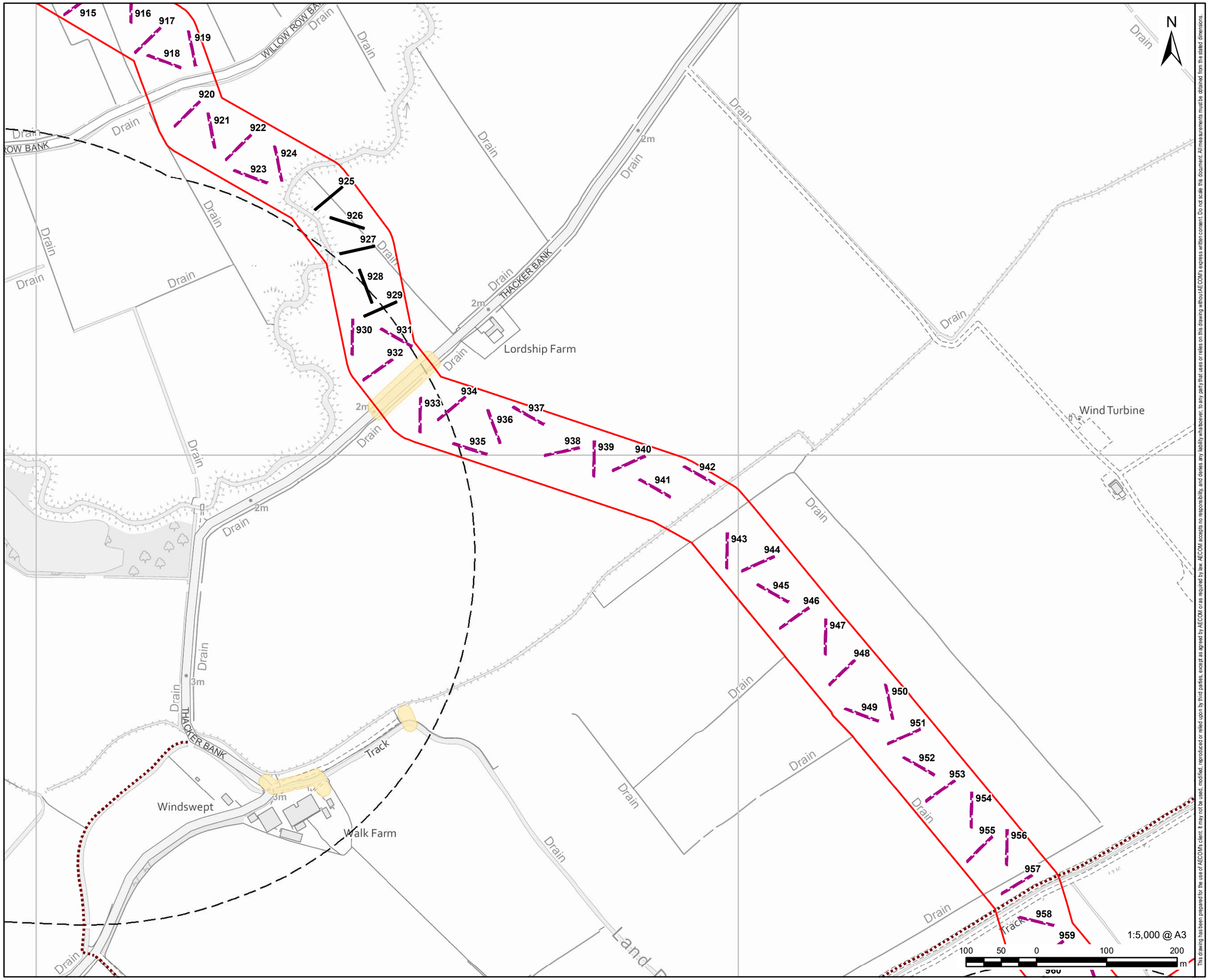

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

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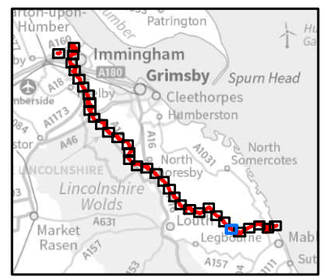

FIGURE TITLE

Figure 5 (30 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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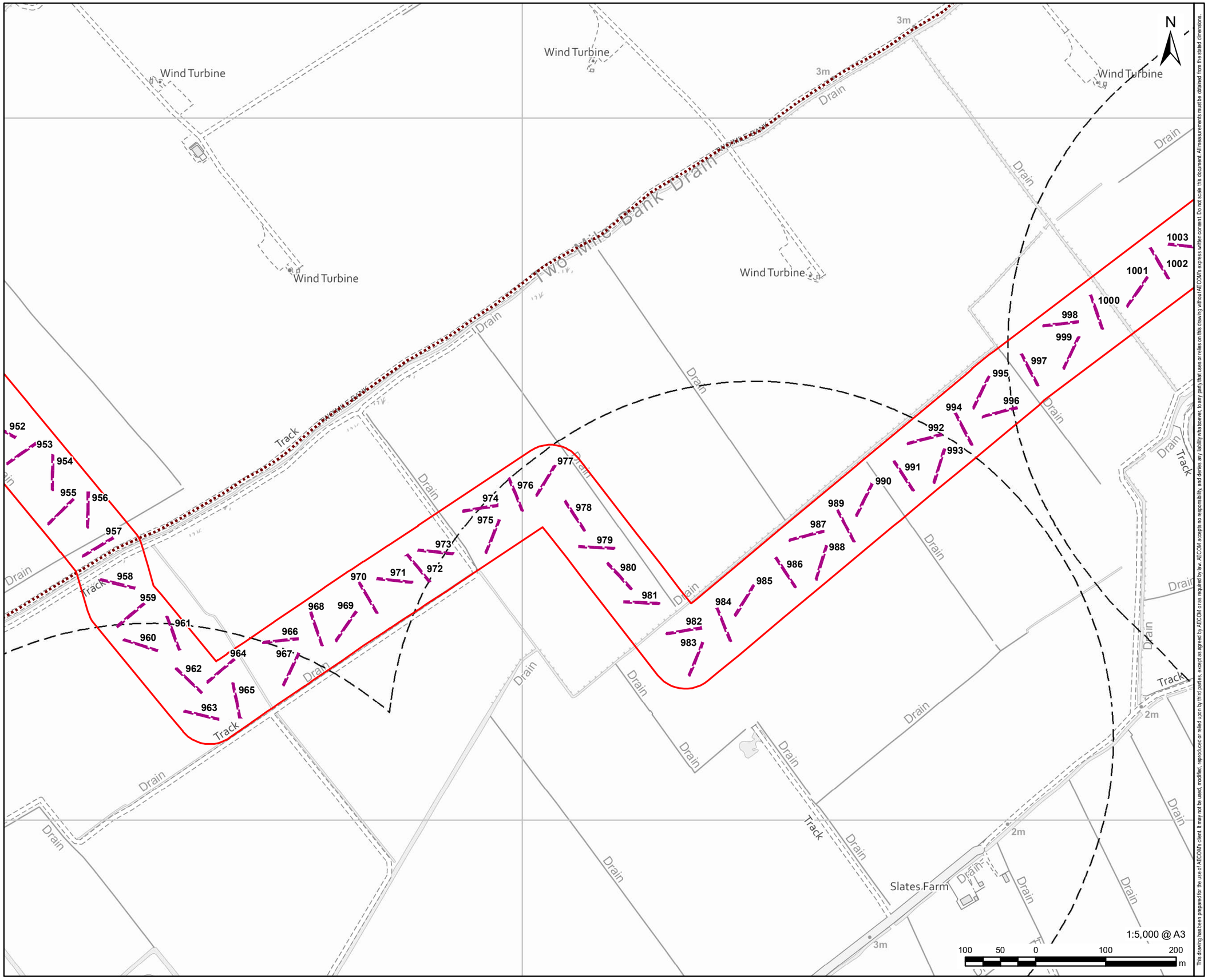

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Pond - 500m Buffer

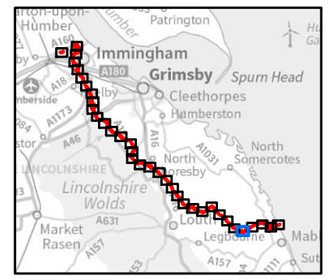

FIGURE TITLE

Figure 5 (31 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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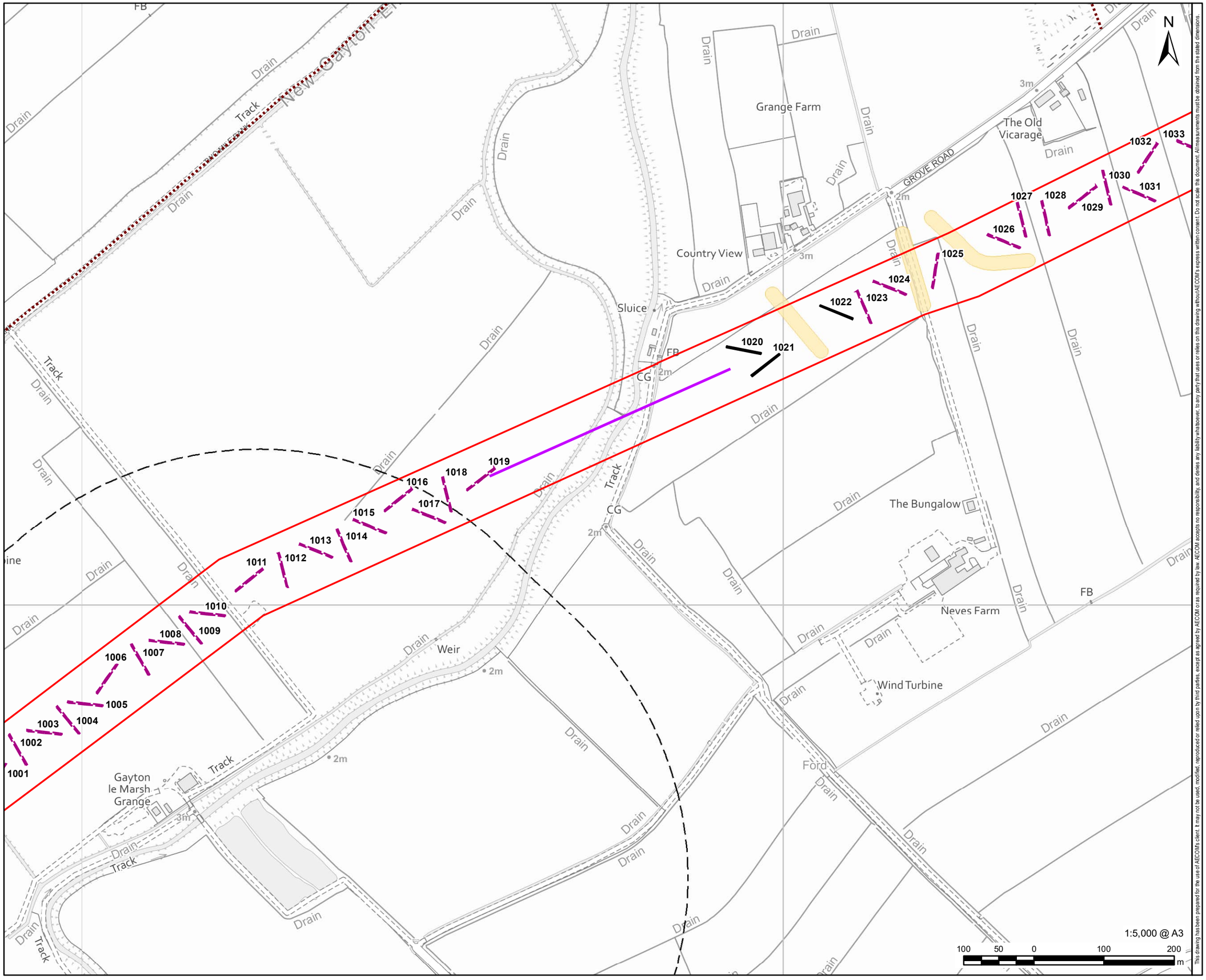

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Proposed HDD Section
- Indicative Trench Location - Targeted
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Pond - 500m Buffer

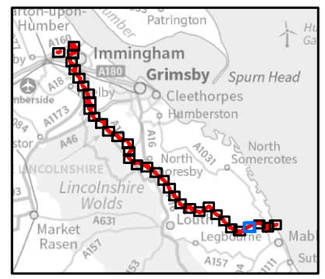

FIGURE TITLE

Figure 5 (32 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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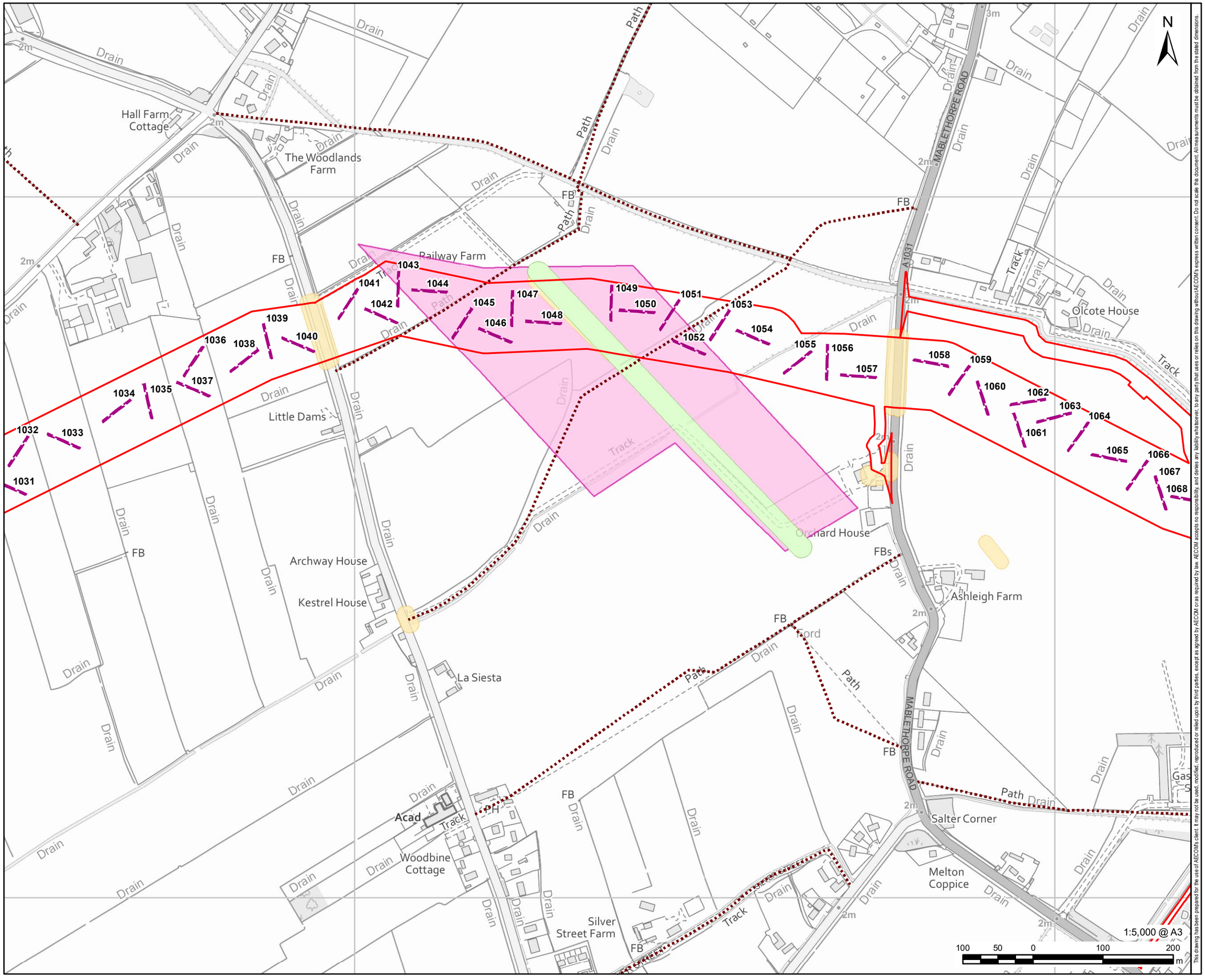

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities (Gas) - 15m Buffer
- Known Utilities - 10m Buffer
- Known Utilities - Angus Energy Gas Pipeline Route Area

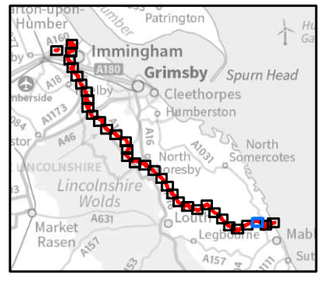

FIGURE TITLE

Figure 5 (33 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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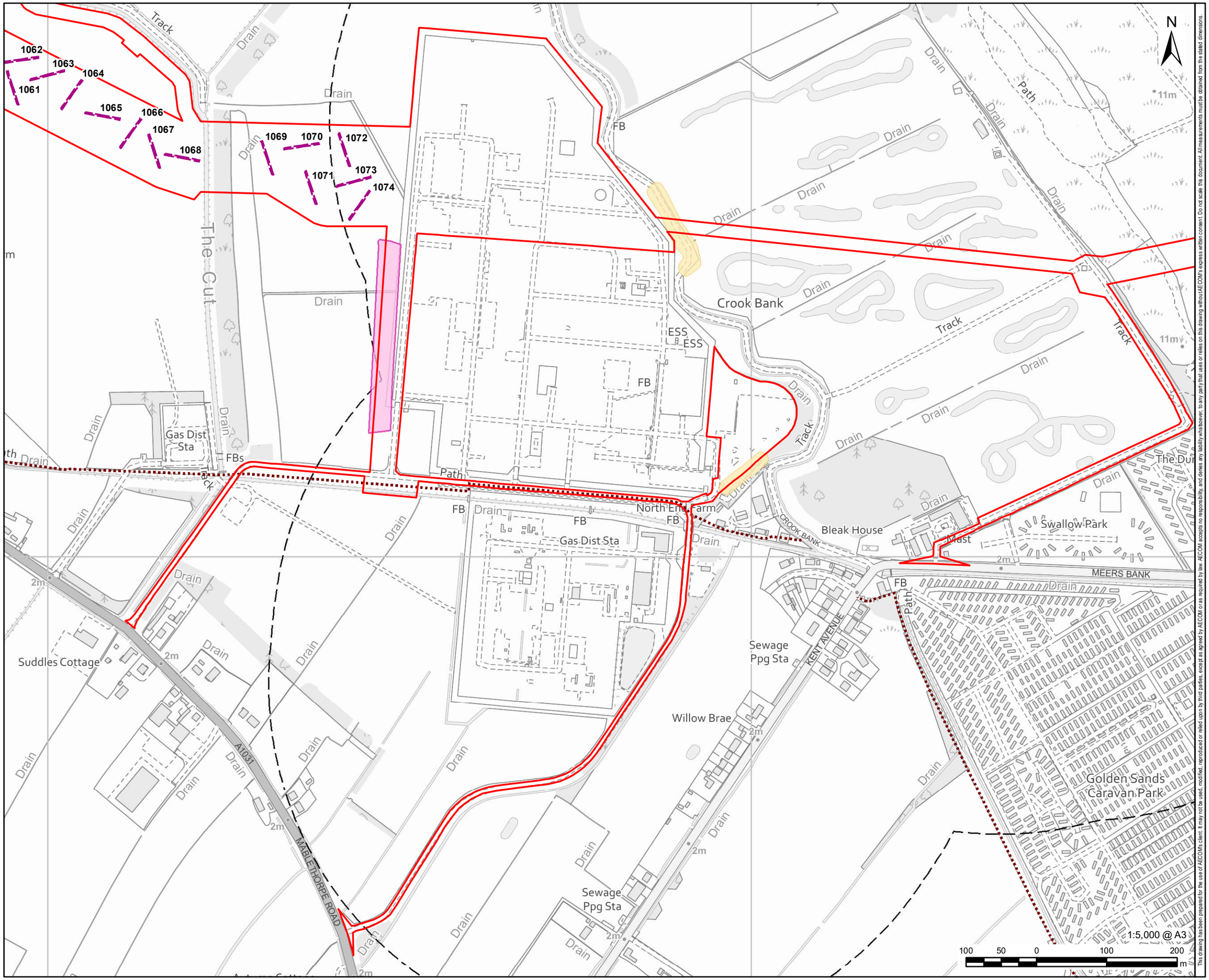

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Indicative Trench Location
- Public Right of Way
- Known Utilities - 10m Buffer
- Known Utilities - Angus Energy Gas Pipeline Route Area
- Pond - 500m Buffer

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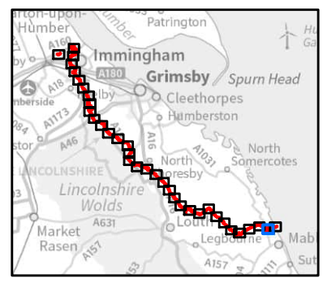

FIGURE TITLE

Figure 5 (34 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Public Right of Way
- Pond - 500m Buffer

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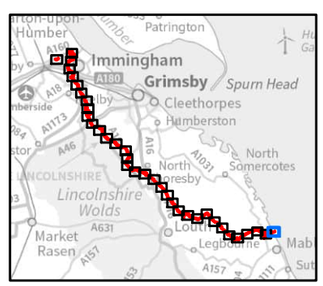

FIGURE TITLE

Figure 5 (35 of 35)
Indicative Trench Locations and Site Constraints

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230927_WSI_TT_5

Revision: 1 Drawn: LC Checked: DA Approved: MW Date: 2023-10-03

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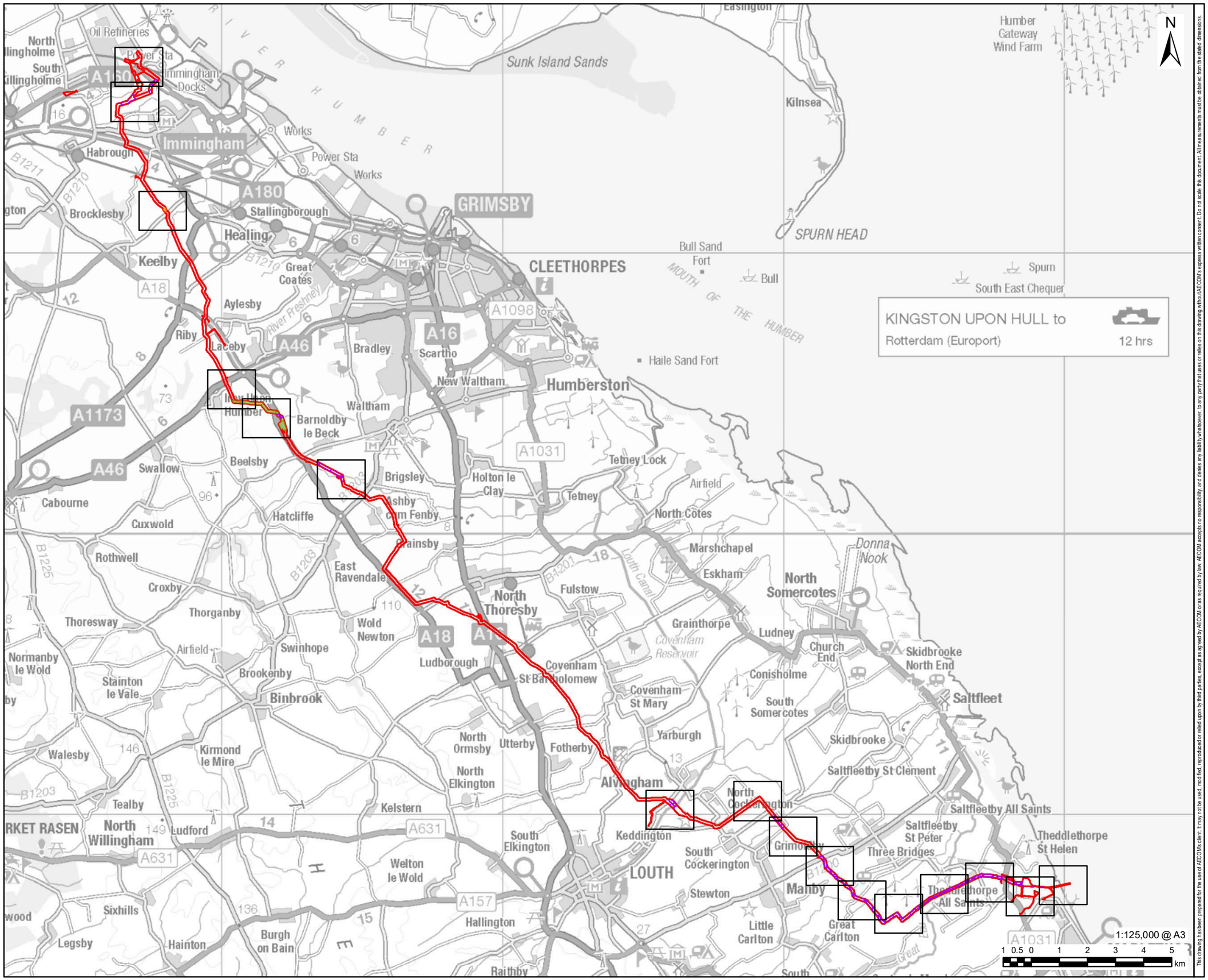

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- Detailed Sheet Reference
- DCO Site Boundary
- Proposed Geoarchaeological Borehole Survey Area
- Proposed Earthwork Survey
- Proposed Metal Detector Survey Area

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FIGURE TITLE

Figure 6A - Overview
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231003_WSI_TT_6A

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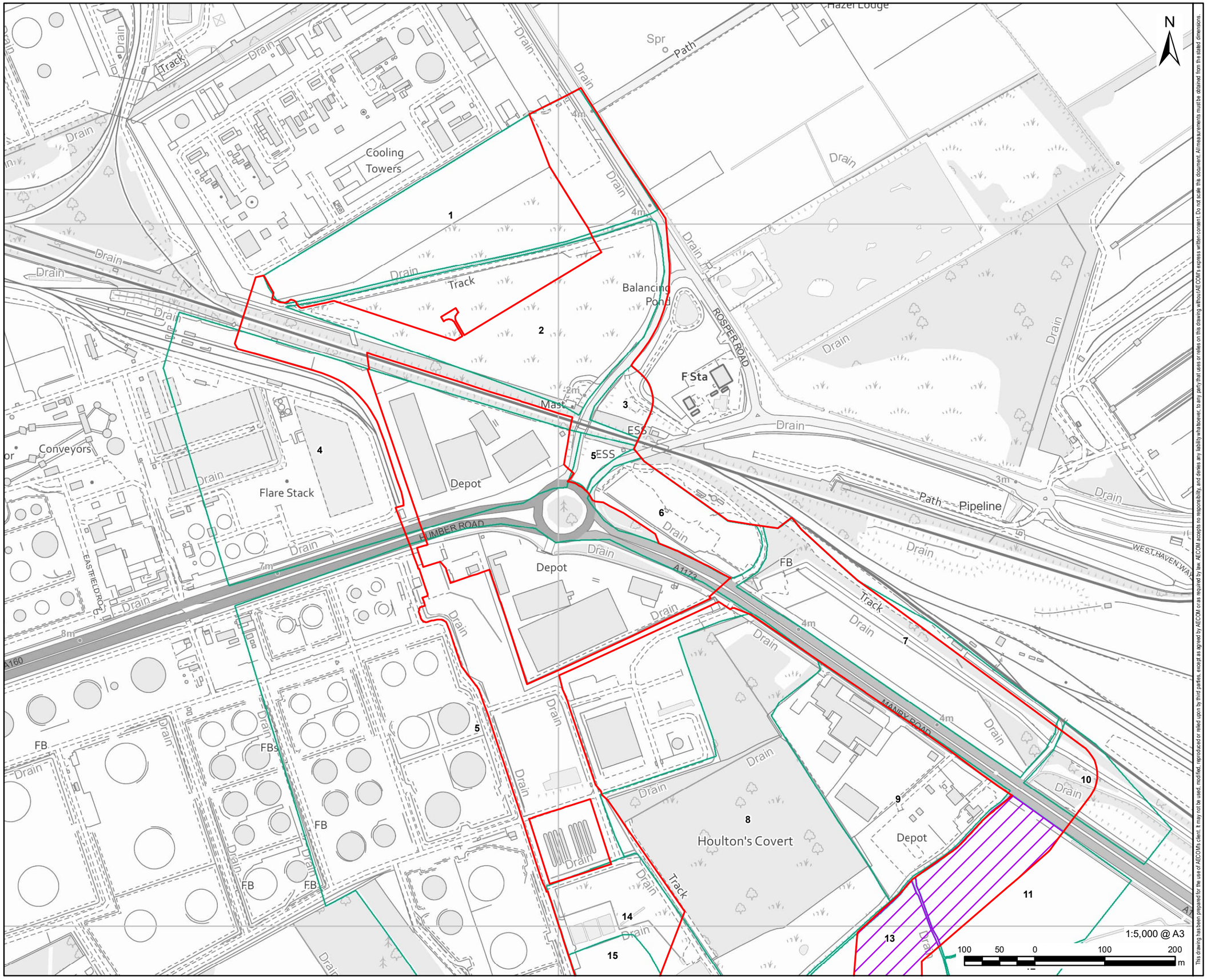

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

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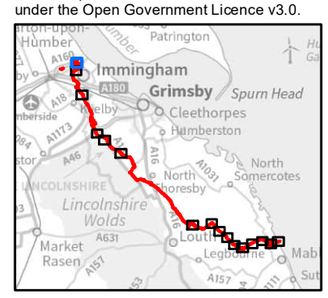

FIGURE TITLE

Figure 6B (1 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231003_WSI_TT_6B

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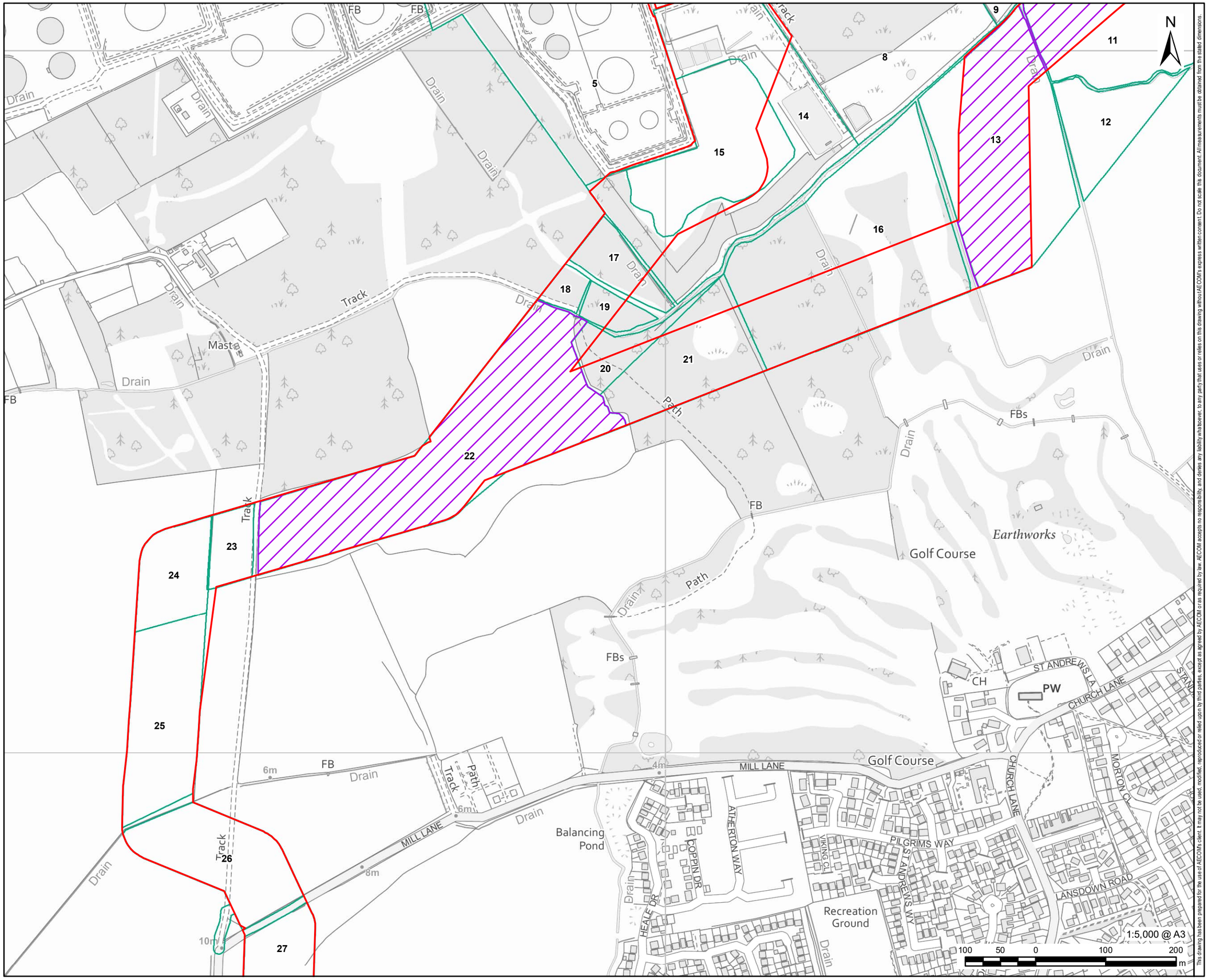

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

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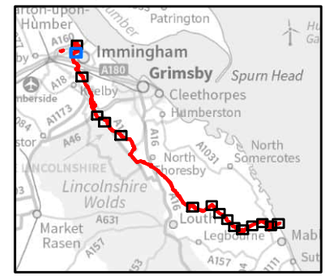

FIGURE TITLE

Figure 6B (2 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231003_WSI_TT_6B

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-10-03

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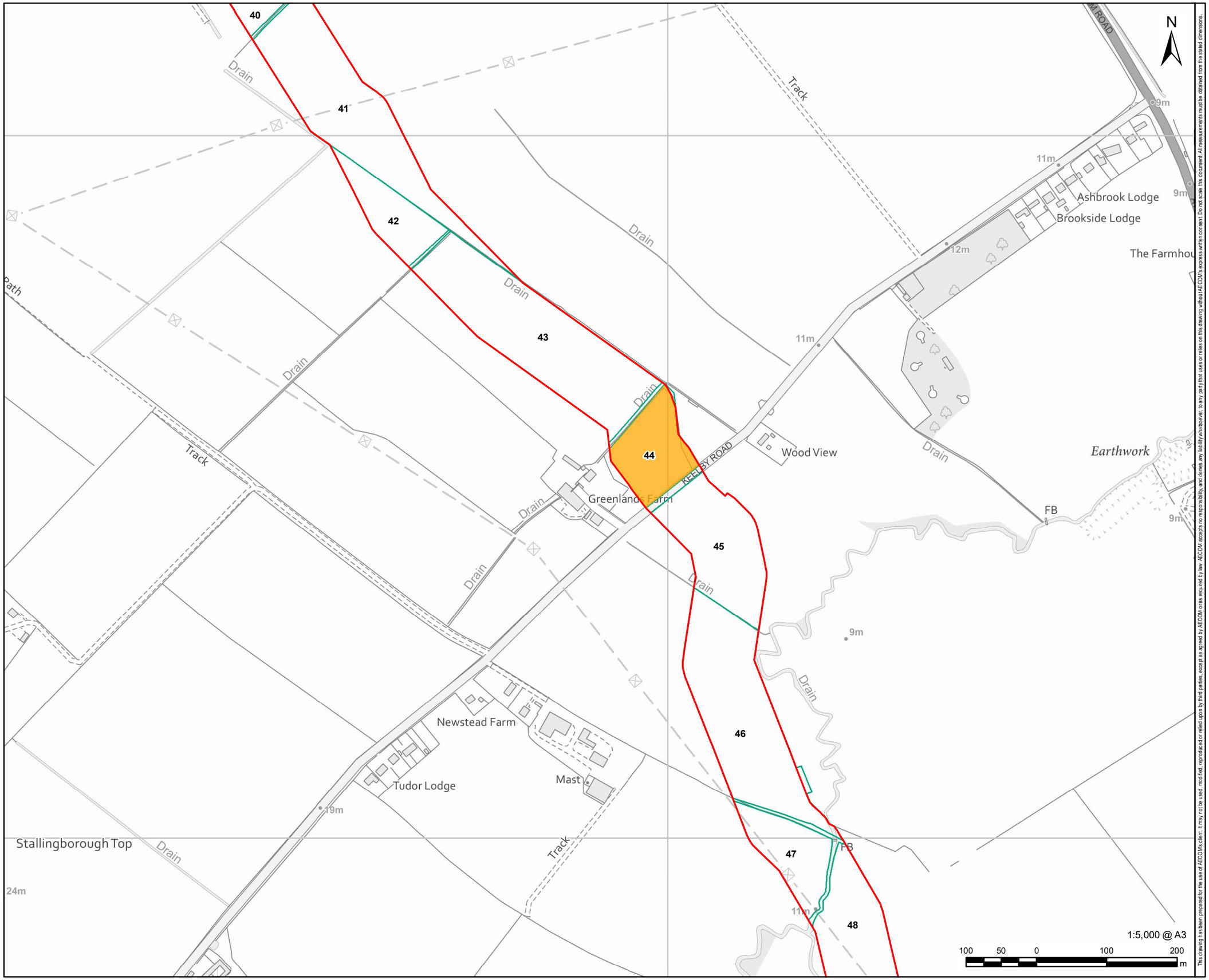

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Earthwork Survey

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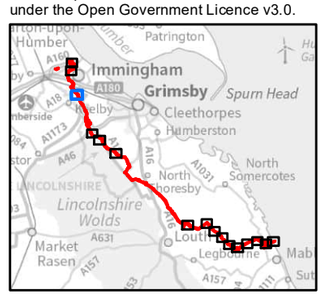

FIGURE TITLE

Figure 6B (3 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231003_WSI_TT_6B

Revision: 3 Drawn: LC Checked: DA Approved: MW Date: 2023-10-03

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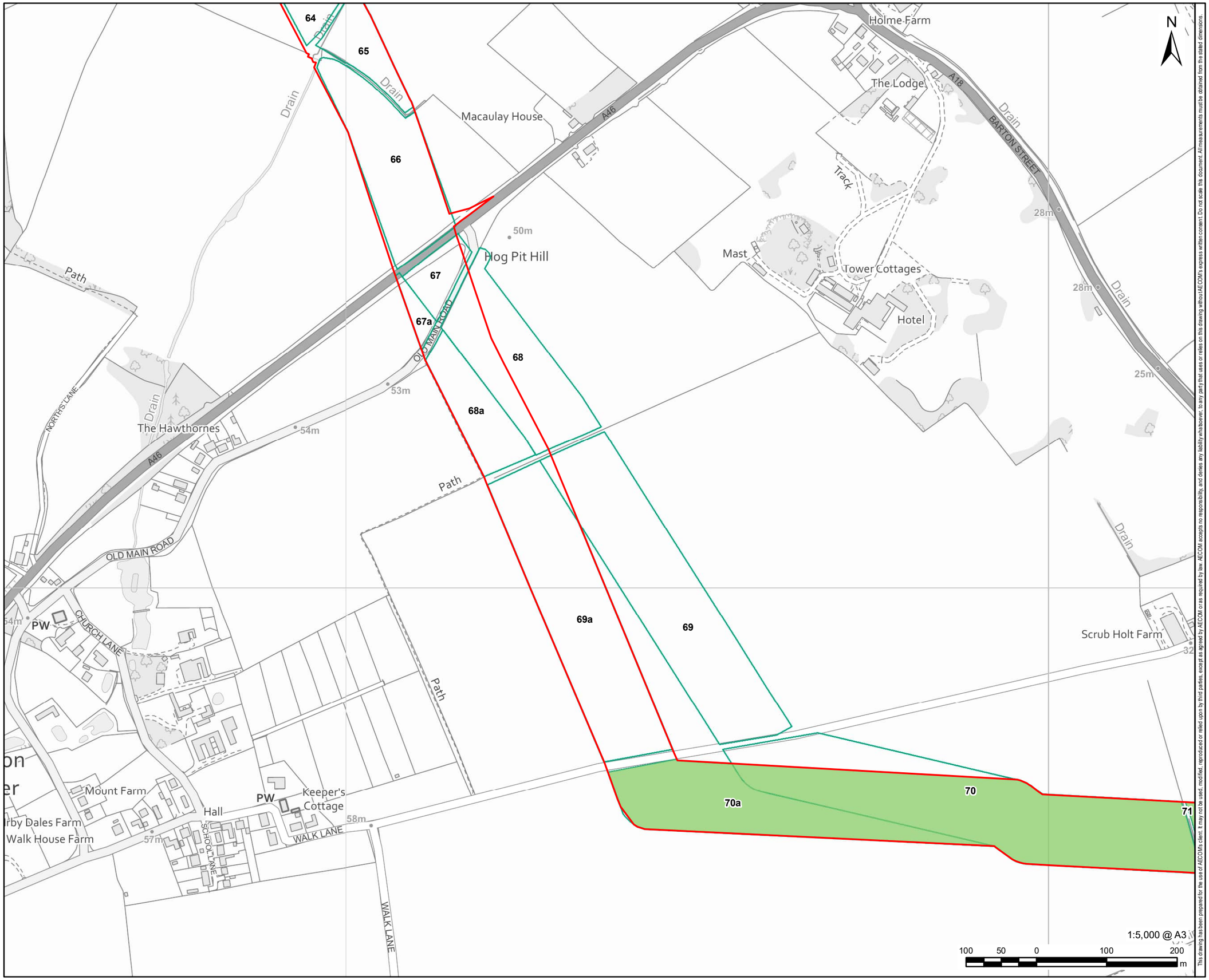

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Metal Detector Survey Area

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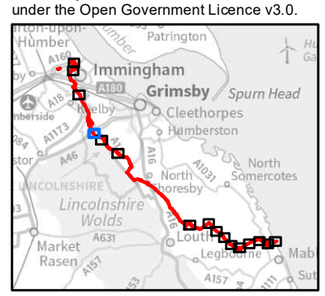

FIGURE TITLE

Figure 6B (4 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231003_WSI_TT_6B

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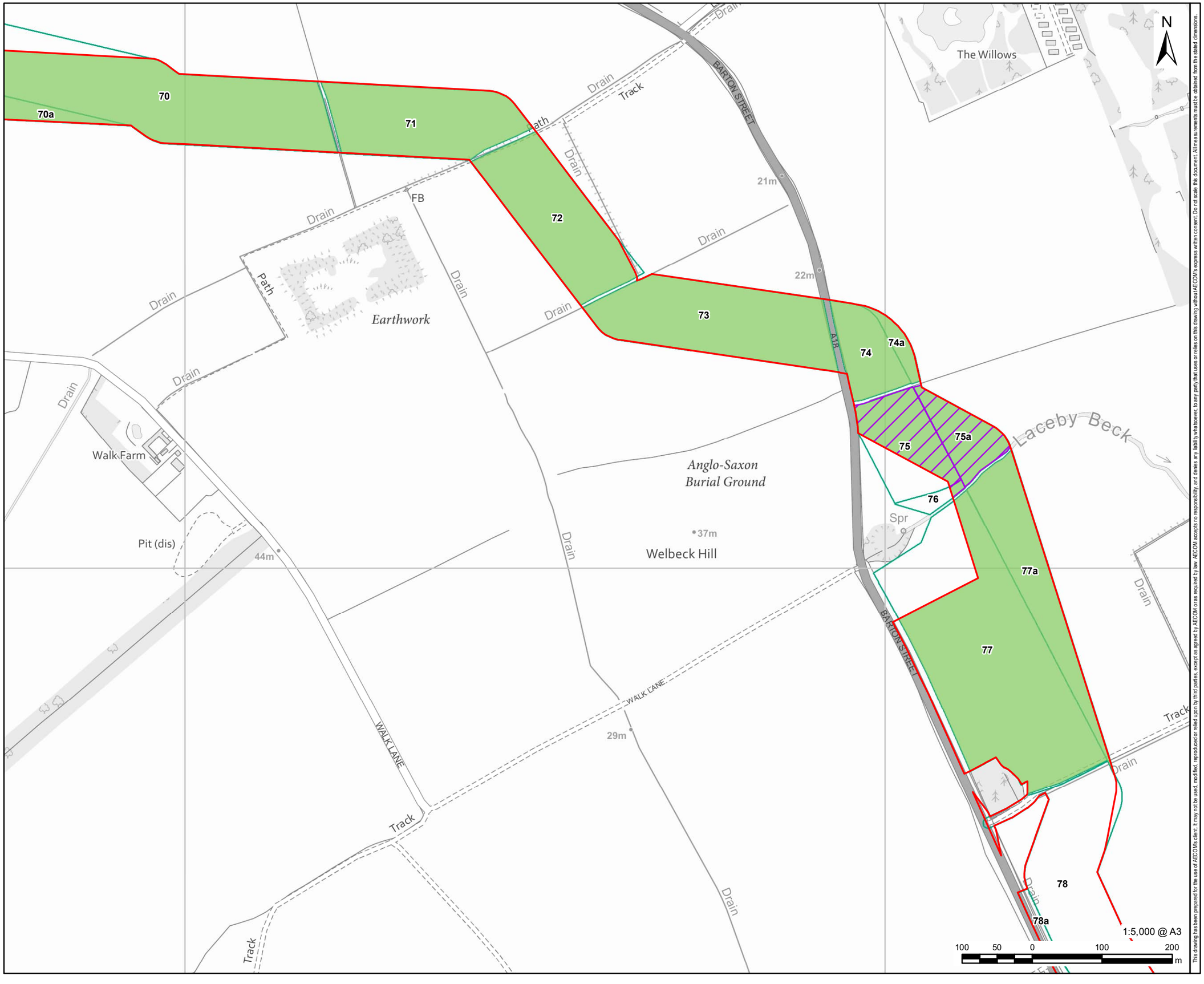

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area
- Proposed Metal Detector Survey Area

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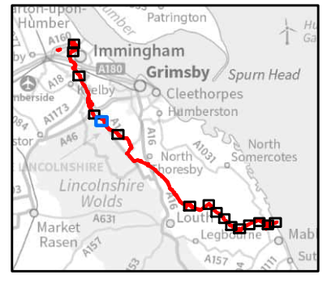

FIGURE TITLE

Figure 6B (5 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231003_WSI_TT_6B

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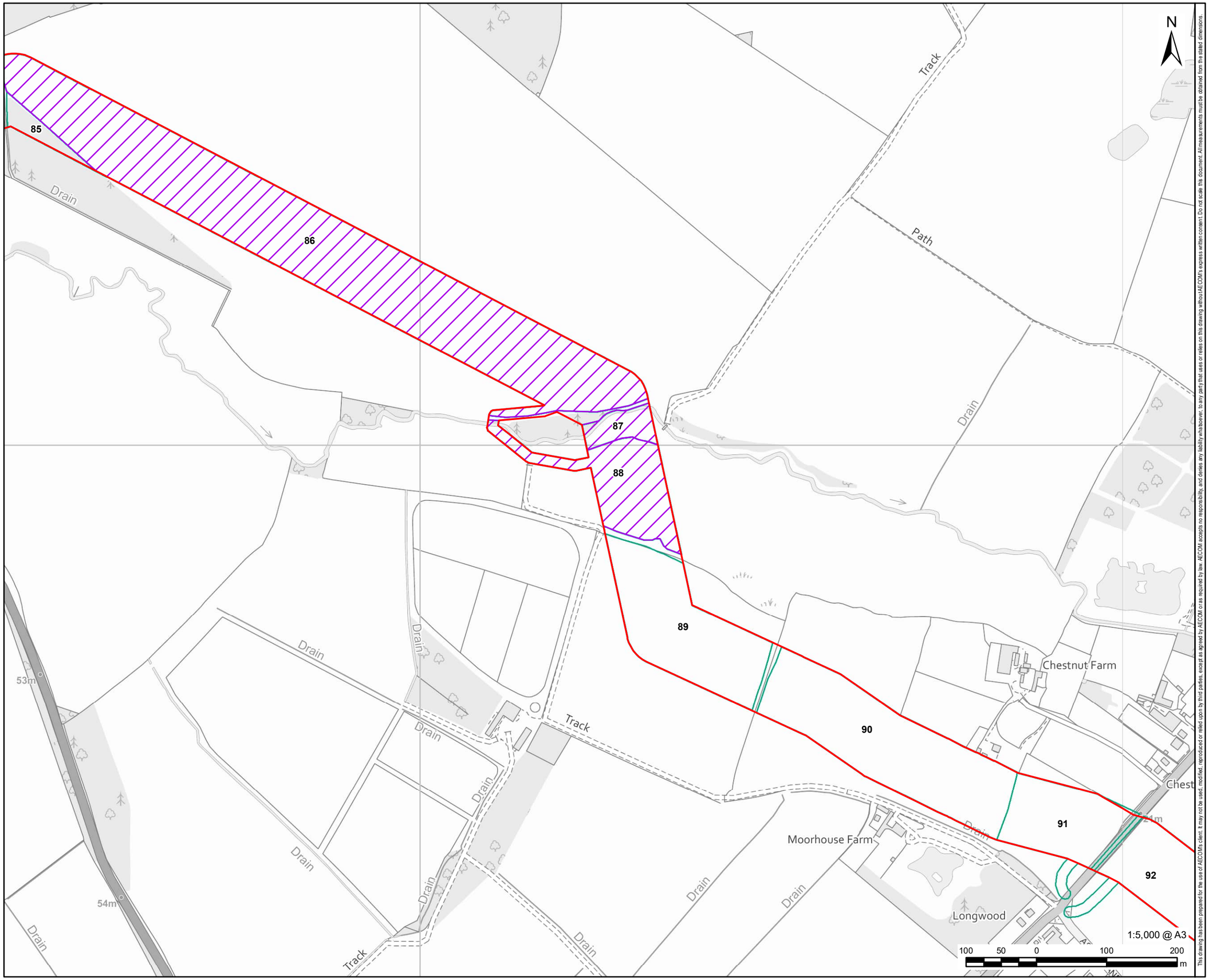

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

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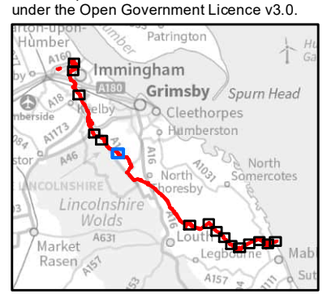

FIGURE TITLE

Figure 6B (6 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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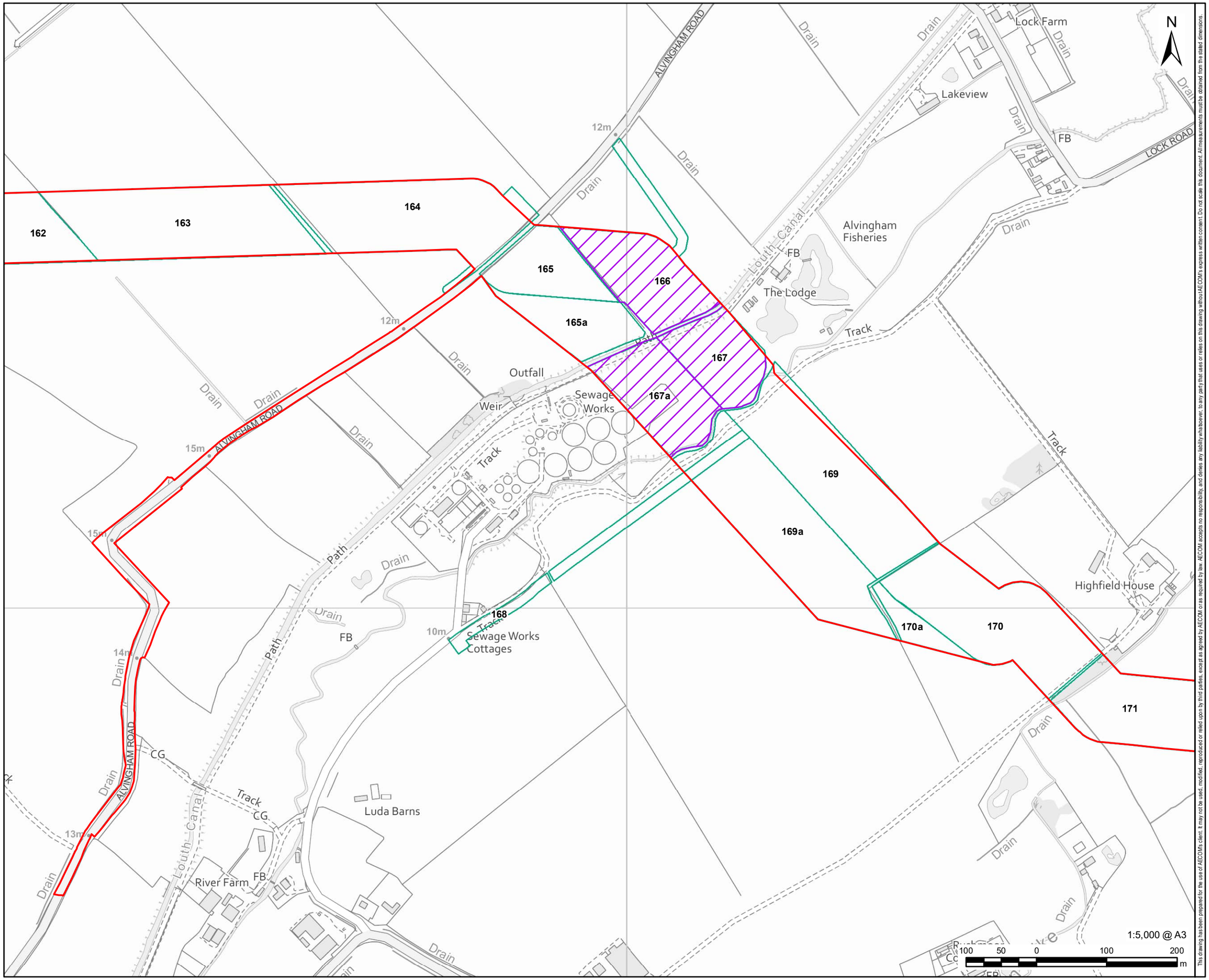

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

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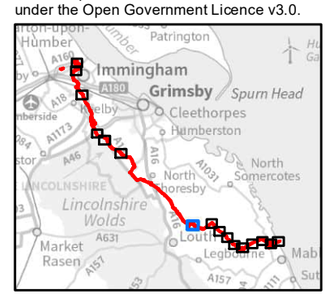

FIGURE TITLE

Figure 6B (7 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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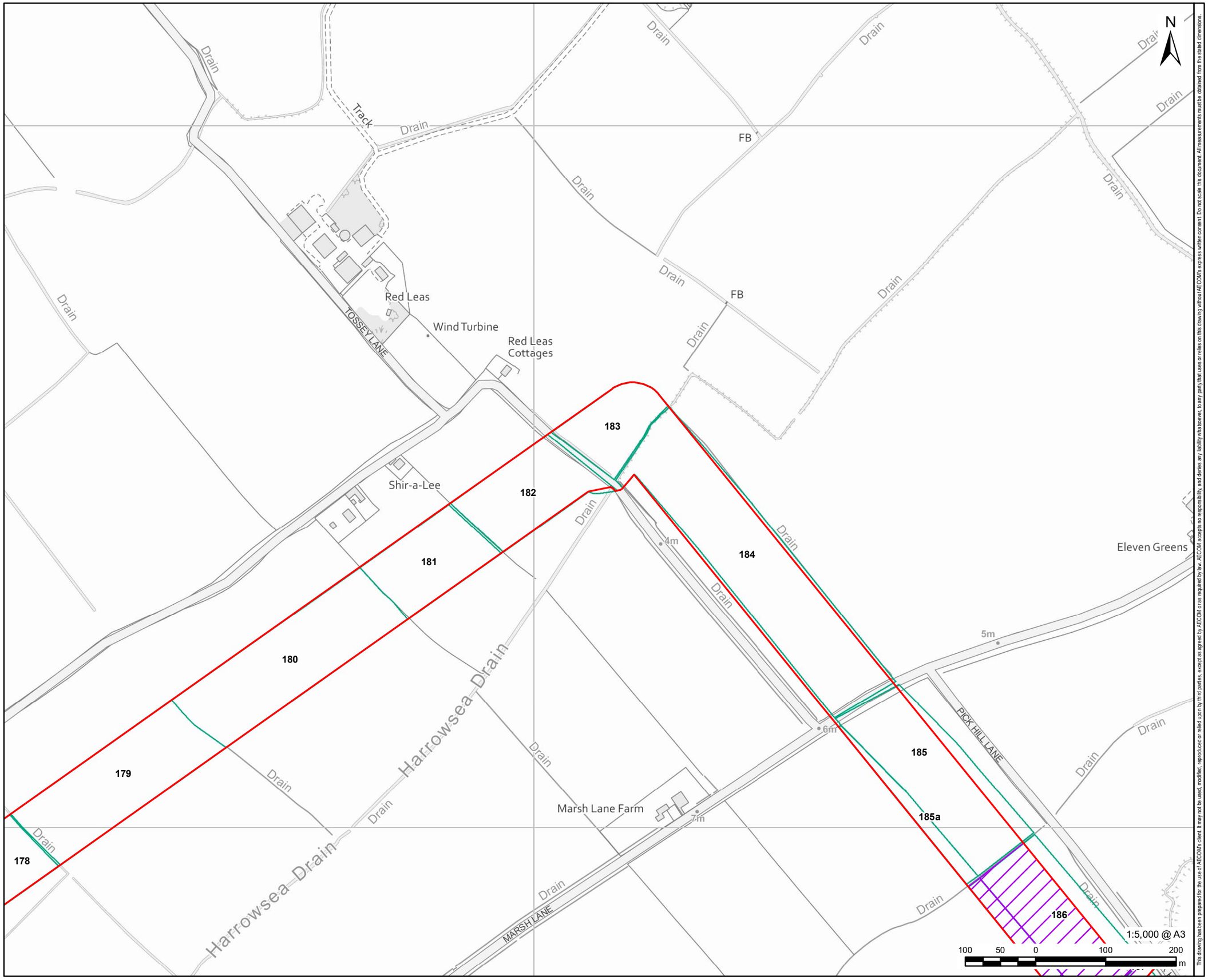

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

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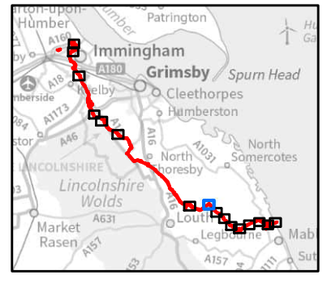

FIGURE TITLE

Figure 6B (8 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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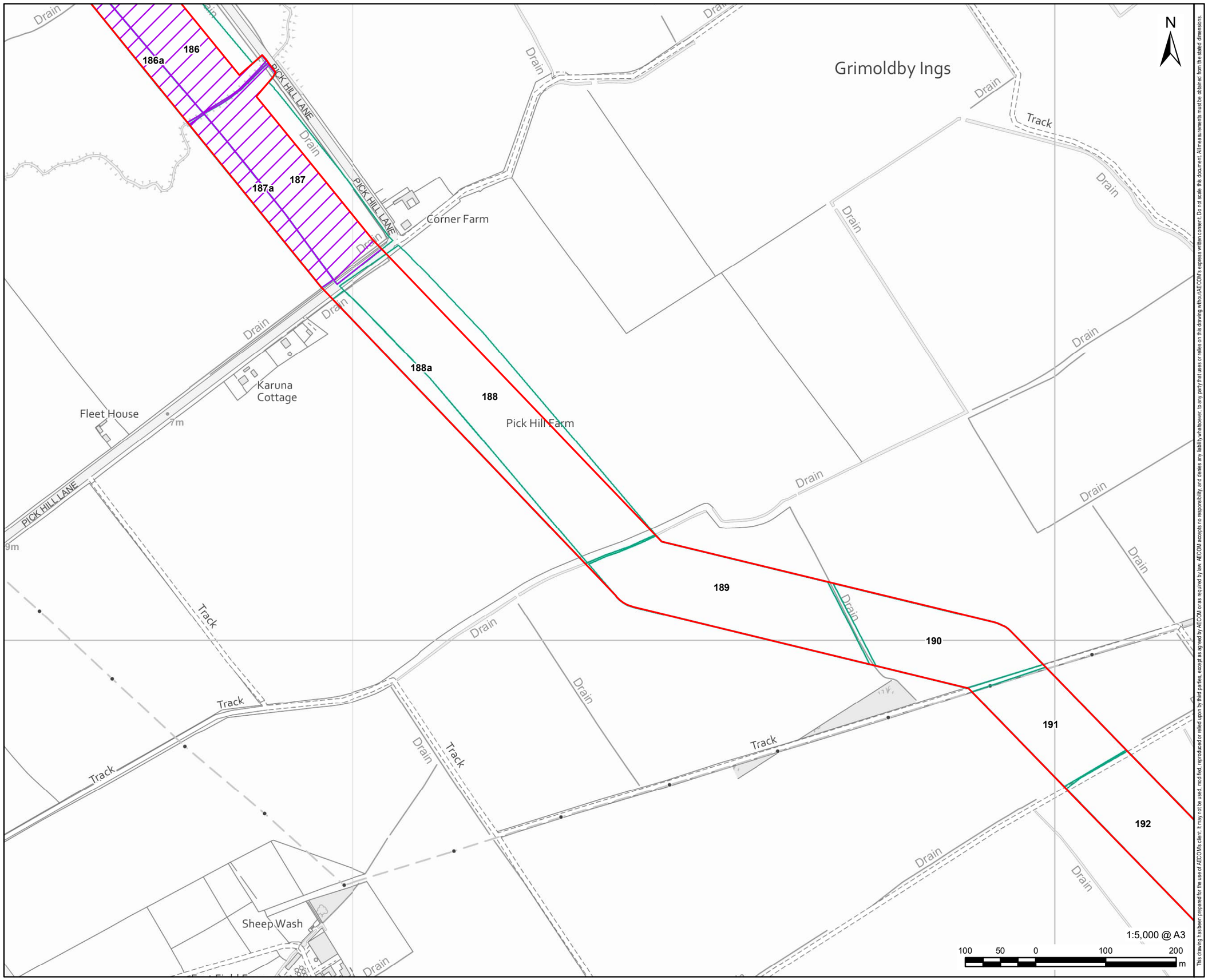

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

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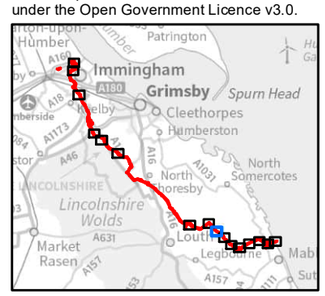

FIGURE TITLE

Figure 6B (9 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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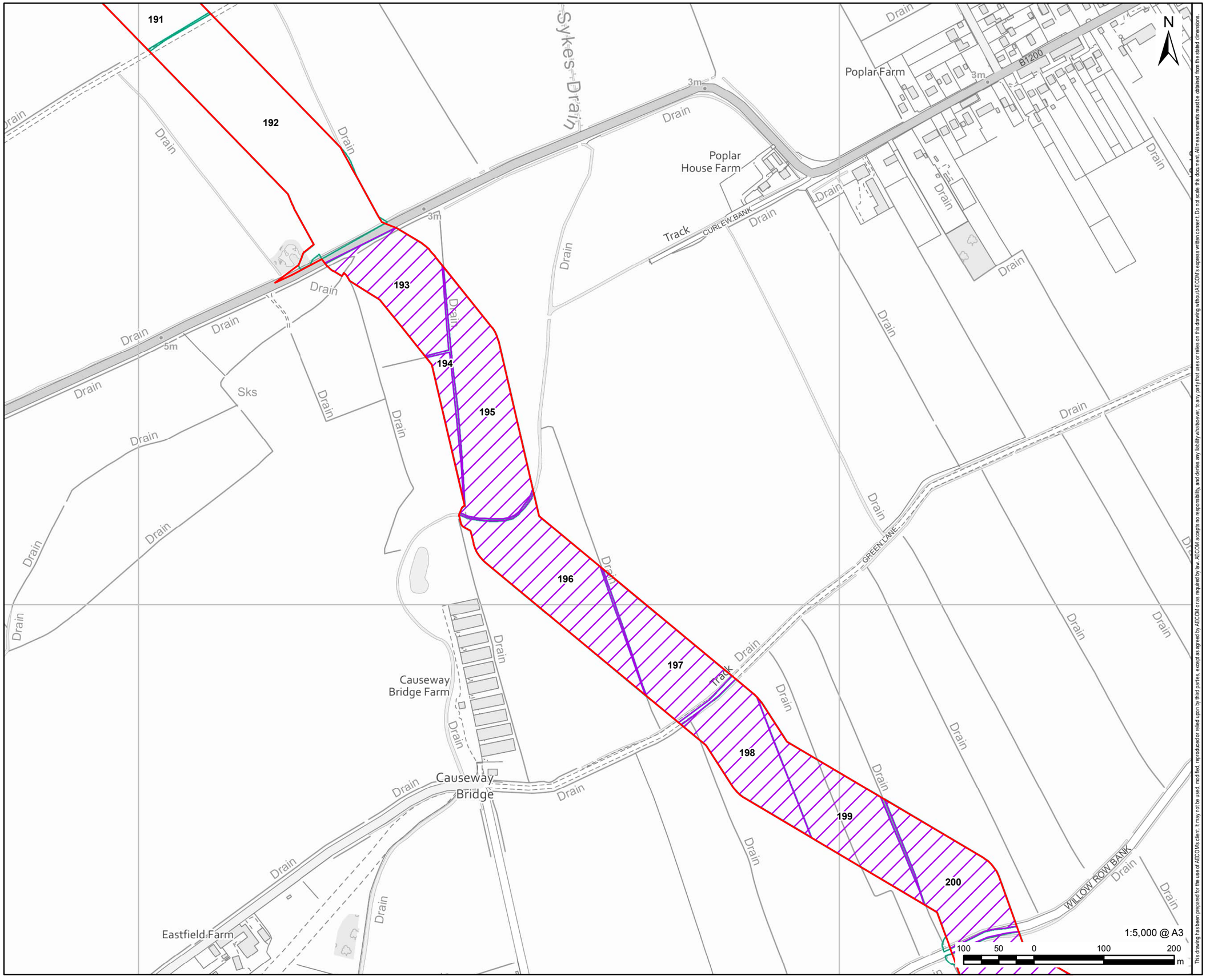

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

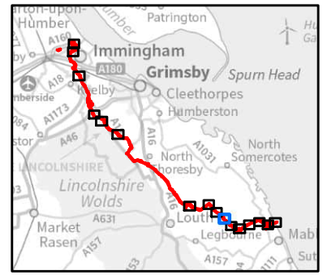

FIGURE TITLE

Figure 6B (10 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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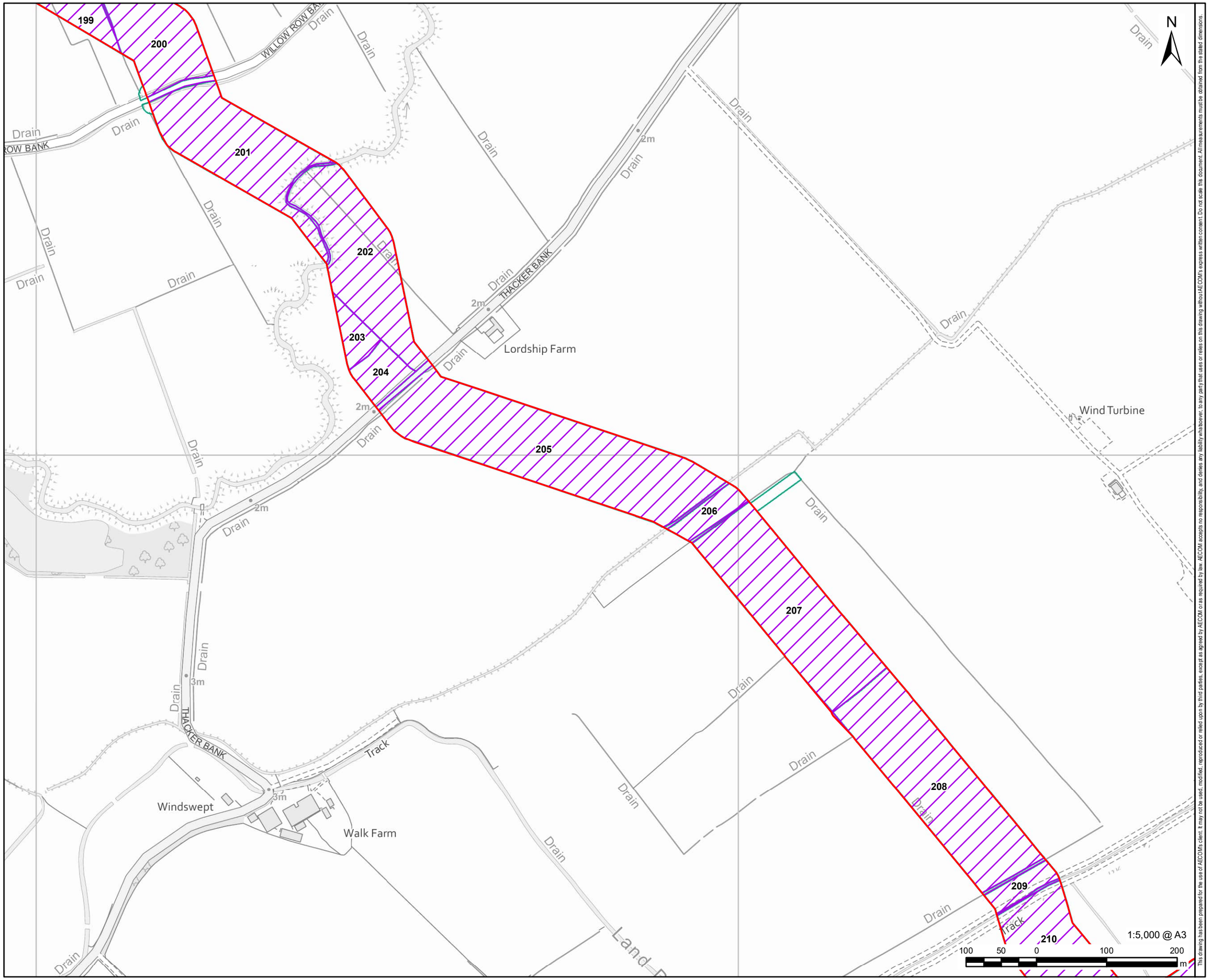

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

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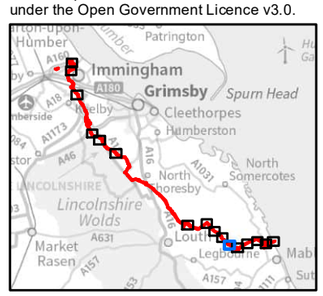

FIGURE TITLE

Figure 6B (11 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231003_WSI_TT_6B

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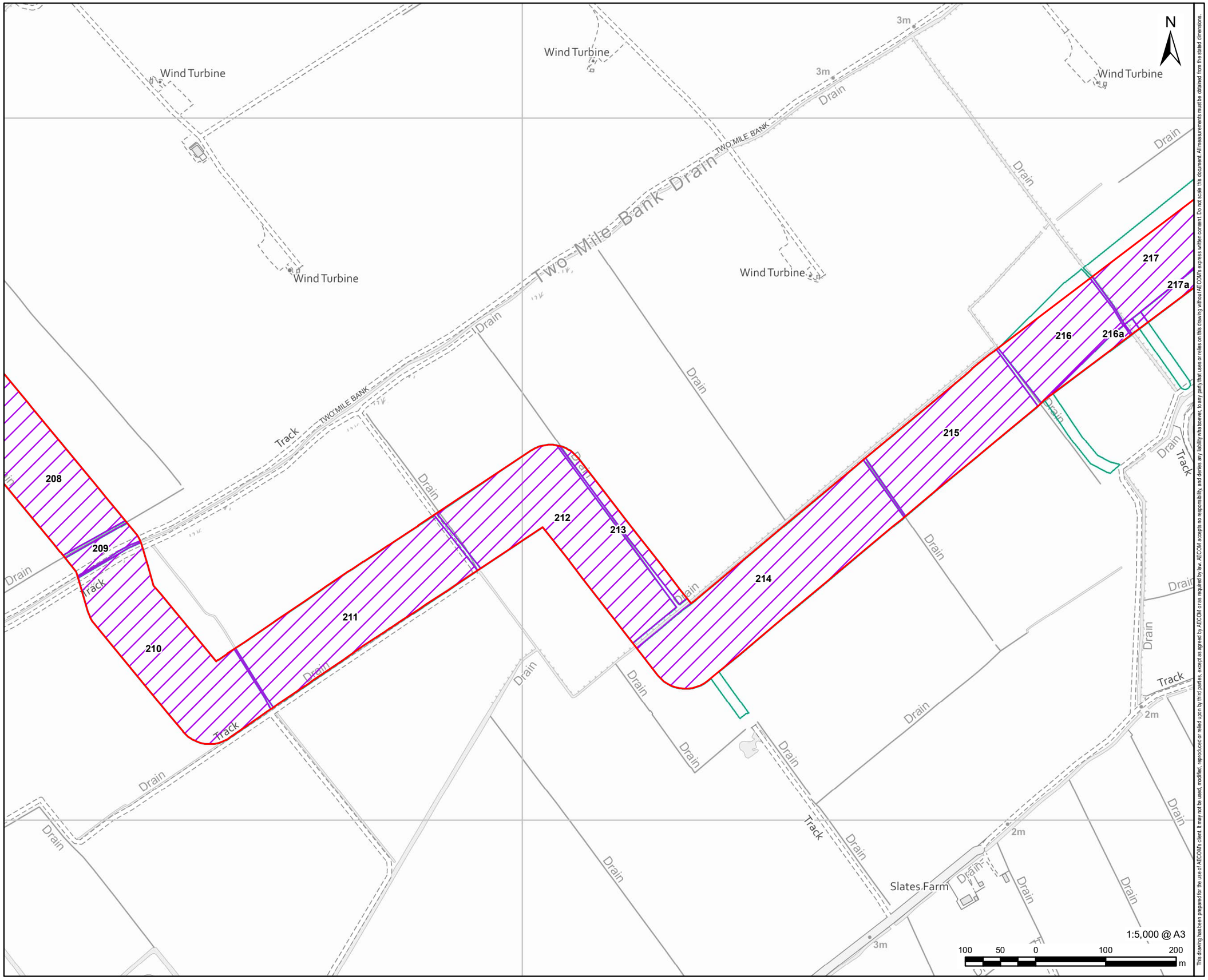

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

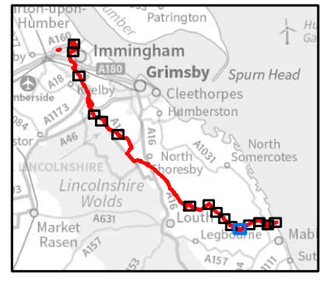

FIGURE TITLE

Figure 6B (12 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

60668955 / VCCS_231003_WSI_TT_6B

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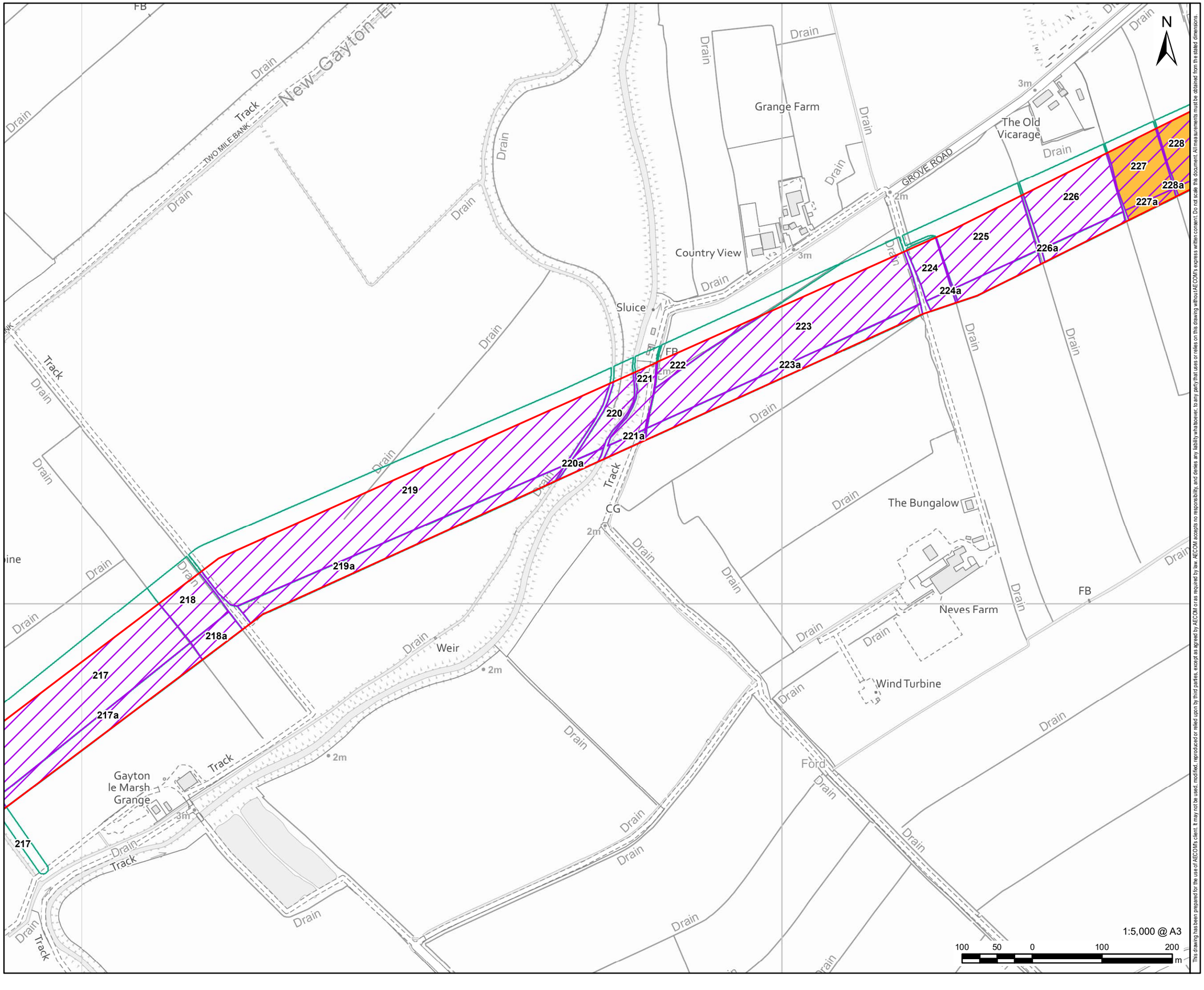

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area
- Proposed Earthwork Survey

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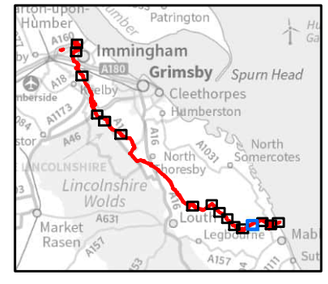

FIGURE TITLE

Figure 6B (13 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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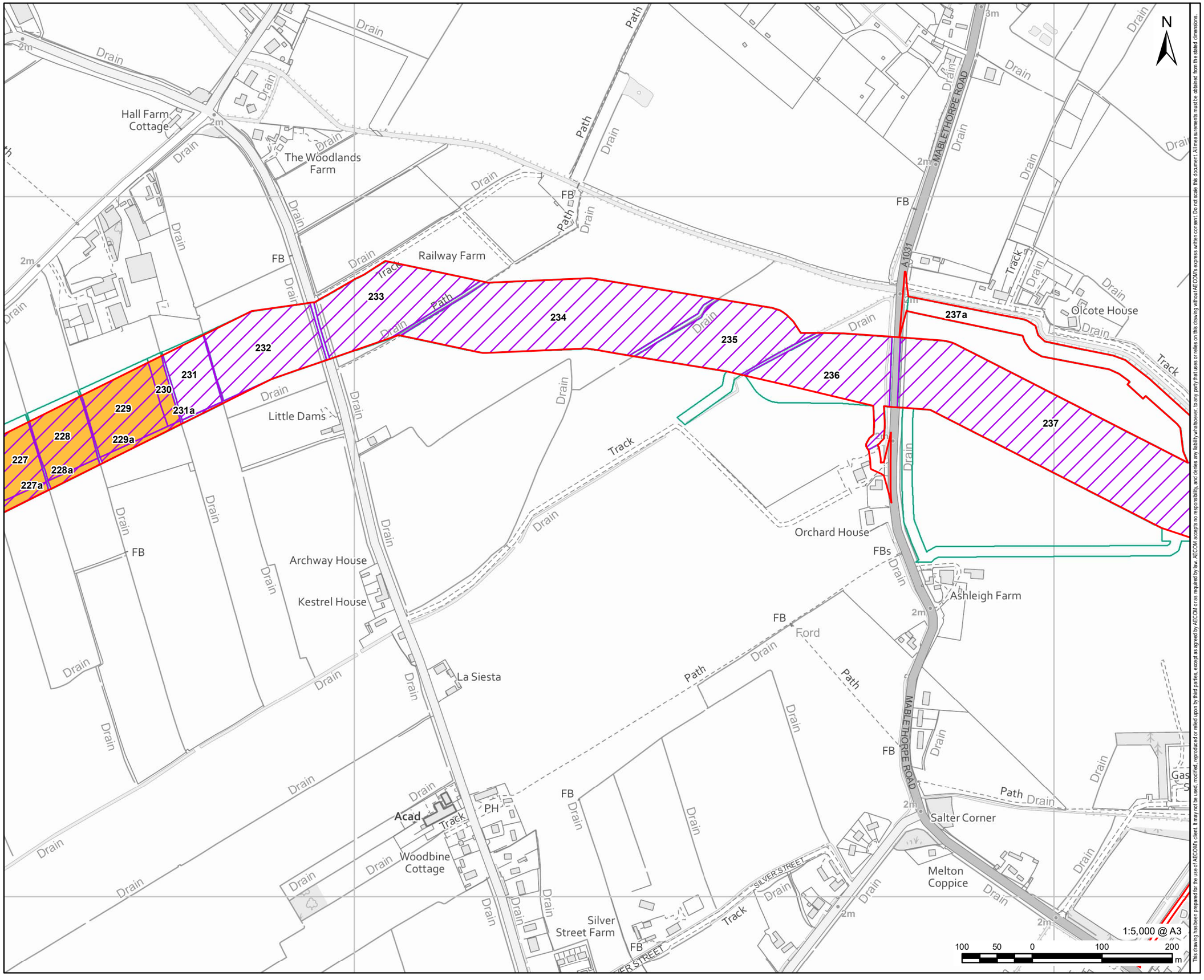

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area
- Proposed Earthwork Survey

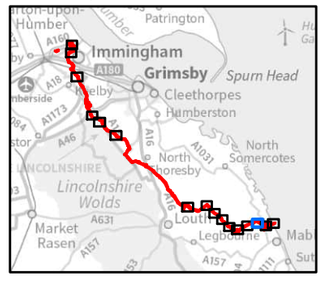

FIGURE TITLE

Figure 6B (14 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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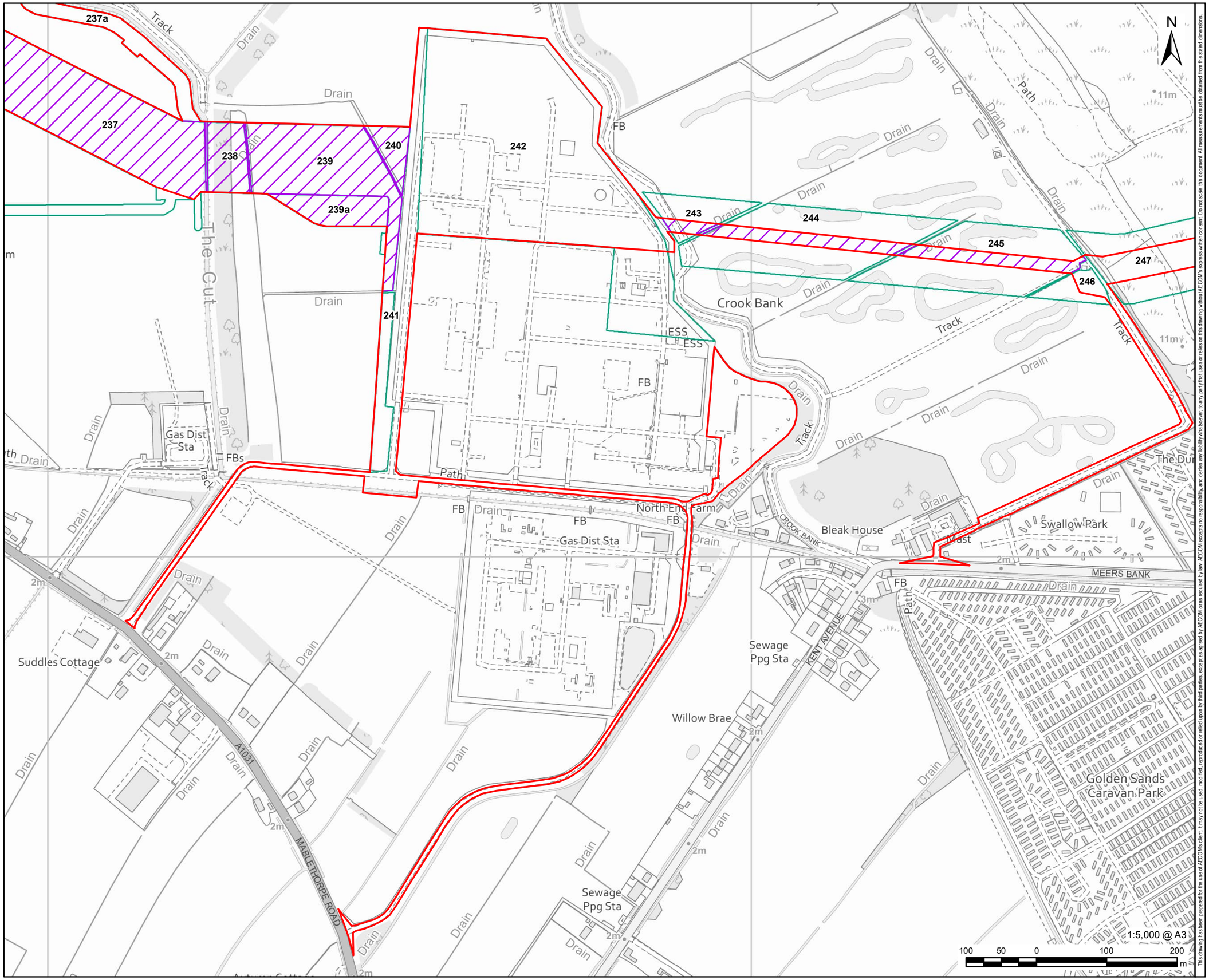

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

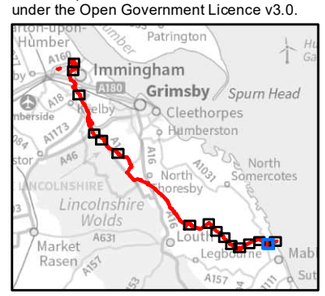

FIGURE TITLE

Figure 6B (15 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

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VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- Survey Field Boundary
- Proposed Geoarchaeological Borehole Survey Area

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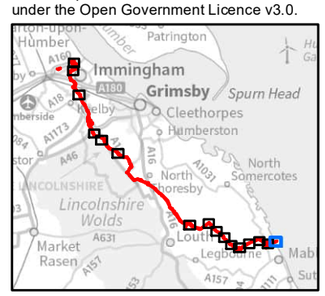

FIGURE TITLE

Figure 6B (16 of 16)
Areas for Earthwork Survey, Metal Detector Survey and Geoarchaeological Assessment

ISSUE PURPOSE

WSI TRIAL TRENCHING

PROJECT NUMBER / REFERENCE

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VikingCCS

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