

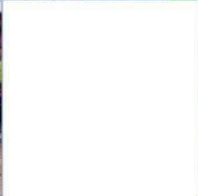
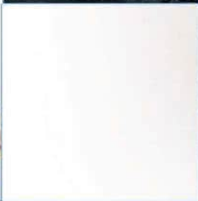
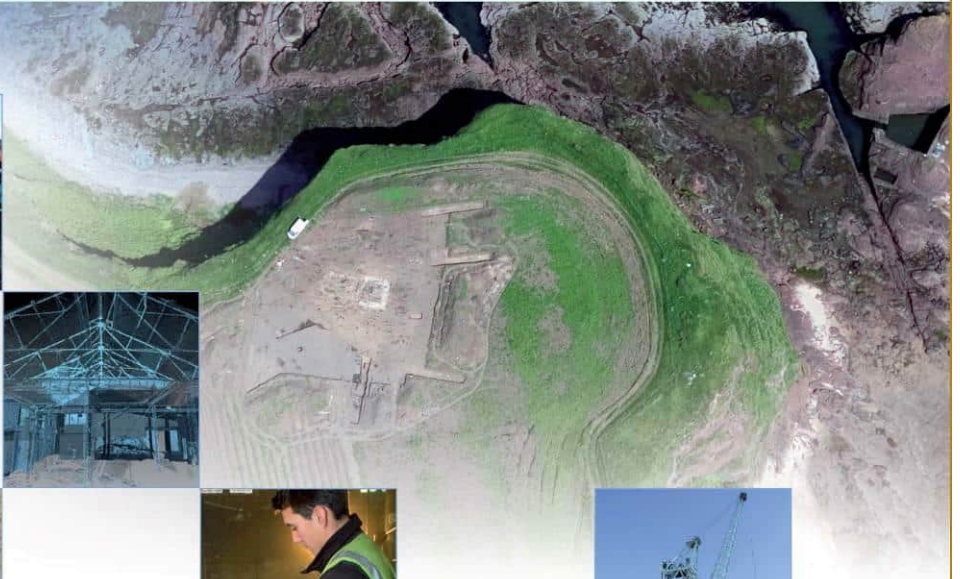
VPI Immingham, Humber Zero Project, Lincolnshire

Archaeological Evaluation Report

National Grid Reference Number: TA 16798 16959

AOC Project No: 53122

Date: April 2023



ARCHAEOLOGY

HERITAGE

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VPI Immingham, Humber Zero Project, Lincolnshire Archaeological Evaluation Report

On Behalf of:	AECOM Limited, on behalf of VPI Immingham LLC AECOM House 63-77 Victoria Street St Albans Hertfordshire AL1 3ER
National Grid Reference (NGR):	TA 16798 16959
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Fieldwork undertaken by:	Becky Wilson, Kim Hosking, Hope Martin, Matt Walker, Tom Howe, Dani Shacklock, Toby Smith, Max Greaves
Fieldwork undertaken:	January to March 2023
Report prepared by:	Becky Wilson
Illustration by:	Sam O'Leary and Stephen Digney
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Authors: Becky Wilson

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Approved by: S. Potten and R. Jarosz-Blackburn

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Enquiries to: AOC Archaeology Group
The Raylor Centre
James Street
York
YO10 3DW

Tel. 01904 413404
e-mail. york@aocarchaeology.com

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Non-Technical Summary

AOC Archaeology Group was commissioned by AECOM, on behalf of VPI Immingham LLP, to undertake an archaeological evaluation by trial trenching at the site of a proposed carbon capture plant at VPI Immingham, Rosper Road, North Lincolnshire, as part of the Humber Zero scheme. The evaluation formed part of a program of works at the site in advance of the development, following a geophysical survey and in conjunction with a Geoarchaeological Borehole survey (AOC 2023).

Thirty-two trenches were excavated at the site. Three areas of occupational activity were encountered which were concentrated in the northwest, northeast and southeast corners of the Site, centred on the higher ground. The central area of site was characterised by a flooding deposit sequence associated with a possible coastal inlet which was aligned west to east across the site.

The northwestern corner of site featured a number of ditches containing some Romano-British pottery and animal bone. There were also a small number of pits beside a possible palaeochannel; these were potentially prehistoric in date, indicated by the recovery of late Mesolithic/ early Neolithic lithic fragments. The northeastern corner of Site featured an alignment of postholes, one of which contained a surviving timber post, and several small ditches which were possible small boundary or enclosure ditches. The southeastern corner featured dense Iron Age/ Romano British activity including a large multiphase curvilinear ditch within a possible enclosure, as well as small ditches associated with field systems. The finds assemblage was small, with deposition of finds largely concentrated in the southeastern corner, and many features remained undated. The finds assemblage included late Mesolithic/ early Neolithic scrapers and blades as well as industrial waste in the form of slag.

The location of archaeological activity within the Site indicates that this activity probably represents the continuation of settlement activity and features identified in adjacent areas. This was identified during archaeological works completed in the early 2000s as part of the construction of VPI Immingham and improvement works on Rosper Road.

1. Introduction

- 1.1 AOC Archaeology Group was commissioned by AECOM, on behalf of VPI Immingham LLP, to undertake an archaeological evaluation by trial trenching and geoarchaeological boreholes at the site of a proposed carbon-capturing facility on land adjacent to VPI Immingham, Rosper Road, Lincolnshire. The proposed construction works form part of the Humber Zero Project. The evaluation formed part of a programme of archaeological works at the site, including a geophysical survey (Allen Archaeology 2022) and a geoarchaeological borehole survey (HFA 2006), which is designed to inform a planning application for the development.
- 1.2 The archaeological evaluation was undertaken in accordance with a Written Scheme of Investigation (WSI) prepared by AOC Archaeology and approved by Alison Williams, the Historic Environment Officer for North Lincolnshire Council (NLC) (AOC, 2022a). The work also met the requirements of nationally recognised guidance for archaeological excavations, including the professional standards published by the Chartered Institute for Archaeologists (specifically, the *Standard and Guidance for Archaeological Field Evaluation* (CIfA, 2014a)).
- 1.3 The archaeological evaluation was managed to the standards laid down in the Historic England guideline publication *Management of Research Projects in the Historic Environment (MoRPHE): Project Managers Guide* (2015), and the *MoRPHE: Project Planning Note 3: Archaeological Excavation (PPN3)* (2008). It also met the requirements of the National Planning Policy Framework (NPPF; Chapter 16: 'Conserving and enhancing the historic environment'; DCLG 2018).

2. Site Location and Description

- 2.1 The proposed development site (hereafter 'the 'Site') is situated within the administrative district of North Lincolnshire, approximately 1.6km north of Immingham and 1.5km west of the Humber Estuary. The Site comprises two irregularly shaped areas, c.5.8ha and c.2.2ha in size, separated by a watercourse, south of the existing Combined Heat and Power Plant (CHP), now owned by VPI Immingham LLC. The Site is bounded to the south and west by the extant trainline; further south is the main campus of the Phillips 66 Refinery. The Site is bounded to the east by Rosper Road which is an old road that appears on the early Ordnance Survey Maps and likely dates back to the Medieval period (OS Map 1886). The site is currently rough pasture and centred on NGR TA 16798 16959 (Figure 1).
- 2.2 The Site is located within the Humberside area on low lying terrain generally at elevations between 2-4m above Ordnance Datum (AOD). A slight decline in the topography from north to south is noted on the north side of Site: from 3.88m AOD at Trench 9 to 2.6m AOD at Trench 8. The topography on the south side rises from northeast to southwest: from 2.5m AOD in Trench 29 to 3.2m AOD in Trench 28. The natural drainage direction across the site is eastwards, towards the Humber Estuary.
- 2.3 The British Geological Survey mapping records the underlying bedrock on site as Burnham Chalk, formed as deep seabed deposits approximately 93.9 to 83.6ma (million years ago) during the Cretaceous Period (BGS 2023). The chalk drops from outcrops along the Lincolnshire Wolds towards the Humber Estuary and serves as a natural, porous aquifer.
- 2.4 The Site is located within the Lincolnshire Marsh, a vast marshland located between the Lincolnshire Wolds and the North Sea Coast, and is part of the Lincolnshire Coast & Marsh National Character Area (NCA) as defined by Natural England. On the early Ordnance Survey Maps the area immediately east of the Site is named as the Killingholme Marshes, with Halton Marshes immediately to the north and Harborough Marsh to the south; all were divisions within the greater Lincolnshire Marsh. The area

has shrunk greatly post-industrialisation (OS Map 1886). The Lincolnshire Marsh is also topographically and ecologically divided into the 'Middle Marsh' (overlying the glacial till) and the 'Outmarsh' (overlying the alluvial and estuarine clays). The Site itself is located on the edge of the 'Middle Marsh' with Rosper Road representing the boundary between this higher ground (generally located at 6m AOD) and the 'Outmarsh' (generally located at less than 6m AOD). Geoarchaeological borehole surveys conducted immediately east of the development Site by Archaeological Project Services identified the rise of the Glacial Till towards the west, away from the earlier course of the coastline (AECOM, 2023). The alignment of Rosper Road also represents the approximate location of the foreshore of the Humber Estuary during the Iron Age and Romano-British periods. The height of the 'Outmarsh', and equivalent flood-formed plains on the north shore of the Humber Estuary, is consistently between 2 and 3m AOD, therefore the formation of the marshlands was a consistent, area-wide event (Berridge & Pattison, 1994).

- 2.5 British Geological Survey mapping shows that two superficial deposits underlie the Site, corresponding to those discussed as part of the composition of the Lincolnshire Marsh. Diamicton glacial till is the main deposit from the last (Devensian) cold stage and underlies the majority of the site (BGS 2023). Till is deposited by glacial ice, either at the glacier base or derived from material within and on the ice. It comprises gravelly sandy silty clay with boulders and contains numerous lenses of sand and gravel. The till is also likely to contain interdigitating units of glaciolacustrine clay, plus sand and gravel formed during ice advance and retreat (Burke et al., 2015). The Holocene superficial deposits (12,000 years ago – present) consist of tidal mudflats (clay, silt, sand, and peat) forming a linear feature entering the site from the east (BGS 2023) which may form an inlet that existed from the prehistoric period onwards. The alluvial and estuarine deposits extend up to 20m deep across the north and south banks of the Humber Estuary.
- 2.6 Underlying topographical features investigated during the works included an east-west aligned coastal inlet bisecting the Site and which protruded inland from the earlier Iron Age/Romano British foreshore along the line of Rosper Road. The inlet and foreshore deposits were identified during a geoarchaeological borehole survey which formed part of the 1999 to 2002 archaeological mitigation works for the Combined Heat and Power Plant (CHP) known currently as VPI Immingham. Further identification occurred during Lidar topographical surveys carried out by the Environment Agency from 1998 to 2006.
- 2.7 The soil on Site comprises two deposits which also reflect the underlying deposits and the Site's location on the boundary between the Middle Marsh and the Outmarsh. The soil on the majority of Site, which continues eastwards towards the Humber Coastline, comprises the loamy and clayey soil of the coastal flats with naturally high groundwater. Geological mapping illustrates that the deposition of these soils includes the potential course of the east-west aligned coastal inlet. In the southwest of the Site the soil comprises slowly permeable, seasonally wet, slightly acidic base-rich loamy and clayey soils which formed as the slightly higher ground of the Middle Marsh (Soilscapes, 2023).

3. Archaeological and Historical Background

- 3.1 A Desk Based Assessment (DBA) undertaken in 2022 (AECOM 2022) identified a moderate potential for pre-Iron Age prehistoric deposits, and a high potential for Iron Age, Roman, Medieval and Post Medieval remains to be present within the Site. The following is a summary of the DBA findings.

Early Prehistoric (Upper Palaeolithic to Neolithic) (50,000 BC – 2,200 BC)

- 3.2 Material evidence of prehistoric features is limited across the North Lincolnshire and Humber region. This is especially true of the Palaeolithic period due to the effect of the Devensian glaciation as the

area was located beneath the North Sea Ice sheet. The superficial drift geology of the area comprises Devensian glacial till and the Site's underlying geology was formed during this period. Additionally, the formation of the 'Middle Marsh' and the 'Outmarsh' potentially began in this period; however, its origins are disputed. The abruptness of the edge of the sub-Flandrian platform which forms the 'Outmarsh' potentially indicates a wave-cut shore feature. This would be associated either with a Late Devensian meltwater lake or a pause in the advance of the Flandrian sea during the advent of the current geological epoch (Berridge & Pattison, 1994).

- 3.3 Find spots are recorded from the early prehistoric period within the wider North Lincolnshire area. Flint scatters and hand axes from the palaeolithic period were recovered up to 10km away at the Ken Hill Gravel pit as well as at Kelsey Hill. An archaeological evaluation 3km north of the Site recovered a palaeolithic scraper (AECOM, 2022).
- 3.4 The retreat of the ice sheet in the area occurred around 13, 000 years ago, during the transition from the Upper Palaeolithic to the Mesolithic, and resulted in the eventual sea level rise from 65m below current Ordnance Datum (OD) to less than 10m below current OD between 10,000 and 7000 years ago. This created marshland as the area began to silt up during inundations and advance from the rising water. The coastline was located 50 km east during this period; however, the sea advanced significantly, changing the ecology from predominantly woodland ecosystems to wetland. Preserved tree stumps from this transition have been encountered from Immingham to Ingoldmells (Berridge & Pattison, 1994). By the advent of the Neolithic around 4,300 BC the coastline was significantly inland from its position in the present day.
- 3.5 Mesolithic features in the wider area were largely spot finds comprising flint blades, scrapers and flakes at Croxton, New Melton Cross, East Halton and Barrow-upon-Humber (sites located 8-15km from Site). A watching brief at Humberside airport also recovered flint fragments in 1995; further archaeological works in the area indicated near continuous settlement into the Saxon period. Closer to the Site, flint scatters have been identified within 1km of the Site at East End, Faulding Lane, and Harbrough Road as well as the recovery of a Mesolithic blade core near Killingholme Marshes.
- 3.6 Fieldwalking on Site in 1999 recovered several flint fragments, potentially natural with local origins, which dated from the Mesolithic, Neolithic and Bronze Age and, along with the surrounding flint scatters, suggest some activity in the area during this period (Humber Archaeology, 2006).
- 3.7 As discussed above the coastline during the Neolithic was significantly west of its current position, likely close to the location of the Site, as the sea level continued to steadily rise. Deforestation continued to occur both naturally and as part of clearance events in Holderness around 3600 BC as people settled and agriculture became the primary industry. Funerary practices also changed with lay barrows in the area to the east of the Lincolnshire Wolds; an area of importance as this form of barrow is unique to the area.
- 3.8 The transition from the nomadic Palaeolithic and Mesolithic to the more settled Neolithic can be inferred from the archaeological record with cut features starting to be identified in the area. During archaeological works for the Skitter-Halton pipeline, north of the Site, several Neolithic features were identified including linear and ring ditches with tools and pottery as well as a quarry and lay barrow. This indicates a significant Neolithic settlement in the area. Pollen cores from East Halton dated a peat layer to the Neolithic and Bronze Age which was sealed by alluvium deposits, suggesting a later marine transgression. Assemblages of tools and debitage were recovered from works at East Halton in 2010 and from North Killingholme in 2001. Supporting the importance of the area during the Neolithic period was the recovery of prestige items including a Greenstone Axe at Barrow-upon-Humber as well as small hand axes at Gloxhill and North Killingholme. (AECOM, 2022).

- 3.9 Within 1km of the Site a number of finds have been identified from the period, predominantly to the north and northeast. This includes a scraper, cores, and flakes from around Station Road in 1999; a fragment of a polished stone axe within plough soil near Rosper Road; and 7 pieces of worked Neolithic or Bronze Age flint recovered during field walking carried out by Allen Archaeology in 2009. Neolithic material recovered from Site was during the aforementioned field walking in 1999 which recovered Mesolithic, Neolithic and Bronze Age flints.

Bronze Age (2,200- 750 BC)

- 3.10 Settlement in the area continued during the Bronze Age with the addition of metalworking industry and salt production. The coastline during this period was static with minor movements east and west during small inundations and regressions. It is therefore likely, as with the Neolithic, that the Site was generally low lying but above sea level; hence, there was potential for occupational activity in the area. The Bronze Age in North Lincolnshire saw increased field systems, however there is evidence of some continuation of seasonal nomadic lifestyle in flint scatters at East Halton and North Killingholme.
- 3.11 Further afield, flints and pit groups from the period were identified in excavations at Humberside Airport in 1991; fish traps were encountered in works at New Holland; ring ditches in crop marks at Gloxhill as well as an urn cremation; and round houses at Ulceby, Holme Hill, and Kirmington. Barton Street, a route across the Lincolnshire Wolds, also dates to this period and illustrates the wider interconnection between settlements.
- 3.12 Northwest of Site, on the eastern side of Rosper Road, trial trenching was carried out in 2006 by Archaeological Project Services to facilitate construction of buildings at the Prax Lindsey Oil Refinery. During the works a large ditch was identified across a number of trenches, aligned northwest/southeast (following the probable coastline alignment), which was potentially a boundary ditch between the 'Middle Marsh' and the 'Outmarsh' and contained pottery dating from the Bronze Age (AECOM, 2022).
- 3.13 Immediately southeast of Site, geophysical survey and trial trenching conducted by Headland Archaeology in 2009 recorded Early, Middle and Late Bronze Age features all sealed by alluvial clay. The features included linear ditches, curvilinear features, a buried soil, and a spread of burnt material. The site continued to be occupied into the Iron Age and Romano-British period. The site did not appear to be domestic in nature and was thought to be associated with exploitation of the estuarine environment, with semi-permanent industrial and marine resource exploitation activities being present.
- 3.14 To the southwest of Site, an excavation prior to construction of facilities supporting the windfarm industry encountered a number of sub-square enclosures and curvilinear features. These were identified as primarily Iron Age and Romano British in date, with some evidence this is a continuation of Bronze Age activity.

Iron Age and Romano-British (750 BC- 410 AD)

- 3.15 A significant number of occupational sites identified in the area saw continuous occupation through the Iron Age into the Romano-British periods, such that these are discussed together. The coastline regressed further eastwards during the Iron Age, creating new areas of marshland across North Lincolnshire while draining others. The edge of the foreshore, the high tide line, was likely in the region of Rosper Road and along the boundary between the 'Middle Marsh' and the 'Outmarsh'; the drier conditions even in the low-lying areas of the Lincolnshire Marshes (below 6m AOD) encouraged settlement in the area, and several Iron Age and Romano-British sites have been identified. The Iron Age also saw increased industrial activity, particularly salt production, with several salterns identified in the immediate area. In the wider area, there were limited hillforts in North Lincolnshire and in general

settlements of the early Iron Age are difficult to identify; however, the area was still well-occupied and technologically advanced.

- 3.16 Previous archaeological investigations to the immediate north and south of the Site in 1999/2000 and 2015 uncovered extensive archaeological remains, some of which are likely to extend into the trial trenching area. Further afield, significant settlements have been identified at Kirmington Airfield, Yarborough Camp and North Killingholme, primarily in the form of rectilinear ditches and enclosures (AECOM, 2022). The settlements largely dated from the mid-to late Iron Age in foundation, with evidence of industrial activity at East Field road, North Killingholme. Field systems have been identified in crop marks 2km southwest of Site as well as several small D-shaped occupation enclosures with roundhouses between 0.5m and 2km northwest of the Site. The wider area is significantly occupied and exploiting its proximity to the Humber Estuary.
- 3.17 Several archaeological evaluations and mitigations have occurred in the immediate surrounds of the Site. This included a programme of archaeological mitigation immediately to the south of the Site which was carried out during the spring and summer of 2015 in advance of road improvement works to the A160/A180 access to the Port of Immingham. This identified two large linear ditches which contain notable quantities of late Iron Age pottery. It is suggested that these features were part of an occupation enclosure rather than a field system. These features were originally believed to be located 16m south east of the Site. However, the 2015 mitigation suggests that they may extend into the Site (AECOM 2022). Immediately to the west of the above mentioned site, archaeological works encountered sub-square enclosures which contained curvilinear features (possible ring gullies), linear ditches and discrete pit type features, at least one of which was a hearth. Domestic occupation appeared to be concentrated to the west of the site. There was also some evidence for salt making being carried out towards the wetter eastern part of the site. It is likely that the sites are associated and are also potentially related to the Bronze Age landscape identified to the southeast of Site and evaluated in 2009 by Headland Archaeology.
- 3.18 The site evaluated by Headland Archaeology via trial trenching was located to the southeast of Site and identified Iron Age and Romano-British features as well as its Bronze Age ditches. Finds from the site included industrial slag and pottery dating from the Bronze Age into the Iron Age and into the 2nd Century. The nature of the finds was indicative of an industrial landscape rather than domestic deposition. Finds also included the fragmentary remains of ceramic trays that were potentially used in salt production.
- 3.19 Nearly 1km northeast of Site, a major settlement was investigated via trial trenching, geophysical survey and field walking by Allen Archaeology between 2011 and 2012. The site was in use from the mid- to late Iron Age and continued into the Romano-British period. The sites, broadly, consist of a multi-phased arrangement of interconnected, rectangular ditched enclosures orientated on a north-south axis. Within these enclosures are numerous features representing structures, animal enclosures, and the subdivision of land plots and fields.
- 3.20 Two Iron Age settlement sites were located to the north of the Site. Approximately 370m to the north-east an excavation in 2013 uncovered two large enclosures. Both featured internal sub-divisions, with the southernmost displaying evidence of six ring gullies and other structural elements dating from the mid to late Iron Age and early 1st century AD. The remains of a field system were identified in an archaeological evaluation in 2006, approximately 100m north of the Site.
- 3.21 Archaeological investigations undertaken on the site of a proposed combined heat and power plant (CHP) at North Killingholme, west of Rosper Road, between 1999 and 2000 uncovered a significant occupation site with early Iron Age origins. Part of this settlement is located within the Site at its

northern extreme. It lies partially under the extant buildings, partially within the (potentially less disturbed) area of the car park on the northeast edge of the Site, and partially within the southern open area of the Site. The southernmost excavations, within the current development Site, encountered an early Iron Age settlement which is distinct as most settlements are mid-to late Iron Age in date. After a period of latency in the mid Iron Age the settlement becomes larger in the north, under the extant buildings of the VPI Immingham Power Station, with continued occupation into the Romano-British period. The archaeological investigations are discussed in more detail below, in Prior Archaeological Works.

- 3.22 The Romano-British period in Lincolnshire was heralded by the arrival of the 9th Legion Hispania in Lincoln between 50- 60 AD. Lincoln was already the capital of the area under the Corieltavi tribe dating from the Late Iron Age. Further regression of the coastline occurs in the early Romano-British period encouraging settlement within the former marsh area and the earlier foreshore. Several lost Romano-British settlements, including Scupholme and Ingoldmells, are referred to in historical records from the period and are now located within the current Humber Estuary (Green, 2014). As discussed above a number of significant Iron Age settlements continued to be occupied and expanded during the Romano-British period. This includes the CHP/VPI power plant itself as well as ladder settlements at Kirmington Airfield and rectangular enclosures at North Killingholme. The material culture of the area suggests the full 'Romanisation' of the region did not occur until the 2nd century, likely influenced by the rural nature of the area and distance from the nearest major Roman Road: High Street (Roskams, 1999).
- 3.23 Several Romano-British sites have been identified and investigated in the wider area. These include two Romano-British ladder settlements, one c.650m south of the site and another c1.5km to the west. The settlement to the south was recorded by a geophysical survey and metal detecting survey in 2004-2005 and comprised a complex series of rectangular ditches conjoined to either side of a trackway. Some of the positive anomalies within the settlement were suggestive of wall footings and arranged in such a way to suggest buildings. The metal detecting survey recovered a substantial assemblage including 3rd and 4th century coins and two Roman brooches of the 1st or 2nd century. The settlement to the west of the Site was investigated by Allen Archaeology in 2014 following geophysical survey in 2011 and evaluation in 2012; a number of ditches were recorded across the works including a double-ditched penannular enclosure and a large main sub-rectangular enclosure with subdivisions and a short trackway. The features displayed evidence of being re-worked and adapted from the mid-to Late Iron Age into the 2nd Century.
- 3.24 The settlement to the west of the Phillips 66 Lindsey Oil Refinery possibly consisted of one or more farmsteads. The pottery was largely utilitarian shell-gritted ware, typical of the Late Iron Age - Roman transition in North Lincolnshire. One sherd in a cream fabric was thought to originate from a 1st century AD kiln at Lincoln, whilst other material was more distinctively late Roman (3rd – 4th century AD). There was also evidence for metalworking residue, fired clay fragments, oyster shells, and animal bone.
- 3.25 The late Roman and early Medieval periods saw marine transgression from the Humber Estuary as the coastline moved westwards, burying Romano-British settlements in up to 2 or 3m of alluvium. This was illustrated by investigations of a small settlement or farmstead to the northeast of Site which was evaluated in 2012 by Allen Archaeology. The area featured ditches which were likely continuation of field systems encountered during the CHP/VPI Immingham excavations in 1999-2002. Most significantly the ditches were sealed by an alluvial flood deposit up to 0.9m thick and located at the edge of a palaeo-shoreline. This is consistent with the existence of the possible coastal inlet and the

location of the Iron Age/Romano-British foreshore while corroborating data from previous geoarchaeology borehole surveys.

Medieval/ Post-Medieval (410 AD- Present)

- 3.26 The area was part of the Anglo-Saxon Kingdom of Lindsey up until the 7th century where it was absorbed into the Kingdom of Northumbria. Settlement and funerary practices altered again and there was increased class division. A Saxon *Burh* (walled settlement) was founded at Stallingborough while pottery recovered at sites in East Halton and Kirmington Airfield suggested continued occupation into the Anglo-Saxon period. The evidence of continued occupation in the immediate area around the Site is limited and largely comprises spot finds. This includes late Saxon pottery sherds recovered during fieldwalking of a moated site 177m to the west, as well as evidence of continued occupation at the site excavated to the northwest by Allen Archaeology in 2014 (AECOM, 2022). During the CHP/VPI Immingham excavations a single Saxon coin was recovered (7th to 8th Century) suggesting low level intermittent occupation of the area (Humber Archaeology, 2006).
- 3.27 After the conquest the area remained largely agricultural and unchanged up until the advent of industrialisation in the early 1900s (AECOM, 2022). The largest settlements in the area were Immingham and Stallingborough which were recorded in the Domesday book (1086) but smaller settlements at North and South Killingholme were also recorded. The households that formed North and South Killingholme were distributed along a spine road (reminiscent of row villages) and cultivated fields referred to as East and West Field. The Site is located on the edge of the East Field in an area known as the 'Summergates' which was lower-lying marshland.
- 3.28 Several units of medieval ridge and furrow were digitally plotted using pre-existing aerial photographs from the 1940s and 1970s as well as new data collected during 2011 (via geophysical survey). The ridge and furrow activity was seen to cover the location of the current VPI Immingham buildings and the potentially undisturbed ground with the Site, where there is the potential for preservation. The geophysical survey of the Site prior to the evaluation identified anomalies consistent with ridge and furrow in the southwest corner, on the higher ground away from the course of the potential coastal inlet.
- 3.29 One concurrent length of hedge, the remains of historically important hedgerows that appear as field boundaries on pre-1840 maps, currently runs along the eastern perimeter of the Site. A linear cropmark (possibly a ditch) thought to be of medieval / post-medieval date is present at the west edge of Site.
- 3.30 Industrialisation of the area began late, around 1912, and included the construction of the railway bounding the south of the Site. The surrounds of the Site gradually became the Immingham docklands; however, the Site itself remained agricultural land into the present day. The northern half of the Site was used during the construction of VPI Immingham as a lay-down area which resulted in the deposition of a significant amount of made ground.

Previous archaeological investigations

- 3.31 A number of excavations have been carried out in recent years in the immediate vicinity of the Site. These excavations have been discussed above in depth, where they contribute to the chronological picture of the wider area. Archaeological remains with potential to extend into the present Site include Late Bronze Age and Early Iron Age settlement activity, followed by later Iron Age to Romano British activity.
- 3.32 The relevant excavated sites are itemised below as follows:

- Archaeological works by Humber Archaeology, 1999-2002, ahead of the construction of the Combined Heat and Power Plant (CHP) to the immediate north of the Site, currently known as VPI Immingham (Humber Archaeology, 2006). These excavations extended into the current Site at its northern boundary (see Figure 1).
- Geophysical survey and trial trenching conducted by Headland Archaeology in 2009 immediately southeast of Site.
- A programme of archaeological mitigation immediately to the south of the Site which was carried out during the spring and summer of 2015 in advance of road improvement works to the A160/A180 access to the Port of Immingham.

Excavations to the north of the present Site

- 3.33 The 2000-2002 works at the northern edge of the present Site revealed that an early Iron Age settlement was located in the south of the previously excavated area, on the lower ground near a former creek on the shore of the River Humber. This extended into the bounds of the current development Site. A series of parallel ditches were encountered in the area along with internal ditched divisions (Humber Archaeology 2006). At the southernmost point of the excavations a ditch paralleling the course of the coastal inlet was excavated, possibly serving as the southern boundary to the Iron Age activity. Pottery recovered from the early Iron Age site included shell-tempered pottery which was not present in the later Iron Age assemblage in the northern area. The nature of the pottery suggested that the early to mid-Iron Age in the area was greatly influenced by activity around the Humber and the East Riding of Yorkshire instead of Lincolnshire; this reversed in the Late Iron Age.
- 3.34 There then appears, on the basis of the pottery sequence, to have been a hiatus in occupation of the site in the mid to late Iron Age. The late Iron Age and Romano-British settlement developed on higher ground further to the north, centred around a driveway and a pattern of enclosures. The northern part of the settlement appeared to have been unenclosed: although the single mid-Iron Age roundhouse from this period was found between two boundary ditches, these appeared to represent the subdivision of an open area, as opposed to the enclosure of smaller compounds. Pottery evidence for the later Iron Age and Romano-British periods suggested that until the mid-2nd century there was a scarcity of imports, and it is likely that at this time the site was of a relatively low status. During the latter part of its life (late 2nd century onwards) the settlement appears to have become more affluent (as represented by the cultural material, including foreign imports) and could be seen as a more moderate to high status site.
- 3.35 The salt production industry was relatively well-established in the area and there was evidence of this activity in the northern, later, area of the settlement. Evidence of salt production included briquetage fragments in the form of ceramic trays (used to reduce the brine to salt), as well as green slag residue from the chemical reaction between the salt and fuel. The location of the material evidence suggests salt production was concentrated on the foreshore (towards the east) instead of the coastal inlet (towards the south).
- 3.36 The nature of the pottery, a general lack of artefacts, and the environmental evidence from the site suggested a rural, pastoral settlement with some semi-aquatic activity related to the foreshore and the coastal inlet to the south. Moreover, given the presence of a driveway, ponds, and enclosures interpreted as pens or corrals for livestock, it appeared that the settlement was mainly dependent on raising cattle and sheep/goats.

Excavations to the south of the present Site

- 3.37 The geophysical and trial trenching works to the southeast of the Site by Headland Archaeology in 2009-2010 recorded Early, Middle and Late Bronze Age features all sealed by alluvial clay (Headland 2010). The features included linear ditches, curvilinear features, a buried soil, and a spread of burnt material within alluvial clay layers. The site continued to be occupied into the Iron Age and Romano-British period. The site did not appear to be domestic in nature and was thought to be associated with exploitation of the estuarine environment, with semi-permanent industrial and marine resource exploitation activities being present.
- 3.38 Archaeological mitigation works were undertaken by Network Archaeology in 2015 to the immediate southeast of the Site; the northwest portion of the excavated areas fell within the present development boundary (see Figure 1). The excavations identified a northeast-southwest aligned linear ditch at the northeastern corner of the excavations, and a probable enclosure in the southern excavated area with at least two curvilinear ditched features positioned within it. Several ditches continued beyond the excavated limits of the areas into the present site. Many excavated ditches contained notable quantities of late Iron Age pottery, the volumes suggesting that these features were part of an occupation enclosure rather than a field system. Several features were also phased as early Roman (AECOM 2022).

4. Aims and Objectives

- 4.1 The aim of the archaeological evaluation was to gather sufficient information to establish the presence/absence, character, extent, state of preservation and date of any archaeological remains within the areas to be impacted by the development, and to inform further archaeological mitigation strategies should they be necessary.
- 4.2 The specific objectives of the archaeological fieldwork were to:
- Locate, record, characterise, and determine the extent of any surviving sub-surface archaeological remains;
 - Excavate and record identified archaeological features and deposits to a level appropriate to their extent and significance;
 - Report the results of the fieldwork and place them within their local and national context; and
 - Produce a comprehensive site archive and a descriptive and interpretive report.
- 4.3 The specific research objectives of the archaeological fieldwork were to:
- Determine whether significant deposits and features pre-dating the post-medieval period survive at the site, and at what depth.
 - Determine whether potentially Iron Age or Roman features survive at the site which may be linked to wider evidence for activity from these periods in the locality (notably through cropmark evidence).
 - Provide an assessment of the impact of the development on any significant archaeological deposits and features to assist in the formulation of an appropriate archaeological mitigation strategy.
- 4.4 In addition, the WSI highlighted further Specific Research Aims (SRA) relating to the previously recorded evidence for extensive Iron Age settlement to the immediate northwest of the site and multi-period settlement evidence to the southeast which included activity of Bronze Age, Iron Age and

Roman date (AOC, 2022). The specific aims of the archaeological evaluation in relation to these settlements were:

- SRA6: To determine how extensive these settlements were;
- SRA7: To determine how long lived the settlements were;
- SRA8: To determine their spatial and chronological relationship – are we looking at one large, long-lived settlement through which a river ran or two (or more) settlements operating at different times, the focus of activity gradually moving northwards?;
- SRA9: To determine how changes in the location of the foreshore and associated tributaries influenced settlement patterns; and
- SRA10: To determine what the wider landscape was like at this time.

4.5 The results of the archaeological evaluation may also inform broader research initiatives outlined in the East Midlands Historic Environment Research Framework, specifically:

- 4.5.1: Why did large nucleated settlements emerge in areas such as Lincolnshire and Northamptonshire, and can we clarify further their character and functions?
- 4.5.2: How are the nucleated settlements related to one another and to other settlements of the period? In particular, is there evidence for a developing settlement hierarchy?
- 4.5.3: How may nucleated and other settlements have developed in the Roman period?
- 4.7.2: What roles may wet and other natural locations have performed and how might these have changed over time?
- 4.8.1: Can we chart more closely the processes of woodland clearance and agricultural intensification, their impact upon alluviation and colluviation, and variations between different areas?
- 4.8.3: How may agricultural changes have impacted upon settlement patterns? Can the relationship between sedentary and mobile economies be clarified, and how did this vary spatially and over time?
- 4.9.1: How can we add to our existing knowledge of industries and crafts in this region, particularly the extraction and smelting of iron and lead, salt production and quern manufacture?
- 5.4.3: How did rural settlements relate to each other and to towns and military sites, and how may this have varied regionally and over time?
- 5.4.4: How did field and boundary systems relate to earlier systems of land allotment, and how did these boundary networks develop over time?
- 5.4.5: What patterns can be discerned in the location of settlements in the landscape?
- 5.5.2: How did integration into the Roman Empire impact upon the agrarian economy, including the introduction of new crops, herbs and fruits?

5. Methodology

5.1 Thirty-two trenches were excavated across the proposed development area, which were predominantly 50m long and 2m wide (Figures 2- 26). Trench 25 was 65m long and 2m wide. The trenches were sited to target geophysical anomalies and to investigate a representative sample of the total site area.

- 5.2 The trenches were located using Trimble R8 survey-grade (cm accurate) GPS equipment, and were accurately tied into the Ordnance Survey National Grid and Ordnance Datum levels. Overburden was stripped using a 360° mechanical excavator, fitted with a toothless ditching bucket. Additionally, a toothed bucket, a ripper tooth, and a hydraulic pecker were utilised in order to excavate compact made ground deposits. All machine excavation was supervised by a suitably experienced and qualified archaeologist. Machine excavation ceased either at the first significant archaeological horizon or when natural sub-soil was encountered. Following machine excavation, all excavation was undertaken by hand.
- 5.3 The following sampling policy was applied:
- a 100% sample was taken of all stake-holes;
 - a 50% sample was taken of all post-holes, and of pits with a diameter of up to 1.5m;
 - a minimum 25% sample was taken of pits with a diameter of over 1.5m; this included a complete section across the pit to recover its full profile;
 - a minimum 25% sample was taken of all linear features, up to 5m in length; for features larger than this, a 10% sample was taken;
 - Deposits at junctions (and interruptions) in linear features were excavated to determine the relationships between the different components;
 - Any *in situ* building remains were fully recorded for the extent that they were exposed;
 - Significant features were 100% excavated, if required by the Historic Environment Officer at NLC.
- 5.4 A full written, drawn and photographic record was made of all features revealed during the course of the archaeological evaluation trenching, in accordance with the standards and requirements of the *Archaeological Field Manual* (MOLAS 1994). Plans were completed at a scale of 1:50 or 1:20 (as appropriate), and section drawings at a scale of 1:10. Monochrome photography (35mm format) and digital photography were employed. Digital photography was undertaken using a camera with a resolution of at least 10 megapixels.
- 5.5 All identified finds and artefacts were collected and retained. Finds were bagged according to their context, and significant finds were allocated a recorded finds number and their positions surveyed individually. Finds were exposed, lifted, cleaned, conserved, marked, bagged and stored in accordance with the guidelines set out in the United Kingdom Institute for Conservation's *Conservation Guidelines No. 2* and the ClfA guidelines *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (2014b). Where required, conservation was undertaken by approved conservators in line with the *First Aid for Finds* guidelines (Watkinson and Neal 1998).
- 5.6 The palaeoenvironmental sampling strategy comprised the removal of a bulk sample from securely sealed, hand-excavated contexts, excepting those with excessive levels of residuality or those with minimal 'soil' content (such as building rubble). Bulk samples comprised a representative 40 litre sample, or, from small features, the maximum amount of material that it was practicable to collect.

Variations to the methodology

- 5.7 Trench 1 was removed from the scope of works after consultation with the client, the consultant and Allison Williams, the Historic Environment Officer. This was due to the potential for a telecoms cable to be located in the vicinity of the trench; the area surrounding the trench also produced anomalies when scanned with a cable avoidance tool.

- 5.8 Trenches 14, 16 and 17 were relocated to avoid potential electricity cables associated with lampposts. Additionally, Trenches 25, 30, 31, 32 and 33 were relocated in order to avoid standing water. The presence of standing water also required Trenches 30 and 31 to be split in half, each half being labelled A and B (e.g. Trench 30A and Trench 30B). These alterations were agreed by the Historic Environment Officer.
- 5.9 The depth of the overburden in most trenches exceeded 1m and, generally, this was not deep enough to reveal the entirety of the site deposition sequence or the upper surface of the natural glacial boulder clay at the site. It was agreed with the Historic Environment Officer that, once the maximum safe depth of excavation had been reached in each trench, sondages would be excavated at each end of each trench to the depth of natural glacial till. In some trenches, additional central sondages were excavated to further investigate and record the deposit sequence. These sondages were not safe to enter and were recorded from the trench edge by photographs, sketch sections and detailed written notes. However, if archaeological features were encountered at depth, trenches were stepped wherever practicable in order to create a safe working area. Trenches which were stepped included Trenches 3, 5, 6, 7, 16, 17, 25, 27, 28, 29, 33.

6. Results

- 6.1 In this report, cuts and structural remains are shown in square brackets '[000]' and fills and layers are shown in rounded brackets '(000)'. The levels of significant deposits and features are given first in height above Ordnance Datum (AOD); this is followed by a depth below ground level (BGL).

Natural deposits

- 6.2 Natural glacial till (boulder clay) was encountered in all trenches, generally through the excavation of sondages (Plates 1 and 2). In a small number of trenches (9, 14, 16, 18, 25, 26, 27, 28) it was exposed across most of the length of the trench and consisted of a dark purplish brown clay with frequent chalk flecks and blue/grey clay striations (Plate 3). This deposit was encountered on the north side of the site between 3m AOD (1.39m BGL) and 0.9m AOD (2.2m BGL). In the south side of the deposit was encountered between 2.39m AOD (0.9m BGL) and -0.20m AOD (2.3m BGL)
- 6.3 Overlying this glacial till were further natural deposits. The sequence is summarised below and discussed more thoroughly in the Geoarchaeological Deposit Model Report (AOC, 2023). Outside the coastal inlet area (see below), in the northern side of the site, natural orange/brown clays and gravels were encountered in Trenches 3, 5, 6, 9, 11, and 16, sealing the glacial till and serving as the archaeological horizon (Plate 4). These deposits were encountered between 2.1m - 2.25m AOD (1.1m - 1.5m BGL) and were 0.40m – 0.20m thick. The upper surface of the deposit sloped generally from north to the south across the site. This deposit type is categorised as Pleistocene glaciofluvial material formed in peri-glacial conditions. Both the glacial till and the glaciofluvial gravels date from the Devensian/late Pleistocene (c. 33000-12000 years ago) (AOC 2023).
- 6.4 A potential coastal inlet area was identified in the central part of the site. A sequence of flooding deposits were identified here, lying above the glacial till and the orange/brown gravels, where the current topography creates an amorously shaped, shallow “bowl” within this part of the site. The recorded extents of these deposits align with the probable course of the coastal inlet and suggests the area was frequently inundated with water (Figure 34).
- 6.5 These flooding deposits were identified in Trenches 2, 4, 6, 7, 8, 10, 12, 13, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30a, 30b, 31b and 33 (Figure 31). The stratigraphic sequence of these deposits was generally consistent across the site and can be divided into three main depositional episodes.

- The first episode consisted of early deposits of mixed blue/grey clay and sandy gravels which overlay the glacial till (and the orange/brown periglacial gravels, where present); these are interpreted as Holocene lower intertidal deposits (AOC, 2023).
- The second episode overlay these lower intertidal deposits and was a thick layer of purple/brown silty clay which contained manganese flecks. The composition of the deposit suggests it was formed via natural deposition when the area was inundated with water which remained stagnant for a significant period of time.
- The third depositional episode consisted of mixed orange and blue/grey clays which may represent early post-medieval warping. Warping is the practice of intentionally opening or breaking flood defences to allow farmland to be inundated by river or estuary floodwater, encouraging the deposition of agriculturally rich deposits on farmland.

- 6.6 The first depositional episode - the lower intertidal deposits, were thickest (up to 1m thick) towards the centre of the site where the surface of the underlying glacial till was at its lowest (approximately 0m AOD, 2.6-2.8m BGL) (Figure 33 and Plate 5). Towards the northern and southern edges of the site, away from the proposed coastal inlet alignment, the lower intertidal deposits were thinner (0.4-0.9m thick) (Figure 31 and Plate 6). These results support those from the boreholes and suggest that the inlet formed a small basin across the central part of the site, getting deeper towards the centre. This inlet would have been subject to regular inundation, as evidenced by the intertidal deposits built up in and around it. Beyond the limits of this intertidal deposition (to the north and south of the inlet) the land would have been drier and more suitable for habitation. Assessment of the early intertidal deposits suggests that the earliest deposits, as identified in Trenches 17 and 33, were estuarine clays deposited in the early Holocene (9700 to 6326 BC) by slow rises in sea level whereas the more gravelly upper deposits were formed during more active period of inundation and flooding, perhaps occurring around the mid to late Holocene boundary (2250 BC) (AOC, 2023; see also Appendix 9).
- 6.7 In Trenches 10, 17, 23, 24, 33, and 29 organic material was identified at the top of the lower intertidal deposits, possibly formed by plant debris settling while the area was underwater or a saltmarsh. It represents a period of stability in the area and is possibly contemporaneous with the archaeological activity identified at the site (sited beyond the flooded areas). The organic material was intermittent and up to 0.1m thick in Trench 10 (Figure 29 and Plate 7). The deposit dates from the mid- to late Holocene (6326 to 2250 BC and onwards) and was formed within a temperate wetland or saltwater environment (AOC, 2023).
- 6.8 This intertidal deposit was sealed by the second depositional episode. This was a layer of purple/brown silty clay that formed during a period of stagnation after the main period of active intertidal deposition (above). The upper surface of this deposit sat consistently at between 1.85m and 2.10m AOD across the site (depth BGL varied widely from 0.25m to 1.3m, most typically lying around 0.6-0.9m BGL) but the layer varied in thickness. Like the intertidal deposits, it was thickest towards the centre of the site (up to 0.8m thick) and became shallower towards the edges of the inlet (between 0.16m and 0.78m thick). In Trenches 17 and 13 lenses of manganese flecks and marine shells were identified within the deposit (Figures 29 and 30, Plate 8), this suggests that the water which created the deposit is salt water from the estuary, that remained trapped in the area, resulting in the deposition of silt and mollusc remains. In only two trenches, the purple-brown layer was directly related to the archaeological horizon. This was in Trenches 17 and 33 where ditch [17010] and postholes [33008] and [33011] were sealed beneath the deposit at a depth of 1.35m BGL (Plate 9). This is consistent with the theory that the main period of occupational activity at the Site occurred when the coastal inlet was open and active – with occupation being focused on areas beyond the tidal flooding of the inlet. This does not preclude

the possibility that other features were in use when the inlet was already largely silted up or stagnant. However, in this later period the Site and the wider area around it appear to be subject to at least semi-permanent flooding and so are less suitable for occupation. The date of deposition of the purple-brown deposit is unknown, but geoarchaeological analysis of the borehole data suggest the deposit is alluvium deposited in the Late Holocene (c. 2250 BC onwards) as low-lying floodplain deposits (AOC, 2023). It is possible that the deposit formed over hundreds of years and the rate of deposition may have been increased by subsequent land reclamations and deforestation practices from the medieval period onwards (AOC, 2023) (Appendix 9).

- 6.9 The material associated with the third depositional episode sat above, and sealed, the purple-brown silty clay of the second depositional episode. This deposit sequence was representative of a later period of flooding which comprised mixed orange and blue/grey clays (Plate 10). The composition and consistency of this deposit was similar to the warp deposits encountered three miles south of the site at Queens Road, Immingham, which lies a similar distance from the coastline of the Humber estuary as the Humber Zero site and where current ground level was also between 2m and 3m AOD (AOC, 2022). This period of deposition can possibly be attributed to the period after the 17th century when land reclamation along the Humber estuary increased (AOC, 2023).
- 7.1 The flooding sequence described above was sealed by subsoil and topsoil deposits that extended across the site.

Trenches Containing No Archaeological features

- 6.10 Trenches 2, 4, 8, 10, 11, 12, 13, 14, 19, 20, 21, 22, 23, 26, 29 and 30 contained no archaeological features (Figures 3 to 26). Trenches 10, 12, 13, 19, 20, 21, 22, 23, 26, 29 and 30 featured the flooding sequence summarised above (6.4 – 6.9, Figure 31). The subsoil which overlay the entire site consisted of a friable, mid grey/brown silty clay with occasional small sub-rounded stones and was between 0.2m and 0.4m thick. The topsoil consisted of a friable dark grey/brown clayey silt containing occasional small sub-rounded stones; it measured between 0.2m and 0.5m thick.
- 6.11 In Trenches 2, 4, 11 and 14, a buried topsoil horizon representing the former ground surface was sealed by between 0.5m and 1m of made ground; this comprised compact grey and white hardcore (stone) and mid brown mixed rubble (Plate 11). Directly on top of the buried soil horizon a modern membrane sheet was identified, separating the original ground level from the made ground above. Additionally, Trenches 11 and 14 showed evidence of significant modern truncation in the form of drainage trenches (the bases of these features were not reached) (Plate 12). In these two trenches the natural till was encountered at between 0.8m and 1.2m BGL having been significantly truncated. Topsoil and subsoil were of the same composition and thickness c. 0.15m and 0.20m respectively.

Trenches Containing Archaeological features

Trench 3 (Figures 3, 4 and 27)

- 6.12 Trench 3 was located in the northwest corner of the site and in close proximity to previous archaeological investigations (Figure 3).
- 6.13 The earliest deposit encountered was a glacial till layer (3020), reached at 1.8m BGL (Plate 13). This consisted of mid purplish grey/brown clay with inclusions of chalk flecks, and was sealed by an orange/brown clayey gravel natural layer (3021) measuring 0.3m thick. Layer (3006) overlay (3021) and was up to 0.18m thick. The upper horizon of this deposit lay at 2.23m AOD (1.32m BGL). Deposit (3006) consisted of mid brown sandy clay with frequent manganese flecks, and was likely formed during a period when there was standing water in the area. Several archaeological features cut into

deposit (3006), as did paleochannel feature [3007], which suggests that the deposit is of significant age.

- 6.14 Paleochannel [3007] extended over the majority of Trench 3 (Figure 27 and Plate 16). The western edge of the feature lay within the trench and indicated a northeast-southwest alignment. As seen, it measured greater than 35m wide and had a gentle and slightly irregularly sloping western edge (the eastern edge was not seen within the trench). The composition of the excavated paleochannel fill (3008) was a mid-blue/grey and orange clay which was directly comparable to similar deposits encountered in Trenches 2 and 4 suggesting that the lack of archaeology in these trenches was due to the presence of an infilled paleochannel across the area. This suggests that the eastern edge of the paleochannel lay between Trenches 3 and 5, with its course extending southwards through the site. The channel was investigated by machine cut sondages in Trenches 2 and 4 which revealed glacial till at the base of the channel at 1.75m AOD (in Trench 4, 2.05m BGL). No finds material was recovered from the channel. In Trench 3, fill (3008) was overlain by an alluvial layer (3022) which consisted of mid blue/grey purplish clay up to 0.1m thick; this sealed the channel.
- 6.15 To the west of the palaeochannel feature, several features were identified which also cut deposit (3006) (Figure 4). The features included two small rounded pits and a northeast-southwest aligned ditch. Two further discrete (possible pit) features were encountered against the northern bank of the trench.
- 6.16 Ditch [3013] was aligned approximately northeast-southwest with a u-shaped profile, measuring 1.15m wide and 0.55m deep (Figures 4, 27 and Plate 14). It was infilled by two deposits which were naturally formed. The basal fill (3014) consisted of orange/blue clay with frequent gravels and was 0.07m thick and formed via initial erosion of the natural gravels on the ditch edge. The upper fill (3015) was 0.48m thick and comprised orange/blue clay, suggesting a slow water-lain deposit which would be consistent with the nature of the wider site. Several lithic fragments were recovered from the ditch, including a bipolar core in basal fill (3014) and a blade from upper fill (3015) suggesting an early prehistoric date (the flints cannot be more closely dated) (Appendix 5). The ditch was possibly a dual purpose feature, used for both drainage and as a boundary or enclosure feature. The exact relationship between the ditch [3013] and the paleochannel [3007], is unclear though if both maintain their current alignments they would impact on each other a few metres to the north of the trench.
- 6.17 Pits [3009] and [3011] were situated c.0.90m to the west of ditch [3013] and may be contemporary with each other, an association suggested by their proximity and their similarity in form and fills (Figures 4, 27 and Plate 15). Both pits were sub-circular in shape and measured approximately 0.8m in diameter. Pit [3009] was 0.15m deep and was infilled with (3010), a mid grey-brown silty clay with moderate charcoal inclusions; the fill contained an early prehistoric bipolar core as well as an assemblage of a blade and platform rejuvenation flake alongside numerous pieces of undatable debitage and shatter (Appendix 5). Whilst the lithic material was mostly undatable the bipolar core can be viewed as earlier prehistoric in date. Pit [3011] measured 0.23m deep and was infilled with (3012), a dark grey silty clay with frequent charcoal flecks and possible ash residue from burning, suggesting deliberate deposition of material.
- 6.18 Two additional pits or postholes were located immediately adjacent to, and north of, ditch [3013], and were only partially visible within the trench, at its northern limit. Pit [3018] was an elongated oval pit measuring 1.65m long and greater than 0.45m wide. It was 0.20m deep and was infilled by a mixed dark grey sandy clay (3019) which contained moderate charcoal flecks, similar to the fills of pits [3009] and [3011] to the west. This pit was truncated by a circular pit, or possible posthole, [3016] with a width of 0.6m and a depth of 0.2m. Its fill (3017) was a blue/grey sandy clay and is possibly a backfill,

following the removal of a wooden post or the postpipe remains. Several unworked flint fragments, some heat-affected, were recovered from fill (3017) (Appendix 5); however, these are not closely datable and may be residual from the earlier pit fill (3019).

- 6.19 The presence of two bipolar cores, one each from adjacent features pit [3009] and ditch [3013], may suggest an early prehistoric date for this cluster of features within Trench 3. Combined with the debitage and shatter distributed across several of the features, they may represent residual evidence of prehistoric flint knapping in the area, with lithics incorporated into the features over time. Although the lithic material is not closely datable, there is no other dating evidence within these features. It is also notable that the features are isolated by the palaeochannel from the main area of Iron Age settlement; the possibility remains that the features in this part of the trench may be of an earlier prehistoric date.
- 6.20 The archaeological features in Trench 3 cut through [3006] and were sealed by a mixed flooding deposit (3005) (up to 0.25m thick) composed of mixed blue/grey clays; this deposit also sealed alluvial layer (3022). However, unlike the paleochannel fills and deposit (3022) this alluvial deposit was present along the length of the trench. This possibly suggests that the area was abandoned after it became unsuitable for occupation or cultivation due to widespread flooding. The flooding deposit was overlain by a buried subsoil (3004) and topsoil (3003), with thicknesses of 0.20m and 0.15m respectively. The topsoil was followed by a series of successive made ground deposits (3002), (3001) and (3000) which formed a sequence 1 metre thick. This was a modern deposit sequence forming a lay-down area associated with the construction of VPI Immingham in the early 2000s.

Trench 5 (Figures 5, 6 and 27)

- 6.21 Trench 5 was located in the western half of the site in close proximity to Trenches 3 and 6 as well as the previous excavation in the early 2000s. Two parallel ditches were encountered at the northern end of the trench and two possible drainage features were encountered towards the southern end, although these may represent shallow naturally formed channels (Figures 5 and 6). The archaeological horizon was encountered at between 2.35m AOD in the north and 2.22m AOD in the south (c.1.5m BGL). This necessitated the stepping of the entire trench.
- 6.22 Glacial till (5027) was encountered in a sondage at the southern end of the trench at 2.3m BGL (Plate 17). It was overlain in the majority of the trench by a mixed red/brown silty clay deposit (5007) with blue striations throughout (>0.18m thick). At the northern end of the trench a thin, intermittent orange gravel natural deposit (5028) was identified, similar to that encountered in Trenches 3 and 6, which lay above (5007). Deposit (5016) was a firm blue-grey water-lain clay up to 0.10m thick which was present at the southern end of the trench for a length of approximately 20m. Deposit (5016) was no more than 0.15m thick and lay directly over (5007) and under buried subsoil (5006). The clay-rich composition of the natural deposits in the southern part of the trench is likely due to water deposition, the deposits forming where the topography gradually declines towards the coastal inlet. In contrast, the orange gravels (5028) lay on the slightly higher ground.
- 6.23 Two shallow linear features [5001] and [5013] were located at the southern end of the trench and ran parallel to each other on an east-west alignment (Figures 5b and 27, and Plate 18). Both these features truncated deposit (5007). The features were wide and shallow, with the southernmost channel [5001] measuring 1.4m wide by 0.3m deep and [5013] measuring 1.02m wide by 0.23m deep. Both features were infilled by mid grey/blue clays (recorded as fills (5015) and (5014) respectively). These were near-identical to a blue/grey flooding deposit (5016), recorded in this part of the trench. Although it was clear that these features cut deposit (5007) it was much more difficult to determine their relationship with deposit (5016); they were tentatively recorded as cutting through (5016), but the

boundaries between fills (5015) and (5014), and deposit (5106) were diffuse and equivocal. It is suggested that these features represent natural drainage channels; linear depressions in the landscape which formed on the slope towards the coastal inlet, possibly draining water into the palaeochannel to the west. Both linear 'cuts' had a steeper southern (downslope) edge and a very gentle northern edge, consistent with having been eroded by the gradual passage of water, naturally collecting downslope, rather than being cut deliberately. No finds were recovered from the features and they appeared to be linear natural depressions at the edge of the paleochannel and coastal inlet. It is then likely the flooding deposit (5016) is the same as deposits (5015) and (5014) which infilled [5001] and [5013].

- 6.24 Further north within Trench 5 three ditches [5002], [5009] and [5021] were identified. They were all on an approximate east-west alignment (Figures 6 and 27 and Plate 19). All three ditches were cut through deposit (5007); however, ditch [5021] was overlain by deposit (5008) whilst the other two ditches [5002] and [5009] cut through this deposit. The earliest ditch [5021] measured 1.4m wide and 0.48m deep. Ditch [5021] cut natural layer (5007) and had moderately steep sides with a broad, concave base. It was infilled by four deposits: the three lower fills (5018), (5019) and (5020) were thin layers of clays and sandy clays all of which were between 0.15m and 0.20m thick; these were formed via water lain deposition and slumping events as the edges of the ditch eroded. The uppermost fill (5022) measured up to 0.28m thick and contained manganese flecks suggesting this formed over a longer period of time and within the presence of stagnant water. No finds were recovered from this ditch.
- 6.25 Ditch [5021] was overlain by deposit (5008). This was a layer of mid orange-brown clay with occasional charcoal and manganese flecks, measuring up to 0.25m thick and covering an area approximately 7m wide. It is interpreted as either bank material that has been flattened and washed over the infilled ditch feature, or a build-up of eroded material which possibly settled in this area due to the disuse and backfilling of the ditch (and resulting poor drainage). Deposit (5008) was truncated by two later ditch features, large ditch [5009] to the north of [5021] and smaller gully [5002] which recut along the line of ditch [5021].
- 6.26 The recutting of ditch [5021], by ditch [5002], suggests that the position of the original ditch was known, or discernible, when [5002] was cut, and its stratigraphic sequence suggests that [5002] was part of a later phase of settlement. The recut was slightly smaller at 1.25m wide and 0.3m deep. However, it shared a similar profile with the earlier feature. The feature may represent a drainage gully associated with the larger boundary ditch [5009] to the immediate north. Ditch [5002] was infilled with a single mid yellow-brown clay deposit (5012) which was mottled with manganese, suggesting the deposit formed in standing water over time. A single sherd of Romano-British greyware was recovered from (5012); it cannot be closely dated (Appendix 2).
- 6.27 The larger ditch [5009] measured 2.2m wide and 0.95m deep. It was infilled by three naturally deposited fills. The basal fill (5010) was a thin blue/grey clay deposit that appeared to be water lain (0.12m thick). The main fill (5026) was a mid-orange grey/brown clay with manganese flecks (0.5m thick) which formed slowly, suggesting this fill formed as the ditch was still in use as a boundary feature. The grey-brown upper fill (5024) contained more silt and probably formed as the ditch fell out of use (0.36m thick). The ditch was undated by finds but its position in the stratigraphic sequence was identical to [5002]; the features were spaced 1.3m apart. It is possible these were paired features of contemporary (Roman) date, perhaps re-establishing a disused boundary of possible Iron Age date represented by [5021].

- 6.28 A small assemblage of flint fragments was recovered from environmental samples from the fills of all three ditches ([5021], [5002] and [5009]), as well as deposit (5008). They are a mix of debitage chips, flakes and shatter and may all be of natural origin, although such material may derive from the initial stages of hard hammer flint working typical of early prehistoric sites (Appendix 5).
- 6.29 The flooding layer (5016), which lay over [5007] and [5008] and the archaeological sequence, was sealed by a mid yellow-brown silty clay subsoil layer (5006), which measured between 0.3m thick towards the southern end of the trench and 0.6m thick above the backfilled features towards the northern end of the trench. This in turn was sealed by a buried topsoil (5005) comprising dark grey/brown clayey silt up to 0.3m thick; this layer represents the former ground surface prior to the deposition of later modern deposits.
- 6.30 A series of modern made ground deposits (5004), (5017), (5003) and (5000) overlay the buried topsoil and the early depositional sequence, comprising white chalk hardcore and compact grey blast furnace slag. The layers collectively raised the ground level by up to 1m and were associated with the construction of VPI Immingham in the early 2000s.

Trench 6 (Figures 5, 7 and 28)

- 6.31 Trench 6 was located approximately 35m to the east of Trench 5. It was split into two halves (north and south) to avoid a standing fence and spoil heap. This resulted in this portion of the north trench extending into the 1991-2002 excavation area. Due to the different archaeological deposits present in Trench 6 North and Trench 6 South the two trenches will be discussed independently. A single ditch and possible stakehole were identified in Trench 6 as well as two large modern truncations (Figures 5 and 7).

Trench 6 North

- 6.32 Glacial till (6012) was encountered at 1.55m AOD (2.3m BGL) in Trench 6 North (Plate 20). It was overlain towards the southern half of the trench by a mid-reddish brown clay (6006) which was similar to the deposit encountered in the southern half of Trench 5. This deposit measured up to 0.60m thick. At the northern end of the trench the glacial till was overlain by a mid yellow brown silty clay (6011) with some gravel content, similar to the natural deposit encountered in the northern end of Trench 5 and in Trench 3. Deposit (6011) was no more than 0.40m thick. The upper surface of these two deposits was at between 2.1m and 2.25m AOD (c. 1.5m BGL). All features encountered within Trench 6 North were cut into these deposits.
- 6.33 A broad, slightly curvilinear ditch was identified at the north end of the trench (Figure 28, Plates 21 and 22) and excavated at two locations – recorded as [6016] and [6019]. The ditch was aligned predominantly north-south, curving slightly to the west at its southern end; it measured up to 1.35m wide and at least 0.65m deep. The southern portion of the ditch ([6016]) was truncated by previous archaeological excavations. The ditch showed similar patterns of fill deposition at both excavation locations. The lower fills consisted of silty clay fills (6032) and (6021). Deposit (6032) was 0.12m thick, and deposit (6021) up to 0.16m thick. Context (6021) was deposited after a possible minor edge collapse represented by the natural-rich fill (6034), only 0.05 m thick; a further edge slumping event (6033) followed with a depth of 0.11m. The upper fills of [6019], deposits (6022) and (6023), were both similar blue/grey clay rich deposits, with context (6023) overlying (6022). Deposit (6023) was 0.20m thick and deposit (6022) 0.27m thick. Both deposits contained high amounts of manganese as well as snail shells (Appendix 7). Small fragments of rock grit-tempered pottery dating from mid-to late Iron Age were recovered from both upper fills (6022) and (6023) (Appendix 2). A small assemblage of fourteen fragments of poorly preserved animal bone from large mammals was recovered from contexts

(6021), (6022), (6023) and (6032); these could not be identified to species (Appendix 4). This suggests that the ditch was used for refuse and food waste deposition after it had partially silted up. The finds are also consistent with a domestic and pastoral environment.

- 6.34 A small possible stakehole [6035] was recorded at the eastern edge of ditch [6019]; this was circular in plan with a steep v-shaped profile, and measured 0.1m in diameter and 0.07m deep (Figure 28). The single fill (6036) was a mid blue/grey fine sandy clay containing manganese and charcoal flecks; it yielded no finds.
- 6.35 A truncation event [6013] was recorded at the edge of [6016] which was filled by dark silty clay deposits (6014) and (6015). This corresponds to a previous hand-excavated slot carried out as part of the 2002 excavations. It seems likely that [6016]/[6019] equates to the ditch recorded as [1143] in the 2002 excavations, interpreted as part of a driveway; the slot [6013] investigated its relationship with a further east-west aligned ditch immediately to the south of [6016]. This was recorded in plan as described below. (HFA 2002, see Figure 10).
- 6.36 Feature [6016]/[6019] was encountered at significant depth, which required the trench edges to be stepped. With the agreement of NLC, the remainder of Trench 6 North was stripped to the archaeological horizon prior to backfilling (but not stepped) in order to expose the other features in this area which had been recorded in 2002. Due to the level of prior disturbance these were recorded in plan only, including the position of the previously excavated feature slots. The archaeology identified appeared to correspond to features [1404], [1411] and [1412] recorded in 2002 (ibid.), interpreted as a palaeochannel and ditches belonging to the Iron Age settlement.
- 6.37 The archaeological activity at the north end of the trench would originally have been sealed by the buried subsoil (6005) and topsoil (6004) recorded elsewhere in the vicinity of Trench 6, which were 0.1m and 0.45m thick respectively and comprised mid to dark grey brown silty clay. However, due to prior excavation these were absent in the northern portion of the trench and the features were directly sealed by the backfill material (6010) from the previous archaeological excavations. Backfill deposit (6010) was a compact mid to dark grey/brown clayey sand which represents stripped overburden redeposited as backfill during the earlier excavations.
- 6.38 At the southern end of Trench 6 North a large modern truncation [6007] was encountered in the sondage to test natural deposits. [6007] measured at least 1m wide, 2m long and 1.1m deep; it appeared linear in plan on a northwest-southeast alignment. The feature cut through the buried topsoil deposit (6004) but was sealed by the modern made ground sequence, and was therefore most likely a late 20th century feature. The truncation [6007] contained two dense organic fills (6008) and (6009) which were possibly redeposited topsoil.
- 6.39 Trench 6 North was sealed by a sequence of made ground deposits (6029)/(6003), (6028), (6027), (6002), (6001) and (6026)/(6000), comprising a mix of white chalk hardcore and compact blast furnace slag. The combined thickness of the made ground measured up to 1.2m.

Trench 6 South

- 6.40 In Trench 6 South glacial till was not encountered due to the depth of the overlying deposits and extensive modern truncation (Figure 5 and Plate 23). Natural deposits were only encountered in the northern end of the trench and took the form of a series of shallow successive layers similar to the lower intertidal deposits encountered in other trenches in the area. The earliest deposit encountered was (6044), a mottled light blue and beige compact malleable clay layer (>0.05m thick). It was overlain by (6043), (6042), (6041) and (6040) which were generally mid to light compact silty clays between 0.11m and 0.35m thick, representing episodic intertidal flooding events. The combined thickness of

the deposits was greater than 0.8m. The uppermost layer (6040) was a mid to dark blue-grey layer (0.16m thick); the upper horizon of this deposit lay at 2.3m AOD (c. 1.4m BGL) it was truncated by a large modern feature [6045].

- 6.41 Truncation [6045] covered much of Trench 6 South, with only its northeast edge visible in plan. The edge was aligned northwest-southeast, similar to modern truncation [6007] in Trench 6 North. It measured greater than 6m long by greater than 2m wide, and was over 1m deep. The truncation was backfilled by (6046), a brick and CBM rubble-rich deposit in a mixed mid brown clayey silt matrix. The bricks appeared to be 18th or 19th century in date and are potentially related to the demolition of brick buildings possibly associated with farming.
- 6.42 Overlying the flooding deposits and modern truncation was a thin layer of buried subsoil or topsoil (6039), up to 0.26m thick, consisting of mid grey/brown silty clay. The sequence in Trench 6 South was sealed by two successive made ground deposits of (6037) over (6038), with (6038) directly overlying (6039). Deposits (6037) and (6038) had a combine thickness of 0.65m and consisted of mixed gravels, silts and redeposited natural till. This represents the southern extent of the modern lay-down area for the construction of VPI Immingham, the made ground being significantly shallower here compared to Trench 6 North.

Trench 7 (Figures 8 and 28)

- 6.43 Trench 7 was located to the east of Trench 6, roughly central to the northern portion of the Site. A single potential archaeological feature [7015] was encountered in the centre of Trench 7 (Figure 8).
- 6.44 Glacial till (7017) was encountered at 2.8m BGL (1.33m AOD) and was overlain by a series of possible flooding deposits similar to the flooding sequence encountered in the trenches to the immediate south and described in detail above (Plate 24). The location of Trench 7 on site suggests that it is on the edge of the 'basin' for the coastal inlet and it therefore features both the flooding deposits and later made ground. Directly overlying the glacial till was a mixed grey/blue and orange sandy clay deposit (7016), 0.5m thick, into which the possible feature [7015] was cut. This horizon was encountered at 1.81m AOD (1.5m BGL).
- 6.45 The linear feature [7015] was aligned north-south and measured 0.2m wide and 0.1m deep with very gently sloping sides and a concave profile (Figure 28). It was infilled by dark black/grey sandy clay (7014) which contained potential organic material throughout (Plate 25). The fill was similar in composition to the organic lenses observed within the lower intertidal deposits encountered in Trenches 10, 13 and 17 on the north side of site. Rather than an archaeological feature, [7015] most likely represents a naturally formed hollow or depression which has become filled by organic material. A very small amount of lithic shatter was recovered from (7014) but this may be naturally occurring (Appendix 5).
- 6.46 Overlying feature [7015] was deposit (7012), a 0.75m thick layer of purple/brown grey clay with blue striations and manganese flecks towards the base. The deposit was similar in form to the purple/brown flood deposit which sealed the coastal inlet across the trenches in the central area of the site and it is likely the same event.
- 6.47 Flooding layer (7012) was sealed by a dark grey-black buried subsoil (7011) measuring 0.25m thick. This in turn was sealed by 1.5m of made ground deposits (Plate 24). The made ground was significantly thicker in this trench compared to nearby Trenches 6 and 9, potentially levelling a depression in the topography formed by the underlying coastal inlet. The sequence commenced with membrane (7010), followed by white rubble (7009), dark silty clay layer (7008), then layers (7007), (7006), (7005), (7004), (7003), (7002) and (7001) which were a mixture of white chalk hardcore and

rubble interspersed with membrane layers. The sequence was capped by tarmac layer (7000). The made ground layers and tarmac were deposited during the construction of VPI Immingham in the early 2000s.

Trench 9 (Figures 9, 10 and 28)

- 6.48 Trench 9 was located to the northeast of Trench 7. A single shallow ditch and an associated pit or posthole were encountered in the centre of the trench (Figures 9 and 10). Two field drains were also encountered along the trench, aligned northwest-southeast and feeding into the large post-medieval drainage ditch in the centre of site.
- 6.49 Glacial till (9016) was encountered along the length of the trench, sloping downwards from 2.92m AOD at the northern end to 2.42m AOD at the southern end, (c. 1.10m BGL). At the lower southern end the glacial till was overlain by (9015), a dark brownish grey clay deposit which is possibly a flooding deposit at the edge of the coastal inlet 'basin'. The shallow ditch feature [9011] was cut into (9016).
- 6.50 Shallow ditch [9011] was aligned northwest-southeast and measured 1m wide and 0.15m deep (Figure 28 and Plate 26). It was infilled with a dark grey/brown sandy clay (9012) which contained occasional charcoal or manganese flecks, suggestive of natural silting over time. The alignment of the feature as well as its wide, shallow profile suggest it was a drainage feature running downhill towards the coastal inlet. Immediately to the west of the feature was a small pit or possible posthole [9013] with a diameter of 0.3m and a depth of 0.1m. The feature was infilled by dark grey/brown sandy clay (9014) which probably infilled naturally. No finds were recovered from the features.
- 6.51 At the northern end of the trench the glacial till (9016) was overlain by a dark brown sandy clay buried subsoil layer (9006) and a dark grey/brown silty clay buried topsoil (9005), with a combined thickness of 0.37m. The subsoil layer (9006) sealed the ditch [9011]. The stratigraphic sequence was sealed by 0.5m of modern made ground comprising (9004), (9003), (9002) and (9001); these were mixed layers of modern hardcore and rubble with a combined depth of c.0.65m.

Trench 15 (Figures 11, 12 and 29)

- 6.52 Trench 15 was positioned towards the eastern end of the northern half of the site. A single ditch, [15008], was identified at the northern end of the trench (Figures 11 and 12). However, the interpretation of ditch [15008] and its associated deposits was hampered by the depth of the excavations, the ingress of groundwater and collapsing trench edges.
- 6.53 Glacial till (15025) was encountered at 1.67m AOD at the north end of the trench and 1.04m AOD at the southern end (c.1.20m BGL). The early stratigraphic sequence identified in the majority of the trench to the south of ditch [15008] comprised a series of flooding deposits which overlay the natural till (Figure 29). Deposit (15014), a brown/orange clay that was 0.3m thick, lay above (15025). Deposit (15014) was in turn sealed by (15015) a deposit of yellow/brown sandy clay that was 0.07m thick. Above this lay 0.07m thick deposit of light blue/grey clay (15016). The deposits of this southern sequence are most likely representative of lower intertidal deposition along the edges of the coastal inlet. No finds were recovered.
- 6.54 To the north of ditch [15008], a different sequence of deposition was exposed. Immediately above the glacial till at the northern extent of the trench was a 0.4m thick, orange-brown, gravelly clay (15004) that was similar to the lower intertidal deposits (Figure 29 and Plate 27). The upper horizon of the layer was at 2.2m AOD (0.65m BGL). The layer was fully exposed in a machine-excavated sondage at this end of the trench. A hand-excavation approximately 2m to the south of this sondage was dug to investigate a ditch [15008]. At the northern edge of this feature a distinct sequence was recorded

which differed markedly from deposit (15004). Deposits (15017), (15018), (15012)/(15019) and (15013) had all been deposited at an angle, sloping downward, from north to south, as if filling the northern side of a large cut feature such as a ditch. Deposit (15017), a yellow/brown silty clay (0.17m thick) was the earliest of these deposits followed by (15018) (mid brown silty clay (0.15m thick)), (15012)/(15019) (mid blue/brown silty clay (0.2m thick)) and then (15013) (brown/orange clay (0.3m thick)). None of these deposits contained finds and their upper horizon levelled out at between 2.10-2.18m AOD (0.67-0.75m BGL). In the field these were interpreted as intertidal flooding layers but given the angle of deposition and their difference from (15004) they have been reinterpreted. No finds were present in this material.

- 6.55 The best interpretation of this northern sequence is that the early angled deposits represent fills of a large feature, most likely a ditch, which was not recognised in the trench and thus was not excavated to its edge. These would have infilled a cut which truncated the layer (15004) at around 2.15m AOD (0.7m BGL). In turn, the excavated ditch [15008] represents a recut of this earlier feature some time after it had at least partially silted up.
- 6.56 Ditch [15008] was cut through deposit (15016) of the southern sequence and (15013) of the northern sequence. Ditch cut [15008] measured 1.83m wide and 0.6m deep (Figure 29 and Plate 28). The profile was a wide, flat-based feature with steep, concave sides. The ditch was infilled by a sequence of deposits which were water lain clays (15009) (0.12m thick), (15010) (0.25m thick) and (15011) (0.3m thick), suggesting it was infilled by successive silting and flooding events. An assemblage of lithic fragments was recovered from fill (15009) which largely comprised shatter, chips and fragments (Appendix 5). These are not closely datable and may be natural in origin. No other dateable finds were recovered. The ditch is potentially a drainage feature at the edge of the coastal inlet 'basin' which, combined with the 'bank' material, may have acted as a rudimentary flood defence for the area of occupation to the north.
- 6.57 To the north of the ditch, two deposits ((15020) (0.3m thick) and (15022) (0.2m thick) lay above the lip of ditch forming a possible mound or bank (these did not seal the ditch fills, although (15020) had slumped very slightly over the northern edge of the cut [15008]). (15020) was a firm and gritty mid-brown silty clay with manganese and stone inclusions. (15022) consisted of mid yellow-brown silty clay with orange streaks. Neither deposit yielded finds. Both deposits had a more mixed and 'soily' feel compared to the flooding and alluvial layers, with more frequent stone inclusions and a softer texture which may be indicative of more rapid deposition. They were interpreted in the field as possible upcast material from the excavation of the ditch. If this were the case, the lower deposit (15020) would include material redeposited from the earlier infilled ditch feature, explaining its darker composition and manganese inclusions from deposits which had silted up the earlier feature. The upper deposit (15022) would comprise material dug lower down within the cut [15008], which may include some redeposited natural material, and explain its brighter appearance. The deposits were interpreted as upcast because they were focused at this location only (i.e. on the north side of ditch [15008]), with a mounded appearance in section. The level of their deposition is also consistent with the level of the ditch cut [15008] at its southern edge: the ditch truncated the layer (15016) on its southern edge at 2.18m AOD (0.67m BGL). As discussed above, the deposits interpreted as fills of an earlier (unrecognised) ditch feature had silted up to a comparable level on the northern side, and (15020) and (15022) were deposited above this level.
- 6.58 To the south of the bank deposits (15020) and (15022), the infilled ditch (fill 15011) was sealed by further alluvial deposits (15023) (0.25m thick) and (15024) (0.15m thick). The lower deposit (15023) was a mottled mid yellow and blue-grey silty clay with manganese inclusions, while (15024) was a

lighter blue-grey silty clay with orange lenses. These equate to alluvial layers recorded further south within the trench: layers (15027) and (15026), respectively. To the north of the bank, similar silty clay flooding layers (15003) (blue-grey in colour, 0.3m thick) and (15002) (orange-brown in colour, 0.15m thick) built up the ground to a comparable level. The alluvial layers sealing the archaeology were slightly undulating in section across the trench and had a combined thickness of between 0.26m and 0.44m. The layers contained no finds.

- 6.59 The stratigraphic sequence was sealed by 0.15m of subsoil (15001), consisting of mid brown silty clay, and up to 0.25m of dark brown clayey silt topsoil (15000).

Trench 16 (Figures 13, 14 and 30)

- 6.60 Trench 16 was located in the northeast corner of the site, parallel to Rosper Road, where the ground level rises away from the coastal inlet. The trench, along with Trench 14, was located in order to investigate the potential continuation of significant archaeological features encountered in Trench 11 of the 2000 evaluation and Trench 2 of the 2002 excavations (HFA 2002). Its planned position was immediately adjacent to an existing lamp post, and a short break in the trench was left in order to avoid excavating in close proximity to this. The length of this gap was compensated for by adding c.4m to the northwest end of the trench. An area of relatively dense archaeological activity was identified in the centre of Trench 16 which comprised two small gully features, a possible terminal end or pit, and three postholes, one of which contained the partial remains of a wooden post (Figures 13 and 14).
- 6.61 Glacial till (16021) was encountered at approximately 2.12m AOD (1.3m BGL) at the southeastern end of the trench. This glacial till was overlain by a mid yellow/orange silty clay (16008) similar to the orange clay gravels encountered in Trenches 3, 5, 6, 18, 28 and 33 and likely an interface layer overlying the natural which has been affected by erosional processes and water movement. The archaeological horizon in Trench 16 was identified as the upper surface of deposit (16008) at between 2.42m AOD at the northwestern end of the trench and 2.26m AOD at the southeastern end (1.10m BGL). Towards the northwestern end of the trench a thin, water affected deposit (16028) (up to 0.2m thick) was identified which was identical in composition to natural deposit (16008) but contained frequent manganese flecks. These contexts appear to belong to the same depositional episode but towards the northwestern end of the trench the layer's composition was affected by standing water. The archaeological features in this trench were cut through deposit (16008) = (16028).
- 6.62 Three postholes were identified towards the centre of Trench 16, which appeared to be arranged along a slightly curving east-west alignment (Figures 14, 30 and Plate 29). These postholes – [16009], [16016] and [16022], measured between 0.28m and 0.44m in diameter and between 0.14m and 0.25m in depth, and had similar U-shaped profiles. Postholes [16016] and [16022] did not contain any wood fragments (indicative of posts) and there was no evidence of a postpipe. This would suggest that the posts were removed in antiquity. Both contained similar blue/grey clay fills ((16017) and (16023)), possibly representing the original backfilled packing for wooden posts. A single undatable lithic flake came from posthole [16016] (Appendix 5). Posthole [16009] contained a timber fragment, (16010), which appeared to be the partial remains of a wooden post that had been driven into the natural beyond the base of the posthole (Plate 30). Examination of the timber fragment identified it as an oak flat-bottomed stake or post with visible saw marks at the base and a short branch left in situ (Appendix 6). The post is likely reused as its form is atypical of posts and stakes. The backfill material around the timber remains, (16011), was a mid to light grey silty clay streaked with yellow clay, which contained no finds. Associated with the postholes was a small stakehole [16024] which was located on the inner curve of the posthole line. The stakehole measured 0.16m in diameter and 0.12m deep, and had a V-shaped profile; as with postholes [16016] and [16022], it likely contained a wooden stake that was

removed during antiquity. It contained two fills (16025) (0.12m thick) and (16026) (0.04m thick) which were sterile mid grey silty clays. The postholes and stakehole are possibly part of a structure. There is no parallel arrangement of postholes within the trench to the south, therefore it is unlikely to be the remains of a roundhouse.

- 6.63 A shallow fluvial layer (16027)=(16029) was recorded towards the northwestern end of the trench, overlying the postholes and deposit (16028)=(16008). This represents a probable later flooding event after the features had gone out of use and silted up. The layer measured up to 0.11m thick and consisted of manganese-mottled blue/grey to grey/brown silty clay.
- 6.64 A later north-south aligned, shallow, linear feature, [16018], was identified cutting through deposit (16029) and truncating posthole [16016]. Feature [16018] was 1.63m wide where visible in the section of the trench and 0.14m deep. It was an extremely diffuse feature and petered out immediately to the south of the trench section. The feature was similar in form to a furrow and the fill (16019) consisted predominantly of redeposited natural; it is possibly associated with later agricultural activity.
- 6.65 Approximately 7m to the southeast of the posthole group lay a small sub-oval pit (or the terminal end of a linear ditch feature) – [16012] – and c.3m to the south of this was another ditch, [16014] (Figure 30 and Plate 31). Feature [16012] was aligned approximately east-west and measured 1.18m long (continuing eastwards beyond the trench), 0.44m wide and 0.14m deep. It was infilled by a dense blue/grey clay (16013) which was water lain; the fill was similar in composition to some of the flooding layers encountered in trenches to the south and southwest. The only finds recovered from the fill comprised a small assemblage of lithic shatter which is most likely natural in origin (Appendix 5). The feature potentially represents a shallow gully extending beyond the trench limit to the east. The nature of the fill was inconsistent with a refuse pit and suggests a use associated with water management, which is more consistent with a linear feature.
- 6.66 Small ditch [16014] was situated approximately 5m to the south of [16012]; no archaeological features were encountered further to the south of this ditch which may suggest that it represented a small boundary or enclosure (Figure 30 and Plate 32). The topography also began to decline rapidly beyond this ditch, so the area of dense archaeological activity to the north was located on a relatively high plateau. The ditch measured 0.98m wide and 0.7m deep with a soft V-shaped profile. Like the features to the north, it was aligned east-west. It was infilled by a mid grey/brown silty clay (16015) with blue/grey clay mottles which had formed naturally over time from erosional processes. A few charcoal flecks were identified within the fill suggesting a limited level of human refuse deposition in the ditch, but no finds were recovered. The features in this part of the trench shared the same alignment as the ditches in Trenches 15 and 17 to the south and southwest, which also corresponds with the northern edge of the coastal inlet.
- 6.67 The archaeological activity within this trench was sealed by a 0.15m thick buried subsoil layer (16007) consisting of mottled grey/brown and yellow silty clay. This was overlain by the buried topsoil (16006) comprising dark brown silty clay (up to 0.35m thick). The sequence was sealed by a series of successive modern made ground deposits (16005), (16004), (16003), (16002) and (16001) followed by tarmac (16000), all of which were associated with the construction of VPI Immingham in 2000-2002. The made ground sequence had a combined thickness of 0.8m in this trench.

Trench 17 (Figures 15 and 30)

- 6.68 Trench 17 was located approximately 40m to the south of Trench 16, close to the eastern boundary of the site. A single ditch was encountered towards the eastern end of the trench (Figure 15).

- 6.69 Glacial till (17009) was encountered at 0.9m AOD at the western end of the trench (c. 2.00m BGL). The stratigraphic sequence in the trench was characterised by flooding deposits (Plate 33). The glacial till was overlain by lower intertidal deposits comprised of mixed blue/grey clays and orange sands. The height of the lower intertidal deposits rose towards the east, from 1.31m AOD to 1.52m AOD, (c.1.30m BGL), suggesting that the trench was located at the edge of the coastal inlet. Deposit (17008) immediately overlay the glacial till, followed by (17007), (17006) and (17005) (combined thickness of 0.81m). Deposit (17005) formed an archaeological horizon, being cut by [17010] at a height of 1.55m AOD (1.35m BGL).
- 6.70 The feature [17010] was a wide, shallow linear feature aligned east-west and measuring 1m wide and 0.15m deep (Figure 30 and Plate 34); it is interpreted as a probable ditch. The ditch was infilled by a firm, mid purple/brown clay (17011) with blue striations which was deposited via natural silting facilitated by water. A small assemblage of undated likely natural flint shatter was also recovered (Appendix 5). The ditch was located immediately to the south of the area of dense activity in Trench 16 as well as along the edge of the coastal inlet, in a similar location of the ditch recorded in Trench 15. As with ditch [15008], [17010] may have functioned as a drainage or flooding defence ditch at the edge of the coastal inlet, protecting the area of activity on higher ground to the north. The ditch was also potentially a boundary feature marking the edge of the coastal inlet 'basin'.
- 6.71 The infilled ditch [17010] was sealed by deposit (17004) which was 0.65m thick. This is identified as the purple/brown flooding deposit seen in several trenches across this part of the site; this indicates that the deposit postdates the main period of archaeological activity at the site. The deposit in Trench 17 also featured significant inclusions of seashells indicating the water that flooded the inlet was from a marine transgression (Appendix 7). The purple/brown deposit was overlain by the later, shallower mixed blue/grey flooding deposit (17003) which measured up to 0.25m thick.
- 6.72 The stratigraphic sequence was sealed by a yellow/brown hardcore made ground deposit (17001) and a shallow soil layer (17000). The made ground was up to 0.65m thick and was associated with the construction of drainage pools located in the southeast corner of the northern side of the site. At the eastern end of the trench, a modern service was identified and a berm left over its location. A made ground deposit (17002) replaced the overburden sequence in this part of the trench, and probably filled a cut (not seen) which was associated with installation of the service. Deposit (17002) consisted of rubble-rich dark grey/brown silty clay with frequent concrete; it was approximately 1.2m thick.

Trench 18 (Figures 16 and 31)

- 6.73 Trench 18 was the westernmost trench in the southern half of the site. Four parallel furrows were identified in Trench 18 which correlate to anomalies identified during the geophysical survey of the site (Figure 16).
- 6.74 Glacial till (18007) was encountered in a sondage at the northern end of the trench at 2.29m AOD (c. 0.65m BGL). The glacial till was overlain by an interface deposit (18002) which consisted of orange/brown sandy clay with chalk flecks; this was up to 0.25m thick and lay at between 3.22m and 2.78m AOD (c. 0.40m BGL). The composition of the interface deposit suggests that it was formed from the glacial till being subject to erosional processes. This is similar to the natural clay gravel deposits identified on the north side of the site in Trenches 3, 5, 6 and 9 and indicates that outside the immediate area of flooding around the coastal inlet geological processes have created natural deposits.
- 6.75 The furrows truncated the interface layer (18002) and were aligned northwest-southeast, measuring 3-4m wide and positioned at 5m intervals. The furrow fills consisted of mid brown sandy clay formed from redeposited ploughed natural and ploughsoil during the formation on the ridge and furrow. One

example was excavated and recorded as furrow cut [18003]; this proved to be up to 0.25m deep at the centre with gently sloping concave sides (Figure 31 and Plate 35). The single fill (18004) contained a single cattle molar (Appendix 4). It was truncated by a later field drain cut [18005] which followed the same alignment as the furrow and was infilled by deposit (18006).

- 6.76 The infilled furrows were overlain by a subsoil (18001) of mid orange brown clayey sandy silt up to 0.2m thick. The stratigraphic sequence was completed by topsoil (18000) comprising dark grey/brown sandy silt, which measured up to 0.15m thick.

Trench 24 (Figure 18)

- 6.77 Trench 24 was located within the eastern third of the southern part of the site. A single possible linear feature, [24009], was encountered in Trench 24 but it could not be fully excavated due to the instability of the trench edges (Plate 36). Photographs and a brief record of the feature were made, and it was marked on a sketch plan. The feature was located towards the southern end of the trench, to the south of the southernmost step which has been surveyed in, where the topography was rising away from the coastal inlet (Figure 18). As with the majority of the trenches on the southern side of the site, Trench 24 featured a flooding deposit sequence.
- 6.78 Glacial till (24011) was encountered at -0.2m AOD (2.8m BGL) at the north end of the trench. The level of the glacial till suggests that the underlying geology in Trench 24 drops rapidly towards the north, into the coastal inlet. This is consistent with the depth of glacial till in Trenches 23 and 29 which was also at approximately 0m AOD. In contrast, the glacial till was encountered at 0.6m AOD (2m BGL) at the south end of the trench, confirming a rise in the topography towards the south as the distance from the coastal inlet increased.
- 6.79 The glacial till was overlain by the mixed lower intertidal deposits comprised of blue/grey clays and orange clay gravels. This sequence is represented by the layers (24008) to (24004). At the northern end of the trench the combined thickness of the lower intertidal deposits was up to 1m thick and the deposits comprised alternating layers of clays, silts and gravels. The thickness of the lower intertidal layers here suggests that they were deposited within the coastal inlet. The lower intertidal deposits became much thinner towards the southern end of the trench where they measured up to 0.5m thick.
- 6.80 The possible linear feature [24009] was cut into the uppermost lower intertidal deposit (24004); it was a shallow possible ditch that was aligned east-west. The feature measured at least 0.5m wide and at least 0.3m deep, and had moderately steep sides, but its full profile was not exposed prior to the abandonment of the trench. The cut was infilled by (24010), a mid blue/grey dense clay suggesting natural, water lain deposition (Plate 36). The location of the feature and nature of the fill suggest that it was possibly a drainage feature within the coastal inlet basin. No finds were recovered.
- 6.81 The feature, as with similar archaeological features within the immediate surrounds of the coastal inlet, was sealed by the thick, purple/brown flood deposit (24003). This measured up to 0.8m thick at the north end of Trench 24 and became steadily thinner towards the south end. Overlying the deposit was the later flooding or warp deposit (24002) which was a pale greenish grey clay.
- 6.82 The sequence was sealed by a combined depth of overburden up to 0.45m thick, comprising a mid grey brown silty clay subsoil (24001) and a dark clayey silt topsoil (24000).

Trench 25 (Figures 19 and 31)

- 6.83 Trench 25 was situated to the southeast of Trench 24 and was designed with an extended length of 65m to target multiple anomalies. The trench provided a profile of the edge of the coastal inlet basin,

containing the flooding deposit stratigraphic sequence. A single small sub-circular pit ([25009]) was encountered toward the north end of Trench 25 (Figure 19).

- 6.84 Glacial till (25008) was encountered at 0.94m AOD (1.72m BGL) at the northern end of the trench and 1.45m AOD (1.3m BGL) at the southern end. It was overlain by an early mixed flooding deposit (25007) comprising mixed blue/grey clays and orange gravels which measured up to 0.4m thick. The possible pit [25009] was cut into this layer at 1.4m AOD (1.25m BGL) (Figure 31 and Plate 37). The pit was a shallow, sub-circular feature with a diameter of approximately 0.3m and a depth of 0.15m. It was infilled with dark blue/grey clay with frequent organic flecks. The feature had very diffuse edges against the flooding layer (25007) but was distinct, especially in plan, with the dark organic staining particularly evident. The feature could be interpreted as a possible refuse pit. No archaeological finds were recovered from the feature.
- 6.85 Deposit (25007) was followed by deposits (25006) and (26005) which may represent further minor episodes of flooding (between 0.1m and 0.48m thick); the lower layer (25006) was a bright greyish yellow clay which sealed the pit fill (25010). It was followed by a blue-grey layer (25005). The possible flooding layers were then sealed by a thick, purple brown flood deposit (25004) which is consistent with the deposit postdating the main period of archaeological activity on site. This deposit thinned significantly (from 0.5m thick to 0.3m thick) towards the southern end of the trench as the underlying topography rises away from the coastal inlet. Above (25004), an episode of later flooding was identified across the trench, thicker towards the north. This comprised a thin layer of blue clay (25003) followed by the mixed blue/grey and orange clay (25002). The combined thickness of these two layers was up to 0.35m thick.
- 6.86 The overburden in Trench 25 comprised a thin layer of mid brown sandy clay subsoil (25001) up to 0.2m thick, sealed by dark clayey silt topsoil (25000) up to 0.2m thick.

Trench 27 (Figures 20, 21 and 32)

- 6.87 Trench 27 was located at the edge of the coastal inlet 'basin', close to the southern boundary of the site. There was a significant rise north to south in both the current ground level and the underlying glacial till, from 2.57m AOD to 3.47m AOD and 1.36m AOD to 1.71m AOD respectively. As in Trenches 24 and 25, the underlying topography sloped gently upwards towards the south (away from the coastal inlet), but the more marked increase in the depth of Trench 27 was a result of the increased made ground thickness towards the southern end of the trench. A single ditch was identified at the southern end of the trench (Figures 20 and 21).
- 6.88 Glacial till (27008) was encountered at 1.36m AOD (1.21m BGL) at the northern end of the trench, rising to 1.71m AOD (1.76m BGL) at the southern end (Plate 38). The glacial till was overlain by lower intertidal deposits (27006), (27005) and (27004), with a combined thickness of up to 0.88m.
- 6.89 Overlying the lower intertidal deposits was the dark purple/brown deposit (27003) which measured up to 0.4m thick. At the northern end of the trench this was sealed by the later flooding deposit (27002); however, at the southern end this deposit had either been removed by works associated with the deposition of the later made ground, or was absent because the trench was at the edge of the coastal inlet 'basin'.
- 6.90 Ditch [27009] truncated the purple/brown flood deposit (27003) at the southern end of the trench, (where deposit (27002) was absent), and was located at the edge of the coastal inlet 'basin' (Plate 39). Due to low contrast with the purple-brown deposit (27003) and lower intertidal layer (27004) in plan, the presence of the ditch was not noted until both deposits had been removed by machine. The ditch was much clearer against the underlying intertidal layer (27005) (through which it also cut). The

relationship between the ditch and the excavated deposits (27004) and (27003) was later established in section. The ditch was aligned northeast-southwest and its profile was broad and u-shaped, measuring up to 1.6m wide and 0.9m deep (Figure 32). Its sides were slightly concave and it had a slightly rounded base. The ditch was infilled by two deposits; an initial basal deposit (27010) (0.35m thick) of dark blue grey clay and an upper deposit (27011) (0.55m thick) of mid orange brown clay. Both fills were deposited naturally through erosion and water processes. No finds were recovered from within the ditch.

- 6.91 The ditch was sealed by a made ground deposit (27012) comprising mixed dark grey/brown silty clay with red sandy clay patches; it measured up to 1.3m thick. The made ground was likely deposited during the construction of the Rosper Road roundabout immediately to the southwest of the site and was also recorded in Trenches 28, 31 and 32. There was probably broad ground reduction prior to deposition of the made ground, which has removed earlier overburden deposits. As ditch [27009] was only sealed by this modern deposit it was difficult to interpret the age of the feature. However, the fact that it cut the purple/brown flood deposit (27003) is significant as this suggests that it might post-date some of the other archaeological features at the site (in Trenches 17 and 33 ditch [17010] and postholes [33008] and [33011] were sealed by what is likely the same purple/brown layer, but these features contained no dating evidence that would provide a secure chronology for the depositional sequence). The position of the ditch at the edge of the coastal inlet basin suggests that it might have been used as a form of flood defence or for drainage control.
- 6.92 A thin layer of subsoil, (27001), was identified across the trench and comprised pale grey brown clay measuring up to 0.15m thick. The stratigraphic sequence was sealed by a topsoil deposit (27000) which comprised a dark grey/brown sandy clayey silt measuring up to 0.4m thick.

Trench 28 (Figures 20-22 and 32)

- 6.93 Trench 28 was located near the southern boundary of the site on the highest point in this part of the site. It was in close proximity to excavations undertaken in 2015 for the construction of the A160 which revealed extensive field and enclosure systems from the Bronze Age to the Romano-British period (AECOM 2022). The trench was located to investigate potential geophysical anomalies in the southwestern corner of the site including a potential curvilinear ditch. A number of ditches including three intercutting curvilinear features were encountered within Trench 28 (Figures 20, 21 and 22).
- 6.94 Glacial till (28044) was encountered towards the bases of some of the features (at 2.01m AOD; 1.5m BGL) and was overlain across the length of the trench by a natural interface layer (28002) (0.25m thick). This deposit consisted of mid-yellow/brown clay with frequent stones and was similar to the orange gravel natural deposit identified in Trenches 3, 5 and 6 on the northern side of the site, as well as in Trenches 18, 31, 32 and 33 on the southern side. This horizon was encountered at between 2.39m and 2.59m AOD (c. 0.7m BGL). Ditches [28006], [28014]/[28013], [28019] and [28039] were cut into natural deposit (28002). Ditches [28031]/[28004], [28028] and [28020] all re-cut one of more of the earlier ditches.
- 6.95 The westernmost feature was ditch [28039] which had been partially recut by a later, wider, ditch [28020] (Figure 32). Both ditches were aligned roughly north to south (Figure 22). Only the western edge of earlier ditch [28039] survived, but the profile seen suggested it was a similar in nature to the later recut. It measured greater than 0.97m wide and 0.58m deep. The original ditch cut [28039] was infilled by two fills: the lower fill (28021) (0.2m thick) consisted of redeposited natural clay suggesting it was formed via the slumping of the ditch edges due to erosion. The upper surviving deposit (28040) (0.34m thick) also contained significant amounts of redeposited natural clay, chalk flecks and stones and was also predominantly formed naturally. However, a small assemblage of animal bone fragments

also recovered from the ditch fill (28040), indicating some deposition of food waste (Appendix 4). The animal bone is not identifiable to species. These fills suggest frequent erosion and deposition of the edges which resulted in the eventual recutting of the ditch.

- 6.96 Ditch recut [28020] was a large, wide feature with a V-shaped profile, it measured 1.97m wide by 0.67m deep (Figure 32 and Plate 40). Ditch [28020] contained four fills that were predominantly deposited via natural processes. The basal fill (28037) (0.2m thick) consisted of mid brown/yellow silty clay which was likely eroded from the natural glacial till and the earlier infilled ditch. It also contained struck flint finds: a bipolar core and a flake were recovered (Appendix 5). These are indicative of early prehistoric activity in the wider landscape but could be residual; they are not closely datable. The middle fill (28038) (0.38m thick) was near-identical in composition to the lower fill; however, it contained significant quantities of manganese flecks suggesting the ditch was open at this level and contained standing water for an extended period of time. The upper fills (28023) (0.17m thick) and (28024) (0.11m thick) contained higher silt content and more manganese and represent later episodes of silting as the ditch fell out of use. Small fragments of shell-tempered pottery were recovered from the recut ditch, primarily the upper and middle fills, and dated from the mid-to late Iron Age; a single sherd was of a finer fabric (Appendix 2). Additionally, animal bone including cattle, sheep/goat, and other unidentifiable large and medium mammals was distributed throughout the ditch, particularly in the upper fills (Appendix 4). This suggests casual deposition of food waste which increased towards the end of use.
- 6.97 In the centre of the trench a large curvilinear feature was encountered, generally on an east-west alignment with its western end curving towards the south (Figure 22). Excavation of the curvilinear feature demonstrated that it was in fact a sequence of intercutting ditches. Ditches [28014]/[28013] and [28019] were the earliest in the sequence, with [28019] being adjacent and to the south of [28014]. The stratigraphic relationship between [28014] and [28019] was unclear as the interface between the two ditches had been removed by a later recut [28028], which itself had then been recut [28004]/[28031].
- 6.98 Ditch [28014] measured up to 1.47m wide and 0.65m deep. It contained four infills. Fill (28025) (0.05m thick) was a small slumping deposit on the northern edge of the ditch, while three fills (28026), (28015) and (28027) were the bulk backfills of the feature. The lower fill (28026) (0.27m thick) was a firm mid grey silty clay mottled with orange, probably resulting from initial silting. The middle and upper deposits (28015) (0.25m thick) and (28017) (0.21m thick) were mid brown/grey silty clays containing manganese and iron pan. Small fragments of pottery were recovered from throughout the fills of ditch [28014] and included a mix of shell-tempered and rock grit-tempered pottery dating from the mid-to late Iron Age (Appendix 2). Additionally, ditch [28014] contained a relatively large assemblage of animal bone from cattle, sheep/goat and horse, as well as fragments from unidentifiable large and medium mammals; the bone was a combination of food and butchery waste (Appendix 4). This material was recovered from all of the fills of [28014], however the middle fill of the sequence, context (28015), contained a significant proportion of the finds from this feature, suggesting the ditch was used for deliberate household waste disposal during this period of its use. Deposit (28015) also contained four lithics that are likely natural in origin (Appendix 5).
- 6.99 Ditch [28019] (the southern ditch) measured up to 2m wide and at least 0.65m deep (the base was not reached due to trench depth). The ditch profile was wider and more U-shaped than ditch [28014] and its northern edge was completely truncated by later ditch [28028]. Ditch [28019] was infilled by two fills, (28035) (>0.19m thick) and (28036) (0.23m thick), which were mid to dark brown silty clays suggesting the presence of some degraded organic material. In conjunction with a small assemblage

of pottery and animal bone, the nature of the fills suggests that household waste was either intentionally or accidentally disposed of in this feature throughout its use. The pottery was rock grit-tempered and dated from the mid-to late Iron Age; the animal bone was cattle bone displaying evidence of butchery (Appendices 2 and 4).

- 6.100 Ditches [28014] and [28019] were both truncated by ditch [28028] which removed the relationship between the two earlier features. Ditch [28028] was a smaller feature than either of the earlier two curvilinear ditches. It measured 0.77m wide and 0.63m deep, and had a more pronounced V-shaped profile. It was infilled by two naturally deposited layers (28029) (0.31m thick), which contained frequent iron pan inclusions and (28030) (0.24m thick). The recut may have contained standing water for a significant period, and the absence of any finds suggests it was not used for waste disposal as the earlier ditches had been.
- 6.101 The final ditch in this sequence, ditch [28004]/[28031] was a broad, shallow, ditch which was observed in section but could not be discerned in detail in plan due to the similarity of its fill with the surrounding fills it was cutting through. It measured c.1.20m wide and 0.25m deep and contained three fills, all sandy and silty clays of varying hues – (28005) (0.24m thick), (28033) (0.3m thick) and (28034) (0.07m thick). Fill (28005) yielded an end scraper dating from the late Mesolithic period (Appendix 5). Though this is residual material, its presence confirms the site's location within an early prehistoric landscape.
- 6.102 Towards the northeastern end of the trench lay a single ditch [28006] aligned north-northwest to south-southeast, possibly parallel to ditch [28020] to the southwest (Figure 32 and Plate 43). The ditch measured 0.8m wide and 0.57m deep, and had near-vertical sides and a slightly rounded base. It was infilled by a sequence of five deposits and was truncated on its eastern edge by a field drain [28011]. The lower fills (28007) (0.1m thick), (28008) (0.27m thick), (28009) (0.26m thick), and (28043) (0.2m thick) were a series of early deposits formed via the slumping of the edges, natural weathering and some dumping of charcoal and pottery fragments. The upper fill (28010) was a 0.46m thick, homogenous deposit of mid brown/grey silty clay with charcoal, stone and chalk inclusions; it was likely deposited slowly as the ditch fell out of use via natural processes. The form of the ditch and the lack of water lain deposits suggest it was a boundary or enclosure ditch potentially for divisions within a settlement or for agricultural purposes. Finds recovered included a small assemblage of mid-to late Iron Age pottery and animal bone fragments which were a mix of butchery and food waste; this included mammal bone with cut marks (Appendix 2 and 4).
- 6.103 The archaeological activity was sealed by a thick layer of made ground (28001)/(28042) which measured up to 0.54m thick and consisted of grey/brown clay with frequent small stones and gravels. This was overlain by topsoil (28000) comprised of mid brown clay loam, measuring up to 0.29m thick.

Trench 31b (Figures 23 and 32)

- 6.104 Trench 31 was split into two smaller trenches to avoid areas of standing water. Trench 31b (25m long) was located to the north of Trench 31a and was situated close to the possible former costal inlet towards the eastern edge of the site, positioned so as to investigate geophysical anomalies which were potentially the remnants of field systems. Trench 31b contained a flooding derived deposit sequence along its entire length, with deposits becoming thinner towards the eastern end of the trench. A single ditch was identified in the centre of Trench 31b.
- 6.105 Trench 31a (25m long) contained a flooding derived deposit sequence at its west end (as it dropped towards the coastal inlet) and a more simple sequence of topsoil, subsoil and made ground at its eastern end. It did not contain any archaeological features.

- 6.106 Glacial till (31006b) was encountered at 1.40m AOD (c.1.05m BGL). It was overlain by a thick deposit of orange clay and gravels (31005b) similar to natural deposits encountered in Trenches 3, 5 and 6 which formed the archaeological horizon in these trenches. Deposit (31005b) formed the archaeological horizon in Trench 31b and was encountered between 1.75m and 1.88m AOD (0.6-0.7m BGL), north to south. Despite some similarities with the lower intertidal deposits this natural deposit is more consistent with an interface or upper natural deposit, as seen in Trenches 18 and 28.
- 6.107 Ditch [31007b] cut the gravel natural deposit (31005b) at 1.87m AOD (0.6m BGL) and was aligned northeast-southwest; it measured 1.53m wide and 0.48m deep (Figure 32 and Plate 44). The ditch had a wide, V-shaped profile and was infilled by three successive deposition events. The fills (31008b), (31009b) and (31010b) were generally similar in composition and comprised predominantly blue/grey and grey/brown clay. The basal deposit (31008b) (0.2m thick) comprised mixed grey/brown gravels and was formed via initial erosion by water action on the edge of the ditch. The middle and upper fills, (31009b) (0.18m thick) and (31010b) (0.13m thick) respectively, consisted of clays, the upper fill being a firm, plastic blue/grey clay similar to the flooding deposits and suggesting that the fill was water lain and deposited after the ditch had fallen out of use. No finds were recovered from within any of the fills of the ditch. The ditch itself was likely multipurpose in use as both a possible enclosure ditch and a drainage feature. It may be associated with the archaeological activity to the southwest (in Trenches 32 and 28), which is concentrated on the higher ground. The ditch was not encountered in Trench 31a, immediately to the south, which contained no archaeological features. This could be due to the ditch terminating or a slight change in alignment of the ditch between the two trenches. Alternatively, the ditch could have been truncated during the construction of the road as Trench 31a had a significantly greater depth of made ground.
- 6.108 The ditch was sealed by a series of successive flooding deposits. The earliest flooding layer was a thin, blue/grey layer (31004b) (0.12m thick) similar to the upper fill of the ditch. As with a majority of the archaeological features within the coastal inlet basin, the feature was also overlain by the dark purple/brown deposit (31003b) which marks a period of consistent standing water within the area. The deposit was relatively thin in this trench (0.15m thick) due to its location at the edge of the basin. The layer was subsequently overlain by the later flooding deposit (31002b) (0.2m thick) comprised of pale grey/brown and blue clay.
- 6.109 A subsoil layer (31001b) consisted of yellow/brown silty clay up to 0.1m thick; this was sealed by topsoil (31000b) which comprised dark greyish brown silty clay up to 0.18m thick.

Trench 32 (Figures 24 and 32)

- 6.110 Trench 32 was located close to the southeastern boundary of the site, to the south of Trench 31a and east of Trench 25. The trench was located in order to investigate geophysical anomalies which were potentially the remnants of field systems. Archaeological features were identified at both the west and east ends of the Trench (Figure 24). The stratigraphic sequence showed both flood deposits and modern construction material.
- 6.111 Glacial till (32005) was encountered at 1.35m AOD (c.1.25m BGL) in a sondage at the western end of the trench. The trench was excavated to the archaeological horizon which lay at 1.9m AOD at the western end and 2.73m AOD at the eastern end (0.6-0.7m BGL), which illustrated the sharp incline upwards and away from the coastal inlet. The glacial till was overlain by two possible flooding deposits in the form of thin layers of pale brown and orange/brown clay: deposits (32004) and (32003), respectively, measuring between 0.15m and 0.25m thick. The composition of the layers was similar to that of the interface layers identified in Trenches 18, 28, and 31b which suggests, combined with the topography of the area, that the deposits might be colluvial and not solely water lain.

- 6.112 A small northwest-southeast aligned gully [32006] was cut into the glacial till (32005) at the eastern end of the trench (Figure 32 and Plate 45). The gully had a shallow, concave profile and measured 0.37m wide and 0.2m deep. It was infilled by a mid grey/brown sandy clay (32007) with occasional redeposited natural lenses, suggesting the fill has been deposited in part due to erosion of the edges of the gully. The fill contained significant amounts of vitrified material, including coal and charcoal, suggesting disposal of material possibly related to a domestic hearth (Appendix 8). No datable finds were recovered from the feature. The gully was directly sealed by the made ground deposit (32002) which was associated with the construction of the A160 to the southeast. As elsewhere, it is probable this involved some ground reduction and thus the gully in its surviving form may be truncated; its relationship to the colluvial layers (32004) and (32003) could not be established.
- 6.113 At the western end of the trench a shallow ditch was encountered which truncated a possible sub-oval pit (Figure 32 and Plate 46). The features cut the earlier possible colluvial deposit (32004); however, they were in turn sealed by the upper colluvial deposit (32003) which illustrates the geologically dynamic nature of the landscape.
- 6.114 Pit [32008] measured 0.94m wide and 1.1m long, and was sub-rounded in plan. It was infilled by two fills: the basal fill (32009) (0.18m thick) was a mixed blue/orange/grey clayey silt formed from erosion processes; it contained occasional manganese flecks suggesting the pit contained standing water for an extended period of time. The upper fill (32012) (0.18m thick) consisted of mid grey-blue clayey silt which also contained manganese as well as occasional charcoal flecks. Neither fill yielded finds or environmental material.
- 6.115 Ditch [32010] truncated the pit; it measured 0.94m wide and up to 0.42m deep, and it had a rounded, concave profile. The ditch was aligned northwest-southeast and was infilled by a single mid brown/grey clayey silt (32011) which probably formed via natural processes. A single piece of lithic shatter was the only find recovered from the ditch and this is almost certainly natural in origin (Appendix 5); a single fragment of oak charcoal was also retrieved from the environmental sample (Appendix 3). It was likely a form of drainage channel or associated with agricultural field systems in the area.
- 6.116 The archaeological activity seen in this trench was predominantly sealed by the aforementioned made ground deposit (32002) which was formed during the construction of the Rosper Road Roundabout. The made ground measured up to 0.4m thick at the eastern end of the trench and comprised mixed yellow/brown clayey silt with grey striations. The made ground was overlain in turn by a disturbed upper subsoil deposit (32001) (0.29m thick) consisting of yellow brown clay which contained occasional CBM inclusions including land drain fragments. The final layer was topsoil (32000) comprising mixed grey/brown clay, up to 0.24m thick.

Trench 33 (Figures 25, 26 and 33)

- 6.117 Trench 33 was located along the eastern boundary of site, close to the potential alignment of the coastal inlet. The stratigraphic sequence featured the flood deposits which characterised the coastal inlet basin area. Two postholes were identified towards the northern end of the trench (Figure 26).
- 6.118 Glacial till was encountered at 0.84m AOD (c. 1.65m BGL) in the centre of the trench and rose to 1.39m AOD (1.25m BGL) at the southern end where it rose away from the coastal inlet (Plate 47). The glacial till was sealed by up to 0.25m of orange clayey gravels (33007), similar to those recorded in Trenches 3, 5, 23, 24 and 29. This deposit represents the natural gravels at the edge or base of the coastal inlet; it formed the archaeological horizon in Trench 33 (Figure 33 and Plate 48). The gravels were consistently at approximately 0.9m to 1m AOD (up to 1.35m BGL).

- 6.119 The postholes were sub-oval in plan and lay in close proximity to one another. Both cut into the gravels (33007) (Figure 33 and Plate 49). Posthole [33008] was a large, irregular feature which was wide and shallow; this profile was possibly formed via erosion around posthole when in use. It measured 0.3m wide and 0.3m deep, and was infilled with a pale blue/grey silty clay (33009); this was likely deposited after the removal of the post. Fragmentary remains of timber were recovered from this deposit during environmental sampling; however, there was no discernible form to the fragments. Nevertheless, they probably represent the remains of a post (Appendix 6). Posthole [33010] was smaller in diameter (0.15m) and shallower (0.25m). It contained a piece of surviving wooden post (33011) as well as a supportive wooden strut towards its base (33013) (Plate 50). The larger wooden fragment showed evidence of being worked which included two tool marks and a purposefully cut flat base. The flat base of the post is similar in form to the wooden post recovered from posthole [16009] in Trench 16; this could be an indication that the features are associated. The smaller wooden fragment (33013) was likely a peg support and was also flat-bottomed. It had been roughly squared and had a mortar-like substance adhered to one edge which may relate to its original structural purpose. Posthole [33010] was infilled by a blue/grey clay deposit (33012). A small fragment of animal bone identified as cattle humerus was recovered (Appendix 4).
- 6.120 The gravels were overlain by the early flood deposits which comprised mixed, alternating layers of blue/grey clays with lenses of possible humic/organic material (deposits (33006) (0.11m thick), (33005) (0.1m thick) and (33004) (0.09m thick)); this was similar to the sequence identified to the north in Trench 17. These deposits were sealed by the purple/brown flood deposit, here recorded as (33003), which measured up to 0.83m thick. This was overlain by a subsoil (33001) (0.17m thick) instead of the later flooding deposits recorded in other trenches, which suggest that the trench is located outside of the area affected by the later flooding. In the northern half of the trench it was also overlain by chalk hardcore (33002) (0.3m thick), deposited during the construction works on Rosper Road. The stratigraphic sequence was sealed by topsoil (33000) comprising mid grey/brown silty clay up to 0.25m thick.

Finds and environmental samples

- 6.121 A small assemblage of finds including pottery, animal bone and lithics was recovered from the site, much of this assemblage being recovered from features within Trench 28 to the southeast of the site (82% of all pottery and 94% of all animal bone was derived from contexts within Trench 28).
- 6.122 The pottery was largely Iron Age in date and primarily shell-tempered (Appendix 2). The largest assemblage of pottery was recovered from the southern edge of the site in Trench 28 from within fills of ditches [28014]/[28013] and [28019] and ditch re-cuts [28031]/[28004], [28028] and [28020]. Several Iron Age sherds were also retrieved from ditch [6019] in Trench 6 at the northern edge of the site. Results from earlier excavations suggested that shell-tempered ware was associated with early Iron Age settlement, whereas grit-tempered wares are more generally assigned to the mid-to late Iron Age. The use of shell was likely due to the material being readily available from the nearby Humber Estuary and the coastal inlet. Some of the pottery sherds recovered during this work were grit-tempered – these coming predominantly from [6019]. A single sherd of Roman greyware was recovered from a small recut [5002] of a larger undated ditch [5021] (Trench 5). The general scarcity of Roman material suggests that significant Roman settlement was not focused within the site, but it may have continued at a low level in or close to the northern area. This was consistent with the findings of earlier excavations to the north of the site, which found that the focus of later Iron Age to Roman settlement activity on the north side of the coastal inlet had moved northwards, away from the present site (HFA 2002).

- 6.123 The animal bone assemblage is consistent with a pastoral lifestyle, a range of large and medium sized mammal domesticates being present (Appendix 4). A significant amount of cattle and sheep/goat bone was recovered, primarily from the south edge of the site. The largest assemblage of bone was in Trench 28 from within ditches [28006], [28014]/[28013], [28019] and [28039] and ditch re-cuts [28031]/[28004], [28028] and [28020]. The presence of animal bone in all of these features (also associated with pottery in many of them) suggests the ditches in this part of the site were probably relatively close to contemporary settlement and associated domestic activities, making them a convenient location to dispose of refuse. Animal bone was also recovered in small amounts from ditch [6019] (Trench 6), posthole [33010] (Trench 33) and furrow [18003] (Trench 18). In general, the bone was in poor condition, which may suggest that the limited survival is possibly due to the acidity of the soil and not a lack of deposition. The assemblage is consistent with the animal bone recovered from the earlier excavations at the site.
- 6.124 A significant number of lithic fragments and objects were recovered through environmental sample processing (Appendix 5). A majority of the fragments were probably naturally occurring shatter fragments from local stones and this is supported by natural flint in the fills of the ditches in Trench 28. The non-natural occurring lithics include flakes, cores, blades and a scraper all dating from the late Mesolithic to early Neolithic. An end scraper was recovered from ditch recut [28004] (Trench 28), as well as a bipolar core from ditch recut [28020]. These were probably redeposited in these likely Iron Age contexts. It is possible that a collection of bipolar cores, flakes and blades recovered across features in Trench 3, not associated with later pottery, potentially indicate an early date for these features. The bipolar core remnants were retrieved from ditch [3013] and pit [3009], the latter also associated with a platform rejuvenation flake; both features also yielded a debitage blade and several flakes. The end scraper suggests domestic tasks whilst the bipolar cores and debitage show flint was being worked on site; however, the lack of retouched pieces and general small assemblage severely limits further interpretation.
- 6.125 Fifty-one bulk environmental samples were processed and a very small amount of plant matter (eight caryopses) and charcoal was recovered across the features and deposits (Appendix 3). The macroplant material recovered included primarily domesticated crops including wheat from pit [3009] and deposit (5008); a green pea from ditch [6019]; a hazelnut within organic flooding deposit (10003); and a heather seed and leaf in ditch [5013]. The finds are of such small quantities that their potential to inform our understanding of the rural economy is limited, especially as the dates of the features from which they derive are uncertain or unknown. They indicate that wheat was being grown and consumed in the vicinity of the site, potentially in the early prehistoric period (pit [3009]), and that peas and hazelnuts may have formed part of the diet of the local community, potentially in the Iron Age (ditch [6019]). Charcoal was identified in all the environmental samples; however, fragments large enough for analysis were recovered from only six samples: a natural deposit (5008), linear [32010], ditch [17010], deposits (17002), (10003) and posthole [33008]. Most of the charcoal was derived from oak which is not generally recommended for radiocarbon dating (the only other species represented were elm and hazel). The distribution through the samples suggests general occupation activity across the area and the use of local wood for fuel. The small amounts are probable indications of domestic use rather than industrial activity.
- 6.126 Two monolith samples were taken from Trenches 17 and 33, on either side of the central modern drain, to record and investigate the flooding sequence identified across the central part of the site. The monolith samples indicated that the coastal inlet and the Site itself were heavily influenced by estuarine activity and marine inundations, rather than alluvial deposition. Therefore, the occupation of the

settlements was intrinsically connected to the movement and course of the Humber estuary and seasonal flooding (Appendix 9).

7. Summary

7.2 The archaeological works at the Humber Zero site recorded archaeological activity that was heavily influenced by its geological position along the Humber Estuary, in close proximity to what would have been the Iron Age/Romano-British foreshore, and closely associated with the coastal inlet that once bisected the site. Concentrations of archaeological features were encountered in the northeast, northwest, and southeast parts of the site which appear to represent a continuation of the Iron Age / Roman settlement activity noted in earlier archaeological work to the north and south of the site. However, it should be noted that datable artefactual evidence from the site was extremely limited and many of the features are only tentatively dated through their potential association with previously excavated settlements.

The tidal inlet

7.3 The excavations demonstrated that the putative coastal inlet extended across the central portion of the site, aligned approximately east-west. Its approximate extent is depicted in Figure 34. It was characterised by a decline in the height of the natural boulder clay, when compared to areas to the north and the south of the inlet, and by the deposition of mixed, water-lain clays (the lower intertidal deposits). Overlying these deposits was a thick layer of purple/brown silty clay which contained manganese flecks. The composition of this deposit suggests it was formed when the area was inundated with water which remained stagnant for a significant period of time. Archaeological features in Trenches 17 and 33 were sealed by this purple/brown silt layer which suggests that at least some of the activity recorded at the site took place when the inlet was in its active, early stage of silting. This does not preclude the possibility that other features were in use when the inlet was already largely silted up or stagnant.

7.4 Within this landscape, the areas of occupational activity at the site were generally located on slightly higher ground above the flood deposits, both to the north and south of the inlet (Trenches 3, 5, 6, 9, 15, 16 and 17 to the north; Trenches 24, 25, 27, 31, 32, and 33 to the south). In these areas, the archaeological features generally cut through a gravelly interface deposit that lay directly above the glacial till, although some features truncated the intertidal deposits. It is notable that the extent of the inlet, as derived from borehole data and sondages, extends across Trenches 15, 16 and 17, but this probably represents its maximum extent. This is reflected in the excavation results: the ditches in Trenches 15 and 17 truncated the lower intertidal deposits and were sealed by later washed in deposits; some of the features in Trench 16 were also sealed by washed in material. In Trenches 17 and 33, the archaeological features were sealed by an alluvial purple-brown layer which was also observed in many of the archaeologically blank trenches within the tidal inlet. Outside of these areas, the archaeological activity was sealed by topsoil and subsoil deposits.

7.5 It is clear that the presence of the inlet influenced the location of human settlement in the past. However, its presence is also likely to have attracted settlement as the location gave easy access to a variety of marine resources (fish, fowl, water etc.)

Early prehistoric activity

7.6 Although the majority of the lithic assemblage from the site were of natural origin, some items that were possibly indicative of early prehistoric technology were recovered from features at the site. The only datable flint artefact (an endscraper from ditch recut [28004], Trench 28) was of probable late Mesolithic date. It is possible that all this material is residual and simply testifies to the presence of

early prehistoric communities in the surrounding landscape. Certainly, this is the case for ditch recut [28020] in Trench 28, where flint was recovered in association with Iron Age pottery, and ditch recut [28004] in the same trench which contained diagnostic flint but is Iron Age or later in date. However, small concentrations of diagnostic artefacts and flint flakes in Trench 3 (features [3013], [3009] and 3016)), together with an absence of any other artefacts in their contexts of discovery, could indicate that these features are of early prehistoric date. They might indicate low level use of the site during the early prehistoric period, most likely associated with the exploitation of marine resources of the area. These features produced no organic material suitable for radiocarbon dating.

Iron Age activity

- 7.7 Securely dated Iron Age activity was identified in Trenches 6 (ditch [6016]/[6019]) and 28 (ditch recut [28020], ditch [28014], ditch [28019] and ditch [28006]). These features were all dated through the presence of handmade pottery in the Iron Age tradition, most likely of mid- to late-Iron Age date. However, it is notable that the pottery is primarily shell-tempered, a manufacturing process associated with early Iron Age settlement. Whether the use of shell is indicative of an earlier Iron Age date for the features or is simply a result of the site's location on the foreshore is currently unclear.
- 7.8 The ditch in Trench 6 was demonstrated to be a continuation of the Iron Age activity previously investigated on the northern part of the site; it is most likely part of a driveway and indicative of pastoral farming. The features in Trench 28 clearly represent a continuation of the Iron Age activity previously recorded to the southeast of the site by Network archaeology in 2015. The multiple recutting of these features also indicates some longevity of occupation / use. The two northwest-southeast aligned ditches (one at each end of the trench) most likely represent field or enclosure demarcation associated with the settlement. The function of the curvilinear ditches is harder to discern. It is possible that they indicate the presence a circular or oval enclosure of some description but further excavation would be required to determine this. The features in Trench 28 are also notable for the combination of domestic pottery and animal bone that was deposited in their fills. This household / food waste suggests occupation in relatively close proximity to the features, the previously excavated site to the southeast being the most likely location for this.
- 7.9 The remaining undated archaeological features at the site are largely assigned an Iron Age date through association. Ditches present in Trenches 5 and 9, most likely used for drainage or enclosure demarcation, lie very close to the previously excavated Iron Age settlement on the northern part of the site. In Trench 5, three intercutting ditches ([5002], [5009] and [5021]) suggest some longevity of use and the latest in the sequence contained a single fragment of Roman greyware, hinting at continued occupation into the Roman period (the earlier ditches are undated but assumed to be Iron Age). This single fragment of pottery is the only securely datable Roman artefact from the site. It also seems likely that the two ditches in Trenches 15 and 17 relate to the northern settlement. It is suggested that they functioned to demarcate the marshland associated with the coastal inlet from the drier land to the north as both run approximately parallel with the northern extent of the inlet flood deposits and there was an absence of archaeological features to the south of the ditches.
- 7.10 The undated features in Trench 16 (north) and Trench 33 (south) are of some interest due to the survival wooden posts that appear to indicate the presence of structures on the northern and southern boundaries of the coastal inlet. Such preservation is rare and dating of the timbers through dendrochronology or radiocarbon dating should be a priority. Archaeological features previously recorded to the north of the site included evidence for salt production from the late Iron Age and Romano-British period, and it is possible that the Trench 16 features represent a continuation of this activity. However, their fills did not contain any residues consistent with the green/grey ashy deposits

which result from salt production. It is possible, therefore, that the features relate to other forms of Iron Age or Romano-British land management, such as pastoral farming (the ditches and postholes representing rudimentary animal enclosures, for example), or that they are unrelated activity.

- 7.11 With the exception of Trench 28, all of the features on the southern part of the site are undated, and material suitable for radiocarbon dating is scarce (there is a small quantity of viable material from Trenches 32 and 33). It seems likely, however, that the recorded features relate to the settlement evidence excavated to the southeast of the site. As this site produced occupational evidence of Bronze Age, Iron Age and Roman date, the potential date range of the features is large. Most of the features on the southern side of the site appear to relate to land management (drainage or boundary demarcation).

The limited artefactual and environmental material recovered during the evaluation trenching strongly suggests domestic occupation (no evidence for industrial activity was encountered). The landscape divisions might indicate field systems but these are most likely indicative of pastoral farming. Evidence survived for the husbandry of cattle and sheep/goat, most likely for meat and milk. Only three wheat caryopses survived, despite extensive environmental sampling, but they demonstrate that wheat was being grown in the vicinity of the site; peas and hazelnuts may also have been consumed. The occupants of the site largely made use of oak for fuel, but evidence also survived for elm, hazel and heather in the landscape surrounding the settlements.

Roman activity

- 7.12 The only evidence for Roman activity recovered during the evaluation was a single Roman greyware sherd (not closely datable) from the fill (5012) of a minor ditch recut [5002] in Trench 5, close to the northern edge of the site. Thus, it is possible that this small ditch recut was silting up into the Roman period. While caution should be used in drawing significant conclusions from a single sherd, it is perhaps of note that the recovery context was a small-scale reuse of earlier features in this part of the site, reflecting that any Roman activity in the area was minor compared to preceding phases of activity.
- 7.13 This is consistent with findings from previous excavations at the north edge of site and extending northwards (HFA 2006). There appears, on the basis of the pottery sequence, to have been a hiatus in occupation of the site in the mid to late Iron Age. The late Iron Age and Romano-British settlement developed on higher ground further to the north, centred around a droveway and a pattern of enclosures. Pottery evidence for the later Iron Age and Romano-British periods suggested that until the mid-2nd century there was a scarcity of imports, and it is likely that at this time the site was of a relatively low status. During the latter part of its life (late 2nd century onwards) the settlement appears to have become more affluent (as represented by the cultural material, including foreign imports) and could be seen as a more moderate to high status site.
- 7.14 Given the low-status nature of the early (1st and 2nd century) Roman-period settlement in the immediate vicinity of the site, it remains possible that some activity of this period has been unrecognised in the evaluation. Some undated features or features identified (by pottery) as of Iron Age date could also represent some low-level activity extending into the early Roman period. However, the lack of diagnostic Roman pottery styles from excavated features indicates that the higher status settlement dating from the late 2nd century onwards is unlikely to have extended into the evaluation site.

Addressing Aim and Objectives

- 7.15 With regard to the original research objectives of the archaeological fieldwork, the following comments can be made:

- *Determine whether significant deposits and features pre-dating the post-medieval periods survive at the site, and at what depth.* The evaluation has demonstrated that archaeological deposits and features pre-dating the post-medieval period survive on parts of the site beneath between 0.5m and 1.5m of overburden. The overburden is significantly deeper on the northern half of site where the original topsoil is buried beneath up to 1.2m of made ground. Additionally, the depth of the purple/brown alluvium deposit increases towards the centre of the Site (up to 0.8m thick), increasing the depth of overburden in the area where the earlier flooding deposit sequence survives.
- *Determine whether potentially Iron Age or Roman features survive at the site which may be linked to wider evidence for activity from these periods in the locality.* Three areas of probable Iron Age and Romano-British (or possibly earlier) activity were identified on site in the northeast, northwest and southeast, focussed on Trenches 3, 5, 6, 9, 15, 16 and 17 to the north Trenches 24, 25, 27, 31, 32, and 33 to the south. The archaeological features encountered are likely continuations of settlements identified to the north and south of site in 1999-2002 and 2015, respectively. Additionally, the settlements sit within a wider archaeological landscape which contains further settlement evidence to the northeast and a large interconnecting site to the south. Further discussion of the aims of the evaluation in relation to the known settlements continues below.
- *Provide an assessment of the impact of the development on any significant archaeological deposits and features to assist in the formulation of an appropriate archaeological mitigation strategy.* Details of the construction design will be required in order to assess the potential impact of the development on the buried archaeological remains at the site. However, the results of the evaluation suggest that any topsoil stripping at the site will, in certain areas, expose significant archaeological remains.

7.16 Additionally, comments can be made on the following aims of the archaeological evaluation in relation to the previously identified settlements to the north and south:

- *SRA6: To determine how extensive the settlements.* The settlement north of the coastal inlet extends further westwards as evidenced by the archaeological features encountered in Trenches 5 and, potentially, 3, although more refined dating of these features is required. It can also be suggested that a southern boundary ditch has been identified across Trenches 5, 6, 15, and 17 which marks the southern limit of the northern settlement. Given what is known about the extents of the coastal inlet and its basin, the northern settlement appears to respect what would likely have been marshland to the south. With regard to the settlement south of the coastal inlet, it is likely a continuation of settlement activity to the immediate south, southeast and southwest. This is partially corroborated by finds within the features, including Iron Age pottery and a small amount of industrial waste in the form of slag (the southern settlement produced evidence for industrial activity, as well as domestic activity). However, a significant amount of domestic food waste in the form of animal bones was also recovered from the features recorded during the current evaluation, suggesting the activities taking place in the vicinity were more likely domestic than industrial. No clear boundary was identified marking the southern edge of coastal inlet basin, but the southern settlement is unlikely to have extended into the marshland. It remains possible that the settlement was unenclosed.
- *SRA7: To determine how long lived the settlements were.* The evaluation, due to its limited scope and the small quantity of datable material recovered, does not add to our understanding of the longevity of the settlements. Previous archaeological investigations suggest that the northern settlement has early Iron Age origins while the southern area of settlement potentially

has Bronze Age origins; both these areas continued to be occupied into the Romano-British period. Features encountered during the current evaluation were frequently recut or truncated by later phase features; this is most evident in the curvilinear feature in Trench 28 which had multiple recuts and was a double-ditched feature, suggesting multiphase activity. The potential for the features in Trench 3 to be of an earlier prehistoric date should be noted; this hypothesis should be tested further.

- *SRA8: To determine their spatial and chronological relationship- are we looking at one large, long lived settlements through which a river ran or two or more settlements operating at different times, the focus of activity moving gradual northwards.* As above, definitive conclusions on the extent and form of the settlements are difficult to form due to the limited nature of the evaluation; however, some comments can be made. Both the north and south settlements were assessed at the point where they interact with the edge of the coastal inlet and there appeared to be evidence for a boundary ditch demarcating the northern edge of the inlet but not one demarcating its southern edge. This could suggest different settlements with different approaches to the marshland and the inlet. It should be noted, however, that previous excavations suggest that some parts of the northern were also unenclosed. The character of the settlements is also slightly different with the northern settlement focusing mainly on pastoral agriculture and animal husbandry, whilst there is some evidence for an industrial focus in the southern settlement. It remains possible that there were connected but separate zones of activity (domestic, pastoral, industrial, salt production).
- *SRA9: To determine how changes in the location of the foreshore and associated tributaries influenced settlements patterns.* The industries identified in previous archaeological works relied on marine resources, and so settlements developed next to the foreshore. Much of the inlet area was likely marshland during the Iron Age and Romano-British periods which would have prevented the cultivation of crops in some areas but no doubt yielded other resources (fish, fowl etc). During the current evaluation a limited number of features were recorded within the coastal inlet itself (the postholes in Trench 33 and a possible feature in Trench 24); however, in general the settlements on either side of the coastal inlet respected its bounds. The most significant evidence recovered with regard to settlement patterns and their relationship to the foreshore was the widespread purple/brown clay alluvium deposit that sealed features in Trench 17 and 33 is of significance. It is likely representative of the westward marine transgression that occurred in the late Romano-British period and potentially signalled the end of continuous occupation in the settlements (inundating the land). Some fragments of Romano-British gritty ware were recovered from the deposit in Trench 10 which were probably deposited in the latter stages of occupation as the sea level was rising.
- *SRA10: To determine what the wider landscape was like at this time.* No particular comments can be made regarding this due to the limited scope of the evaluation. Within the wider context of the previous archaeological investigations in the area the settlements are largely typical in form but are significant due to the early Iron Age origins of the northern settlement as well as evidence of salt production which is regionally and nationally significant.

7.17 Finally, some limited comments can be made with regard to the broader research questions outlined in the East Midlands Historic Environment Research Framework:

- *4.5.1: Why did large nucleated settlements emerge in areas such as Lincolnshire and Northamptonshire, and can we clarify further their character and functions?* Broadly, the combined evidence from the excavations at the site and in the vicinity suggest that settlements developed in areas where there were a variety of natural resources to exploit: seawater,

marshland habitats and fertile, alluvium-rich soils formed at the end of the Devensian period and into the Mesolithic. The nature of industry at the settlements perhaps requires further investigation. On the evidence of the evaluation, the character of the settlements was largely domestic and, most likely centred around pastoral farming in the wider landscape. Salt production is also evidenced by earlier excavations.

- *4.7.2: What roles may wet and other natural locations have performed and how might these have changed over time?* No material evidence was recovered from the evaluation which indicated salt production or other marine-related industries, although a small amount of industrial slag was recovered from Trench 28. Similarly, no definitive evidence for the exploitation of wetland food sources was recorded, although this may in part be due to differential survival or recovery of small bones. However, interaction with the wetlands of the coastal inlet basin is evidenced by a limited number of archaeological features within the bounds of the basin.
- *5.4.5: What patterns can be discerned in the location of settlements in the landscape?* The Site serves as a microstudy of settlement patterns in the prehistoric to Romano-British period along the North Lincolnshire Coast as the two settlements have a direct relationship with the coastal inlet and the foreshore. Additionally, the Site is located within a cluster of settlements which appear to be located on the boundary between the higher ground of the 'Middle Marsh' and the lower lying ground of the 'Outmarsh'; this seems to suggest some continued risk of flooding and inundation during the Iron Age and Romano-British period prior to the westward migration of the coastline proper in the late Romano-British period.

8. Conclusion

Significance and Recommendations

- 8.1 Significant archaeological remains have been recorded at the site focused on Trenches 3, 5, 6, 9, 15, 16 and 17 to the north Trenches 24, 25, 27, 31, 32, and 33 to the south. The results indicate settlement was centred on the higher ground to the north and south of the coastal inlet that bisects the site. Tentative evidence of early prehistoric activity was recorded in Trench 3 and there was further evidence for low levels of early prehistoric activity in the wider landscape through residual flint tools in later features. Securely dated Iron Age activity was recorded in Trenches 6 and 28. Many of the undated features at the site are also likely to relate to Iron Age and Roman settlement activity previously recorded to the north and southeast of the site, although the potential for Bronze Age activity on the southern part of the site should not be discounted. These results indicate that the previously known settlements extend into the site up to the edges of the coastal inlet. The results also suggest domestic settlement in a largely pastoral landscape adjacent to the coastal inlet where marine resources could be exploited (there was no evidence for industrial activity and no high status artefactual material was present).
- 8.2 The results do not allow any firm conclusions to be drawn as to whether there was one settlement divided by the inlet or two separate settlements: the dating of the finds is not sufficiently refined to indicate chronological variance between the two sites and there were no significant differences in the character of the features and artefacts recorded in the two locations (e.g. domestic vs. industrial). The only recorded variance is limited in evidential value: on the northern part of the site evidence was recorded for ditches demarcating the inlet from the drier ground used for settlement; no such ditches were recorded to the south of the inlet but this may be a consequence of the spatial distribution of the trenches in this area.

- 8.3 Although the main activity recorded at the site appears to be Iron Age in date, the dating of the pottery is broad and cannot at present be refined. It is not possible therefore to state with any certainty the duration of activity at the site, other than to say it is probably of mid- to late-Iron Age date. As noted above, there is also a hint of later activity (a single Roman greyware sherd) and a large number of undated features in a landscape that was settled from at least the Bronze Age onwards.
- 8.4 Despite this absence of definitive, refined dating for many of the recorded features, they are best ascribed high archaeological significance for their potential to inform our understanding of existing Iron Age and Romano-British settlements along the Humber foreshore. In particular, they hold potential for investigating further the character of settlement in the locality, its extent, its interaction with the surrounding landscape and its longevity.
- 8.5 It is recommended that an attempt is made to refine the chronology of the site through scientific dating. In this regard, it should be noted that the quantity of charred plant remains and charcoal recovered from the site is very limited and that the material is generally poorly preserved. Animal bone is better preserved, but the majority of the assemblage derives from features in Trench 28 which are relatively securely dated via the pottery assemblage. However, the following samples are recommended for assessment (oak charcoal is not ideal for radiocarbon dating but in the absence of other sources of material it may provide a 'range-finder' date):

Trench	Context	Sample	Technique
Trench 16	(1610) – posthole [16009]	Wooden post	Dendrochronology / C14
Trench 17	(17011) – ditch [17010]	Oak charcoal	C14
Trench 32	(32011) – ditch [32010]	Oak charcoal	C14
Trench 33	(33011) – posthole [33010]	Wooden post	Dendrochronology / C14

- 8.6 It is further recommended that development proposals and designs are reviewed in detail so that an assessment of their impact on the known archaeological remains at the site can be made and mitigation strategies devised. This will require comparing the locations and depths of all intrusive groundworks associated with the development with the locations and depths of the known archaeological features at the site. Where the development can be shown to impact on buried archaeological remains of significance, mitigation measures may be required to ensure that damage to the remains is avoided entirely or that they are archaeologically excavated in advance of the construction phase of the development ('preservation by record'). Consideration of these matters should take place well in advance of the proposed construction programme so that there is adequate time to design a practicable archaeological mitigation strategy and to undertake large scale archaeological excavations at the site if required.

9. Archiving

- 8.7 A full site archive will be produced which will contain all the data collected during the archaeological works, including the finds (if required by the receiving institution). The archive will be quantified, ordered, indexed and internally consistent, and will be deposited at the appropriate local museum.

- 8.8 The archive will be assembled in line with the recommendations provided in Historic England's *MoRPHE Project Planning Note 3: Archaeological Excavation* (PPN3) (2008), and in accordance with the *Guidelines for the preparation of Excavation Archives for long-term storage* (United Kingdom Institute for Conservation, 1990) and *Standards in the museum care of archaeological collections* (Museums and Galleries Commission 1994).
- 8.9 An OASIS form has been completed and uploaded for this project and a copy of this is provided in Appendix 10

10. Bibliography

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Figures

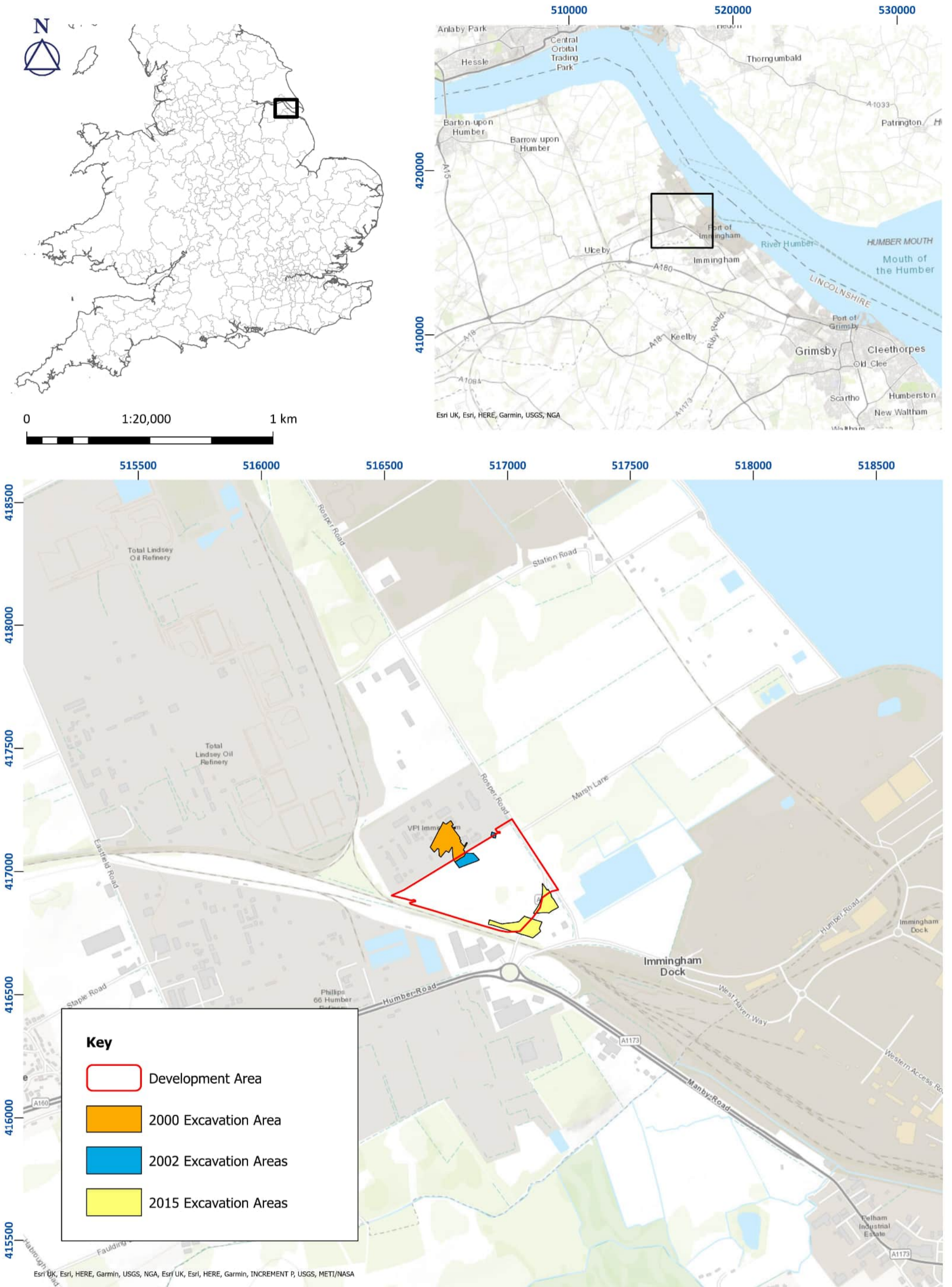


Figure 1: Site Location Plan

01/53122/REP/01/01



VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report

Trench Plan

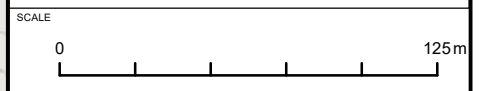
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 - TrenchTop
 - Feature

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DWG no:	01/53122/REP/02/01
AOC Project No.:	53122



SYSTEM
Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

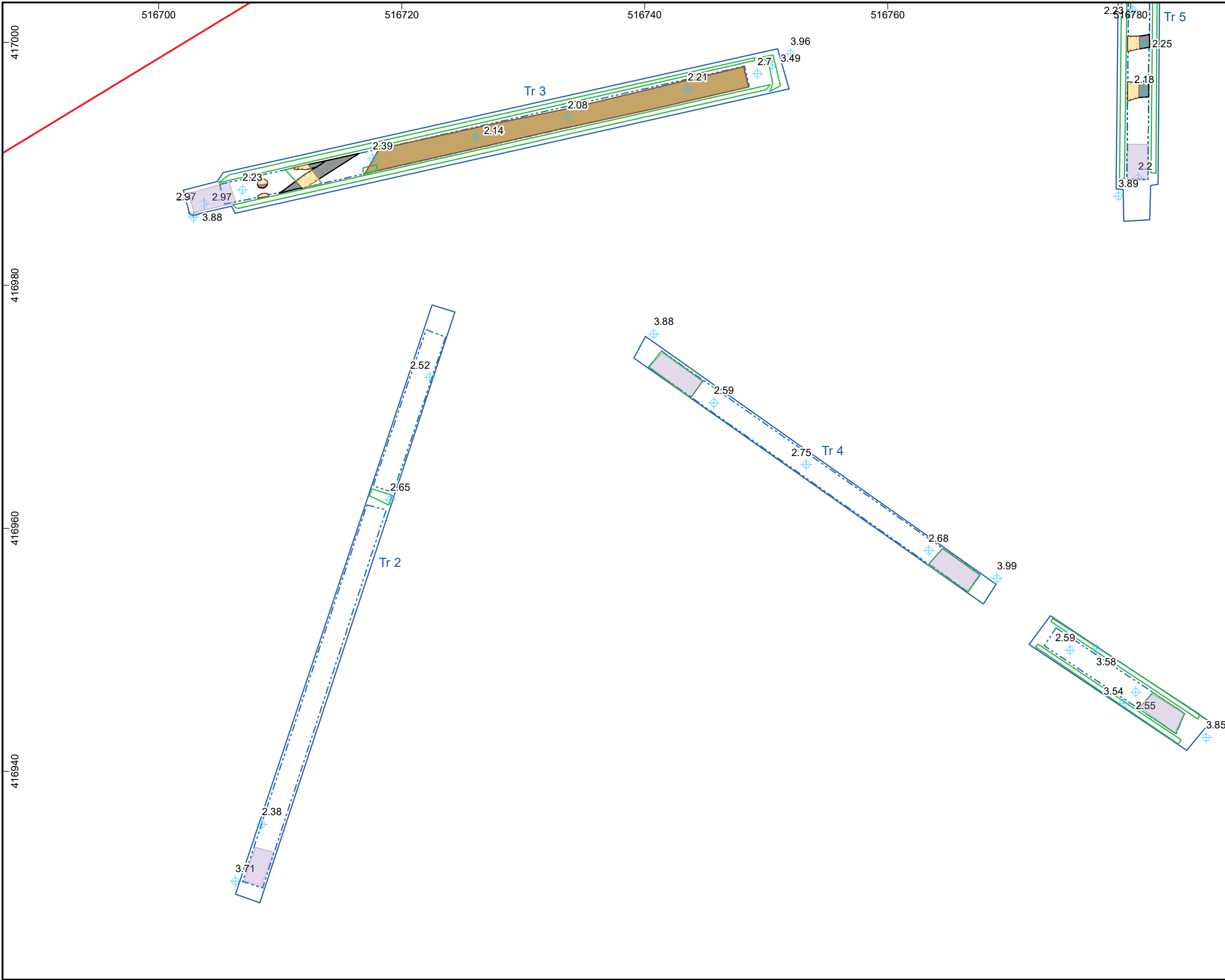

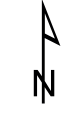
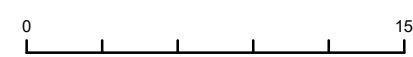
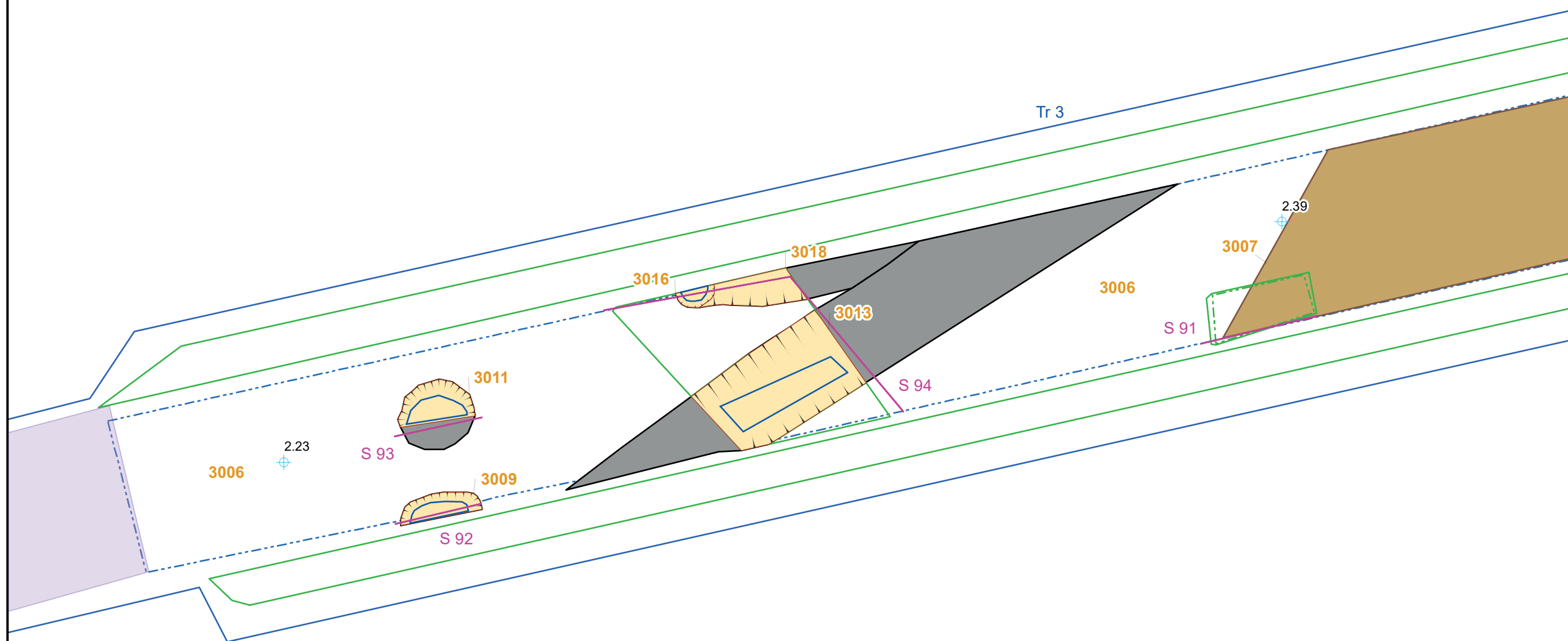


Figure	3
VPI Immingham Humber Zero Project, Lincolnshire: Archaeological Evaluation Report Trenches 2, 3 and 4	
Legend □ Site Boundary □ Trench Top □ Trench Base □ Excavated □ Feature □ Natural Feature/ Palaeochannel □ LOE Top ⊕ Spot Heights (m) □ Sondage to boulder clay	
FOR	
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DWG no:	01/53122/REP/02/01
AOC Project No.:	53122
 (C) AOC Archaeology Group 2023	
	
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SCALE	

VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Archaeology in Trench 3

Legend

- Site Boundary
- TrenchTop
- Trench Base
- Excavated
- Feature
- Base of Feature
- Natural Feature/
Palaeochannel
- LOE Top
- LOE Base
- Section Line
- + Spot Heights (m)
- Sondage to boulder clay



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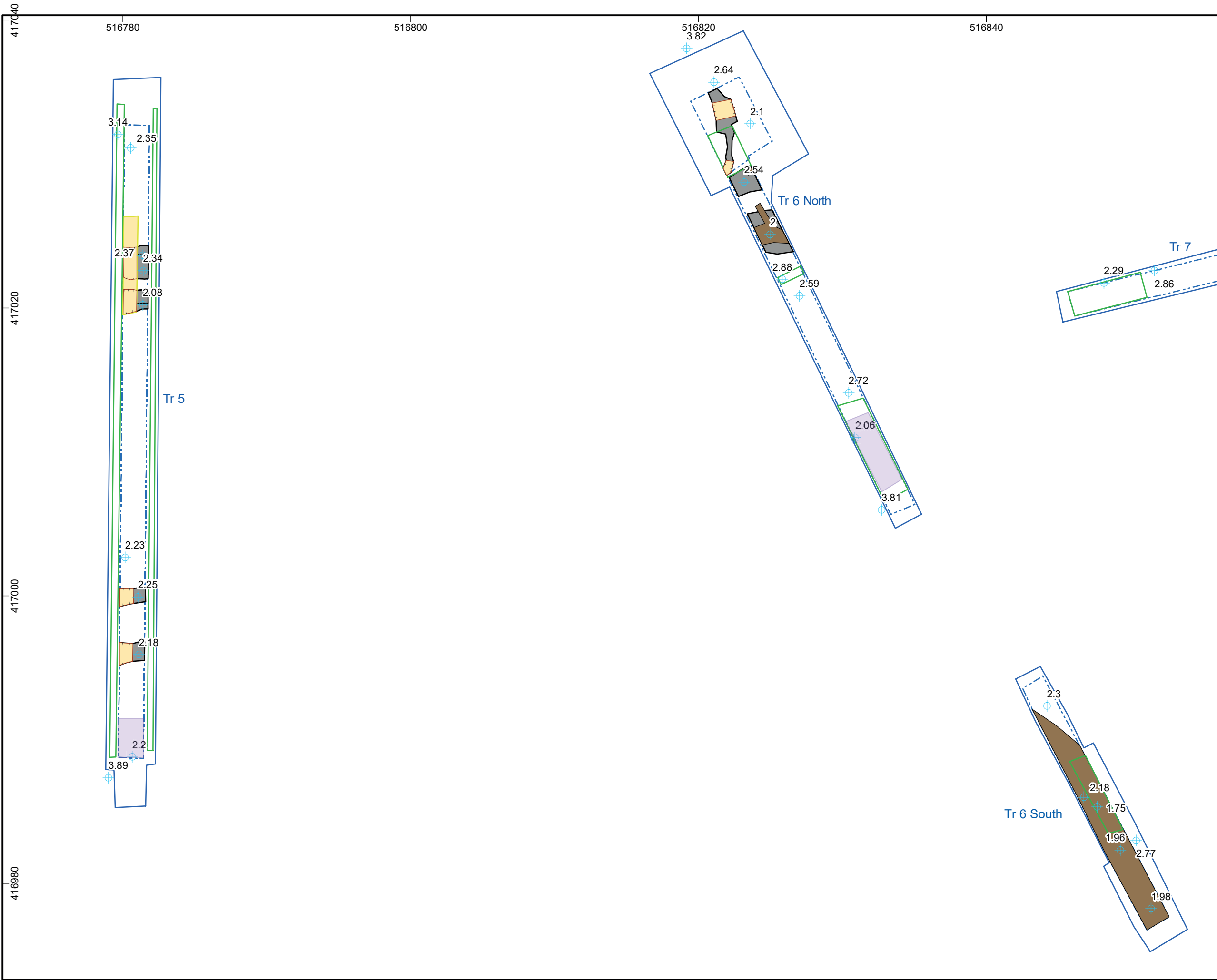


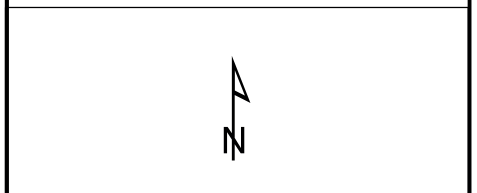
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VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Trenches 5 and 6

- Legend
- ▭ Site Boundary
 - ▭ Trench Top
 - ▭ Trench Base
 - ▭ Excavated
 - ▭ Feature
 - ▭ Deposit
 - ▭ Truncation
 - ▭ LOE Top
 - + Spot Heights (m)
 - ▭ Sondage to boulder clay

FOR

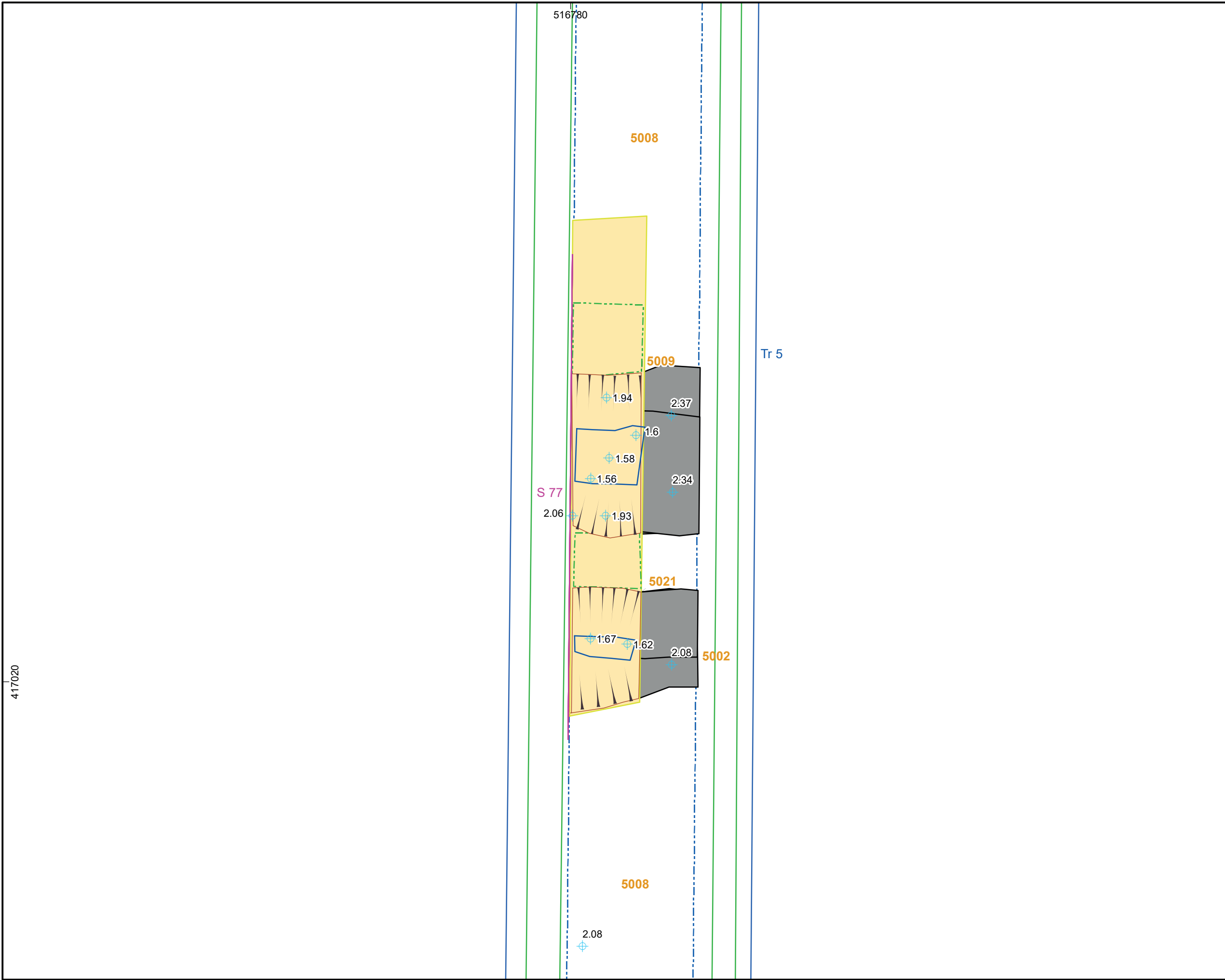
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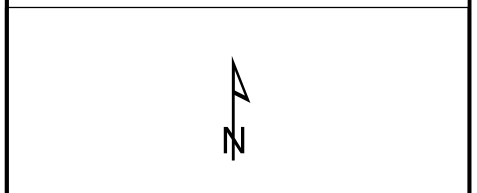
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VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Archaeology in Trench 5

- Legend
- Site Boundary
 - Trench Top
 - Trench Base
 - Excavated
 - Feature
 - Base of Feature
 - Deposit
 - LOE Top
 - LOE Base
 - Section Line
 - ⊕ Spot Height (m)

FOR

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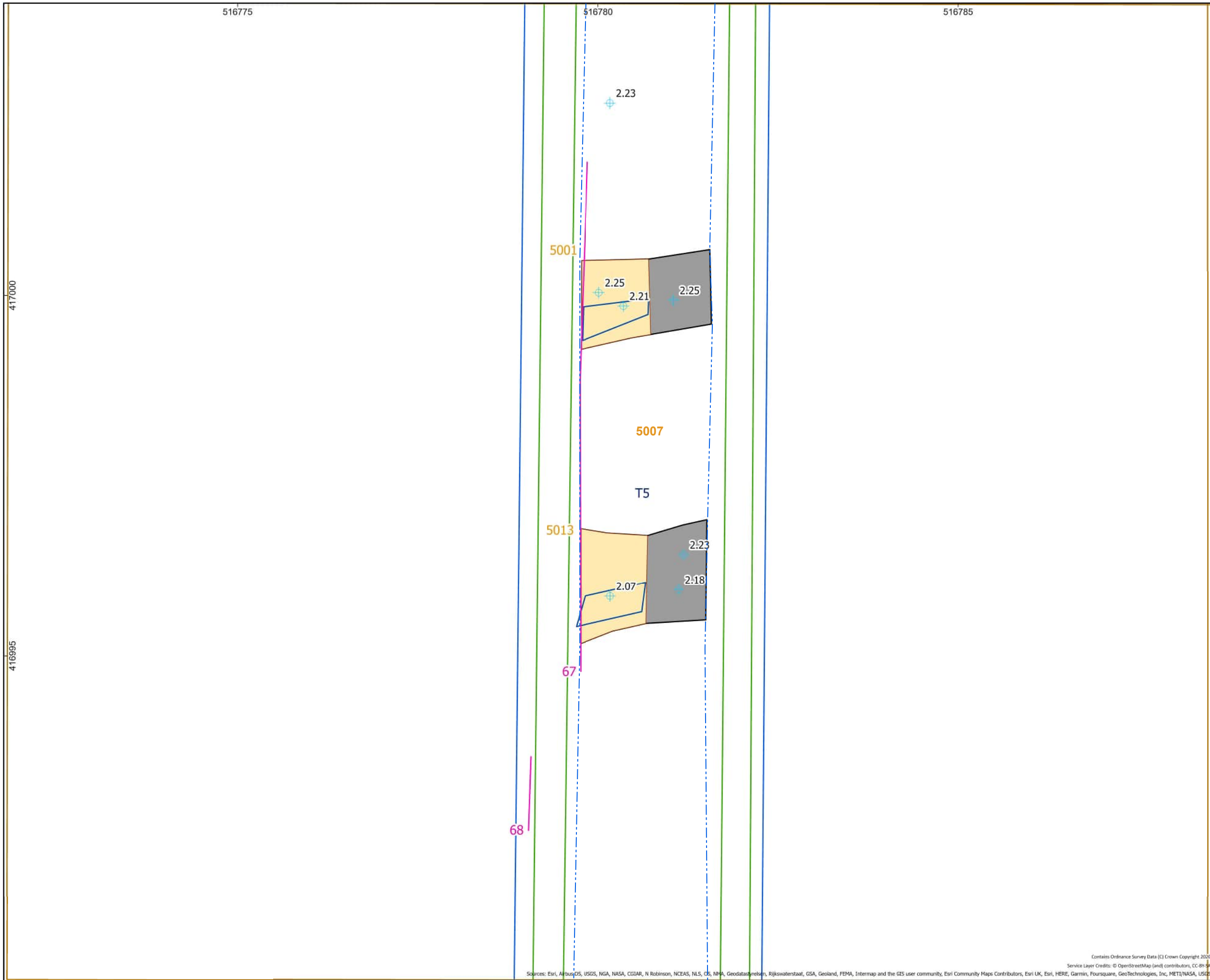


Figure 6B

VPI Immingham Humber Zero Project,
Lincolnshire: Archaeological Evaluation
Report
Archaeology in Trench 5

- Legend
- Site Boundary
 - Trench Top
 - Trench Base
 - LOE Top
 - Excavated
 - Feature
 - Base of Feature
 - Section Line
 - Spot Height (m)

FOR	
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AOC Project No:	53122



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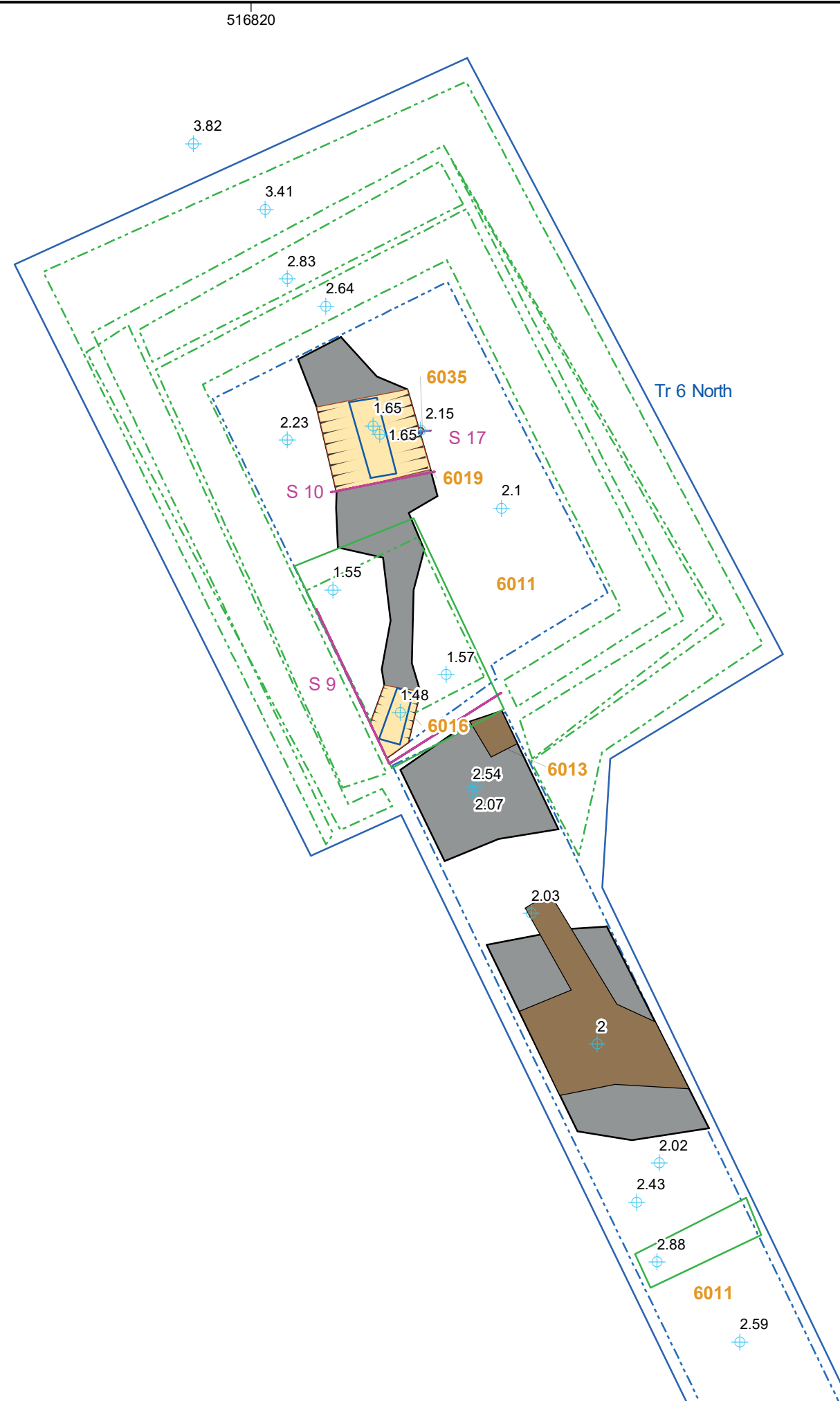





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VPI Immingham Humber Zero Project, Lincolnshire: Archaeological Evaluation Report Archaeology in Trench 6			
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AOC Project No.:	53122		
 (C) AOC Archaeology Group 2023			
			
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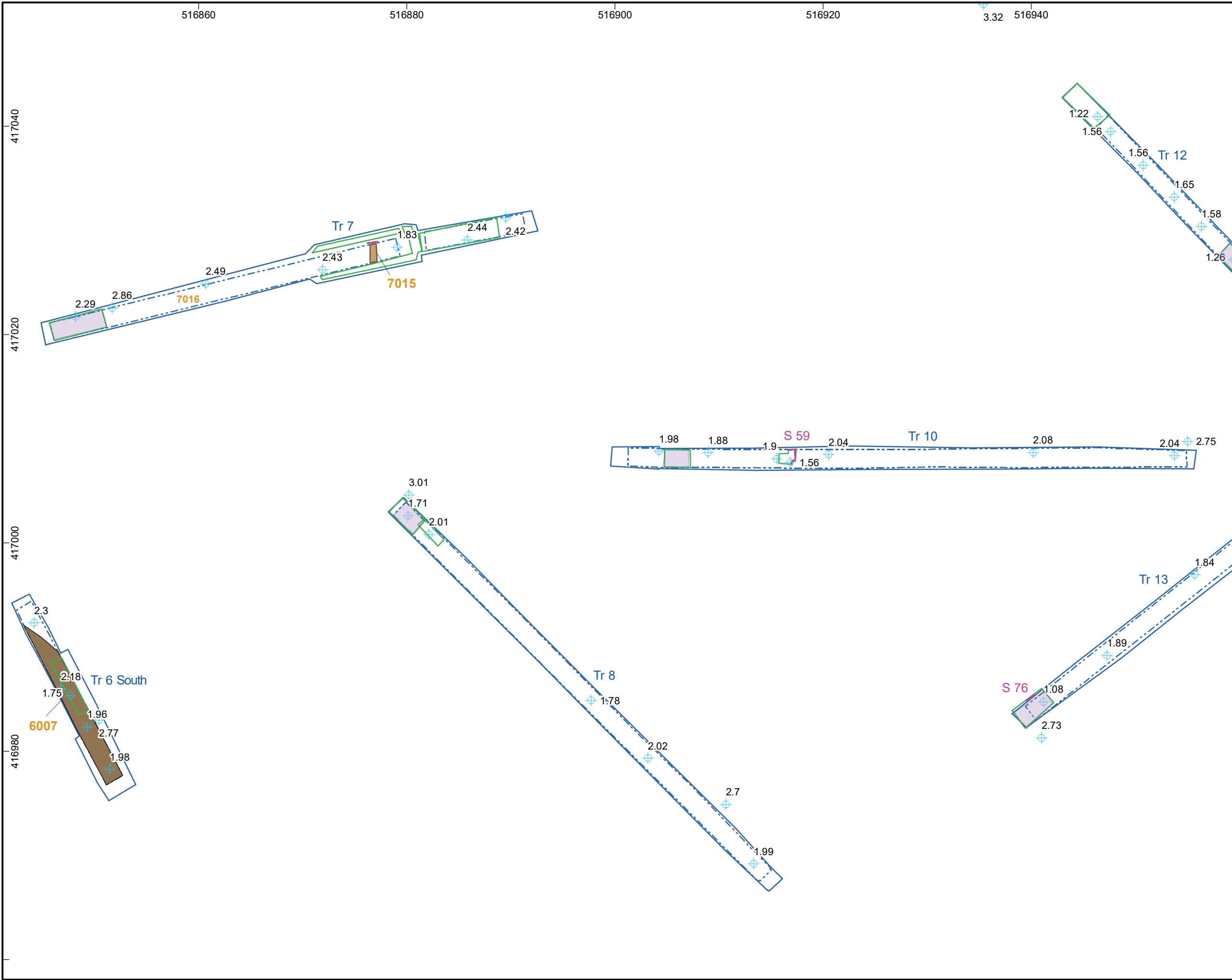

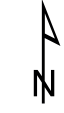
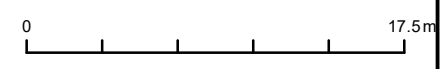
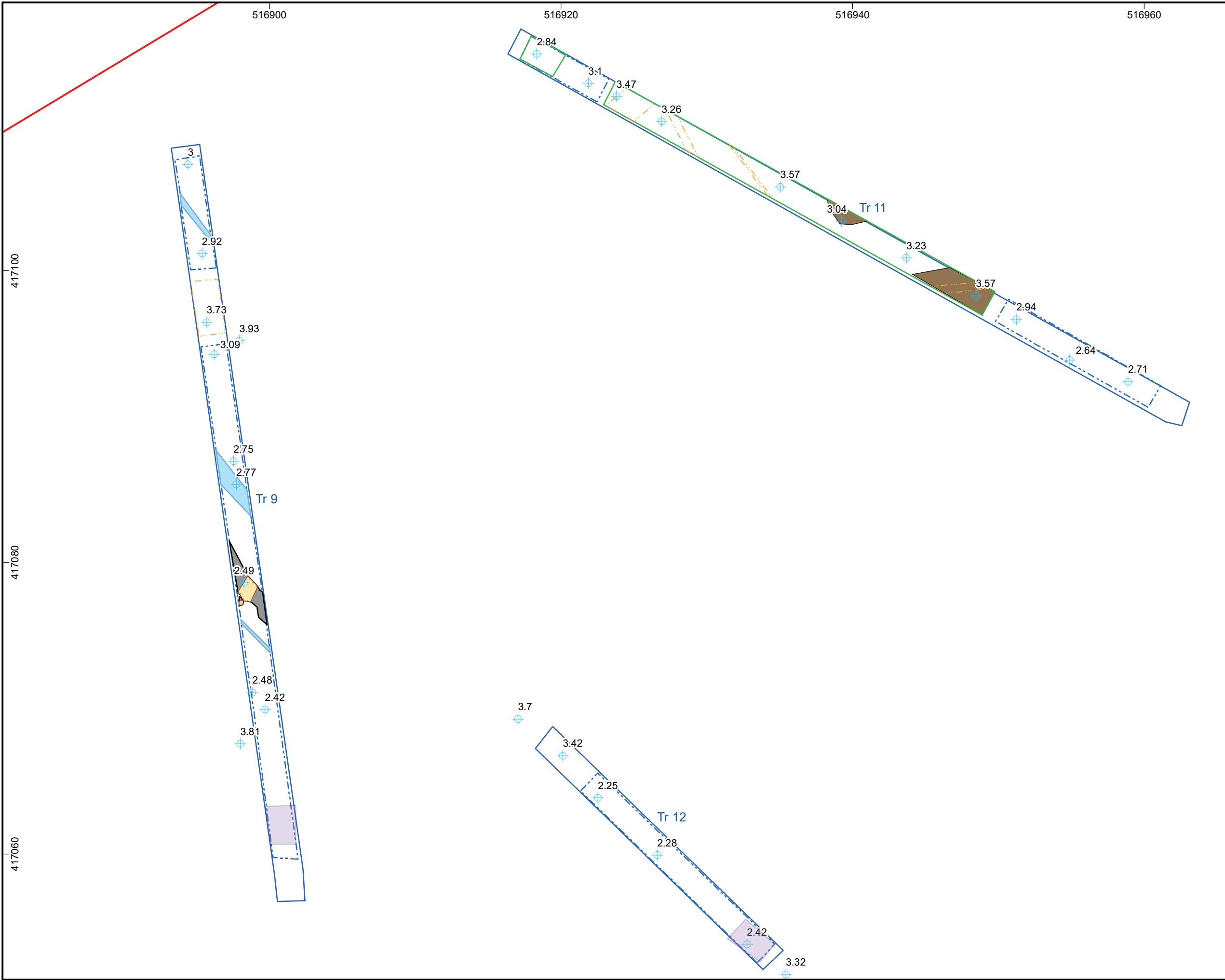


Figure		8
VPI Immingham Humber Zero Project, Lincolnshire: Archaeological Evaluation Report Trenches 7, 8, and 10		
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AOC Project No.:	53122	
 (C) AOC Archaeology Group 2023		
		
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VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Trenches 9 and 11

- Legend
- Site Boundary
 - Trench Top
 - Trench Base
 - Excavated
 - Feature
 - Truncation
 - LOE Top
 - Field Drain
 - ⊕ Spot Heights (m)
 - Service
 - Sondage to boulder clay

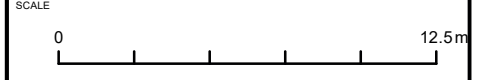
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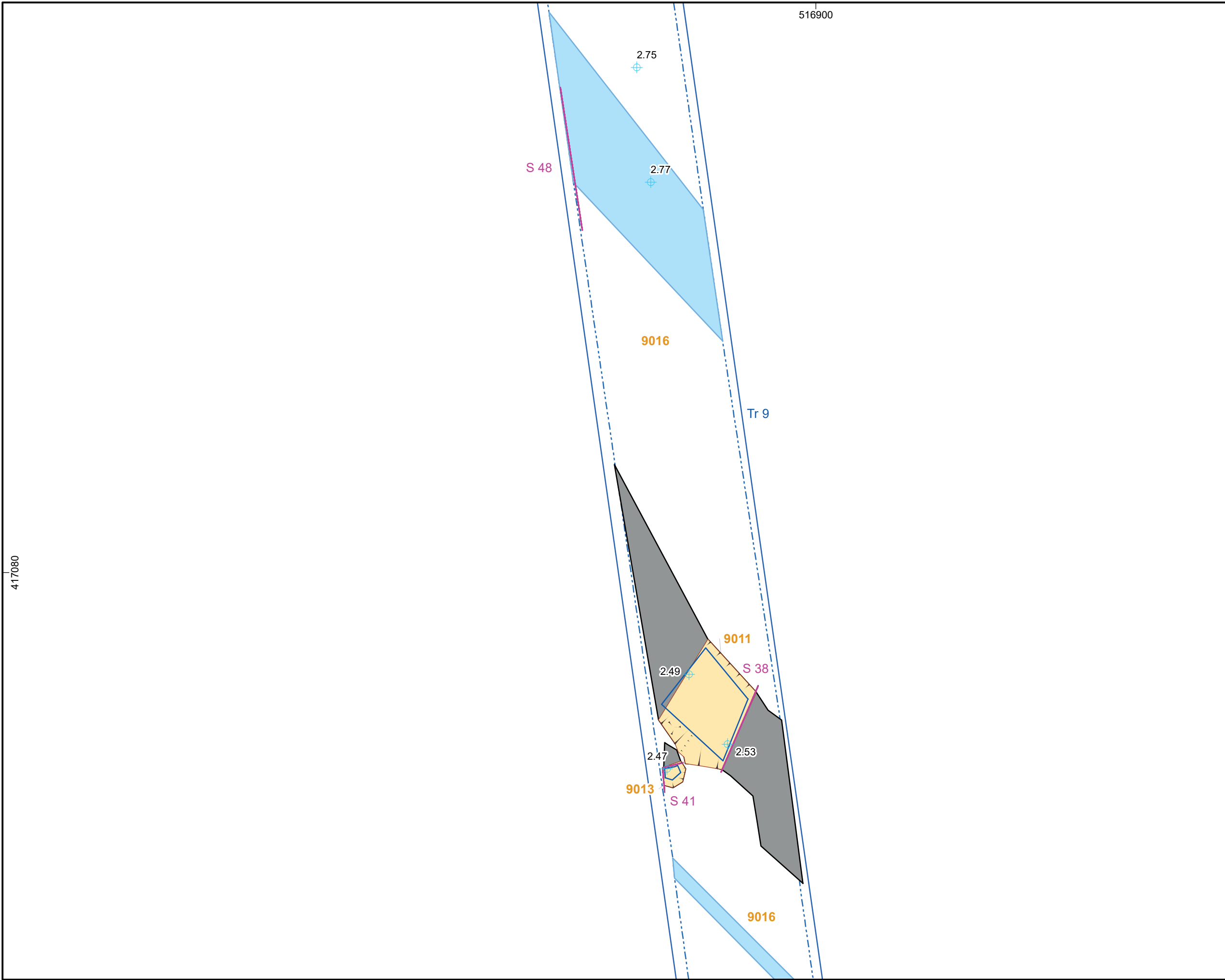
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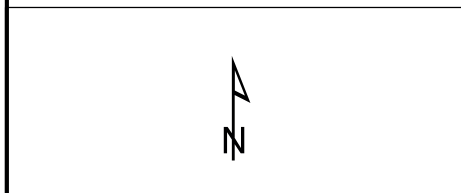


VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Archaeology in Trench 9

- Legend
- Site Boundary
 - Trench Top
 - Trench Base
 - Excavated
 - Feature
 - Base of Feature
 - Field Drain
 - Section Line
 - Spot Height (m)

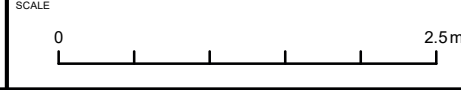
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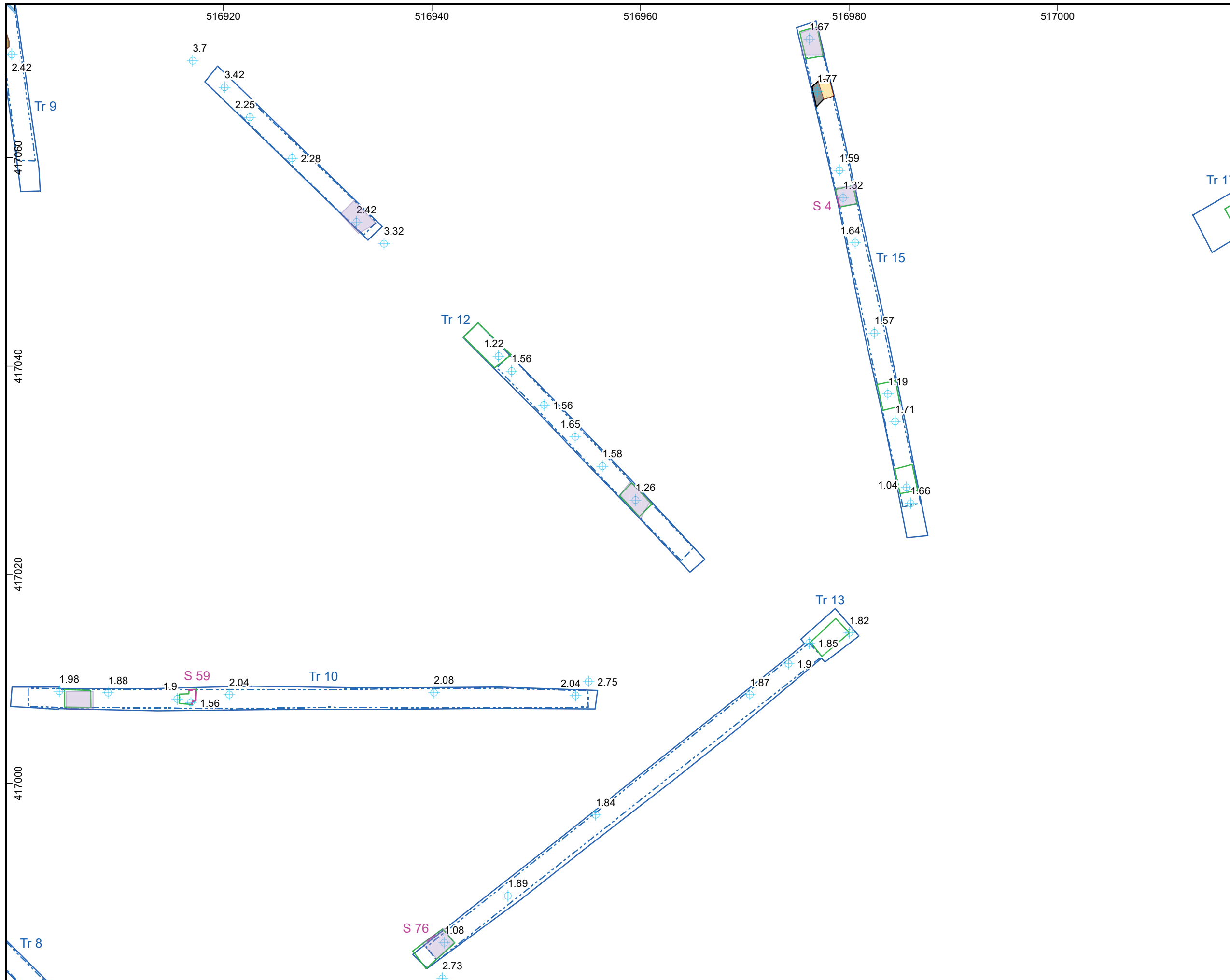



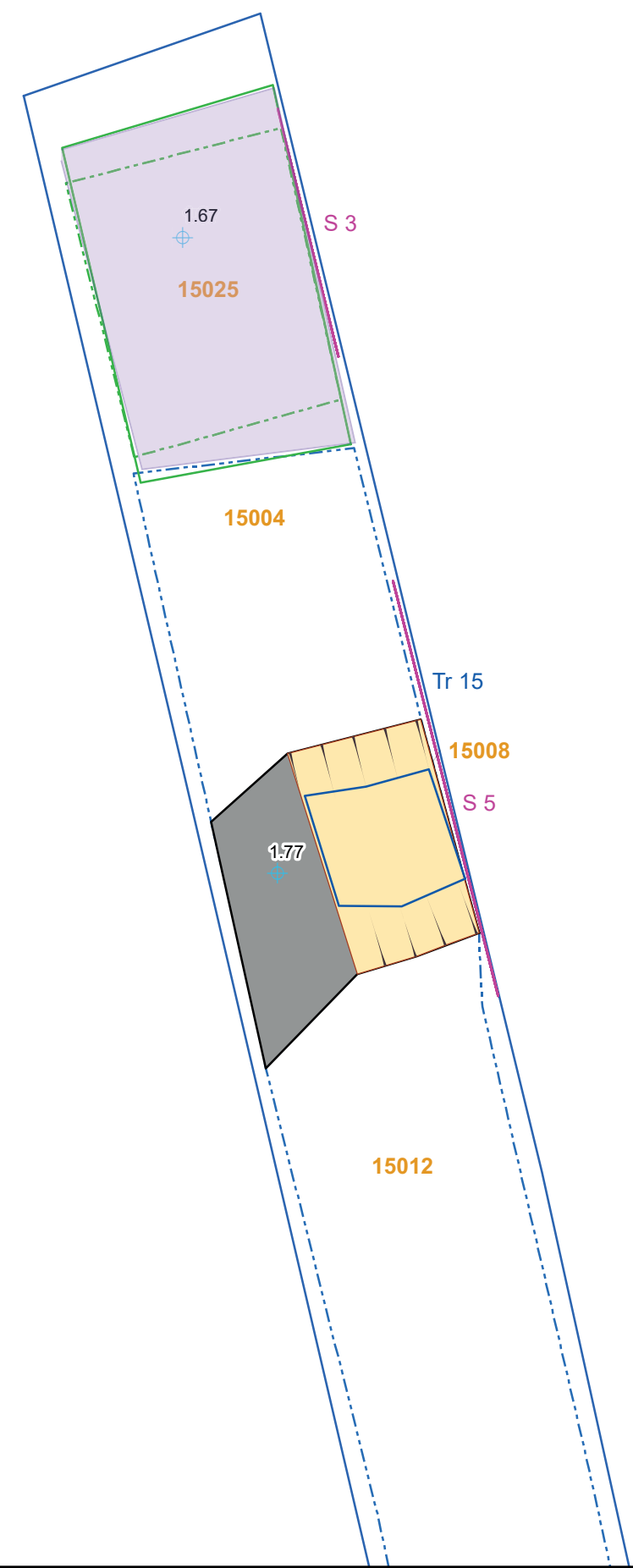


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FOR	
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DWG no:	01/53122/REP/11/01
AOC Project No.:	53122
 <p>(C) AOC Archaeology Group 2023</p>	
	
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VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Archaeology in Trench 15

- Legend
- Site Boundary
 - Trench Top
 - Trench Base
 - Excavated
 - Feature
 - Base of Feature
 - LOE Top
 - LOE Base
 - Section Line
 - + Spot Heights (m)
 - Sondage to boulder clay

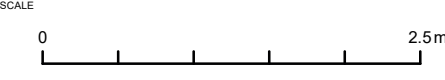
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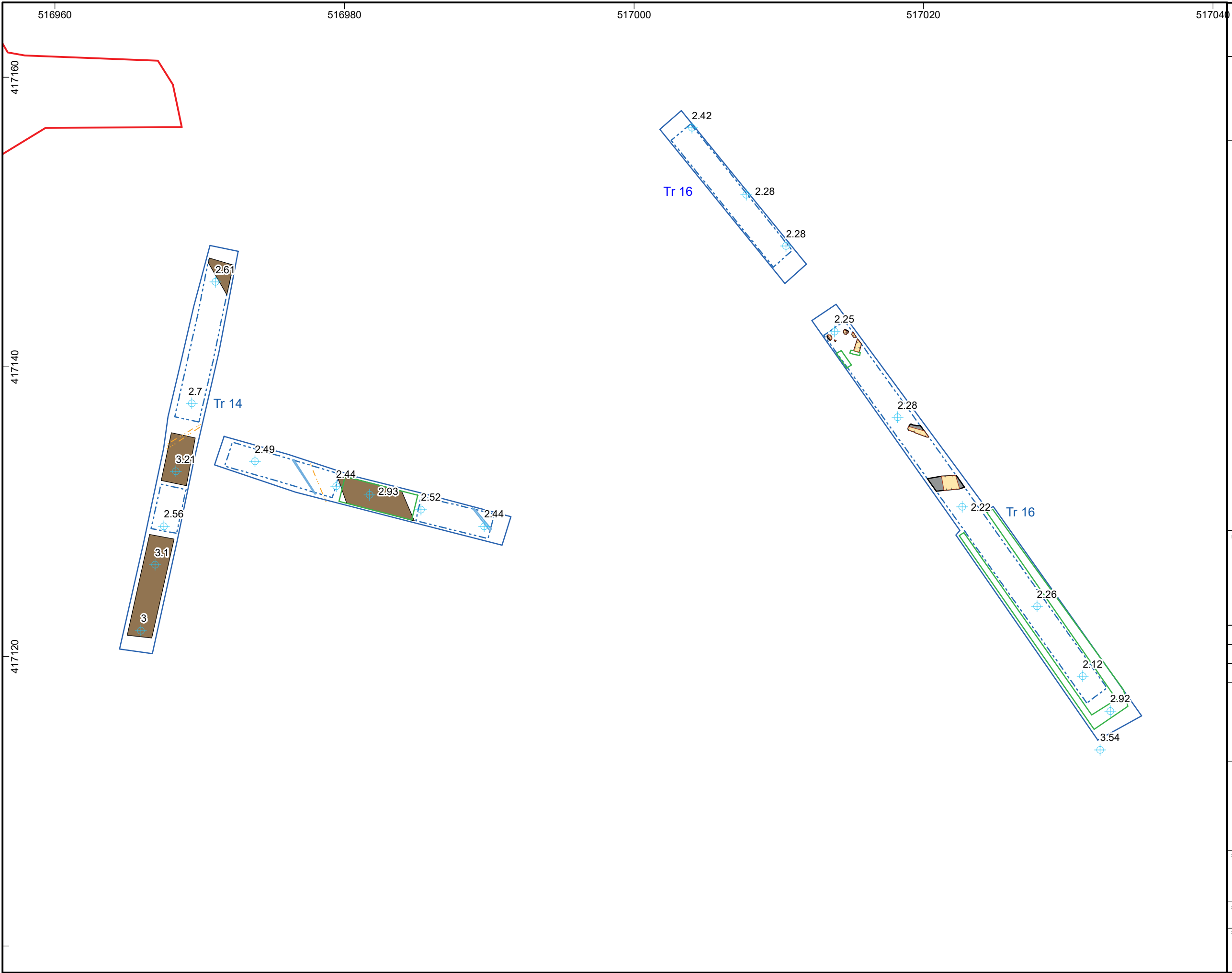


Figure 13
 VPI Immingham
 Humber Zero Project, Lincolnshire:
 Archaeological Evaluation Report
 Trenches 14 and 16

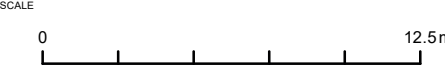
- Legend
- Site Boundary
 - Trench Top
 - Trench Base
 - Excavated
 - Feature
 - Truncation
 - Timber
 - LOE Top
 - Field Drain
 - Break of Slope
 - Service
 - + Spot Heights (m)

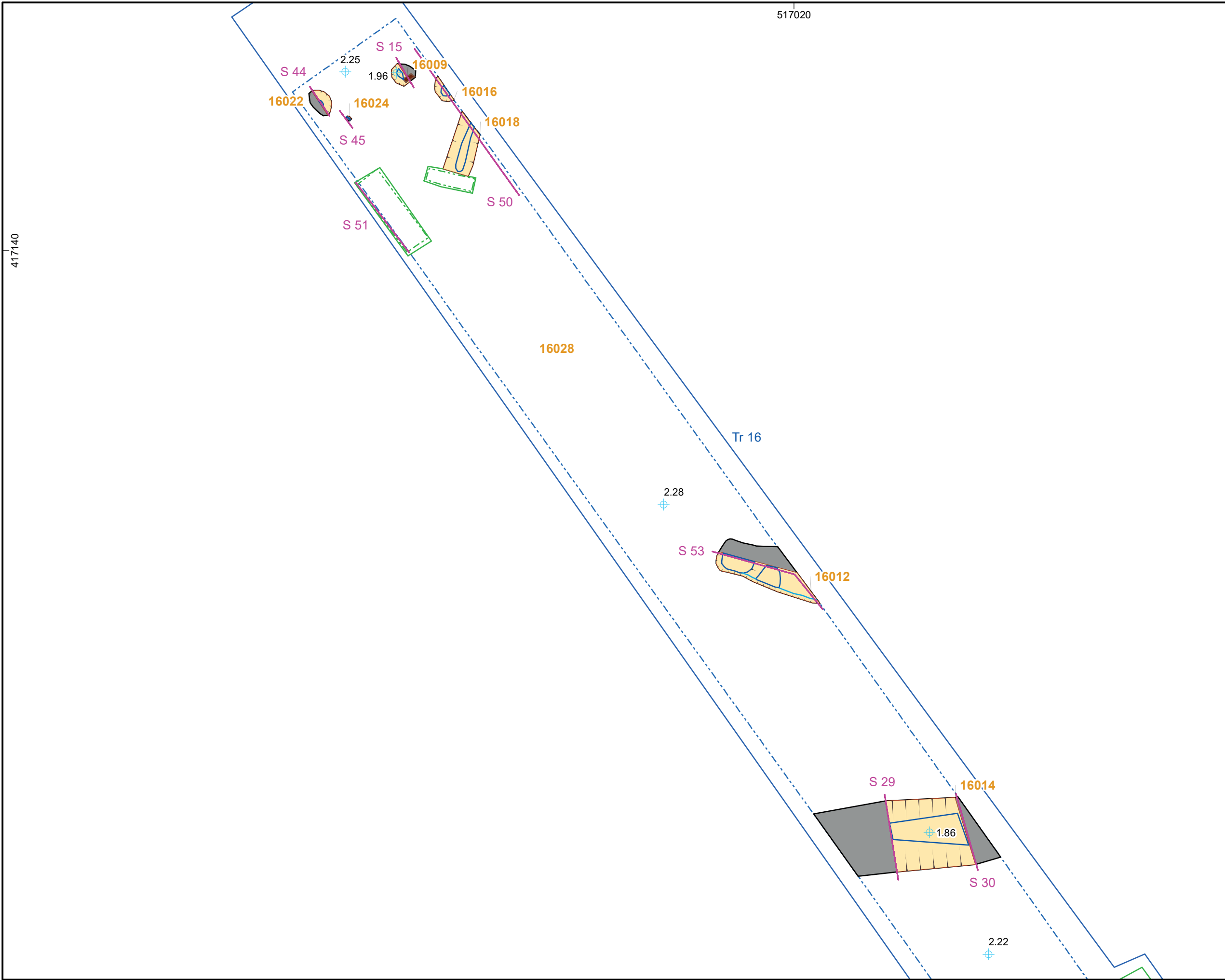
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AOC Project No.:	53122



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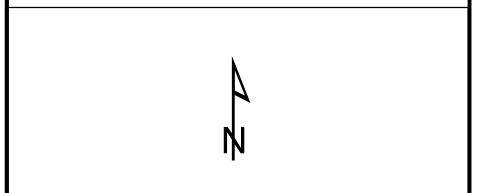


VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Archaeology in Trench 16

- Legend
- Site Boundary
 - Trench Top
 - Trench Base
 - Excavated
 - Feature
 - Base of Feature
 - Timber
 - LOE Top
 - LOE Base
 - Break of Slope
 - Section Line
 - Spot Height (m)

FOR

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DWG no:	01/53122/REP/14/01
AOC Project No.:	53122



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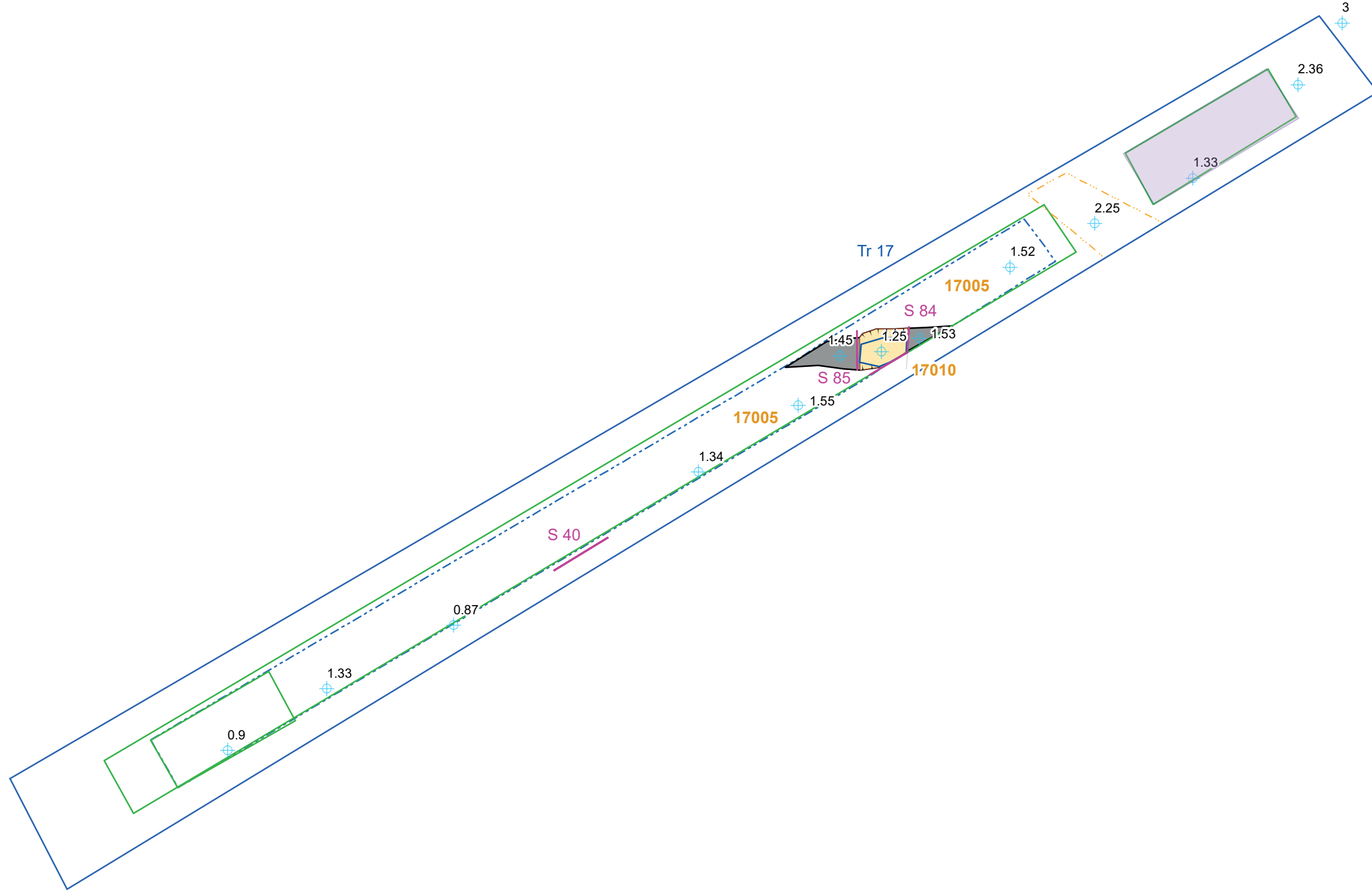
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417080

417060



Figure

15

VPI Immingham
 Humber Zero Project, Lincolnshire:
 Archaeological Evaluation Report
 Trench 17

Legend

- Site Boundary
- Trench Top
- Trench Base
- Excavated
- Feature
- Base of Feature
- LOE Top
- Section Line
- Service
- + Spot Height (m)
- Sondage to boulder clay

FOR

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AOC Project No.:	53122



(C) AOC Archaeology Group 2023



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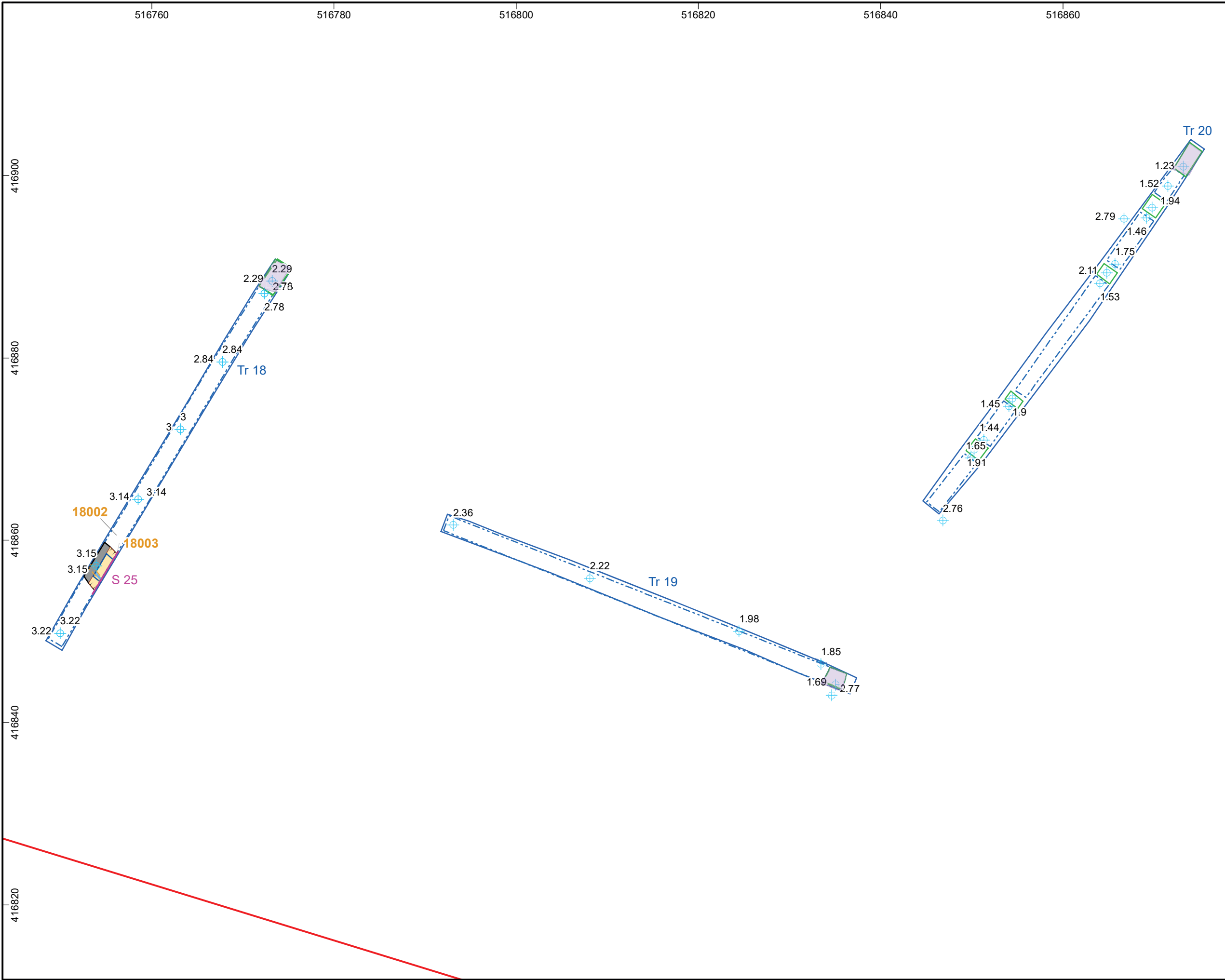
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VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Trenches 18, 19 and 20

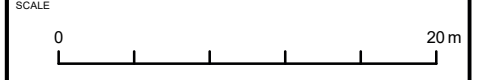
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 - Section Line
 - Service
 - ⊕ Spot Heights (m)
 - ▭ Sondage to boulder clay

FOR	
Drawn/checked:	SD
DWG no:	01/53122/REP/16/01
AOC Project No.:	53122



SYSTEM
Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

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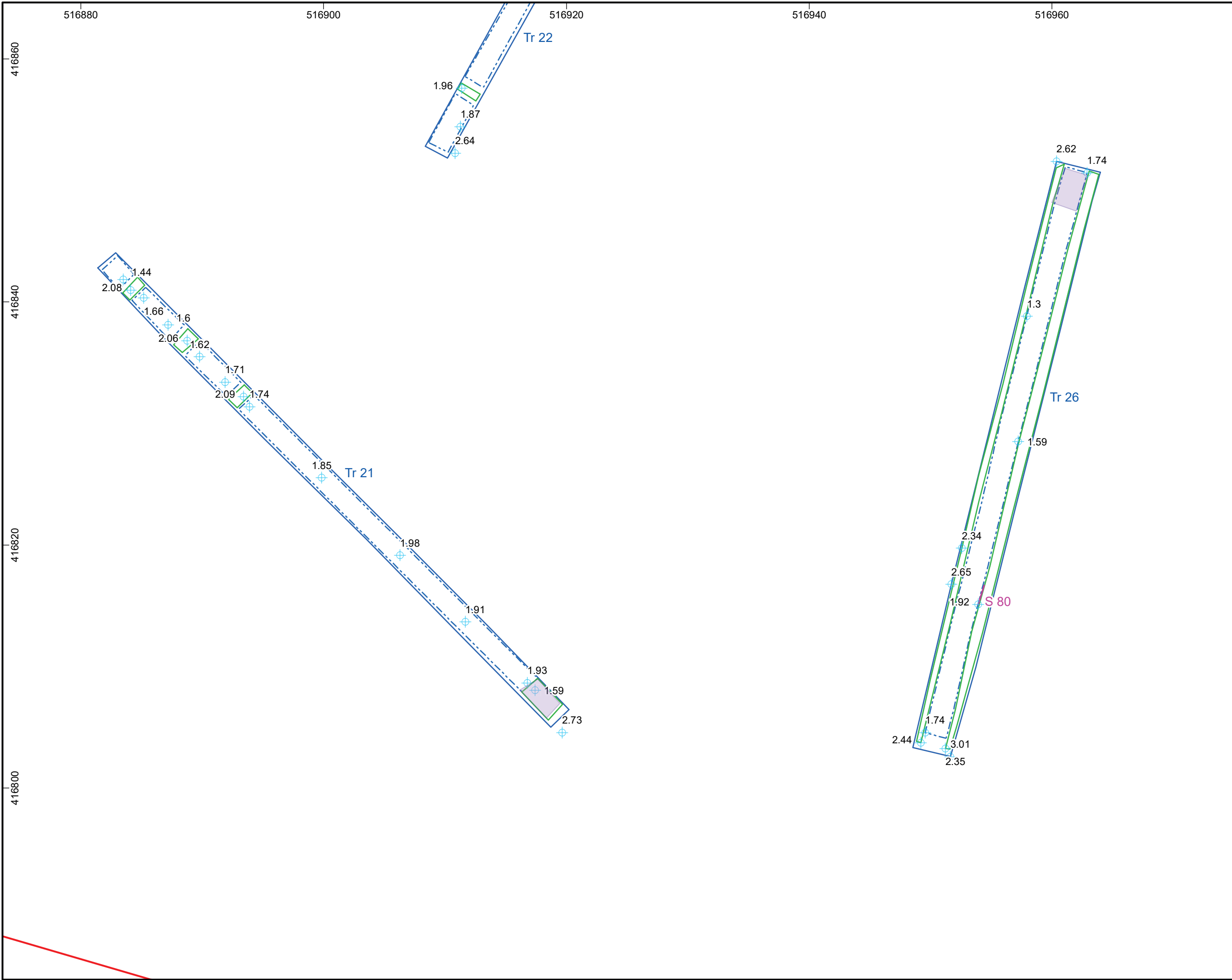

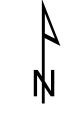
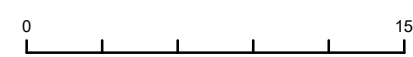


Figure	17
VPI Immingham Humber Zero Project, Lincolnshire: Archaeological Evaluation Report Trenches 21 and 26	
Legend □ Site Boundary □ Trench Top ⋮ Trench Base □ LOE Top — Section Line ⊕ Spot Heights (m) Sondage to boulder clay	
FOR	
Drawn/checked:	SD
DWG no:	01/53122/REP/17/01
AOC Project No.:	53122
 (C) AOC Archaeology Group 2023	
	
SYSTEM Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	
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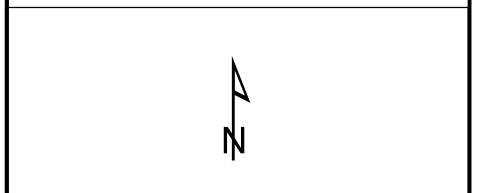
VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Trenches 22, 23, and 24

Legend

- Site Boundary
- Trench Top
- - - Trench Base
- LOE Top
- Section Line
- ⊕ Spot Heights (m)
- Sondage to boulder clay
- Feature (indicative location only)

FOR

Drawn/checked:	SD
DWG no:	01/53122/REP/18/01
AOC Project No.:	53122



SYSTEM
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Projection: Transverse Mercator
Datum: OSGB 1936

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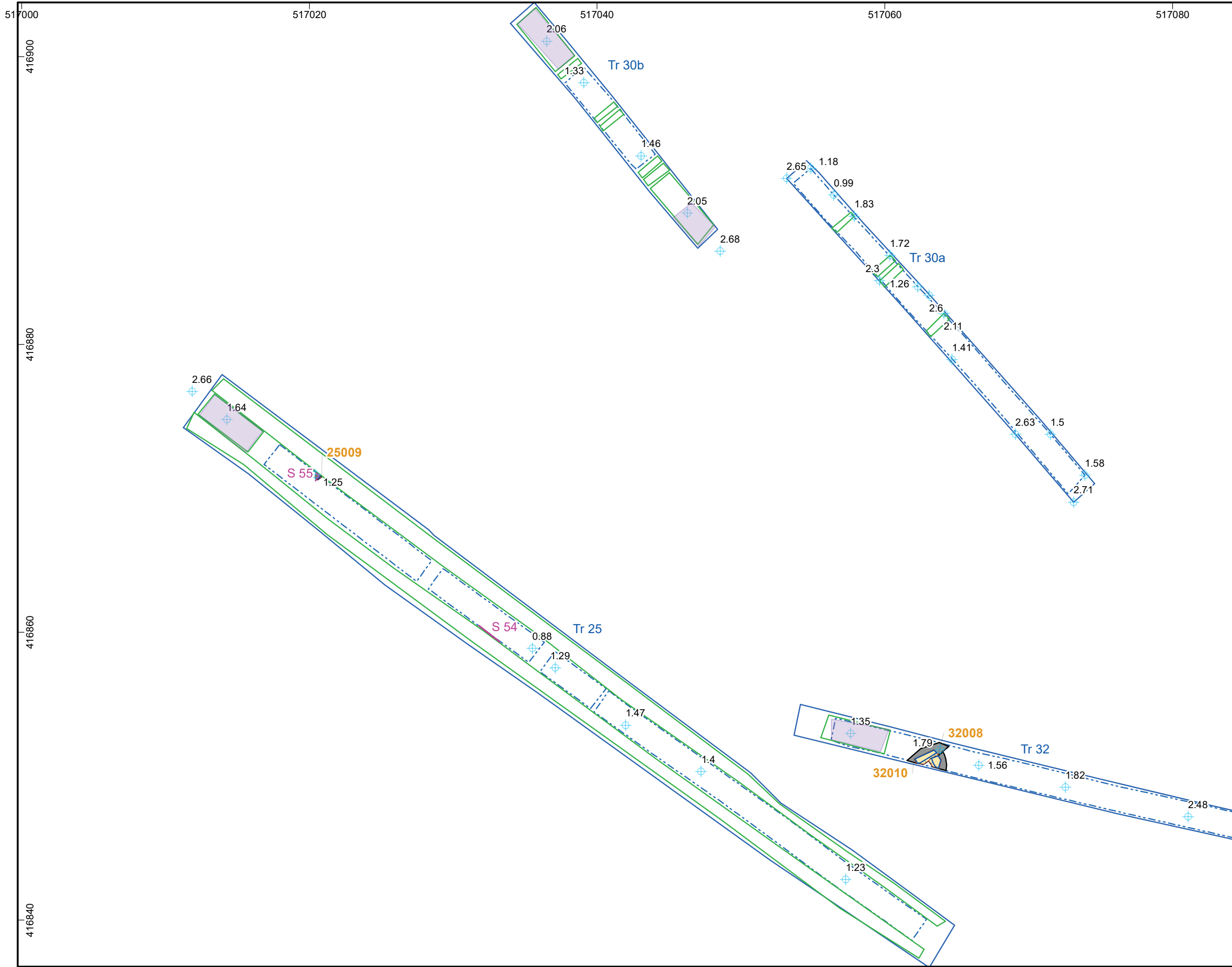



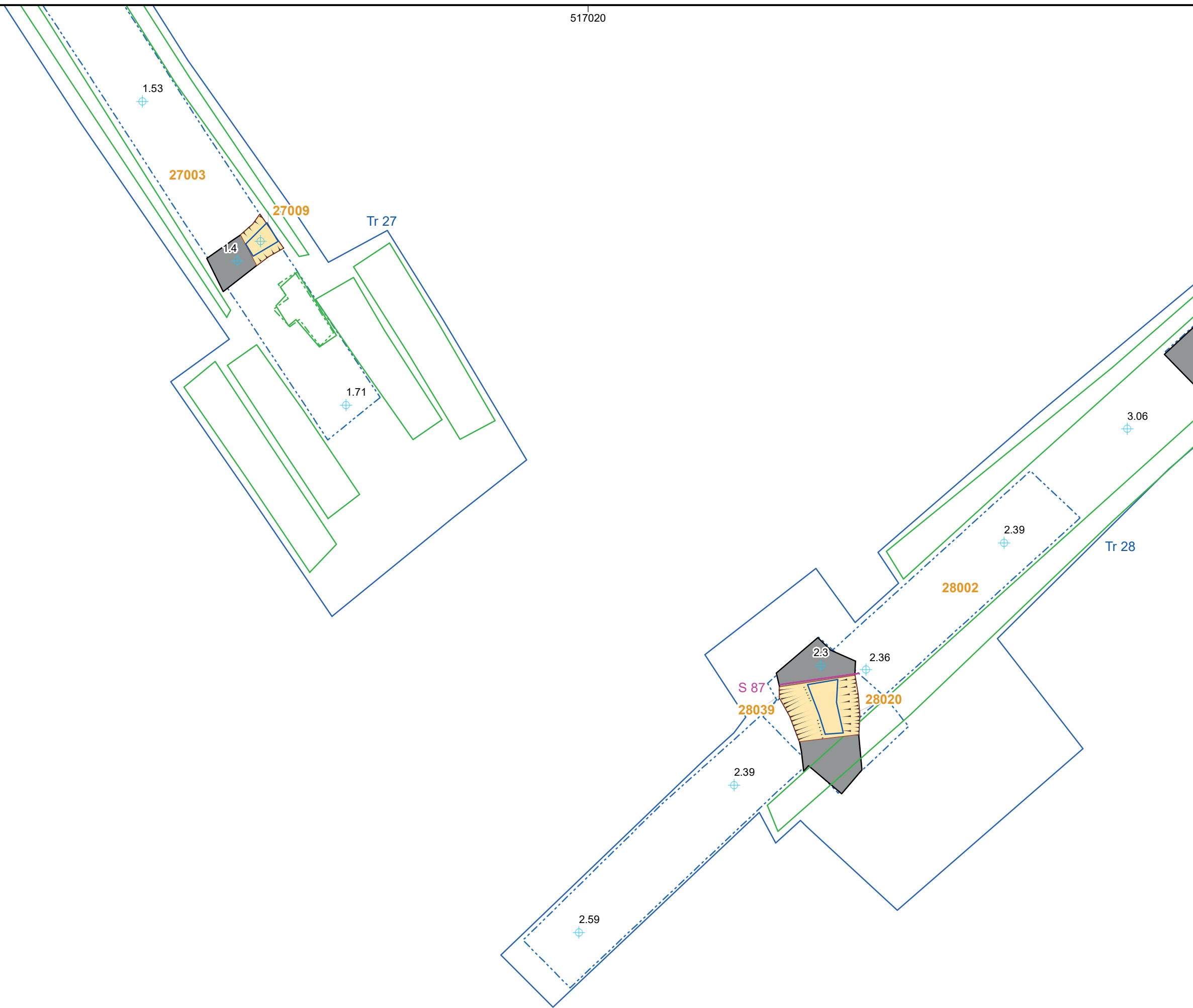


Figure		19	
VPI Immingham Humber Zero Project, Lincolnshire: Archaeological Evaluation Report Trenches 25 and 30			
<p>Legend</p> <ul style="list-style-type: none"> □ Site Boundary □ Trench Top - - - Trench Base □ Excavated □ Feature □ Base of Feature □ Truncation □ LOE Top — Break of Slope — Section Line ◆ Spot Heights (m) □ Sondage to boulder clay 			
FOR			
Drawn/checked:	SD		
DWG no:	01/53122/REP/19/01		
AOC Project No.:	53122		
 <p>(C) AOC Archaeology Group 2023</p>			
			
SYSTEM	Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936		
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SCALE			

416820

517020

416800



VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Archaeology in 27 and 28

Legend

- Site Boundary
- Trench Top
- Trench Base
- Excavated
- Feature
- Base of Feature
- LOE Top
- LOE Base
- Section Line
- ⊕ Spot Heights (m)

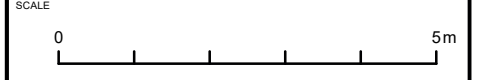
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AOC Project No.:	53122



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Projection: Transverse Mercator
Datum: OSGB 1936

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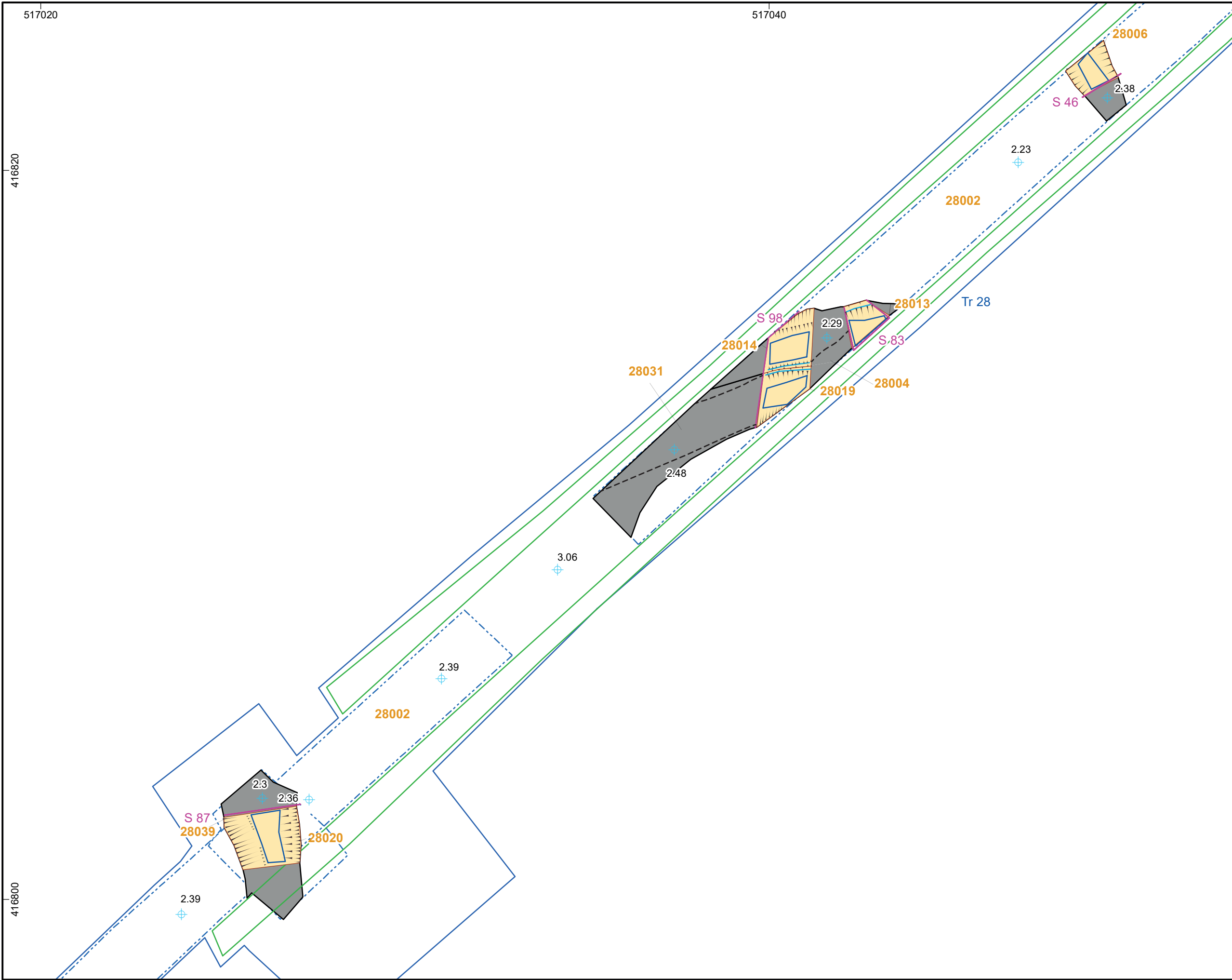

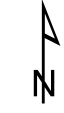
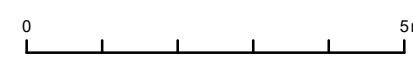


Figure	22
VPI Immingham Humber Zero Project, Lincolnshire: Archaeological Evaluation Report Archaeology in Trench 28	
Legend <ul style="list-style-type: none"> □ Site Boundary □ Trench Top □ Trench Base □ Excavated □ Feature □ Base of Feature □ LOE Top — Break of Slope — Section Line ⊕ Spot Heights (m) 	
FOR	
Drawn/checked:	SD
DWG no:	01/53122/REP/22/01
AOC Project No.:	53122
 (C) AOC Archaeology Group 2023	
	
SYSTEM Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	
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517120

517140

416900

416880

416860

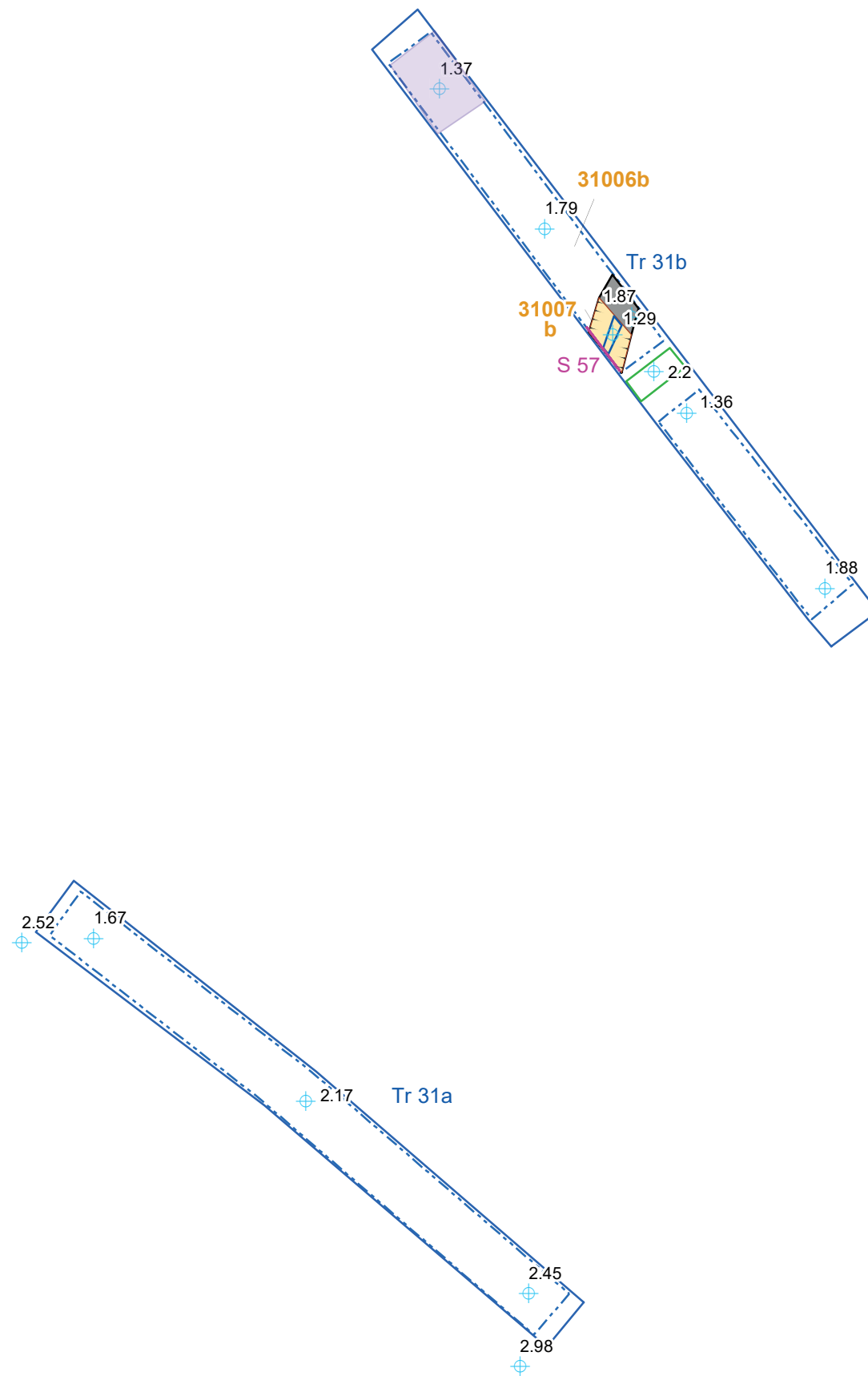
Figure

23

VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Trench 31

Legend

- Site Boundary
- Trench Top
- Trench Base
- Excavated
- Feature
- Base of Feature
- LOE Top
- Section Line
- + Spot Heights (m)
- Sondage to boulder clay



FOR

Drawn/checked:	SD
DWG no:	01/53122/REP/23/01
AOC Project No.:	53122



(C) AOC Archaeology Group 2023



SYSTEM

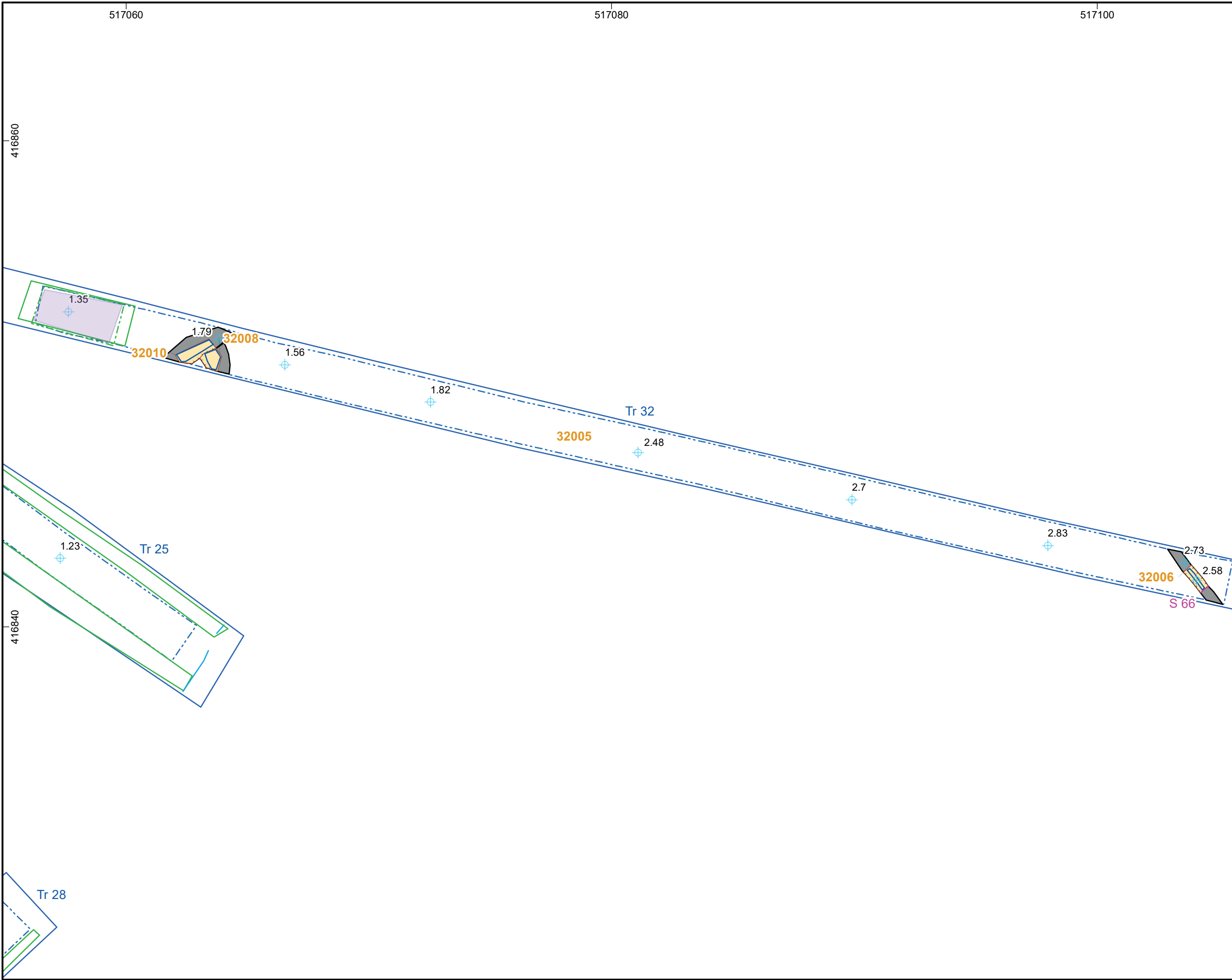
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SCALE

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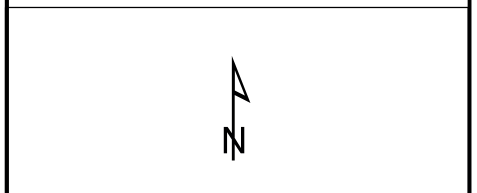


VPI Immingham
Humber Zero Project, Lincolnshire:
Archaeological Evaluation Report
Trench 32

- Legend
- Site Boundary
 - Trench Top
 - Trench Base
 - Excavated
 - Feature
 - Base of Feature
 - LOE Top
 - LOE Base
 - Break of Slope
 - Section Line
 - ⊕ Spot Heights (m)
 - Sondage to boulder clay

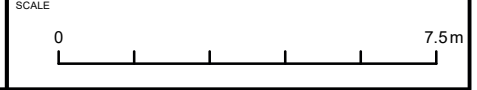
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AOC Project No.:	53122



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Projection: Transverse Mercator
Datum: OSGB 1936

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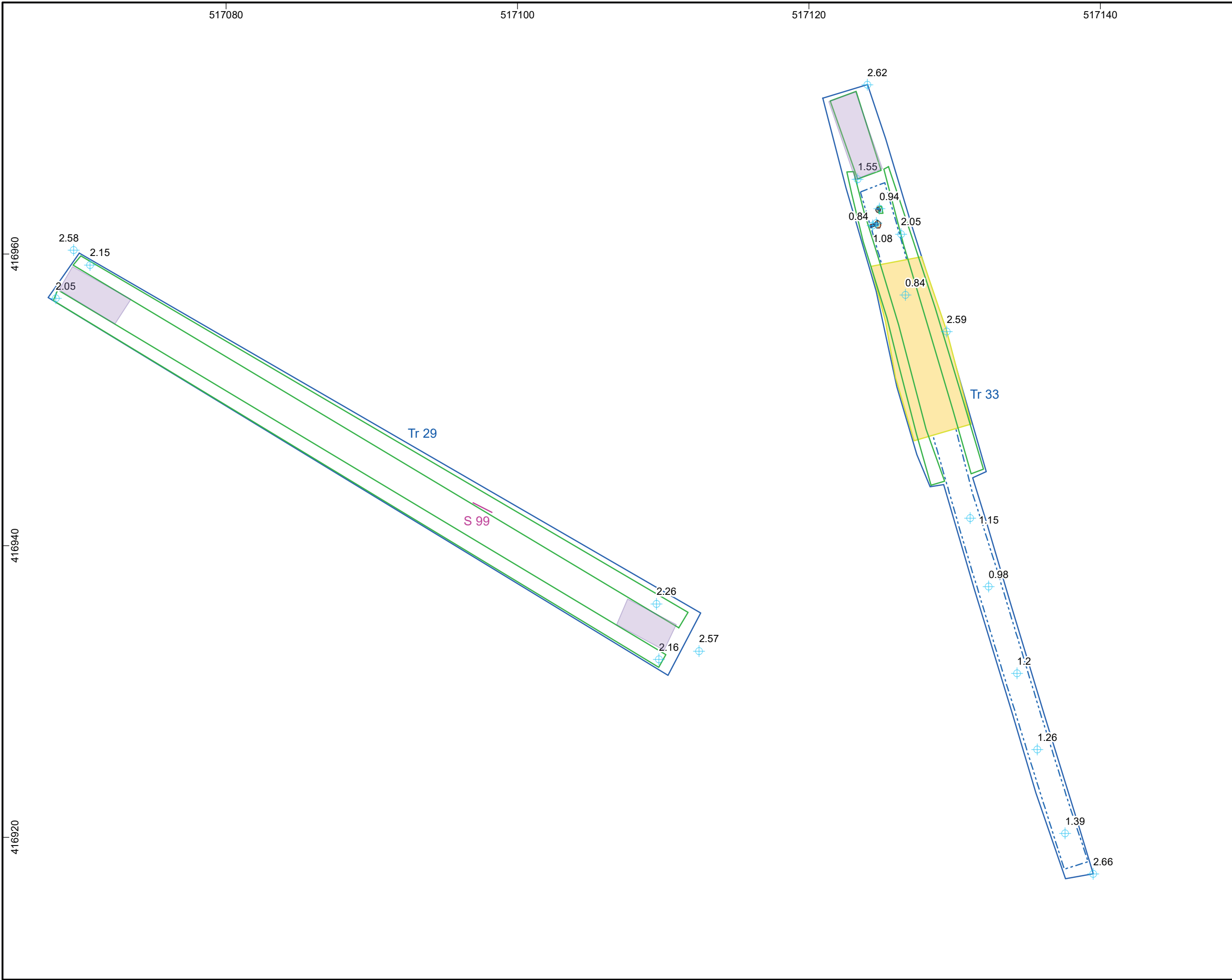





Figure		25	
VPI Immingham Humber Zero Project, Lincolnshire: Archaeological Evaluation Report Trenches 29 and 33			
<p>Legend</p> <ul style="list-style-type: none"> Site Boundary Trench Top Trench Base Excavated Feature Base of Feature Deposit Timber LOE Top Break of Slope Section Line ⊕ Spot Heights (m) Sondage to boulder clay 			
FOR			
Drawn/checked:	SD		
DWG no:	01/53122/REP/25/01		
AOC Project No.:	53122		
 <p>(C) AOC Archaeology Group 2023</p>			
			
SYSTEM	Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936		
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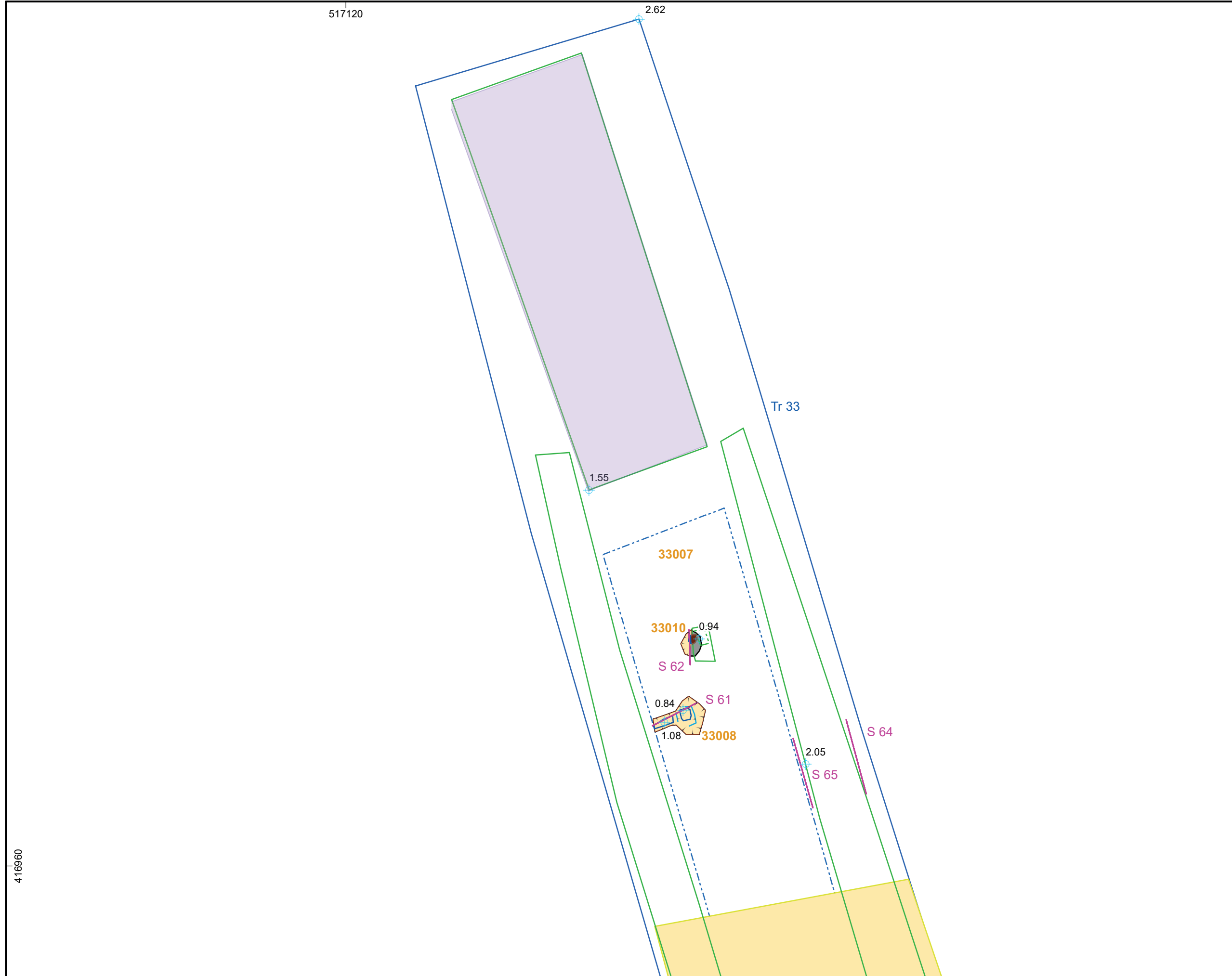





Figure	26
VPI Immingham Humber Zero Project, Lincolnshire: Archaeological Evaluation Report Archaeology in Trench 33	
<p>Legend</p> <ul style="list-style-type: none"> Site Boundary Trench Top Trench Base Excavated Feature Base of Feature Deposit Timber LOE Top LOE Base — Break of Slope — Section Line + Spot Heights (m) Sondage to boulder clay 	
FOR	
Drawn/checked:	SD
DWG no:	01/53122/REP/26/01
AOC Project No.:	53122
 <p>(C) AOC Archaeology Group 2023</p>	
	
<p>SYSTEM Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936</p>	
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SCALE	

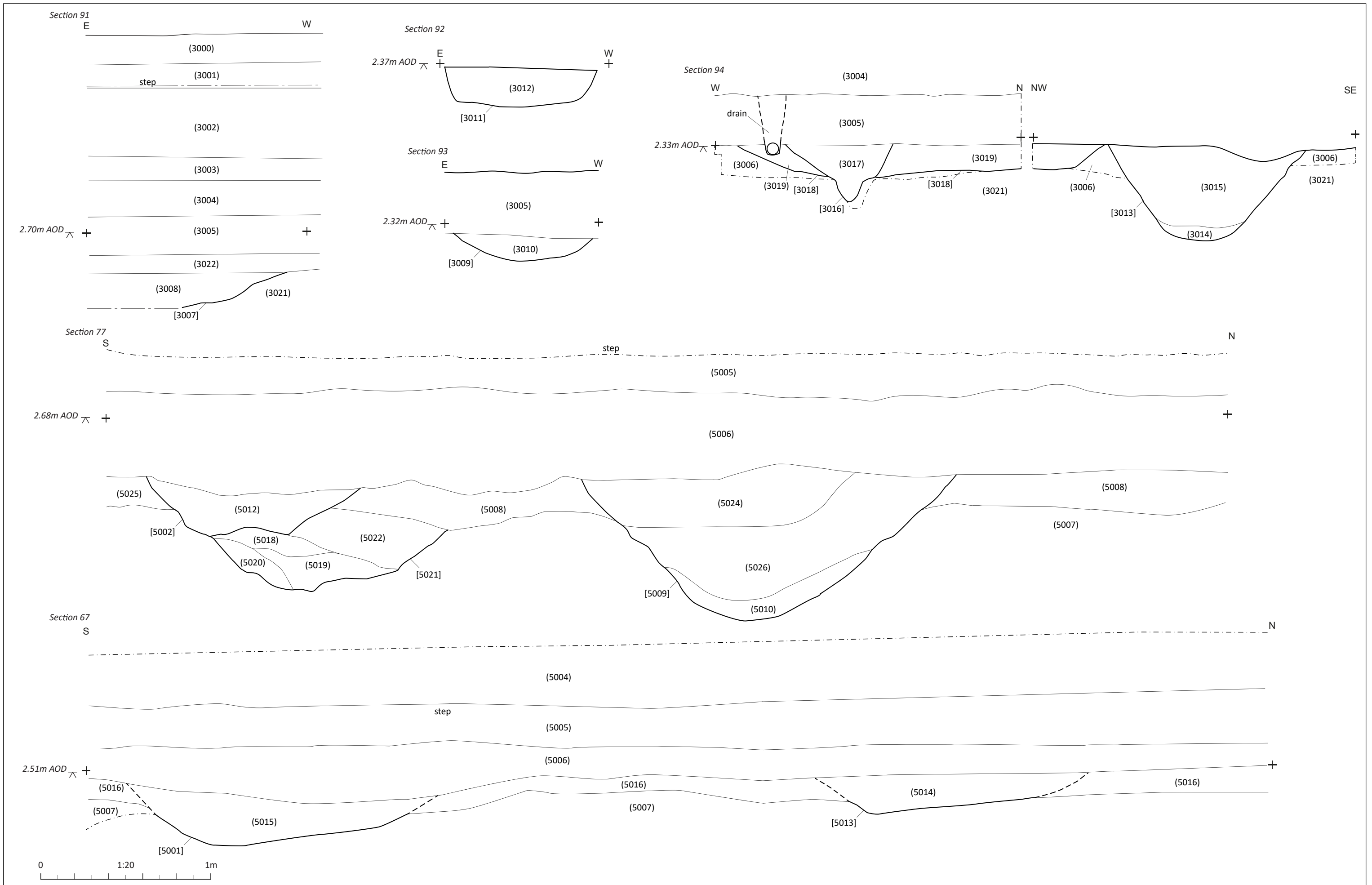


Figure 27: Select sections from Trenches 3 and 5

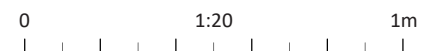
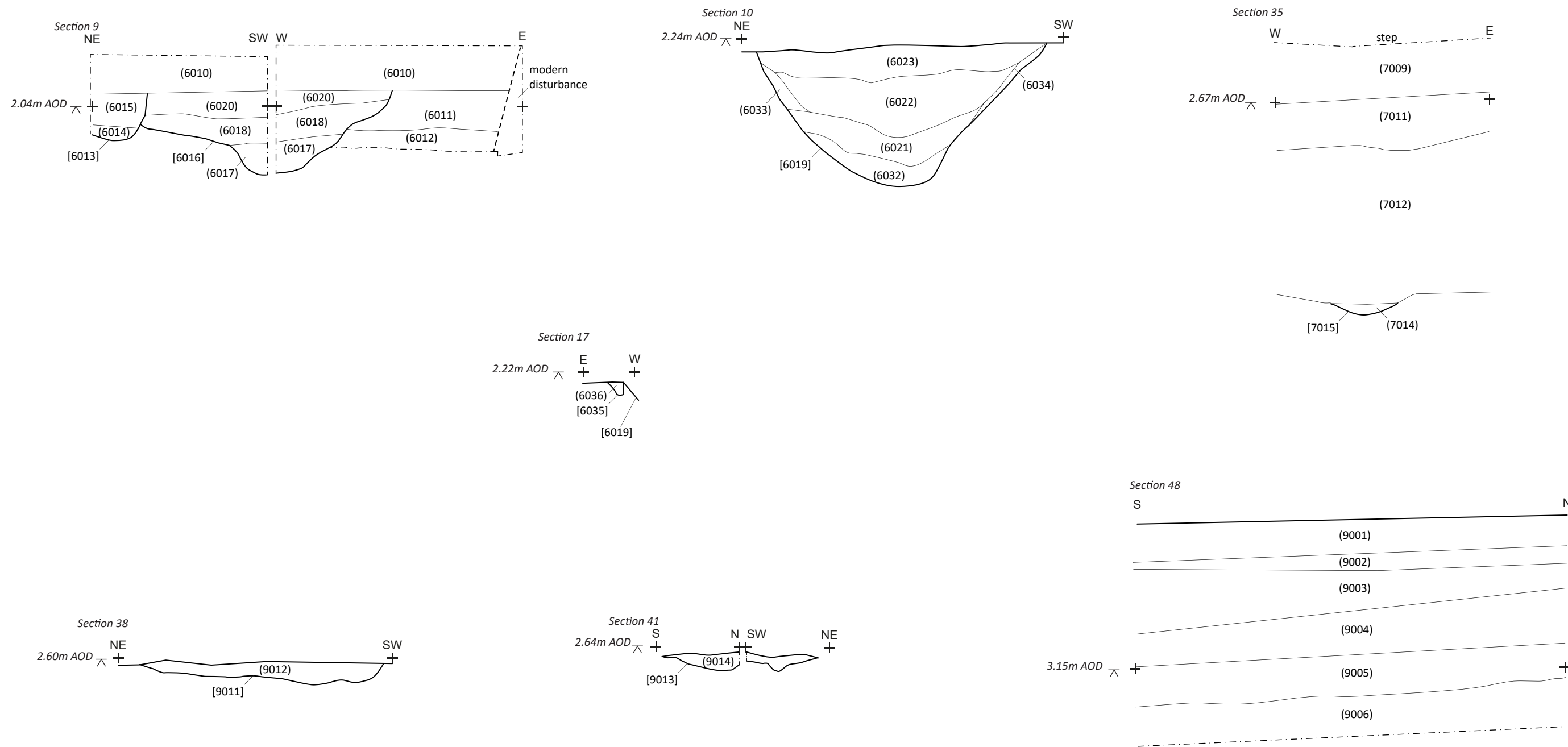


Figure 28 Select sections from Trenches 6, 7 and 9

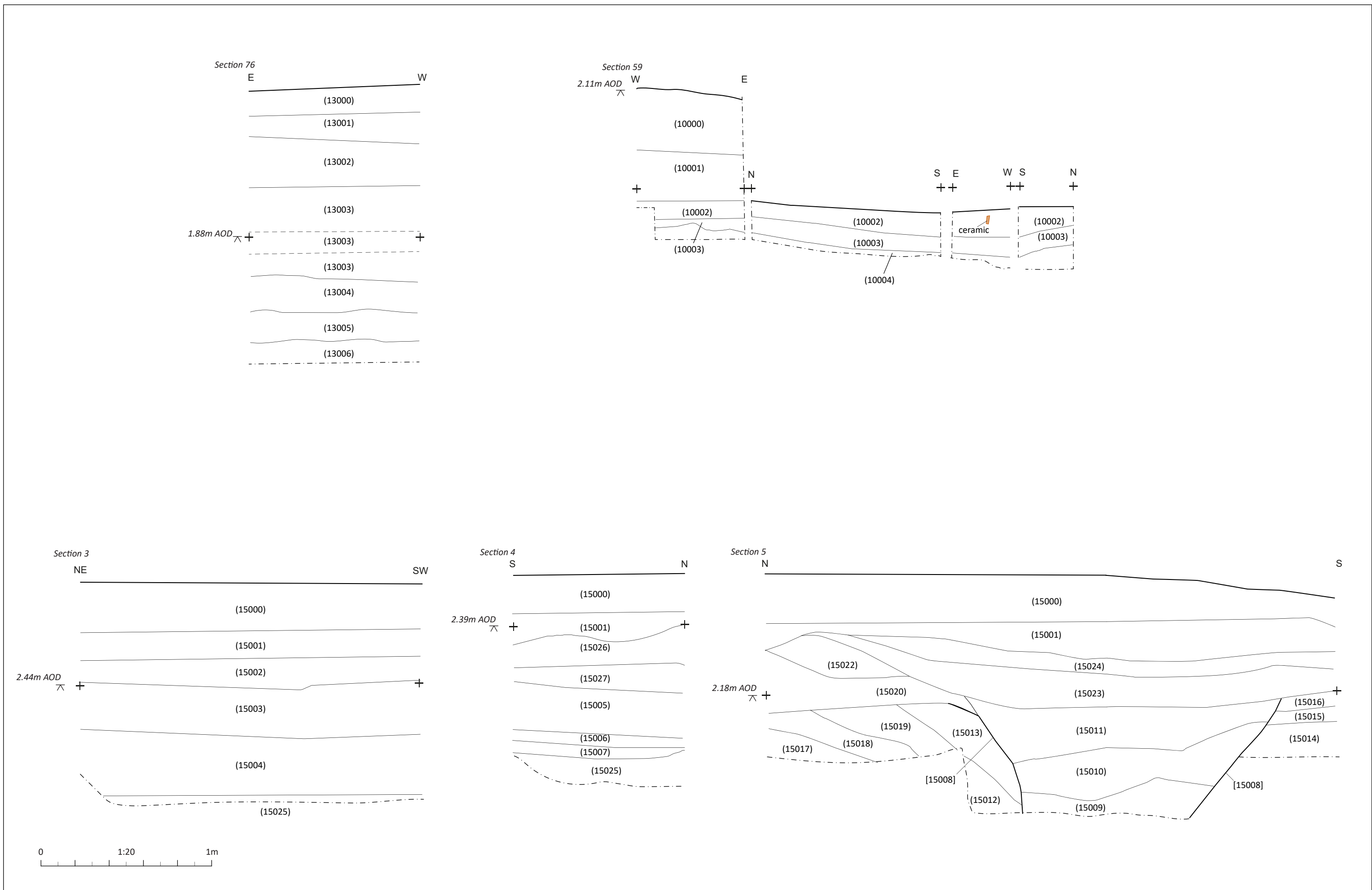


Figure 29: Select sections from Trenches 10, 13 and 15

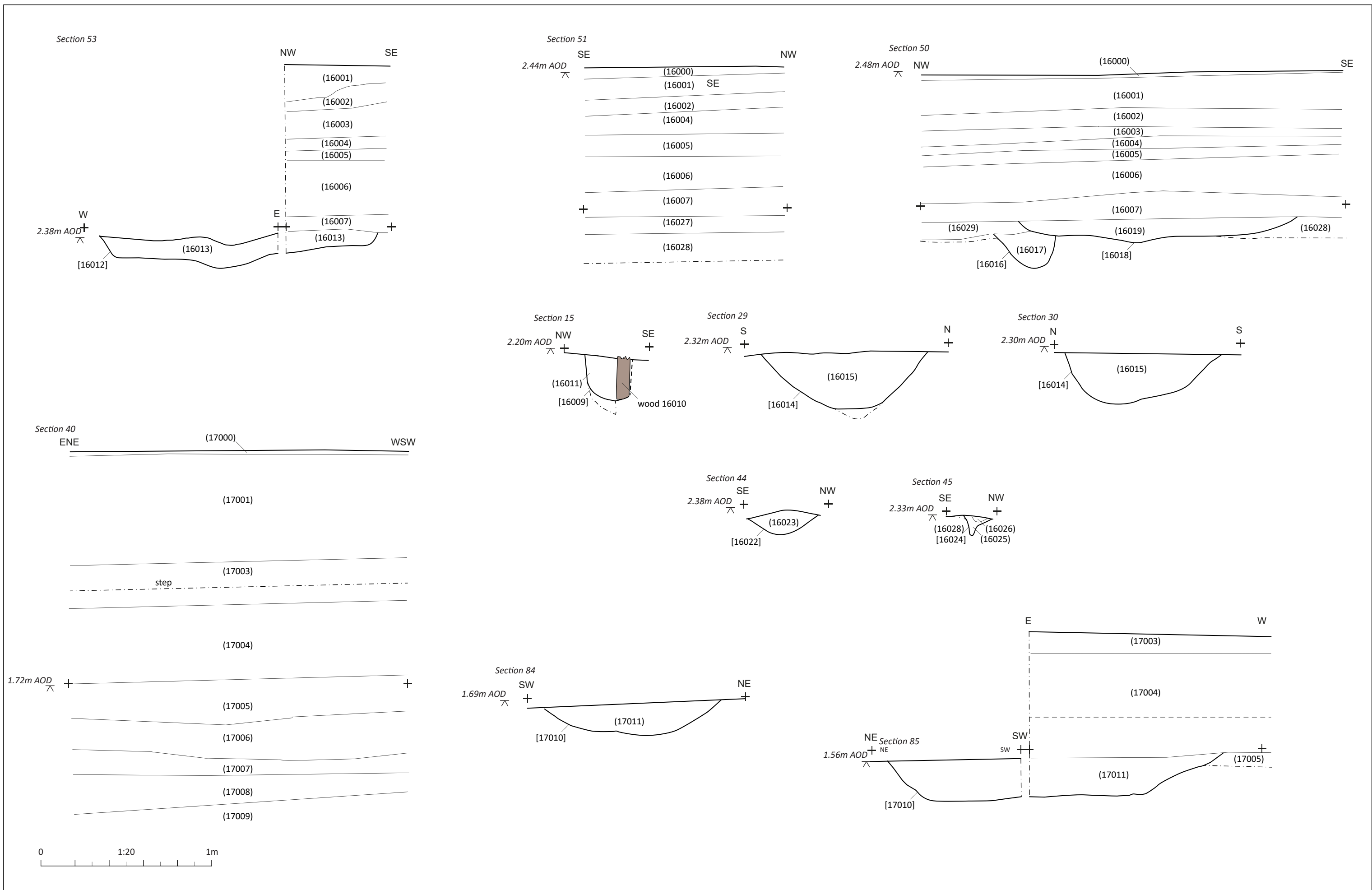


Figure 30: Select sections from Trenches 16 and 17

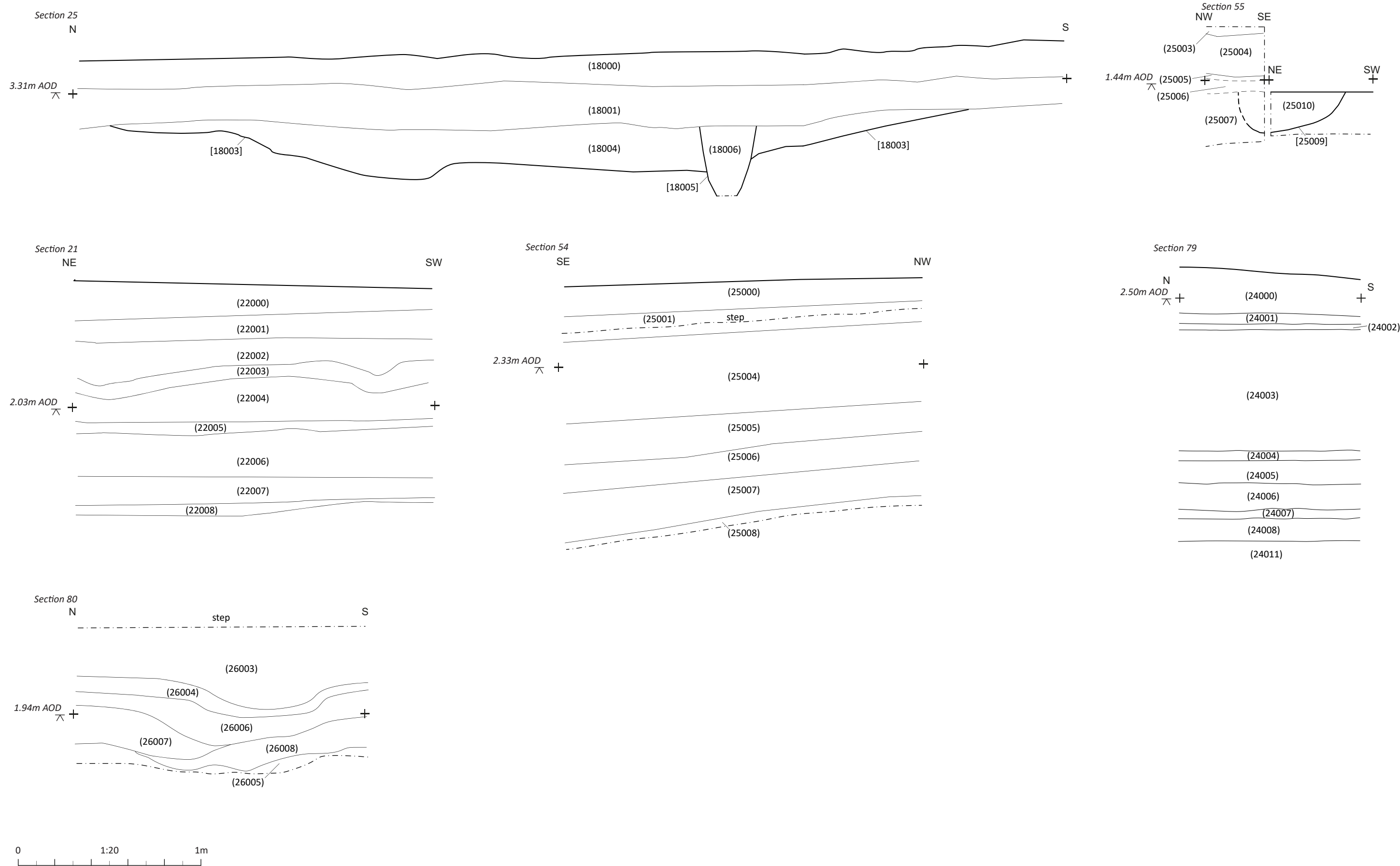


Figure 31: Select sections from Trenches 18, 22, 24, 25 and 26

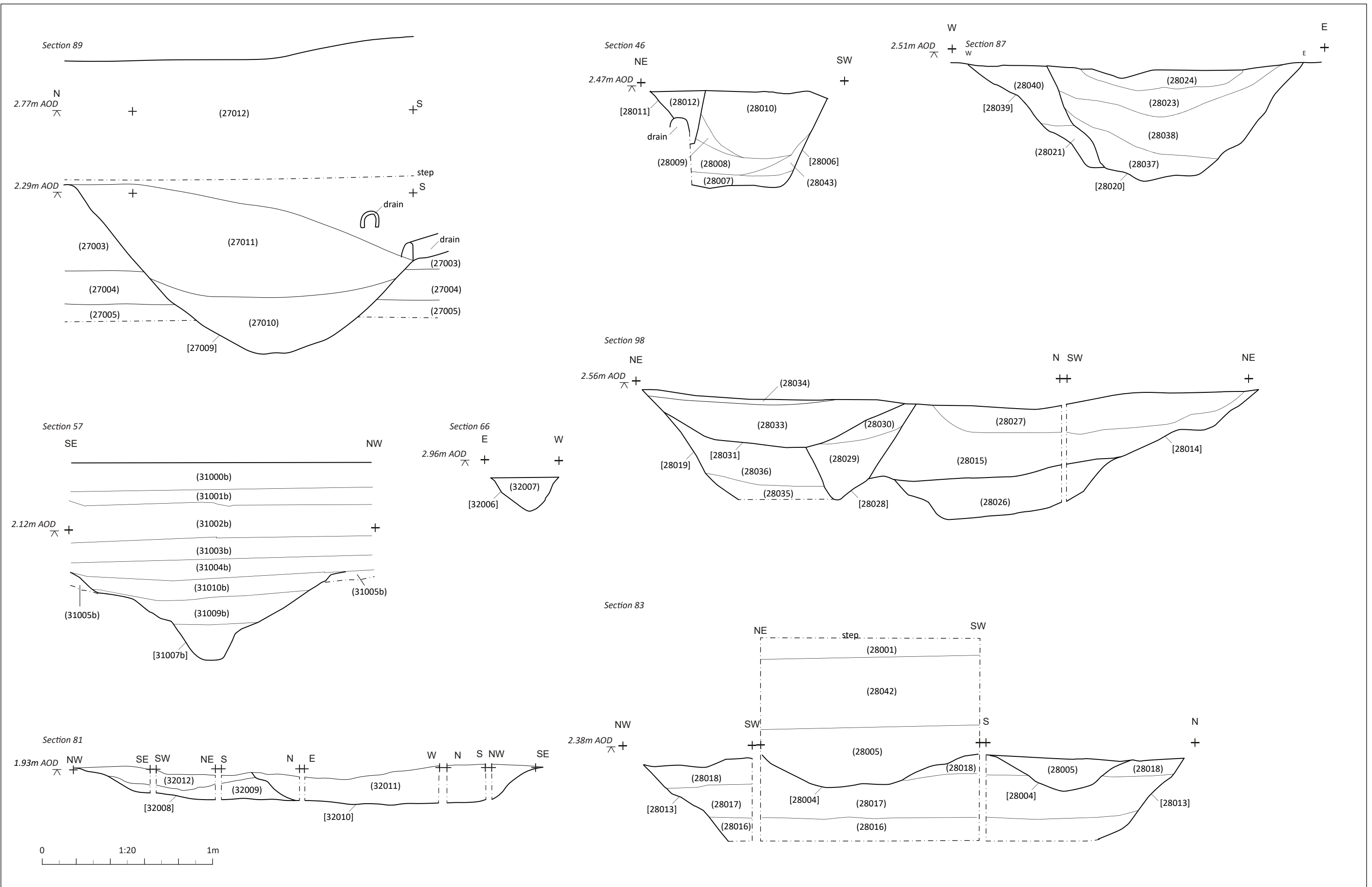


Figure 32: Select sections from Trenches 27, 28, 31b and 32

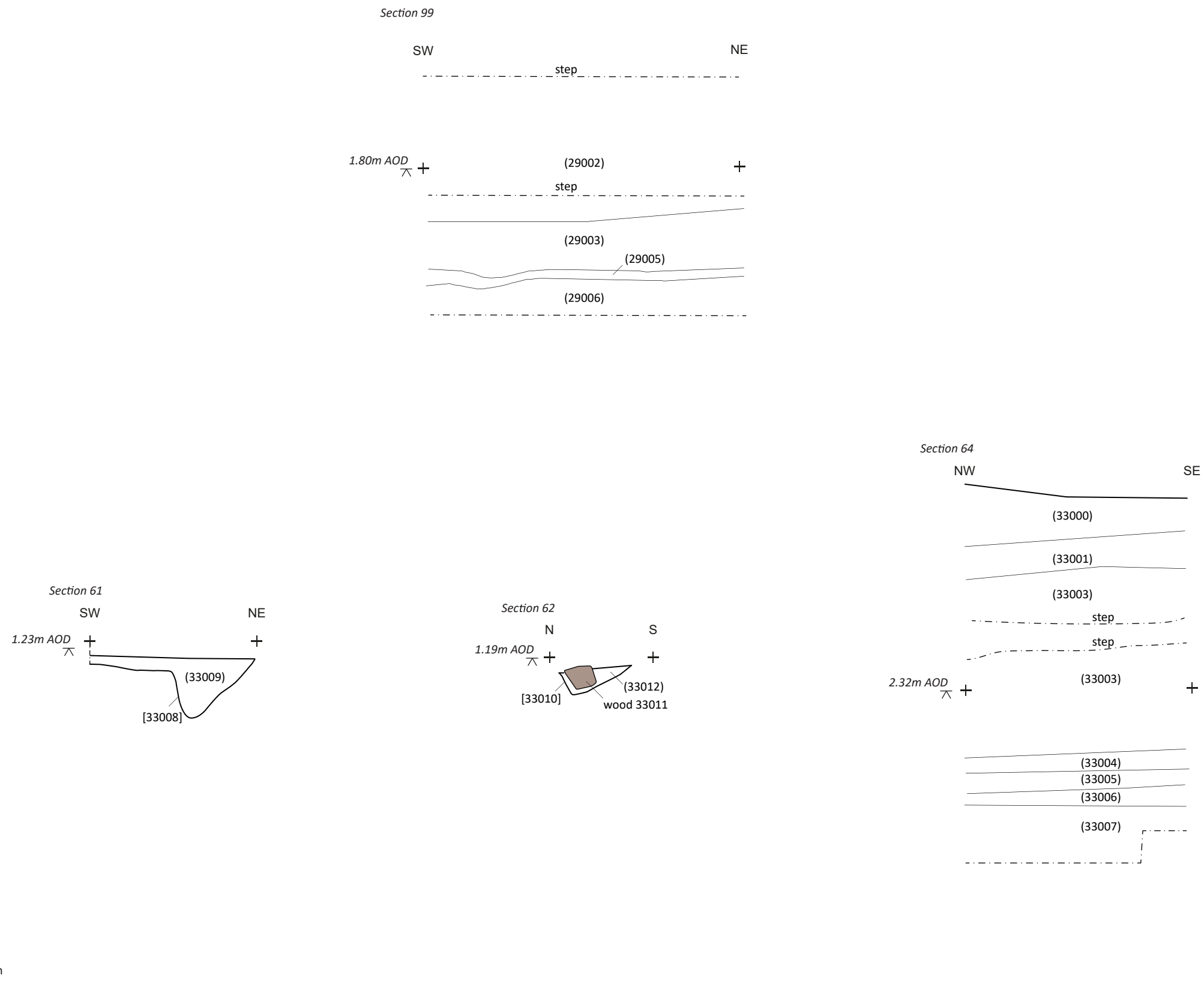
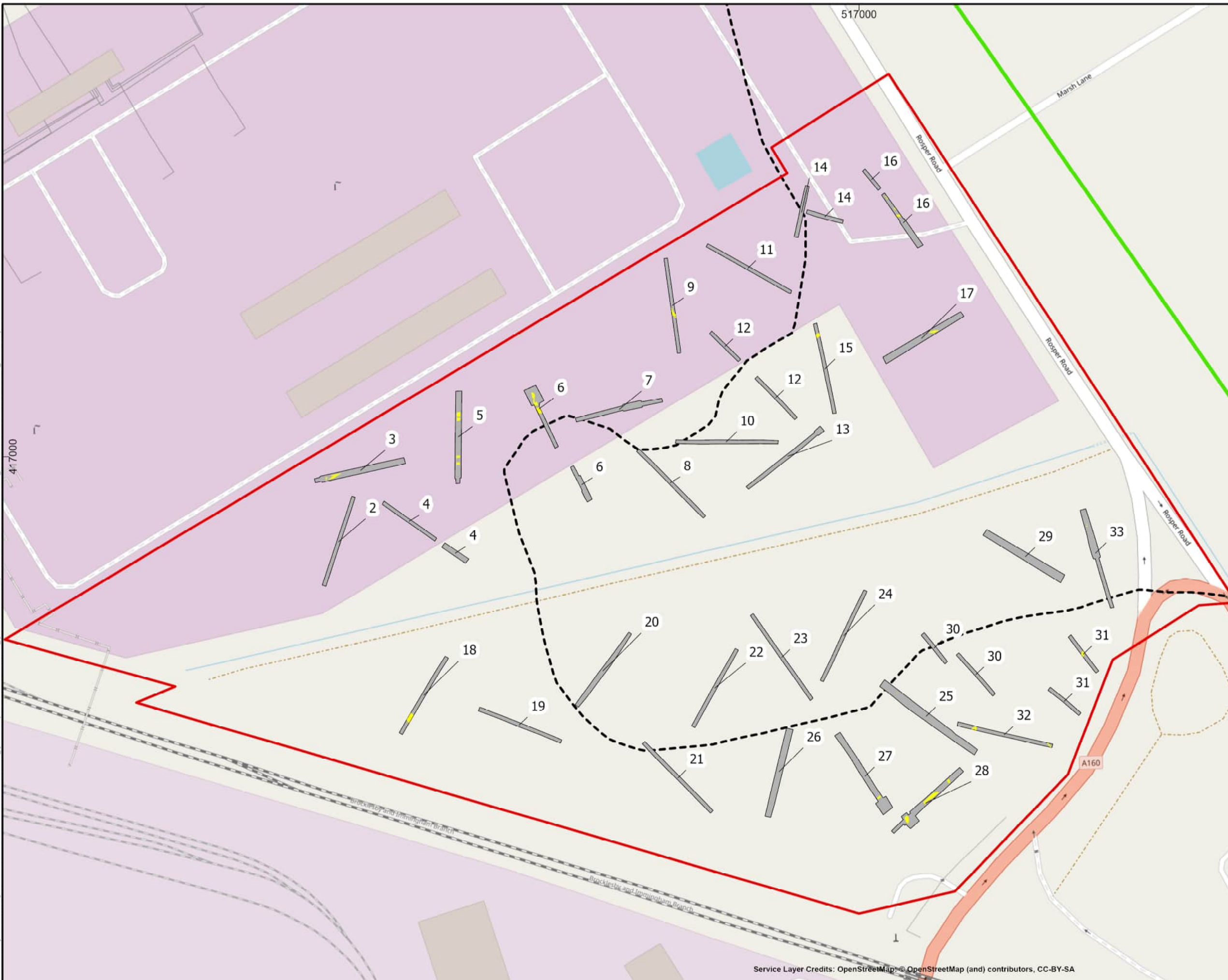


Figure 33: Select sections from Trenches 29 and 33

Plan showing the relict coastline and modelled coastal inlet in relation to the Site boundary, with Areas of Potential and locations of archaeological investigation

Legend

- Site Boundary
- 4900BC Coastline (Green, 2011)
- Coastal Inlet Extent
- AOC 53122 Trench
- AOC 53122 Feature

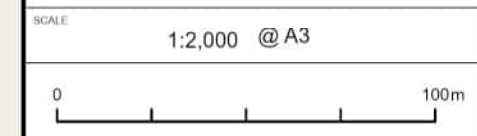


FOR
AECOM
Sunley House,
4 Bedford Park,
Croydon
CR0 2AP

Drawn/checked:	JT
DWG no / Date:	05/06/23
AOC Project No.:	53122



SYSTEM
Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936



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Plates



Plate 1 Sondage excavated in Trench 17 illustrating the depth of natural glacial till on the north side of Site and the overlying flood deposit sequence. Facing North.



Plate 2 Sondage excavated in Trench 25 illustrating the depth of glacial till on the south side of Site and the overlying flood deposit sequence. Facing East.



Plate 3 Trench 9, facing South, illustrating glacial till exposed along the full length of the excavated trench.



Plate 4 Trench 11 Representative section, facing northeast. Illustrates the overlying orange gravel interface deposit which is present in trenches on the north and south side of the Site, concentrated on the higher ground.



Plate 5 Sondage excavated in Trench 29 illustrating the thickness of the early flooding deposits in close proximity to the course of the coastal inlet. Facing East.



Plate 6 Trench 26 Representative Section, facing west. Illustrates the mixed nature of the flooding deposits at the south end of the trench as the landscape rises away from the course of the coastal inlet.



Plate 7 Trench 10 sondage excavated to expose the thick organic layer which sits between the early flooding deposits and the purple/brown clay sealing layer. Facing northeast.



Plate 8 Trench 13 sondage and representative section, facing north, illustrating the different lenses within the purple/brown clay sealing layer including a lens containing seashells.



Plate 9 Ditch 17010 in Trench 17 sealed by the purple/brown clay sealing layer potentially illustrating that the deposit was formed post-occupational activity. Facing South.



Plate 10 The upper/later flooding deposits in Trench 15, facing West.



Plate 11 Sondage excavated in Trench 2, facing West. Illustrates the depth of the madeground deposits on the north side of Site associated with the construction of VPI Immingham in the early 2000s.



Plate 12 Trench 11, facing southeast. Features extensive truncation by modern services.



Plate 13 Sondage excavated at the west end of Trench 3, facing North. Illustrates the orange gravel interface layer encountered at 1.5m BGL and the glacial till encountered at 1.8m BGL.



Plate 14 Ditch 3013 cut into deposit 3006, facing southwest. Possible posthole 3016 visible to the north of the ditch.



Plate 15 Pits 3009 and 3011 at the western end of Trench 3, facing south.



Plate 16 Sondage excavation at the western edge of Paleochannel 3007 in Trench 3, facing south.



Plate 17 Sondage excavation at the southern end of Trench 5 illustrating depth of the orange gravels, encountered at 2.3m BGL. Facing West.



Plate 18 Possible drainage features or natural depressions in the landscape, 5001 and 5013. Facing northwest.



Plate 19 Ditches 5002 and 5009. Ditch 5002 was a recut of earlier ditch 5021. The later ditches truncate deposit 5008 which extends further north. Facing northwest.



Plate 20 Sondage excavated at the northern end of Trench 6 encountering glacial till at 2.3m BGL. Facing West.



Plate 21 Ditch 6016 = 6019 at the northern end of Trench 6. Facing southwest.



Plate 22 Ditch 6016 = 6019 at the northern end of Trench 6. Facing northeast.



Plate 23 Trench 6 South with post-medieval or modern truncation. Facing South.



Plate 24 Sondage excavated at western end of Trench 7, facing North.



Plate 25 Representative section with remains of possible feature 7015, facing North.



Plate 26 Shallow possible gully 9011 with small pit 9013, facing northwest.



Plate 27 Representative section at the north end of Trench 15 with possible bank deposits, facing East.



Plate 28 Ditch 15008 at the north end of Trench 15 and at the edge of the flooded area associated with the coastal inlet. Facing East.



Plate 29 Posthole sequence in Trench 16 including 16009, 16016, 16022 as well as stakehole 16024. Also featured are shallow furrow 16018 and sondage through deposit 16028. Facing South.



Plate 30 Surviving worked timber post 16010 in posthole 16009. Facing East.



Plate 31 Pit or possible gully terminal end 16012 in Trench 16. Facing northeast.



Plate 32 Gully 16014 in Trench 16, Facing southeast.



Plate 33 Representative section in Trench 17. Illustrates the different lenses within the purple/brown clay flood layer. Facing South.



Plate 34 Ditch 17010 in Trench 17, sealed beneath the purple/brown clay layer. Facing southeast.



Plate 35 Furrow 18003 in Trench 18, facing East.



Plate 36 Feature in Trench 24. Partially excavated, facing East.



Plate 37 Pit 25009 in the north end of Trench 25, Facing southeast.

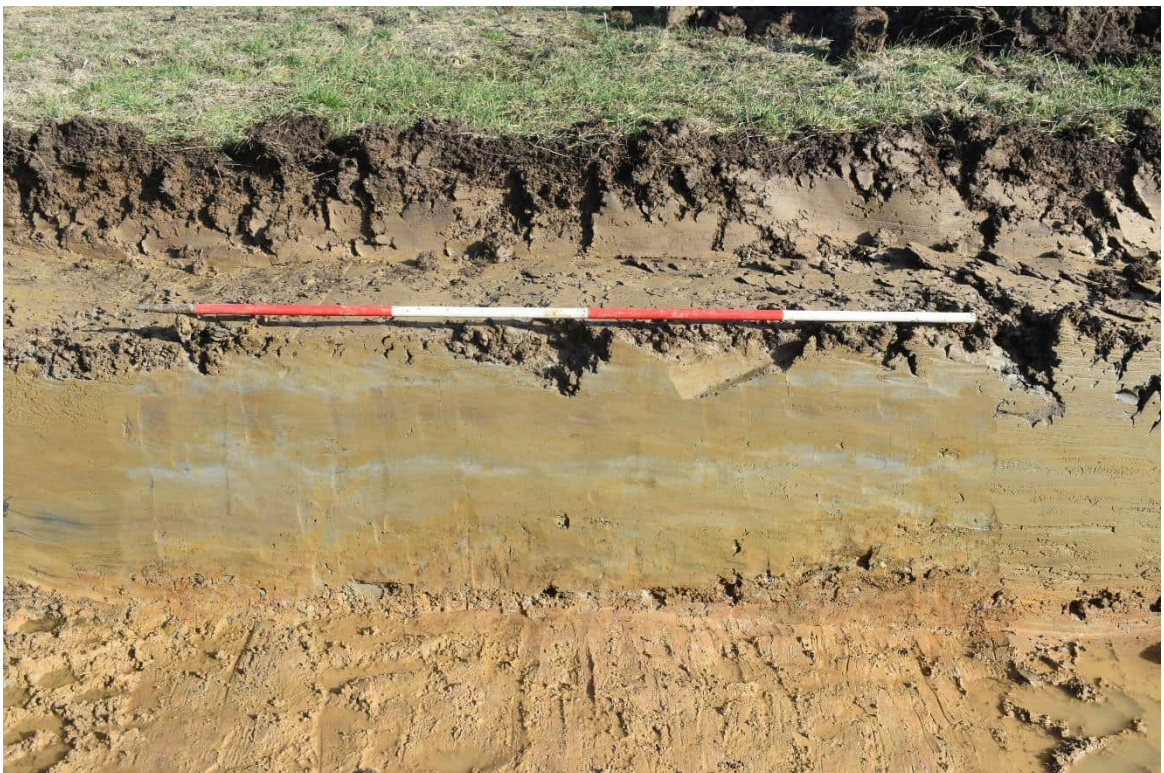


Plate 38 Representative section at the north end of Trench 27 illustrating the relative shallowness of the trench at the north end. Facing East.



Plate 39 Ditch 27009 at the southern end of Trench 27. Possibly modern as truncates all flooding layers. Facing East.



Plate 40 Ditch 28020 which recut earlier ditch 29039. Southwest end of Trench 28, facing North.



Plate 41 Multiphase curvilinear ditches 28013, 28014, 28019, and 28028. Truncated by later feature 28004 and 28031. Facing northeast.



Plate 42 Section of curvilinear ditches 28014, 28019, 28028 and 28031 in Trench 28, facing East.



Plate 43 Ditch 28006 at the north-eastern end of Trench 28, facing South.



Plate 44 Ditch 31007b in Trench 31b, facing South.



Plate 45 Small gully 32006 at the eastern end of the Trench 32, facing South.



Plate 46 Shallow ditch 32010 truncates pit 32008 at the western end of Trench 32. Facing South.



Plate 47 Glacial till encountered at 1.39m AOD at the southern end of Trench 33, facing West.



Plate 48 Representative section in Trench 33 illustrating the organic layer that sits between the early flooding deposits and the purple/brown clay flood layer. Facing East.



Plate 49 Posthole 33008 in Trench 33, facing North.



Plate 50 Posthole 33010 containing surviving timber fragments 33011 and 33013. Facing East.

Appendix 1

Context Summary Table

Trench 2	Dimensions:	50m x 2m		Alignment:	NE-SW
Context No	Type	Description	Length	Width	Depth
2000	Made ground	Extremely compact mid light pale grey rubble made ground.	50m	2m	0.26m
2001	Made ground	Compact friable light yellow sand inclusions: Large angular white rocks.	50m	2m	0.19m
2002	Made ground	Compact friable mid light clayey sand. Inclusions: frequent rocks.	50m	2m	0.18m
2003	Made ground	Compact friable mid to light tan yellow clayey sand. Inclusions: frequent small rocks on turrum.	50m	2m	0.28m
2004	Buried Topsoil	Compact dark greyish brown silty clay.	50m	2m	0.26m
2005	Buried Subsoil	Compact malleable mid to dark greyish brown silty clay.	50m	2m	0.24m
2006	Estuarine	Compact malleable dark brownish grey /blue silty clay with yellow mottling. Inclusions: occasional organic material.	50m	2m	0.05m
2007	Estuarine	Compact mid blueish grey clay. Inclusions: occasional iron pan, manganese.	50m	2m	0.4m
2008	Natural	Compact mid orangish yellow gravelly sand.	50m	2m	>0.2m
Trench 3	Dimensions:	50m x 2m		Alignment:	E-W
Context No	Type	Description	Length	Width	Depth
3000	Made ground	Compact blueish grey hardstanding.	50m	2m	0.57m
3001	Made ground	Firm white chalk hardcore.	50m	2m	0.15m
3002	Made ground	Mixed orangish tan brown stone and clay. Inclusions: frequent stones, rubble.	50m	2m	0.4m
3003	Buried Topsoil	Firm dark greyish brown slightly organic silty clay.	50m	2m	0.15m
3004	Buried Subsoil	Firm mid greyish brown silty clay.	50m	2m	0.2m
3005	Estuarine	Firm mixed blueish greyish orange clay. Inclusions: manganese flecks.	50m	2m	0.25m
3006	Deposit	Friable mixed brownish grey sandy clay. Inclusions manganese flecks.	15m	2m	>0.18m
3007	Cut	Palaeochannel. Linear in plan. Aligned NE/SW.	35m	-	>0.2m
3008	Fill of [3007]	Firm mixed blueish grey clay. Inclusions: frequent manganese flecks.	35m	-	>0.2m
3009	Cut	Pit. Oval in plan. Rounded profile.	0.8m	0.3m	0.15m
3010	Fill of [3009]	Mid greyish brown silty clay.	0.8m	0.3m	0.15m

3011	Cut	Pit. Oval in plan. U-shaped profile.	0.8m	0.6m	0.23m
3012	Fill of [3011]	Dark grey silty clay.	0.8m	0.6m	0.23m
3013	Cut	Ditch. Linear in plan. Aligned NE/SW. V-shaped profile.	1.15m	1m	0.55m
3014	Fill of [3013]	Mid orangish blue silt. Inclusions: gravel.	0.5m	1m	0.07m
3015	Fill of [3013]	Mid orangish blue silty clay.	1.15m	1m	0.48m
3016	Cut	Pit or Posthole. Circular in plan. V-shaped profile.	0.5m	0.2m	0.33m
3017	Fill of [3016]	Mid greyish orange silty clay.	0.5m	0.2m	0.33m
3018	Cut	Pit. Oval shape in plan. Rounded profile.	1.65m	0.45m	0.2m
3019	Fill of [3018]	Friable dark grey blackish clay. Inclusions: gravels.	1.65m	0.45m	0.2m
3020	Glacial till	Firm mid purplish greyish brown clay. Inclusions chalk flecks.	3m	2m	>0.3m
3021	Natural gravels	Firm orangish brown sandy clay. Inclusions gravels.	3m	2m	0.3m
3022	Alluvium	Mid blueish greyish purple clay. Inclusions: small rounded stone	3m	2m	0.1m
Trench 4	Dimensions:	50m x 2m		Alignment:	NE-SW
Context No	Type	Description	Length	Width	Depth
4000	Made ground	Extremely compact mid mixed yellow and grey coarse sands.	50m	2m	0.09m
4001	Made ground	Compact to friable dark grey sand and gravel.	50m	2m	0.14m
4002	Made ground	Extremely compact mid light bluish grey rubble.	50m	2m	0.13m
4003	Made ground	Very compact to friable dark to mid bluish grey sand. Inclusions: frequent stones.	50m	2m	0.11m
4004	Made ground	Compact to friable light yellow sand. Inclusions: angular white hardcore on matting.	50m	2m	0.16m
4005	Made ground	Mid to light tan yellow clayey sand. Inclusions: frequent angular stones.	50m	2m	0.26m
4006	Made ground	Compact to friable mid to light yellowish grey clayey sand. Inclusions: frequent angular stones on plastic membrane	50m	2m	0.14m
4007	Buried Topsoil	Compact malleable dark greyish brown silty clay.	50m	2m	0.28m
4008	Turf	Thin layer of grass.	50m	2m	0.04m
4009	Made ground	Compact to friable mid to light yellowish grey sand and gravel. Inclusions: construction debris.	50m	2m	0.82m
4010	Made ground	Very compact mid yellowish brown slightly clayey sand. Inclusions: frequent stones and construction debris.	50m	2m	0.32m
4011	Estuarine	Compact malleable mid greyish brown silty clay.	50m	2m	0.22m
4012	Estuarine	Compact malleable dark blue silty clay.	50m	2m	0.24m
4013	Estuarine	Compact mid brown silty clay with blueish grey staining.	50m	2m	>0.10m

4014	Buried Subsoil	Friable mid greyish brown slightly silty clay. Inclusions: occasional subangular stones.	3m	2m	-
4015	Estuarine	Firm mid brownish bluey grey clay with occasional lenses of orange.	3m	2m	-
4016	Estuarine	Firm mid yellowish orange gravels. Inclusions: subangular flint	3m	2m	-
4017	Estuarine	Firm mid brownish orange clay with occasional reddish patches.	3m	2m	-
4018	Estuarine	Firm dark bluey black clay. Inclusions: organic.	3m	2m	-
4019	Estuarine	Compact mid bluey brown grey clay. Inclusions: Iron pan.	3m	2m	-
4020	Estuarine	Compact mid orangish brown clay.	3m	2m	-
4021	Glacial Till	Compact mid bluish brown clay. Inclusions: chalk flecks.	3m	2m	-
Trench 5	Dimensions:	50m x 2m		Alignment:	N-S
Context No	Type	Description	Length	Width	Depth
5000	Made ground	Grey concrete.	50m	2m	0.3m
5001	Cut	Ditch. Linear in plan. Aligned E-W. Rounded profile. Possible natural feature.	1.4m	2m	0.3m
5002	Cut	Ditch. Linear in plan. Aligned E-W. V-shaped profile. Recut of ditch [5021].	1.2m	2m	0.3m
5003	Made ground	Compact light grey and white chalk. Inclusions: meshing.	50m	2m	0.25m
5004	Made ground	Compact mid light greyish white chalk and rubble above plastic membrane.	50m	2m	0.4m
5005	Buried Topsoil	Friable dark greyish brown silt. Inclusions: organics.	50m	2m	0.5m
5006	Buried Subsoil	Friable mid yellowish brown silty clay.	50m	2m	0.15m
5007	Natural (Alluvial)	Firm mixed orange reddish brown and blueish brown silts	50m	2m	>0.1m
5008	Deposit	Firm mid yellowish brown clay. Inclusions: charcoal, CBM, manganese flecks. Same as 5025.	5m	2m	>0.25m
5009	Cut	Ditch. Linear in plan. Aligned E-W. V-shaped profile.	2.2m	2m	0.95m
5010	Fill of [5009]	Firm mid greyish brown silty clay with intermittent blue.	1.2m	1m	0.15m
5011		VOID			
5012	Fill of [5002]	Firm mid yellowish brown clay with intermittent blue. Inclusions: manganese.	1.2m	2m	0.3m
5013	Cut	Gully. Linear in plan. Aligned E-W. Rounded profile. Possible natural feature.	1.02m	2m	0.23m
5014	Fill of [5013]	Firm blue waterlain silty clay.	1.02m	2m	0.23m
5015	Fill of [5001]	Firm blue waterlain silty clay.	1.4m	2m	0.3m

5016	Alluvial	Firm blueish grey waterlain clay.	50m	2m	0.1m
5017	Made ground	Compact mixed tan brown hardcore and silty clay. Inclusions: frequent stones.	50m	2m	0.18m
5018	Fill of [5021]	Firm mixed bluish brown clay.	0.75m	1m	0.15m
5019	Fill of [5021]	Firm mixed orangish greyish brown sandy clay with some blue striations.	0.85m	1m	0.2m
5020	Fill of [5021]	Firm dark blueish grey clay. Inclusions: some rounded stone.	0.46m	1m	0.15m
5021	Cut	Ditch. Linear in plan. Aligned E-W. V-shaped profile. Recut by ditch [5002].	1.4m	1m	0.15m
5022	Fill of [5021]	Firm mixed orange purplish blue sandy clay. Inclusions: moderate manganese flecks.	0.9m	1m	0.15m
5023		VOID			
5024	Fill of [5009]	Firm mixed firm greyish brown silty clay. Inclusions: small rounded stones.	1.6m	1m	0.36m
5025	Deposit	Mid yellowish brown clay. Inclusions: charcoal, CBM, manganese flecks. Same as 5008.	50m	5m	0.2m
5026	Fill of [5009]	Firm mid greyish orangeish brown sandy clay. Inclusions: moderate manganese flecks.	1.95m	1m	0.45m
Trench 6	Dimensions:	50m x 2m		Alignment:	NNW-SSE
Context No	Type	Description	Length	Width	Depth
6000	Made ground	Compact beige yellow coarse sand. Inclusions: angular stones.	50m	2m	0.1m
6001	Made ground	Compact bluey grey rolled layer.	50m	2m	m
6002	Made ground	Pale white mid to large chalk fragments. Inclusions: netting	3m	6m	0.15m
6003	Made ground	Pale white mid to large chalk fragments. Grey clay streaks.	3m	2m	0.2m
6004	Buried Topsoil	Coarse, friable mid greyish brown silty sand. Inclusions: organic.	3m	2m	0.45m
6005	Buried Subsoil	Compact malleable dark brownish grey slightly silty sand.	3m	2m	0.1m
6006	Natural	Fine mid reddish brown purple clay with moderate orange mottling.	3m	2m	>0.6m
6007	Cut	Modern truncation. Linear in plan. Aligned NW-SE.	1m	2m	1.1mm
6008	Fill of [6007]	Malleable, loose dark brownish blackish grey slick silty clay. Inclusions: Chalk flecks.	1m	2m	1.1m
6009	Fill of [6007]	Fine malleable pale greyish brown clay and fine silty clay.	1m	2m	>0.2m
6010	Made ground	Compact mid dark greyish brown clayey sand. Inclusions: small to large rocks, rubble.	50m	2m	0.1m
6011	Natural	Compact malleable mid yellowish brown silty clay. Inclusions: frequent manganese.	3m	2m	0.4m
6012	Glacial Till	Compact mid reddish brown clay silty clay. Inclusions: common manganese, chalk flecks.	3m	2m	>0.15m

6013	Cut	Extant archaeological slot. 1999-2002 Excavations.	5m	5m	0.43m
6014	Fill of [6013]	Malleable dark brownish grey silty clay inclusions: frequent small rocks.	5m	4m	0.13m
6015	Fill of [6013]	Malleable mid dark greyish brown silty clay. Inclusions: rocks and chalk flecks.	5m	5m	0.43m
6016	Cut	Ditch. Linear in plan. Aligned N-S. V-shaped profile. Same as [6019].	1m	0.6m	0.56m
6017	Fill of [6016]	Malleable mid to light brownish grey silty clay.	1m	0.5m	0.3m
6018	Fill of [6016]	Malleable to fine mid greyish brown fine silty clay.	1m	0.6m	0.3m
6019	Cut	Ditch. Linear shape in plan. Aligned N-S. V-shaped profile. Same as [6016].	1m	1.35m	0.65m
6020	Fill of [6016]	Malleable, compact mid to light greyish brown silty clay. Inclusions: frequent manganese.	1m	1m	0.24m
6021	Fill of [6019]	Malleable, compact mid blueish grey fine silty clay. Inclusions: occasional small chalk flecks, pebbles.	1m	0.8m	0.16m
6022	Fill of [6019]	Malleable, compact mid blueish grey coarse sandy clay with orange mottling. Inclusions: occasional shell, small stones.	1m	1.01m	0.27m
6023	Fill of [6019]	Firm mid blueish grey coarse sandy clay with yellow mottling. Inclusions: small pebbles and charcoal.	1m	1.35m	0.2m
6024	Cut	Extant archaeological slot. 1999-2002 Excavations.	1m	1.60m	0.5m
6025	Fill of [6024]	Firm mixed dark brown silty clay. Inclusions: CBM, modern rubble.	1m	1.60m	0.5m
6026	Made ground	Compact light blueish grey coarse stone and concrete.	50m	2m	0.18m
6027	Made ground	Compact to friable mid reddish brown coarse clay. Inclusions: frequent chalk flecks, common medium stones.	50m	2m	0.3m
6028	Made ground	Compact to friable dark greyish brown coarse sandy clay. Inclusions: small rocks.	50m	2m	0.3m
6029	Made ground	Compact mid yellowish brown coarse sandy gravel and clay. Inclusions: small to medium size rocks.	50m	2m	0.21m
6030	Cut	Extant archaeological slot. 1999-2002 Excavations.	1.6m	0.6m	-
6031	Fill of [6030]	Compact dark brown silty clay. Inclusions: occasional small stones.	1.6m	0.6m	-
6032	Fill of [6019]	Compact mid blueish grey silty clay with orange coarse sand. Inclusions: small stones.	0.42m	0.2m	0.12m
6033	Fill of [6019]	Firm mid blueish grey sandy clay with yellow mottling. Inclusions: occasional charcoal flecks.	1m	1m	0.11m
6034	Fill of [6019]	Compact mid blueish grey coarse sandy clay with yellow mottling.	1m	1m	0.05m
6035	Cut	Stakehole. Circular shape in plan. V-shaped profile.	0.1m	0.1m	0.07m
6036	Fill of [6035]	Firm mid blueish grey fine sandy silty clay with mixed dark grey sand. Inclusions: manganese flecks and small pebbles.	0.1m	0.1m	0.07m

6037	Made ground	Compact mid to light silty sand and gravel.	20m	2m	0.15m
6038	Made ground	Compact mid t dark brown silty clay with orange sand mottling. Inclusions: frequent stones.	20m	2m	0.50m
6039	Buried Subsoil	Firm mid grey brown silty clay. Inclusions: iron pan.	20m	2m	0.26m
6040	Estuarine	Compact mid to dark blueish grey silty clay. Inclusions: iron pan.	20m	2m	0.16m
6041	Estuarine	Compact mid to light yellow brown silty clay.	20m	2m	0.35m
6042	Estuarine	Compact mid to light yellow and blue mottled silty clay.	20m	2m	0.11m
6043	Estuarine	Compact mid to light brown and blue silty clay.	20m	2m	0.15m
6044	Estuarine	Compact light blue and brown clay.	20m	2m	0.05m
6045	Cut	Modern truncation. Linear in plan. Aligned NW-SE.	6m	2m	1m+
6046	Fill of [6045]	Compact dark grey/brown silty clay. Inclusions: frequent bricks and CBM.	6m	2m	1m+
Trench 7	Dimensions:	50m x 2m		Alignment:	E-W
Context No	Type	Description	Length	Width	Depth
7000	Made ground	Tarmac	50m	2m	0.06m
7001	Made ground	Compact white grey chalk. Inclusions: small to medium chalk fragments.	50m	2m	0.11m
7002	Made ground	Compact greyish white chalk rubble. Inclusions: small subangular stones.	50m	2m	0.18m
7003	Made ground	Plastic Membrane.	50m	2m	0.02m
7004	Made ground	Compact greyish white chalk rubble. Inclusions: small subangular stones.	50m	2m	0.14m
7005	Made ground	Compact yellowish grey chalk rubble. Inclusions: large chalk fragments.	50m	2m	0.29m
7006	Made ground	Compact grey silty rubble. Inclusions: frequent gravel.	50m	2m	0.24m
7007	Made ground	Plastic Membrane.	50m	2m	0.02m
7008	Made ground	Firm mid to dark grey silty clay. Inclusions: chalk flecks.	50m	2m	0.35m
7009	Made ground	Compact yellowish white and grey mottled chalk rubble. Inclusions: large chalk fragments,	50m	2m	0.29m
7010	Made ground	Plastic Membrane.	50m	2m	0.02m
7011	Buried subsoil	Firm dark greyish black silty clay.	50m	2m	0.25m
7012	Estuarine	Firm pale to mid grey silt with orange patches.	50m	2m	>0.75m
7013	Field drain	Remnants of field drain.	2.3m	0.2m	0.02m

7014	Fill of [7015]	Firm dark blue grey silty clay. Inclusions: organic lenses.	2m	0.15m	0.07m-0.13m
7015	Cut	Gully. Curvilinear in plan. Aligned N-S. Concave profile. Possible natural feature.	2m	0.15m	0.13m
7016	Estuarine	Mixed pale grey/blue and orange sandy clay.	>2m	>2m	>0.1m
7017	Glacial till	Firm mid purple yellowish brown slightly silty clay. Inclusions: frequent manganese.	>2m	>2m	>0.7m
Trench 8	Dimensions:	50m x2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
8000	Topsoil	Friable mid brown clayey loam. Inclusions: heavy vegetation.	50m	2m	0.17m
8001	Subsoil	Malleable mid brown clay. Inclusions: some vegetation.	50m	2m	0.13m
8002	Estuarine	Compact malleable mid orangish yellow natural clay.	50m	2m	0.11m
8003	Estuarine	Compact to malleable mid light blueish grey clay with orange streaks.	50m	2m	0.07m
8004	Estuarine	Compact to malleable mid orange with grey mottling. Inclusions: occasional manganese	50m	2m	0.15m
8005	Estuarine	Compact to malleable mid brown silty clay with some orange clay. Inclusions: frequent manganese	50m	2m	>0.06m
8006	Estuarine	Compact to malleable mid light blueish grey clay with orangeish yellow streaks.	50m	2m	>0.12m
8007	Estuarine	Compact to malleable mid purplish brown silty clay. Inclusions: common manganese	3m	2m	0.2m
8008	Glacial Till	Malleable mid purple yellowish brown slightly silty clay. Inclusions: frequent manganese.	3m	2m	0.13m
Trench 9	Dimensions:	50m x 2m		Alignment:	N-S
Context No	Type	Description	Length	Width	Depth
9001	Made ground	Loose dark reddish grey gravel.	50m	2m	0.12m
9002	Made ground	Compacted stones. Inclusions: concrete.	50m	2m	0.08m
9003	Made ground	Compact mid brownish yellow sand. Inclusions: large chalk fragments.	50m	2m	0.19m
9004	Made ground	Compact layer of dark brownish grey silty clay. Inclusions: subangular chalk, hardcore, matting.	50m	2m	0.18m
9005	Buried Topsoil	Fine dark brownish grey silty clayey sand. Inclusions: highly organic.	50m	2m	0.21m
9006	Buried Subsoil	Fine mid greenish brown silty clay with flecks of orange. Inclusions: iron panning.	50m	2m	0.16m
9007	Cut	Cut of field drain.	3.2m	0.15m	0.1m
9008	Fill of [9007]	Dark grey silty clay. Inclusions: small angular stones.	3.2m	0.15m	0.1m

9009	Deposit	Firm dark grey clay. Inclusions: small angular stones.	50m	2m	m
9010	Made ground	Compact mid brownish yellow sand. Inclusions: sized chalk rock, coarse dark brown sand.	50m	2m	0.19m
9011	Cut	Gully. Slight curvilinear in plan. Aligned NW-SE. Rounded profile.	>1m	1.32m	0.10m
9012	Fill of [9011]	Moderately compact mid greyish brown silty clay mottled with yellow. Inclusions: occasional small subangular stone.	>1m	1.32m	0.10m
9013	Cut	Pit. Subcircular in plan. Rounded profile.	0.37m	0.32m	0.08m
9014	Fill of [9013]	Moderately compact mid greyish brown silty clay with yellow and blue mottling. Inclusions: occasional small subangular stone.	3.2m	0.15m	0.1m
Trench 10	Dimensions:	50m x 2m		Alignment:	E-W
Context No	Type	Description	Length	Width	Depth
1000	Topsoil	Friable dark greyish brown silty clay.	50m	2m	0.38m
10001	Alluvial	Firm orangish blueish grey clay. Inclusions: occasional manganese flecks.	50m	2m	0.3m
10002	Estuarine	Firm dark purplish brown silty clay. Inclusions: occasional manganese flecks, pottery	50m	2m	0.1m
10003	Estuarine	Firm dark blackish blueish grey organic clay. Inclusions: wood and plant matter.	50m	2m	0.3m
10004	Estuarine	Firm mixed blueish grey orangish clays and gravels. Inclusions: occasional small rounded stones.	50m	2m	0.3m
10005	Glacial Till	Firm reddish blueish grey clay. Inclusions: chalk flecks.	50m	2m	>0.1m
Trench 11	Dimensions:	50m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
11001	Made ground	Friable dark greyish brown silty clay. Inclusions: frequent roots, stones, moss	50m	2m	0.05m
11002	Made ground	Compact grey hardcore. Inclusions: subangular stones, black mesh.	50m	2m	0.08m
11003	Cut	NW-SE cut of service trench.	3m	0.51m	-
11004	Made ground	Compact white hardcore. Inclusions: subangular chalk, mesh and matt.	50m	2m	0.0.7m
11005	Cut	NE-SW cut of service trench.	1.90m	3m	-
11006	Cut	N-S cut of service trench	3.22m	0.50m	-
11007	Cut	N-S cut of service trench.	1.90m	3m	-
11008	Cut	Modern truncation. Compact to loose rubble with mid brownish grey silty clay. Inclusions subangular stones, matting.	5m	0.90m	0.52m
11009	Buried Topsoil	Dark blackish grey silty clay. Inclusions: subangular stones, manganese.	6m-11m	1.9m	0.25m

11010	Buried Subsoil	Compact firm mid brownish grey silty clay. Inclusions: rare chalk flecks, occasional subangular flint.	6m-11m	1.9m	0.18m
11011	Deposit	Firm mid greyish brown silty clay. Inclusions: manganese, chalk, subangular rock.	1.90m	1.38m	0.2m
11012	Glacial Till	Firm mid reddish brownish clay. Inclusions: frequent chalk flecks.	6m-11m	1.9m	-
11013	Made ground	Compact mixed chalk hardcore. Inclusions: plastic mesh.	5m	2m	0.21m
Trench 12	Dimensions:	50m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
12000	Topsoil	Firm mid greyish brown clayey loam. Inclusions: heavy rooting, occasional small to medium sub angular stone.	50m	2m	0.42m
12001	Subsoil	Firm to malleable mid light greyish brown clay. Inclusions: rooting.	50m	2m	0.22m
12002	Estuarine	Firm to malleable light blueish grey smooth clay with yellowish orange streaks.	50m	2m	0.12m
12003	Estuarine	Firm to malleable mid light reddish brown clay. Inclusions: frequent flecks of manganese.	50m	2m	0.24m
12004	Estuarine	Firm to malleable clay. inclusions: lenses of dark black organic.	50m	2m	0.26m
12005	Estuarine	Firm malleable mid light orangish yellowish grey clay with light bluish grey mottling.	50m	2m	0.20m
12006	Glacial Till	Firm mid light reddish greyish brown clay. Frequent manganese and chalk flecks.	50m	2m	>0.16m
Trench 13	Dimensions:	50m x 2m		Alignment:	ENE-WSW
Context No	Type	Description	Length	Width	Depth
13000	Topsoil	Friable dark brown silty clay.	50m	2m	0.2m
13001	Subsoil	Friable mid greyish brown silty clay. Occasional manganese flecks.	50m	2m	0.2m
13002	Estuarine	Firm mixed blueish greyish orange clay. Inclusions: some manganese.	50m	2m	0.3m
13003	Estuarine	Firm dark purplish brown silty clay. Inclusions: manganese.	50m	2m	0.56m
13004	Estuarine	Firm mixed blueish grey orangish clays and gravels. Inclusions: occasional gravels.	50m	2m	0.22m
13005	Estuarine	Firm reddish blue clay .	50m	2m	0.18m
13006	Glacial Till	Firm reddish blueish grey clay. Inclusions: moderate chalk flecks.	50m	2m	>0.10m
Trench 14	Dimensions:	Two 25m x 2m		Alignment:	NE-SW/NW-SE

Context No	Type	Description	Length	Width	Depth
14000	Natural	Firm orangey blue clay.	50m	2m	0.15m
14001	Estuarine	Firm blackish brown fine sandy clay.	50m	>0.47m	0.03m
14002	Topsoil	Firm mid greyish brown sticky silty clay. Inclusions: very occasional stones.	0.25m	2m	0.11.m
14003	Cut	Cut of field drain.	50m	0.35m	0.19m
14004	Fill of [14003]	Compact to malleable light to mid grey firm clay.	50m	0.35m	0.19m
14005	Made ground	Compact mid to dark brown fine sandy clay. Inclusions: occasional stones.	50m	0.25m-2m	0.47m
14006	Made ground	Loose mid brown gritty sand. Inclusions: metal wire, large angular stones	50m	2m	0.23m
14007	Made ground	Loose mid grey gritty sand. Inclusions: frequent stone.	25m	2m	0.22m
14008	Made ground	Pale grey sandy grit. Inclusions: frequent gravel,	23m	2m	0.18m
14009	Made ground	Very loose dark brown gritty sand inclusions: frequent stone, gravel	50m	0.46m	0.04m
14010	Made ground	Loose light yellowish brown gritty sand. Inclusions: small angular stones.	50m	1.10m	0.05m
14011	Cut	Modern Truncation.	50m	0.22m	6.10m
14012	Fill of {14011}	Very light creamy yellow sandy stone. Inclusions: crushed chalk.	50m	0.22m	6.10mm
Trench 15	Dimensions:	50m x 2m		Alignment:	N-S
Context No	Type	Description	Length	Width	Depth
15000	Topsoil	Soft and friable mid dark brownish grey very organic silty coarse sand.	50m	2m	0.3m
15001	Subsoil	Soft and friable mid greyish brown silty coarse sand.	50m	2m	0.21m
15002	Estuarine	Friable mid orangeish brown silty sand and clay. Inclusions: flecks of blue and chalk.	3m	2m	0.15m
15003	Estuarine	Firm mid blueish grey silty clay with orange flecks. Inclusions: occasional small pebbles.	3m	2m	0.3m
15004	Estuarine	Fine mid greyish brown silty clay. Inclusions: some manganese.	50m	2m	0.4m
15005	Estuarine	Firm dark purplish brown clay with flecks of dark orange	50m	2m	0.25m
15006	Estuarine	Firm very pale blueish grey clay with patches of bright orange sand.	50m	2m	0.1m
15007	Estuarine	Soft smooth malleable bright mid orangish yellow fine sand. With occasional flecks of reddish brown sand.	50m	2m	0.1m
15008	Cut	Ditch. Linear in plan. Aligned E-W. U-shaped profile.	2m	1.83m	0.6m

15009	Fill of [15008]	Compact to malleable smooth mid blue grey clay. Inclusions: rare medium stones.	2m	1.15m	0.12m
15010	Fill of [15008]	Mid purplish brown clay with grey streaking and common orange mottling with very small patches of reddish brown silty sand.	2m	1.5m	0.25m
15011	Fill of [15008]	Firm smooth malleable mid light blueish grey clay with orange mottling. Inclusions: rare red sandstone.	2m	1.83m	0.3m
15012	Estuarine	Firm malleable bluish brown clay.	2m	0.3m	0.3m
15013	Estuarine	Firm to malleable brown orangish grey clay with occasional flecks of dark brown.	2m	0.7m	0.3m
15014	Estuarine	Firm to malleable brown orangish grey clay with occasional flecks of dark brown.	2m	0.07m	>0.2m
15015	Estuarine	Soft smooth malleable bright mid orangish yellow fine sand. With occasional flecks of reddish brown sand.	50m	2m	0.07m
15016	Estuarine	Firm very pale blueish grey clay with patches of bright orange sand.	50m	2m	0.07m
15017	Estuarine	Fine soft smooth mottled mid yellowish brown silty clay. Inclusions: common manganese.	2m	0.5m	0.17m
15018	Estuarine	Soft smooth mid brown silty clay with yellowish orange staining. Inclusions: very occasional manganese.	2m	0.9m	0.15m
15019	Estuarine	Slightly firm smooth mid brown silty clay with slight blue hue. Inclusions: some manganese.	2m	0.8m	0.2m
15020	Buried Soil/Bank	Firm slightly gritty mid brown silty clay. Inclusions: common manganese, some small rocks.	2m	>1.2m	0.3m
15021		VOID			
15022	Buried Soil/Bank	Firm mid yellowish brown silty clay with orange streaks. Inclusions: very occasional stones.	2m	0.85m	0.2m
15023	Estuarine	Fairly firm very mottled mid yellow and light blueish grey silty clay. Inclusions: very occasional manganese.	2m	>3m	0.25m
15024	Estuarine	Compact light blueish grey silty clay with orange lenses.	2m	>2.5m	0.15m
15025	Glacial Till	Firm reddish brown bolder clay. Inclusions: frequent flecks of chalk.	50m	2m	>0.1m
15026	Estuarine	Firm mixed orangeish brownish grey clay. Inclusions: manganese flecks.	50m	2m	0.2m
15027	Estuarine	Firm mixed bluish grey clay.	50m	2m	0.15m
Trench 16	Dimensions:	50m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
16000	Made ground	Tarmac	50m	2m	0.04m
16001	Made ground	Very compact mid grey rubble and sand.	50m	2m	0.11m

16002	Made ground	Compact light blue rubble and stone hardcore.	50m	2m	0.28m
16003	Made ground	Compact mid tan brown small to medium rock hardcore layer.	50m	2m	0.16m
16004	Made ground	Compact light white small to medium hardcore rock rubble layer.	50m	2m	0.12m
16005	Made ground	Compact mid dark grey rubble layer. Inclusions: plastic membrane.	50m	2m	0.09m
16006	Buried Topsoil	Firm dark grey silty clay. Inclusions: occasional rooting.	50m	2m	0.2m - 0.35m
16007	Buried Subsoil	Firm mottled greyish brownish yellow orange silty clay. Inclusions: occasional rocks.	50m	2m	0.15m
16008	Natural	Firm malleable mid yellowish orange silty clay. Inclusions: manganese.	50m	2m	>0.10m
16009	Cut	Posthole. Circular shape in plan. V-shaped profile.	0.28m	0.31m	0.25m
16010	Fill of [16009]	Timber post.	0.27m	0.45m	0.08m
16011	Fill of [16009]	Very firm mid light grey silty clay with yellow streaking. Clay packing for post.	0.28m	0.31m	0.25m
16012	Cut	Pit or terminal end. Ovoid shape in plan. Aligned E-W. U-shaped profile.	1.18m	0.44m	0.14m
16013	Fill of [16012]	Very firm slightly blueish mid grey silty clay.	1.18m	0.14	0.14m
16014	Cut	Ditch. Linear shape in plan. Aligned E-W. V-shaped profile.	>1m	0.98m	0.7m
16015	Fill of [16014]	Firm mid greyish brown slightly silty clay with blueish grey mottled patches. Inclusions: occasional stones, flint, charcoal.	50m	2m	0.07m
16016	Cut	Posthole. Circular shape in plan. V-shaped profile.	>0.15m	0.34m	0.22m
16017	fill of [16016]	Very firm sickly silty clay with mid blueish grey and some darker grey mottle. Inclusions: very occasional stones.	>0.15m	0.34m	0.22m
16018	Cut	Gully or furrow. Linear shape in plan. Aligned E-W. Rounded profile.	2m	1.63m	0.14m
16019	Fill of [16018]	Firm mid brownish grey silty clay. Inclusions: occasional stones and manganese.	2m	1.63m	0.14m
16020	Natural	Firm mid brown grey silty clay. Inclusions: occasional manganese, rooting.	0.5m	0.3m	>0.2m
16021	Glacial Till	Firm mottled bolder clay. Inclusions: chalk flecks.	50m	2m	-
16022	Cut	Pit. Circular shape in plan. Rounded profile.	0.41m	0.3m	0.14m
16023	Fill of [16022]	Very compact mid grey silty clay with occasional yellow streaks.	0.41m	0.3m	0.14m
16024	Cut	Stakehole. Circular shape in plan. V-shaped profile.	0.16m	0.12m	0.12m
16025	Fill of [16024]	Firm mid grey silty clay with yellow streaks.	0.16m	0.12m	0.12m
16026	Fill of [16024]	Firm mid dark grey silty clay with very dark grey mottling. Inclusions: mottling.	0.16m	0.08m	0.04m

16027	Fluvial	Firm mid blueish grey silty clay with yellow mottling. Inclusions occasional stones, manganese.	5m	2m	0.11m
16028	Natural	Firm yellow mottled silty clay with blue and grey streaks. Inclusions: manganese.	1.2m	0.4m	0.20m
16029	Natural	Firm mid greyish brown silty clay with some grey mottling. Inclusions: manganese.	-	0.6m	0.10m
Trench 17	Dimensions:	50m x 2m		Alignment:	ENE-WSW
Context No	Type	Description	Length	Width	Depth
17000	Topsoil	Firm mid brownish grey silty clay. Inclusions: moderate rooting, occasional stones, moss.	50m	2m	0.03m
17001	Made ground	Loose yellow hardcore. Inclusions: subangular chalk, matting.	50m	2m	0.65m
17002	Estuarine	Firm dark greyish brown silty clay. Inclusions: brick rubble, concrete.	5m	2m	1.2m
17003	Estuarine	Firm mid greyish brown silty clay. Inclusions: rare manganese, iron pan.	50m	2m	0.25m
17004	Estuarine	Firm mid purplish brownish silty clay. Inclusions: manganese, shell	50m	2m	0.46m
17005	Estuarine	Firm mid orangish greyish brown clay. Inclusions: frequent manganese, iron pan.	50m	2m	0.26m
17006	Estuarine	Firm mid greyish blue clay with a lense of black clay. Inclusions: manganese.	50m	2m	0.3m
17007	Estuarine	Firm and crispy mid yellowish browney orange sand and gravel. Inclusions: occasional subangular stone.	50m	2m	0.14m
17008	Estuarine	Firm mid orangeish greyish brown clay. Inclusions: rare manganese, iron pan.	50m	2m	0.3m
17009	Glacial Till	Firm mid blueish brownish grey clay. Inclusions: chalk flecks.	50m	2m	0.25m
17010	Cut	Ditch. Linear shape in plan. Aligned E-W. U-shaped profile.	5m	1m	0.15m
17011	Fill of [16010]	Firm mid purple brown clay with blue streaks.	5m	2m	0.15m
Trench 18	Dimensions:	50m x 2m		Alignment:	NE-SE
Context No	Type	Description	Length	Width	Depth
18000	Topsoil	Mid brown clay loam.	50m	2m	0.21m
18001	Subsoil	Yellowish brown clay. Inclusions: stones.	50m	2m	0.32m
18002	Natural	reddish brown clay. Inclusions: small stones	2.8m	2m	>0.38m
18003	Cut	Furrow. Linear shape in plan. Aligned E-W. Rounded shape in plan.	2m	4.02m	0.28m
18004	Fill of [18003]	Compact light yellowish greyish brown clay. Inclusions: charcoal, chalk, small stones.	2m	4.02m	0.28m

18005	Cut	Field drain. Linear shape in plan. Aligned E-W. U-Shaped profile.	2mm	0.30m	>0.38m
18006	Fill of [18005]	Soft light pinkish orangeish brown very sandy loam. Inclusions: chalk, land drain fragments.	2m	0.30m	>0.38m
Trench 19	Dimensions:	50m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
19000	Topsoil	Dark brownish clayey loam.	50m	2m	0.17m
19001	Subsoil	Mid brown clay.	50m	2m	0.08m
19002	Estuarine	Pale brown clay.	50m	2m	0.40m
Trench 20	Dimensions:	50m x 2m		Alignment:	NE-SW
Context No	Type	Description	Length	Width	Depth
20000	Topsoil	Friable darkish brown clay loam.	30m	2m	0.15m
20001	Subsoil	Friable pale brown clay.	30m	2m	0.45m
20002	Estuarine	Firm yellowish brown clay with grey streaks.	30m	2m	0.53m
20003	Estuarine	Firm pale grey clay silt with dark flecks.	30m	2m	0.17m
20004	Estuarine	Firm dark reddish purple clay.	30m	2m	0.40m
20005	Estuarine	Firm mottled bright orangish blue clay.	30m	2m	0.30m
20006	Estuarine	Firm light blueish clay with occasional patches of bright orange clay.	30m	2m	0.20m
20007	Estuarine	Firm bright orange coarse sand with gravel.	30m	2m	0.20m
20008	Glacial Till	Firm dark purple bolder clay. Inclusions: flecks of chalk.	-	-	-
Trench 21	Dimensions:	50m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
21000	Topsoil	Friable dark grey brown loam.	50m	2m	0.25m
21001	Subsoil	Firm pale yellow brown clay.	50m	2m	0.10m
21002	Estuarine	Firm light blue sterile clay.	50m	2m	0.15m
21003	Estuarine	Firm mottles dark orange and light blue clay.	50m	2m	0.20m
21004	Estuarine	Firm bright yellow sandy clay.	50m	2m	0.15m
21005	Estuarine	Firm dull pale orange brown sandy clay.	50m	2m	0.25m
21006	Glacial Till	Firm dark purple brown clay. Inclusions: chalk flecks.	2m	2m	-
21007	Subsoil	Firm dark greyish brown clay.	2m	2m	0.27m
21008	Estuarine	Firm dark blue grey sandy clay. Inclusions: manganese flecks and small stones.	2m	2m	0.16m
21008	Estuarine	Firm mid blue grey sandy clay.	2m	2m	0.10m
Trench 22	Dimensions:	50m x 2m		Alignment:	NE-SW

Context No	Type	Description	Length	Width	Depth
22000	Topsoil	Friable dark brown clay loam. Inclusions: roots and turf	50m	2m	0.22m
22001	Subsoil	Firm brown clay.	50m	2m	0.16m
22002	Estuarine	Firm pale yellow brown silty clay.	50m	2m	0.24m
22003	Estuarine	Firm pale grey with yellow streaks.	3m	2m	0.14m
22004	Estuarine	Pale brown silty clay.	50m	2m	0.23m
22005	Estuarine	Band of firm pale grey silty clay with yellow streaks.	50m	2m	0.08m
22006	Estuarine	Firm brownish yellow silty clay. Inclusions: very few mineral flecks.	50m	2m	0.28m
22007	Estuarine	Band of firm pale grey silty clay. Inclusions: manganese.	50m	2m	0.15m
22008	Estuarine	Firm pale brown silty clay.	50m	2m	>0.07m
Trench 23	Dimensions:	50m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
23000	Topsoil	Friable dark greyish brown loam. Inclusions: subangular stone.	50m	2m	0.2m-0.25m
23001	Subsoil	Firm bright orange brown clay.	50m	2m	0.15m-0.3m
23002	Estuarine	Firm sterile pale blue clay with streaks of bright orange clay.	50m	2m	0.1m-0.2m
23003	Estuarine	Firm purplish brown clay with streaks of bright orange clay.	50m	2m	0.3m - 1.1m
23004	Estuarine	Firm bright blue sterile clay.	50m	2m	0.1m-0.4m
23005	Estuarine	Firm dull purplish brown clay.	50m	2m	0.35m
23006	Estuarine	Light purplish blue clay.	50m	2m	0.1m
23007	Estuarine	Firm bright yellow clay with streaks of bright blue clay.	50m	2m	0.1m - 0.4m
23008	Estuarine	Firm mid to dark coarse sand and gravel.	50m	2m	0.2m - 0.3m
23009	Glacial Till	Firm dark purple clay. Inclusions: flecks of chalk.	50m	2m	m
23010	Estuarine	Firm bright bluish orange clay.	2m	2m	0.4m
23011	Estuarine	Firm bright yellow clay.	2m	2m	0.1m
23012	Estuarine	firm dark blue clay	2m	2m	0.3m
23013	Estuarine	Firm dark orangish brown clay.	2m	2m	0.4m
23014	Estuarine	firm very bright blueish grey clay.	2m	2m	0.15m
Trench 24	Dimensions:	50m x 2m		Alignment:	NE-SW
Context No	Type	Description	Length	Width	Depth

24000	Topsoil	Friable dark greyish brown loam	50m	2m	0.2m
24001	Subsoil	Firm light brown clay.	50m	2m	0.25m
24002	Estuarine	Firm pale greenish grey clay.	50m	2m	0.15m
24003	Estuarine	Firm purplish brown clay.	50m	2m	0.75m
24004	Estuarine	Firm bright orange clay.	50m	2m	0.15m
24005	Estuarine	firm dark bluish grey clay.	2m	2m	0.25m
24006	Estuarine	Mixed dark yellowish brown clay.	2m	2m	0.30m
24007	Estuarine	firm dark blueish yellow clay.	2m	2m	0.15m
24008	Estuarine	Firm mottled dark yellow course sand.	2m	2m	0.25m
24009	Cut	Gully. Linear in plan. Aligned E-W. Not fully excavated due to collapsing trench edges.	-	-	-
24010	Fill of [24009]	Firm blue grey clay	-	-	-
Trench 25	Dimensions:	50m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
25000	Topsoil	Friable dark bluish brown silty clay. Inclusions: rooting.	65m	2m	0.13m
25001	Subsoil	Firm mid yellowish brown silty clay. Inclusions: rooting, occasional chalk flecks.	65m	2m	0.26m
25002	Estuarine	Firm mid greyish blueish yellow clay. Inclusions: occasional rooting, iron pan, manganese	65m	2m	0.42m
25003	Estuarine	Firm thin blue band of clay.	65m	2m	0.1m
25004	Estuarine	Firm mid purple reddish brown clay. Inclusions: iron pan, manganese	65m	2m	0.33m
25005	Estuarine	Firm thin blue band of clay.	65m	2m	0.2m
25006	Estuarine	Firm mid greyish yellow clay. Inclusions: sub angular pieces flint, stones.	65m	2m	0.28m
25007	Estuarine	Firm mid greyish brown clay. Inclusions: manganese.	65m	2m	0.40m
25008	Glacial Till	firm mid blueish brown grey clay. Inclusions chalk, manganese.	-	-	-
25009	Cut	Pit. Circular shape in plan. Rounded profile.	0.4m	0.2m	0.21m
25010	Fill of [25009]	Malleable dark bluish grey silty clay with frequent black flecks. Inclusions: occasional small pebble and natural flint.	0.4m	0.2m	0.21m
Trench 26	Dimensions:	50m x 2m		Alignment:	NNE-SSW
Context No	Type	Description	Length	Width	Depth
26000	Topsoil	Friable dark grey loam.	50m	2m	0.15m
26001	Subsoil	Firm pale brown clay. Inclusions: some rooting.	50m	2m	0.30m
26002	Estuarine	Firm pale blueish grey clay with patches of dark orange clay.	50m	2m	0.15m

26003	Estuarine	Firm dark purple brown clay with streaks of dark orange clay.	50m	2m	0.20m
26004	Estuarine	Firm mixed loose dark orangish yellow silty clay. Inclusions: gravel.	50m	2m	20m
26005	Glacial Till	Firm dark purple clay. Inclusions: flecks of chalk.	50m	2m	-
26006	Estuarine	Firm mixed blue/ orange clay.	50m	2m	>0.2m
26007	Estuarine	Firm mixed orange blue clay, more blue towards base.	50m	2m	>0.2m
26008	Estuarine	Firm mid orange brown clayey gravels.	50m	2m	>0.18m
Trench 27	Dimensions:	50m x 2m		Alignment:	NNW-SSE
Context No	Type	Description	Length	Width	Depth
27000	Topsoil	Friable dark greyish brown loam.	50m	2m	0.40m
27001	Subsoil	Firm pale greyish brown clay.	50m	2m	0.15m
27002	Estuarine	Firm pale blueish grey clay.	50m	2m	0.15m
27003	Estuarine	Firm mixed dark purplish brown with patches of bright orange clay.	50m	2m	0.4m
27004	Estuarine	Firm pale greyish blue clay.	50m	2m	0.15m
27005	Estuarine	Firm mixed reddish brown clay with patches of bright orange and blue clay.	50m	2m	0.4m
27006	Estuarine	Firm mottled dark orange and yellow sandy silty clay.	50m	2m	0.1m
27007	Estuarine	Coarse mid orange sand and gravel.	50m	2m	0.2m
27008	Glacial Till	Firm dark purple clay. Inclusions: flecks of chalk.	50m	2m	m
27009	Cut	Ditch. Linear shape in plan. Aligned E-W. V-shaped profile.	2m	1.6m	0.90m
27010	Fill of [27009]	Firm mixed dark blueish grey and dark orange clay. Inclusions: stones.	2m	1.26m	0.35m
27011	Fill of [27009]	Firm mid yellow brown clay. Inclusions: small sub-angular stones.	2m	1.6m	0.55m
27012	Made ground	Firm mixed dark greyish brown silty clay with red patches. Inclusions: angular stones	2m	2m	1.3m
Trench 28	Dimensions:	50m x 2m		Alignment:	NE-SW
Context No	Type	Description	Length	Width	Depth
28000	Topsoil	Frable mid brown clay loam. Inclusions: infrequent stones.	50m	2m	0.29m
28001	Made ground	Firm pale greyish brown clay. Inclusions: gravel.	50m	2m	0.54m
28002	Natural	Firm yellowish brown clay. Inclusions: stones.	50m	2m	30m
28003	Concrete stanchion	Concrete with iron rebar.	2.95m	2.3m	0.12m
28004	Cut	Ditch. Linear shape in plan. Aligned NE-SW. Rounded profile. Recut of [28013].	1.2m	1m	0.75m

28005	Fill of [28004]	Friable coarse mid brownish grey sandy clay. Inclusions: charcoal flecks.	1.2m	1m	0.24m
28006	Cut	Ditch. Linear shape in plan. Aligned NNW-SSE. U-shaped profile.	1.80m	0.80m	0.57m
28007	Fill of [28006]	Firm mixed light blueish grey and orange silty clay.	1m	0.58m	0.10m
28008	Fill of [28006]	Firm mixed mid blueish grey and orange silty clay. Inclusions: chalk, some charcoal.	1m	0.71m	0.27m
28009	Fill of [28006]	Firm mixed brownish grey and orange silty clay.	1m	0.18m	0.26m
28010	Fill of [28006]	Firm mid brownish grey silty clay. Inclusions: stones, chalk, charcoal.	1m	0.18m	0.46m
28011	Cut	Field Drain. Linear in plan.	2m	0.14m	0.25m
28012	Fill of [28011]	Fill of Field drain.	2m	0.14m	0.25m
28013	Cut	Ditch. Curvilinear in plan. Aligned NE-SW. V-shaped profile.	1.1m	1m	0.5m
28014	Cut	Ditch. Curvilinear in plan. Aligned NE-SW. V-shaped profile.	1.47m	1m	0.65m
28015	Fill of [28014]	Firm mid grey clay with orange mottling. Inclusions: redeposited stones.	1.17m	1m	0.25m
28016	Fill of [28013]	Friable mid grey coarse sandy silty clay with orange mottling. Inclusions: frequent small pebbles, some flecks of charcoal.	1m	0.19m	>0.12m
28017	Fill of [28013]	Malleable mid grey slick silty clay. Inclusions: occasional natural flint, medium rocks.	1m	1.1m	0.21m
28018	Fill of [28013]	Malleable mid brownish grey silty clay. Inclusions: occasional chalk flecks, charcoal flecks.	1m	1.15m	0.18m
28019	Cut	Ditch. Curvilinear in plan. Aligned E-W. U-shaped profile.	1m	1.1m	0.65m
28020	Cut	Ditch. Linear shape in plan. Aligned E-W. u-shaped profile. Recut of ditch [28039].	>1.6m	1.97m	0.67m
28021	Fill of [28039]	Firm mid light yellowish brown silty clay. Inclusions: small manganese.	0.3m	0.2m	0.20m
28022		VOID			
28023	Fill of [28020]	Firm mid yellowish brown silty clay with yellow mottling. Inclusions: manganese, chalk.	1.6m	0.55m	0.33m
28024	Fill of [28020]	Compact mid greyish brown. Frequent manganese, occasional chalk.	1.6m	0.6m	0.11m
28025	Fill of [28014]	Firm mid orangish brownish grey silty clay. Inclusions: occasional manganese, iron pan, rare chalk flecks.	1m	0.07m	0.05m
28026	Fill of [28014]	Firm mid brownish grey silty clay. Inclusions: occasional manganese, iron pan, rare chalk flecks.	1.26m	1m	0.27m
28027	Fill of [28014]	Firm mixed mid brownish grey silty clay with lenses of orange. Occasional manganese, iron pan, chalk flecks.	1.21m	1m	0.1m

28028	Cut	Ditch. Curvilinear in plan. Aligned E-W. V-shaped profile. Recut of ditch [28019].	1m	0.77m	0.63m
28029	Fill of [28028]	Firm mid silty clay. Inclusions: frequent iron pan, occasional manganese, rare chalk flecks.	1m	0.77m	0.31m
28030	Fill of [28028]	Firm mid brownish grey silty clay. Inclusions: occasional chalk flecks, rare manganese.	1m	0.77m	0.24m
28031	Cut	Ditch. Curvilinear in plan. Aligned E-W. Wide, shallow profile. Recut of ditch [28019].	1m	2.22m	0.3m
28032	fill of [28031]	Firm mid orangey grey silty clay. Inclusions: occasional chalk flecks, manganese.	1m	0.53m	0.23m
28033	Fill of [28031]	Firm mid greyish brown silty clay with orangish brown lenses. Occasional chalk flecks, manganese, iron pan.	1m	1.60m	0.3m
28034	Fill of [28031]	Firm dark brownish grey silty clay. Inclusions: rare chalk flecks, manganese, occasional subangular stones.	1m	1.47m	0.07m
28035	Fill of [28019]	firm mid brownish grey silty clay. Inclusions: moderate iron pan, manganese, rare chalk flecks.	1m	1.84m	0.19m
28036	Fill of [28019]	Firm dark brownish grey silty clay. Inclusions: occasional chalk flecks, moderate iron pan, occasional manganese.	1m	1.74m	0.19m
28037	Fill of [28020]	Very compact ,smooth, malleable mid to light yellowish brown silty clay. Inclusions: fine manganese, occasional chalk, small stones.	1.6m	0.79m	0.19m
28038	Fill of [28020]	Compact mid to light yellowish brown silty clay. Inclusions: very frequent manganese, occasional chalk, small stones.	1.6	1.1m	0.42m
28039	Cut	Ditch. Linear in plan. Aligned N-S. Unknown profile.	1.6m	0.97m	0.35m
28040	Fill of [28039]	Firm mid yellowish brown silty clay with yellow mottling. Inclusions: manganese, chalk.	1.6m	0.72m	0.10m
28041		VOID			
28042	Made ground	Firm mid greyish brown silty clay. Inclusions: CBM, some chalk flecks.	50m	2m	0.35m
28043	Fill of [28006]	Firm mid orangish brown clay. Inclusions: gravels, small stones.	1m	0.4m	0.2m
28044	Glacial Till	Firm mid darkish brown clay, Inclusions: chalk flecks.	50m	2m	>0.1m
Trench 29	Dimensions:	50m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
29000	Topsoil	Friable dark greyish brown loam.	50m	2m	0.30m
29001	Subsoil	Firm pale yellowish brown clay.	50m	2m	0.40m
29002	Estuarine	Firm light greyish orange clay with blue streaks.	50m	2m	0.20m
29003	Estuarine	Firm dark purple brown clay.	50m	2m	0.40m
29004	Estuarine	Firm bright orange yellow sandy clay.	50m	2m	0.20m

29005	Estuarine	firm dark black organic clay.	50m	2m	0.35m
29006	Estuarine	Bright yellowish brown sandy clay.	50m	2m	0.40m
29007	Estuarine	firm dull greenish brown clay.	50m	2m	0.30m
29008	Estuarine	firm dark yellow and blue sandy clay.	50m	2m	0.25m
29009	Glacial Till	firm dark purple bolder clay. Inclusions: chalk flecks.	50m	2m	-
Trench 30a	Dimensions:	30m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
30000a	Topsoil	Firm dark brownish grey clay loam.	50m	2m	0.12m
30001a	Subsoil	Plastic mid brownish grey clay.	50m	2m	0.25m
30002a	Estuarine	Firm mixed greyish orange clay.	50m	2m	0.1m
30003a	Estuarine	Firm purplish grey silty clay with mineral staining. Inclusions: few small stones.	50m	2m	0.45m
30004a	Estuarine	Firm yellowish brown sandy clay with mineral streaks. Inclusions small stones.	50m	2m	0.35m
30005a	Glacial Till	Firm, dark purple brown clay with blue streaks. Inclusions: chalk flecks.	50m	2m	>0.12m
Trench 30b	Dimensions:	20m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
30000b	Topsoil	Firm dark brownish grey clay loam.	50m	2m	0.2m
30001b	Warp	Firm mixed blueish grey clay.	50m	2m	0.2m
30002b	Estuarine	Firm purplish grey silty clay with mineral staining. Inclusions: few small stones.	50m	2m	0.3m
30003b	Estuarine	Firm blueish grey clay.	50m	2m	0.05m
30004b	Estuarine	Firm yellowish brown sandy clay with mineral streaks. Inclusions small stones.	50m	2m	0.05m
Trench 31a	Dimensions:	25m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
31000a	Topsoil	Friable dark blackish brown silty clay. Inclusions: rooting, vegetation.	25m	2m	0.10m
31001a	Subsoil	Firm mid yellowish brown slightly silty clay. Inclusions: moderate rooting, occasional chalk flecks.	25m	2m	0.14m
31002a	Estuarine	firm mid brownish orange clay. Inclusions: gravel, subangular flint, manganese.	25m	2m	0.23m
31003a	Estuarine	Firm mid greyish orangish brown clay. Inclusions: manganese, chalk flecks.	6m	2m	0.14m
31004a	Estuarine	Firm mid greyish yellow sandy clay. Inclusions: gravel, occasional manganese.	6m	2m	0.17m

31005a	Estuarine	Firm mid orange grey slightly sandy clay. Inclusions: moderate chalk flecks, occasional manganese.	6m	2m	0.13m
31006a	Glacial Till	Firm mid orangish blue clay. Inclusions: chalk flecks, occasional manganese.	25m	2m	0.14m
Trench 31b	Dimensions:	25m x 2m		Alignment:	NW-SE
Context No	Type	Description	Length	Width	Depth
31000b	Topsoil	Friable dark blackish brown silty clay. Inclusions: rooting, vegetation.	25m	2m	0.18m
31001b	Subsoil	Firm mid yellowish brown slightly silty clay. Inclusions: moderate rooting, occasional chalk flecks	25m	2m	0.1m
31002b	Warp	Firm pale brown clay with patches of blue clay.	25m	2m	0.2m
31003b	Estuarine	Firm dull purple brown clay.	25m	2m	0.15m
31004b	Estuarine	Firm bright blue sterile clay.	25m	2m	0.12m
31005b	Estuarine	Firm bright orange sandy clay. Inclusions: gravel and pebbles.	25m	2m	>0.3m
31006b	Glacial Till	Firm mid orangish blue clay. Inclusions: chalk flecks, occasional manganese.	25m	2m	>0.05m
31007b	Cut	Ditch. Linear shape in plan. Aligned N-S. V-shaped profile.	1m	1.53m	0.45m
31008b	Fill of [31007b]	Firm blue grey clay.	1m	0.5m	0.2m
31009b	Fill of [31007b]	Firm mid to pale brown silty clay.	1m	1.25m	0.18m
31010b	Fill of [31007b]	Firm mid to dark grey brown silty clay. Inclusions: manganese flecks.	1m	1.55m	0.15m
Trench 32	Dimensions:	50m x 2m		Alignment:	WNW-ESE
Context No	Type	Description	Length	Width	Depth
32000	Topsoil	Friable mixed greyish brown clay loam. Inclusions: rare stones.	50m	2m	0.24m
32001	Made ground	Firm yellowish brown clay silt with greyer patches. Inclusions: rare stones, occasional CBM fragments, field drain.	50m	2m	0.29m
32002	Made ground	Firm mixed yellowish brown clay with grey streaks. Inclusions: rare stones, mineral staining.	50m	2m	0.40m
32003	Natural	Firm pale yellowish brown clay silt. Inclusions: rare stones.	50m	2m	0.24m
32004	Natural	Firm mid pale brown heavy clay silt. Inclusions: rare stones.	50m	2m	0.18m
32005	Glacial Till	Firm dark purple brown clay with streaks of blue. Inclusions: chalk flecks.	50m	2m	m
32006	Cut	Gully. Linear in plan. Aligned N-S. U-shaped profile	1m	0.4m	0.2m

32007	Fill of [32006]	Friable mid grey brown coarse sandy clay with redeposited glacial till. Inclusions: chalk flecks and small stones.	1m	0.4m	0.2m
32008	Cut	Pit. Circular shape in plan. Rounded profile.	1.10m	0.94m	0.28m
32009	Fill of [32008]	Firm mixed blueish orangish grey clayey silt.	1.10m	0.94m	0.28m
32010	Cut	Ditch. Linear shape in plan. Aligned NE-SW. Rounded profile.	2.8m	0.9m	0.42m
32011	Fill of [32010]	Firm mid brownish grey clayey silt. Inclusions: occasional iron pan and manganese.	2.8m	0.9m	0.42m
32012	Fill of [32008]	Firm mid greyish blue clayey silt with lenses of orange. Inclusions: charcoal, manganese.	1.10m	0.94m	0.18m
Trench 33	Dimensions:	50m x 2m		Alignment:	N-S
Context No	Type	Description	Length	Width	Depth
33000	Topsoil	Friable mid greyish brown silty clay. Inclusions: occasional stones.	50m	2m	0.25m
33001	Subsoil	Friable mid brownish grey slightly silty clay.	50m	2m	0.17m
33002	Made ground	Firm pale white chalk hardcore.	6m	6m	>0.3m
33003	Estuarine	Firm purplish brown solid clay streaks, dull blue.	50m	2m	0.83m
33004	Estuarine	Firm pale blue clay with bright yellow clay streaks.	50m	2m	0.09m
33005	Estuarine	Firm dark greyish black organic clay.	50m	2m	0.1m
33006	Estuarine	Fine, friable mid blueish grey sandy clay.	50m	2m	0.11m
33007	Estuarine	Firm dark yellowish orange course sand with patches of pale blue sand.	50m	2m	0.25m
33008	Cut	Posthole. Sub-circular shape in plan. U-shaped profile.	0.3m	0.78m	0.3m
33009	Fill of [33008]	Firm mid blue grey clay.	0.3m	0.78m	0.3m
33010	Cut	Posthole. Circular shape in plan. V-shaped profile.	0.15m	0.15m	0.15m
33011	Fill of [33010]	Timber post.	0.15m	0.15m	0.15m
33012	Fill of [33010]	Firm mid blue grey clay. Packing for post.	0.15m	0.15m	0.15m

Appendix 2

Pottery Assessment, by I. M. Rowlandson

Introduction

Seventy nine sherds (maximum 55 vessels, 0.474kg, 0.02 RE) were presented for study (Plate 1). The range of fabrics from this group is similar to that seen from the excavations conducted by Network Archaeology on their Rosper Road site (Rowlandson and Fiske 2016 and 2019). The assemblage from that site contained a good group of fresh sherds that dated to the mid to late Iron Age with a mean sherd weight of 22.53g. In stark contrast the pottery from the Immingham Zero scheme had a mean sherd weight of 6g per sherd with few feature sherds to assist dating. However, the retrieval method of this group of pottery from a series of geoarchaeological samples would appear to explain the merge sherd size. As such it would appear that further Iron Age features have been recognised in the area probably a continuation of the settlement recognised in the earlier excavations of a broadly similar mid to late Iron Age date. A single Roman grey ware sherd was also recovered.

Methodology

The pottery has been archived using count and weight as measures according to the guidelines laid down for the minimum archive by The Study Group for Roman Pottery (Darling 2004) using the codes developed by the City of Lincoln Archaeological Unit - CLAU (see Darling and Precious 2014) and the additional codes used for the Rosper Road site (Rowlandson and Fiske 2016 and 2019). Iron Age feature sherd types follow those developed by Knight (1993). Rim equivalents (RE) have been recorded and an attempt at a 'maximum' vessel estimate has been made following Pollard (1990). Following the *Lincolnshire Handbook* and current museum deposition practices the pottery has been sub-bagged within each context by fabric. All of the pottery presented should be deposited with project archive in the relevant local museum.



Plate 1: The pottery assemblage

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Appendix A: The tabulated data

Table 1 Pottery dating summary

53122- Pottery dating summary							
Context	F No	F Type	Spot date	Comments	Sherd	Weight (g)	RE Total %
05012	?	?	Roman	A single grey ware sherd	1	4	2
06022	06019	Ditch	Iron Age?	A small group of handmade sherds and fired clay.	8	35	0
06023	06019	Ditch	Iron Age?	A small group of handmade sherds and fired clay and a stone	5	12	0
28005	28004	Ditch	Iron Age?	A small group of shell-gritted and rock-gritted handmade sherds.	4	16	0
28015	28014	Ditch	Iron Age	A small group of shell-gritted and rock-gritted handmade sherds and a fragment of fired clay.	21	98	0
28018	28013	Ditch	Iron Age?	A rock-gritted sherd and a fragment of fired clay.	3	11	0
28020	28020	Ditch	Iron Age	A small group of shell-gritted sherds including one with a fine fabric. Fired clay was also present.	19	109	0
28029	28029	Ditch	Iron Age?	A small group including fired clay, unworked stone and a very abraded handmade sherd.	4	9	0
28033	28031	Ditch	Iron Age	A small group of shell-gritted and rock-gritted sherds.	3	41	0
28035	28019	Ditch	Iron Age?	A small group of rock-gritted sherds.	3	32	0
28037	28020	Ditch	Iron Age?	A single rock-gritted sherd.	1	9	0
28038	28020	Ditch	Iron Age	A small group of handmade shell-gritted sherds and an unworked stone.	7	98	0

Table 2 Fabric summary

53122- Fabric summary							
Fabric code	Fabric group	Fabric details	Sherd	Sherd %	Weight (g)	Weight %	Total RE %
GREY	Reduced	Miscellaneous grey wares	1	1.27%	4	0.84%	2
IASH1	Calcareous	Iron Age Shell Grittred: Site Fabric 1	44	55.70%	265	55.91%	0
IASH2	Calcareous	Iron Age Shell Grittred: Site Fabric 2	1	1.27%	11	2.32%	0
ETW	Rock temper	Erratic pebbles broken up as temper	2	2.53%	4	0.84%	0
ETW2	Rock temper	Erratic pebbles broken up as temper	13	16.46%	124	26.16%	0
ETW4	Rock temper	Erratic pebbles broken up as temper, finer than ETW2	1	1.27%	6	1.27%	0

53122- Fabric summary							
Fabric code	Fabric group	Fabric details	Sherd	Sherd %	Weight (g)	Weight %	Total RE %
FCLAY	Fired Clay	Fired Clay	16	20.25%	59	12.45%	0
CLAY?	Fired Clay	Fired Clay	1	1.27%	1	0.21%	0

Table 3 Form summary

53122- Form summary							
Form	Form Type	Form Description	Sherd	Sherd %	Weight (g)	Weight %	Total RE %
J	Jar	Unclassified form	1	1.27%	23	4.85%	0
JEV	Jar	Everted rim	1	1.27%	4	0.84%	2
-	Unknown	Form uncertain	77	97.47%	447	94.30%	0

Table 4 Sherd Archive Output

QRY SHERD ARCHIVE OUTPUT																	
Context	Fabric	Form	Rim	Body	Base	Decoration	Vessels	Alt	Drawing	Comments	Join	Sherd	Weight	Rim diam	Rim eve	Sample	Finds ref
28020	IASH1	-	-	U	-	HM	13	ABR		BS; IRF MISC		13	85	0	0		
28020	FCLAY	-	-	-	-		0			OXID; FORMLESS		4	12	0	0		
28020	IASH2	-	-	U	-	HM	1	ABR		BS; R		1	11	0	0		
28020	FCLAY?	-	-	-	-		0	VAB		BS; R; ?VESSEL		1	1	0	0		
28038	IASH1	-	-	U	-	HM	1	ABR		BS; OX/R		4	62	0	0		
28038	IASH1	-	-	U	-	HM	3	ABR		BS; IRF		2	30	0	0		
28038	NOT POT	-	-	-	-		0			TWO UNWORKED STONE FRAGMENTS		0	0	0	0		
28038	ETW4	-	-	U	-	HM	1	VAB		BS; IRF		1	6	0	0		
28037	ETW2	-	-	U	-	HM	1	ABR		BS; OX/R		1	9	0	0		
05012	GREY	JEV	-	-	-		1	VAB		RIM		1	4	0	2		
28033	ETW2	-	-	U	-	HM	1	ABR		BS; IRF		1	20	0	0	43	
28033	IASH1	-	-	U	-	HM	1	ABR		BS; IRF		2	21	0	0	43	
06023	ETW	-	-	U	-	HM	1	VAB		BS; IRF; SCRAP		1	1	0	0	4	
28035	ETW2	-	-	U	-	HM	1	ABR		BS; IRF		2	9	0	0		
28035	ETW2	J	-	U	FTL	HM	1	ABR		BASE; IRF		1	23	0	0		
28018	IASH1	-	-	U	-	HM	1	VAB		BS; IRF		1	2	0	0	45	
28029	FCLAY	-	-	-	-		0	VAB		FORMLESS FINE OXID FABRIC		3	6	0	0		
28029	ETW	-	-	U	-	HM	1	VAB		BS; IRF		1	3	0	0		
28029	NOT POT	-	-	-	-		0			TWO UNWORKED IGNEOUS STONES		0	0	0	0		
28018	ETW2	-	-	U	-	HM	1	ABR		BS; IRF		1	6	0	0		
28018	FCLAY	-	-	-	-		0	ABR		OXIDISED FINE FABRIC		1	3	0	0		
28015	IASH1	-	-	U	-	HM	19	ABR		BS; IRF		19	56	0	0		
28015	ETW2	-	-	U	-	HM	1	ABR		BS; IRF		1	32	0	0		
28015	FCLAY	-	-	-	-		0	ABR		FINE IRREGULAR SURFACE COLOUR; QUARTZ GRITTED		1	10	0	0		
28005	IASH1	-	-	U	-	HM	1	VAB		BS; R		2	2	0	0		
28005	ETW2	-	-	U	-	HM	1			BS; OX/R		1	13	0	0		
28005	ETW2	-	-	U	-	HM	1	VAB		BS; IRF		1	1	0	0		
06023	ETW2	-	-	U	-	HM	1	ABR		BS; IRF		2	4	0	0		
06023	FCLAY	-	-	-	-	HM	0	ABR		FINE PARTIAL OXIDISED FABRIC FORMLESS		2	7	0	0		
06022	FCLAY	-	-	-	-	HM	0	ABR		FINE OXIDISED FABRIC FORMLESS		5	21	0	0		
06022	ETW2	-	-	U	-	HM	1	ABR		BS; OX/R		2	7	0	0		
06022	IASH1	-	-	U	-	HM	1	VAB		BS; R; SCRAP		1	7	0	0		

Appendix 3

The macroplant and charcoal from VPI Immingham, Humber Zero Project Geoarchaeological and Archaeological Evaluation (AOC 53122): an assessment by Jackaline Robertson

Introduction

A total of 51 bulk samples were submitted for environmental assessment from the archaeological works undertaken at Immingham, North Lincolnshire. The samples were collected from a series of ditches, furrows, linears, pits and postholes believed to date to the prehistoric, Roman and medieval/post medieval periods. The ecofacts comprised a small assemblage of carbonised macroplant and charcoal. The main aim of this assessment was to identify the finds to species, assess their potential for further study and suitability for radiocarbon dating.

Methodology

The bulk samples were processed in their entirety in laboratory conditions using a floatation method designed to retrieve both ecofacts and artefacts (cf. Kenward *et al.* 1980). The sediment consisted of a compact clay and the samples were pre-soaked for up to 24 hours prior to processing. The wash overs were scanned using a high-powered microscope at x10-x40 magnification. The residue was separated using a stack system of 4mm, 2mm and 1mm sieves and each fraction was scanned by eye and with a magnet.

All plant macrofossils were examined at magnifications of x10 and up to x450. Macroplant identifications were confirmed using modern reference material and seed atlases stored at AOC Edinburgh (Cappers *et al.* 2006; Jacomet 2006). Taxonomy and nomenclature for plants follows Stace (2010).

Charcoal fragments larger than 4mm were selected for assessment. Species identifications were confirmed by analysing the transverse, tangential and radial sections at x70-x450 magnification and using keys and texts stored at AOC Edinburgh (Hather 2000; Schweingruber 1990).

The assemblage

The macroplant

There were eight carbonised macroplants dispersed among five contexts. The finds were composed of cereal chaff, vegetables, nuts and weeds. Preservation of the macroplants ranged from mostly poor with some recorded as adequate.

Crops

There were three wheat (*Triticum* sp.) glumes scattered among natural deposit (5008) and pit deposit (3010).

Vegetables

The remains of a poorly preserved garden pea was recorded in ditch context (6022).

Nuts

One fragment of hazelnut shell (*Corylus avellana* L.) was present in deposit (10003).

Weeds

Heather remains of one seed and one leaf was present in linear context (5014). The only other find was a single weed seed in natural (5008), which could not be identified further due to poor preservation.

The charcoal assemblage

Flecks of charcoal were noted in all 51 samples but fragments suitable for analysis were recovered from only six. These were a mix of a natural deposit (5008), linear [32010], ditch [17010], deposits (17002), (10003) and posthole [33008]. Twenty-three fragments (6.1g) were identified as hazel (*Corylus avellana* L.), oak (*Quercus* sp.) and elm (*Ulmus* sp.). The dominant species was oak (74%), followed by elm (22%) and hazel (4%). Preservation of the charcoal was poor with the oak notably vitrified.

Modern contamination

Modern contamination was present in all 51 samples and was composed of roots, straw, weeds, snails and insect remains. The large concentration of contamination within many of the deposits coupled with the small size of the ecofact assemblage, suggests these finds may not be representative of in situ deposition. Therefore, the archaeological security of the ecofacts could be suspect and this should be considered if selecting material for radiocarbon dating.

Summary of the contextual units

Context: (6022) Ditch [6019] Sample <3>

The only find was a single poorly preserved garden pea. This is likely food debris reworked into the ditch.

Context: (5014) Linear [5013] Sample <22>

The ecofacts were composed of a heather seed and leaf. These finds could be the remnants of turf brought to the site for use as a building material or fuel source reworked into the linear. Equally it could have been imported to the site as a weed.

Context: (5008) Natural deposit Sample <24>

The macroplant was composed of two wheat glumes and one weed. There were also five fragments of elm (2.0g). These finds are likely crop processing and fuel waste redeposited within the natural.

Context: (32011) Linear [32011] Sample <31>

There was one fragment of oak (1.0g) that may be fuel waste reworked into the linear.

Context: (17011) Ditch [17011] Sample <34>

A single fragment of oak (0.3g) was present which could be redeposited fuel debris.

Context: (3010) Pit [3009] Sample <36>

There was one wheat glume reworked into this pit.

Context: (17002) Deposit Sample <40>

Five fragments of oak (1.1g) were recovered and these were likely fuel debris reworked into this deposit.

Context: (10003) Deposit Sample <41>

There was one fragment of hazelnut shell along with ten pieces of oak (1.5g). These finds could be the remains of food and fuel debris redeposited within this context.

Context: (33009) Posthole [33008] Sample <51>

The only find was a single fragment of hazel charcoal (0.2) that could be debris reworked into the posthole.

Discussion and statement of significance

Macroplant

Wheat and peas have been cultivated from the prehistoric period onward. Hazelnuts were gathered as a wild food resource from the prehistoric period onwards and the shells were often recycled for kindling. Heather as a component of turf has also long been collected for use as a building material and for fuel. The macroplant assemblage was scattered throughout the site with no evidence of selective or deliberate disposal. The small size of the macroplant assemblage limits its potential for further study.

Charcoal

The charcoal has probably derived from the redeposition of fuel debris. There is no evidence for the presence of any structural or artefactual elements within this assemblage. The species identified are all native and would have grown in the surrounding landscape. Hazel and elm favour a variety of landscapes such as hedgerows, scrub, or more open woods, whereas oak is more adaptable to varying growing conditions (Linford 2009; Stace 2010). The small size and poor preservation of the charcoal assemblage limits its potential for further study.

Recommended further work

The macroplant and charcoal assemblages have been fully assessed and no further species identifications are required. The hazelnut shell and charcoal may be used for radiocarbon dating, but the large amount of modern contamination in the samples means the archaeological security of the ecofacts is suspect. Oak charcoal should be avoided for dating as it is not always reliable due to it being a slow growing wood species, but as this assemblage is so small this may not be possible. Given the small size of the macroplant and charcoal assemblage no further analysis is required as its archaeological potential for further study is negligible. The assemblage is currently stored at AOC archaeology in a dry and stable condition, but once all work is completed it is recommended for discard.

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Appendix A:

Table 1: Charred macroplant.

Sample			3	22	24	36	41
Feature			Ditch 6019	Linear 5013	Natural	Pit 3009	Deposit
Context			6022	5014	5008	3010	10003
Sample vol(l)			40	40	40	20	40
% Analysed			100	100	100	100	100
Species	Name	Part					
Crops							
<i>Triticum</i> sp.	Wheat	Glume(s)			2	1	
Vegetable							
cf. <i>Pisum sativum</i> L.	Garden pea	Seed(s)	1				
Nuts							
<i>Corylus avellana</i> L.	Hazel	Shell frag(s)					1
Building/fuel							
<i>Calluna vulgaris</i> L.	Heather	Seed(s)		1			
<i>Calluna vulgaris</i> L.	Heather	Leave(s)		1			
Weed							
Unknown	Indet	Seed(s)			1		

Table 2: Charcoal

Sample	Feature	Context	Species	Name	Frag	Weight
24	Natural	5008	<i>Ulmus</i> sp.	Elm	5	2
31	Linear 32010	32011	<i>Quercus</i> sp.	Oak	1	1
34	Ditch 17010	17011	<i>Quercus</i> sp.	Oak	1	0.3
40	Deposit	17002	<i>Quercus</i> sp.	Oak	5	1.1
41	Deposit	10003	<i>Quercus</i> sp.	Oak	10	1.5
51	P/H 33008	33009	<i>Corylus avellana</i> L.	Hazel	1	0.2

Key: Frag= number of fragments, weight given in grams

Appendix 4

The animal bone from VPI Immingham, Humber Zero Project Geoarchaeological and Archaeological Evaluation (AOC 53122): an assessment by Jackaline Robertson

Introduction

Animal and bird bone (1.5Kg) was submitted for assessment from the archaeological works undertaken at Immingham, North Lincolnshire. The bone was collected from a series of ditches and a posthole believed to date to the prehistoric or Roman periods. Bone was also gathered from a medieval/post-medieval furrow. The aim of this assessment was to identify the assemblage to species, assess its archaeological potential for further study and its suitability for radiocarbon dating.

Methodology

The assemblage was identified to element and species with the aid of skeletal atlases (Cohen & Serjeantson 2015; Hillson 1986; Schmid 1972;) and the reference collection stored at AOC Archaeology Group (Edinburgh). Where an element could not be identified to species, it was instead described as large mammal (horse/cattle/deer) medium mammal (sheep/goat/pig), small mammal (dog/cat/rodent) or indeterminate mammal. The assemblage was quantified by calculating number of identifiable specimens (NISP) and minimum number of individuals (MNI).

No attempt was made to identify the ribs and vertebrae to species; instead, these were described as L/M, M/M or S/M where appropriate. Separating sheep and goat bones followed Boessneck (1969) and Payne (1985). When analysing the assemblage, the following criteria were recorded: feature, context, element, species, side, fusion, age, fragmentation, size and evidence of staining on the bone surface. The assemblage was inspected for butchery marks, pathologies, bone working, burning and carnivore gnawing. Only those bones found to be intact were measured (Von Den Driesch 1976). These results are reported in full in catalogue 1 stored in the site archive.

Epiphyseal fusion, tooth eruption and wear were assessed to establish the age of the individual (Grant 1982; Payne 1987; Payne 1973; Silver 1969). The proximal, distal and shaft areas of each fragment was recorded to determine the level of fragmentation within the assemblage (Dobney et al 1988). Assessing the level of staining used the following method: no staining was rated "0"; some staining affecting less than 25% of the bone surface was designated as "1"; 25-50% surface staining was "2"; while 50 – 75% was described as 3" and greater than 75% was rated as "4". A four-point system was used to assess preservation with excellent, good, adequate and poor recorded where appropriate.

The assemblage

A total of 290 fragments (1.5kg) were recovered from 18 contexts (Table 1). The number of identifiable specimens (NISP) were horse (1), cattle (16), sheep/goat (9), rodent (19), bird (1), L/M (113), M/M (47), S/M (1) and I/M (83). The minimum number of individuals (MNI) for the main domesticates was horse (1), cattle (1) and sheep/goat (1). Preservation of the bone ranged from mostly poor with a much smaller number recorded as either adequate or good. The poor preservation was due to weathering attributable to prolonged exposure to the elements and more recent damage caused during excavation. The bone was scattered throughout the site with no evidence of selective or deliberate disposal within specific features.

Summary of the contextual units

Contexts: (6021), (6022), (6023) & (6032) Ditch [6019]

Fourteen fragments (35.3g) were scattered among the four deposits (6021), (6022), (6023) and (6032) with no evidence of selective disposal in any specific context. Preservation of these finds was universally poor and none could be identified to species. Instead, they were recorded as L/M (5), M/M (1) and I/M (8). Two of the fragments from (6021) had been burnt to disposal. These finds are a small accumulation of food debris disposed of within the ditch.

Context: (28005) Ditch [28004]

There were four fragments of poorly preserved bone (10.4g) recorded as L/M (1) and I/M (3). These finds are redeposited food debris.

Context: (28010) Ditch [28006]

The 17 bone fragments (100.5g) were a cattle molar (1), L/M (15) and M/M (1). A L/M radius had a series of nine small cut marks along its edge. These finds are a small mix of butchery and food debris.

Context: (28018) Ditch [28013]

There were 49 fragments (93.1g) identified as sheep/goat (3), cattle (2), L/M (5), M/M (3), I/M (36). The sheep/goat skeletal elements were a molar, an ulna and tibia. The distal epiphysis of the tibia was fused indicating this animal was older than 18 months. The cattle fragments were one premolar and one foot bone. These fragments are a mix of butchery and food waste disposed of within the ditch.

Contexts: (28015) & (28026) Ditch [28014]

In deposit (28015) there were 45 fragments (530.2g) recorded as sheep/goat (4), cattle (2), horse (1), L/M (36) and M/M (2). The sheep/goat were made up of a deciduous molar, two molars and a radius. The radius belonged to an animal older than 10 months. The cattle fragments were a tibia from an animal older than 42 months and a metatarsal. The horse skeletal element was a foot bone. The bone (25.7g) in context (28026) totalled 55. These were a sheep/goat foot bone (1), rodent (19) and M/M (35). Except for the rodent the other bone fragments represent the disposal of mixed butchery and food waste. The rodent is likely the remains of a semi articulated individual that burrowed into this feature later.

Context: (28035) Ditch [28019]

Six fragments (86.7g) were cattle (2), L/M (2) and M/M (2). The cattle skeletal elements were composed of a skull fragment and molar. A L/M metacarpal had been marrow cracked. These fragments are butchery waste.

Contexts: (28020), (28023) & (28038) Ditch [28020]

In context (28020) there were 20 fragments (240.6g) recorded as cattle (2), sheep/goat (1) and L/M (17). The cattle fragments were a molar and humerus that belonged to an individual older than 12 months. The sheep/goat humerus came from an animal older than 10 months. In (28023) there was one burnt cattle molar and one I/M fragment (13.0g). From context (28038) there were 24 fragments (238.2g) formed of cattle foot bones (3) and L/M (21). Analysis of the cattle remains indicate this animal was older than 24 months.

Context: (28029) Ditch [28028]

There were 14 fragments (26.7g) identified as L/M (11), M/M (2) and S/M (1). The skeletal elements were a mix of ribs and long bones of which four had been burnt. These finds are a small mix of butchery and food debris.

Context: (28033) Ditch [28031]

There was one cattle metacarpal, one bird femur and a M/M long bone (58.3g). These finds are redeposited butchery and food waste.

Context: (28040) Ditch [28039]

There were 25 fragments all recorded as I/M (2.6g). These finds are food debris redeposited within the ditch.

Context: (33012) Posthole [33010]

One cattle humerus (40.1g) which belonged to an animal older than 12 months. This fragment was reworked into the posthole.

Context: (18004) Post Medieval Ditch [18003]

A single cattle molar (28.0g) was reworked into this post medieval furrow.

Discussion and statement of significance

The animal and bird assemblage collected from Immingham represents the disposal and reworking of butchery and domestic food waste. The most information that can be gathered from the available evidence is that the main domesticates in the form of horse, cattle sheep/goat were all exploited but in what capacity and if this changed over time is unclear. The archaeological potential of this assemblage to answer research questions concerning the economic and dietary role of animals at this site is limited.

Horse

A single horse astragalus was recovered from ditch [28014]. Horses are common finds at most sites of this date and were typically used for transport. It was not uncommon for horses to be butchered after death with the flesh fed to animals such as dogs and the carcasses utilised for leather working and glue production. Nor was it uncommon for horses to be eaten by the human populace especially in times of food shortages. As only a single horse bone was identified the economic role of this species is unclear.

Cattle

A total of 16 cattle bones were scattered among ten deposits and comprised a skull, six loose molars, three long bones and six foot bones. Analysis of MNI revealed the presence of at least one individual older than 42 months. Cattle is a common find at most prehistoric and later settlements with animals exploited for a range of primary and secondary products including dairy, traction, meat and leather. It is not possible to establish if the cattle at Immingham were part of a dairy, meat or mixed economy and if this changed over time.

Sheep/goat

The nine sheep/goat fragments were dispersed among three ditches [28013], [28014] and [28020]. The skeletal elements were four loose teeth, four long bones and one foot bone. These finds represent a minimum of one individual older than 18 months at time of death. Sheep/goat were regularly exploited in north Lincolnshire from the prehistoric period onwards. This species was used to provide dairy products, wool and meat. As with the cattle it is unclear what dietary and economic role the sheep/goat had at this site.

Bird

A single bird femur was noted in ditch [28031] but this could not be identified further.

Rodent

The remains of a semi-articulated rodent were present in ditch [28014] and it is possible this animal burrowed into this deposit rather than representing in situ deposition.

Large mammal

The large mammal fragments totalled 113 which were dispersed among eight ditches. The skeletal elements were a mix of mandible fragments, ribs, scapula, long bone shafts and metapodials.

Medium mammal

There were 47 fragments described as M/M scattered among seven ditches. The identifiable skeletal elements were a mix of ribs, vertebra, long bone shafts and pelvis.

Small mammal

There was a single long bone present in ditch [28028].

Indeterminate mammal

There were 83 I/M fragments scattered among five ditches. All these fragments were poorly preserved and none could be identified.

Butchery

A L/M radius in ditch [28006] had nine small cut marks along its edge and a L/M metacarpal in ditch [28019] was marrow cracked.

Burning

A total of eight fragments had been burnt prior to deposition. None of these had been entirely calcified and instead they had been burnt at a lower temperature for a shorter period. The only fragment that could be identified was a cattle molar in ditch [28020]. The remainder were recorded as two I/M fragments present in ditch [6019] along with one L/M rib, three L/M fragments and one M/M rib all in ditch [28028]. These finds are cooking debris.

Recommended further work

The animal bone has been fully assessed and no further species identifications are required. Given the size of the assemblage it has no further information to offer in answering specific research questions concerning the role of animals at this site and whether this changed over time. If material is required for dating the fragments identified to species and skeletal element are suitable. The animal bone assemblage is stored at AOC Archaeology, but once all work is completed it is recommended for discard.

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*Appendix A:***Table 5 : Animal & bird bone assemblage**

Species	NISP	MNI
Horse	1	1
Cattle	16	1
Sheep/goat	9	1
Rodent	19	N/A
Bird	1	N/A
L/M	113	N/A
M/M	47	N/A
S/M	1	N/A
I/M	83	N/A
Total	290	3

Key: L/M=large mammal, M/M=medium mammal, S/M=small mammal, I/M= indeterminate mammal, NISP=number of identifiable specimens, MNI=minimum number of individuals

Appendix 5

The Lithics from VPI Immingham, Humber Zero Trial Trenching (AOC 53122): An Assessment by Rob Engl

Initial statement

The chipped stone assemblage: the assessment data was derived from an initial macroscopic study of the VPI Immingham, Humber Zero, lithic assemblage.

A total of 817 pieces of chipped stone were recovered from the Humber Zero site. Thirty-two pieces were recovered during excavation with the remainder of the assemblage being retrieved during the processing of bulk samples. The assemblage is comprised of a mix of grey and honey brown Wolds flint derived from the glacial till. Though the general knapping quality was good, numerous flaws and other inclusions were in evidence within the material. Five pieces were obviously fossils.

The majority of the assemblage (n.792) displayed obvious signs of patination ranging from a mottled cream blooms to full matt white discolouration. Five pieces recovered from context (3017) appeared heat affected with some discolouration and loss of mass in evidence.

Modern ploughing had also affected many of the artefacts in the form of post-depositional damage including rolling and 'nibbling' of the edges.

Methodology

The assessment data was derived from an initial macroscopic study of the VPI Immingham, Humber Zero, lithic assemblage and a catalogue was produced.

The assemblage has been carefully sorted, cleaned and dried. The material is currently stored at AOC Archaeology's Loanhead premises.

The Assemblage

The general composition of the assemblage by type is given in Table 1.

Table 1. The lithic assemblage by type.

Type	N
Chip	44
Blade	4
Shatter	711
Flake	
Broken	20
Irregular	22
Regular	4
Platform Rejuvenation Flake	1
Bipolar Remnant	3
Side/end Scraper	1
Split nodule	1
Fossils	5
Total	817

Primary Technology

Flakes & Blades

The assemblage revealed 22 irregular flakes with smaller numbers of blades (n. 4), regular flakes (n. 4) and broken flakes (n. 20).

Cores

Three bipolar remnant cores (DBSF 31,34,60) were present within the assemblage (Plates 1, 2 and 3). All three examples displayed the crushed proximal and distal ends and opposing flake removals characteristic of this technique.



Plate 1: DBSF60, Context (3014)

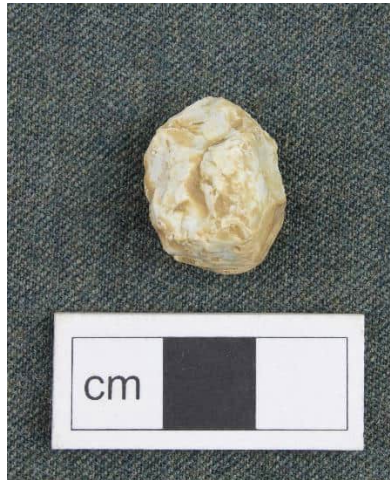


Plate 2: DBSF34, Context (3010)



Plate 3: DBSF31, Context (28037)

Shatter

Seven hundred and eleven pieces of indeterminate chunks and shatter were recorded. These are normally identified as waste products associated with the initial stages of hard hammer flint working and usually present in large numbers on Later Neolithic/Early Bronze Age sites (Butler 2005, 157) where raw material is not readily conserved. However, as with many such assemblages within Eastern Yorkshire and Humberside it is possible that many of the pieces may have been produced by post-depositional factors, such as modern ploughing methods affecting naturally occurring material within the general site matrix.

Secondary Technology

The Humber Zero assemblage produced one modified artefact (Plate 4) in the form of a small end and side scraper with semi abrupt regular retouch along the distal and right lateral edges (DBSF 1). The artefact is of probable Late Mesolithic date.



Plate 4: DBSF1, Context (28005)

Distribution

Table 2 The modified lithics and cores by Context

Context	Lithic Artefact	Associated Feature
3010	Bipolar Core	Fill of Pit [3009]
3014	Bipolar Core	Fill of Ditch [3013]
28005	Side/endscraper (DBSF 1)	Fill of Ditch [28004]
28037	Bipolar Core	Fill of Ditch [28020]

The lithic material was distributed within a large number of features across the site. The patination present on many of the pieces seems to suggest that the material has spent long periods within an active soil. Given that many artefacts appear to have been recovered from the fills of later linear ditch features it is likely that the majority of the assemblage was accidentally introduced within the features from the surrounding soil matrix.

Discussion

The archaeological works undertaken at Humber Zero produced a lithic assemblage of early prehistoric date. The majority of this material was recovered from linear features across the site.

The presence of a small end/sidescraper suggests some Mesolithic activity within the immediate locale. This reinforces the results of the excavations undertaken by AOC Archaeology at VPI Immingham Energy Park 'A' Power Station (Engl 2022) which also identified later Mesolithic material in the form of a microburin, a sidescraper and a retouched flake. Early prehistoric activity in the area has been previously identified with organic remains dating to the Mesolithic recorded from peat deposits at Marsh Lane (AECOM 2022). Scatters of flint, including scrapers, cores and flakes have been noted in areas to the east of the site (AECOM 2022).

Given the paucity of both secondarily worked material and diagnostic debitage, little can be said about the function of the assemblage apart from a general domestic character. Therefore, the material illustrates background early prehistoric activity within the area.

Recommendations for further work

No further analysis is recommended but the assemblage should be retained for future study as part of the site archive.

The illustration of the retouched side/endscraper is recommended to accompany final reporting or publication.

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Appendix 6

The Wood from VPI Immingham, Humber Zero Project, Lincolnshire (AOC Project Code: 53112): an assessment by Genoveva Dimova

Introduction

A small assemblage of waterlogged wood was submitted for assessment in April 2023 following a recent archaeological evaluation undertaken by AOC Archaeology Group at land adjacent to VPI Immingham, Rosper Road, Lincolnshire. The following report attempts to characterise the wood remains and aims to set the finds within their wider context in terms of date, function and archaeological significance.

Methodology

This assessment report provides a summary of the wood assemblage with information on form and function based on visual examination. It also provides recommendations for further work. The wood assemblage was examined with the aim of identifying object type, function, and date, and to compile an inventory for assessment purposes. Finds were measured using plastic-tipped calipers to the nearest millimeter, and a summary table of the material context has been included in Table 1. The finds were hand-retrieved in the field and collected as bulk finds which are identified by their context of discovery (e.g. 147).

The assemblage

Wood was recovered from four contexts: (16010), (33011), (33012), (33013). It included three flat-bottomed stakes and a small assemblage of unworked oak fragments.

Context (16010) Posthole [16009]

The wood recovered from this context is an oak flat-bottomed stake or post, measuring 256mm in length, 141mm in width, and 67mm in thickness. It is rectangular in cross-section, squared on all four sides, with saw marks visible on the base. The conversion is central tangential with the pith preserved. A short branch has been left in situ near the base. The wood is fairly fragile, and the top of the stake has decayed away. At least 150 rings are present on the base, which makes this stake a suitable candidate for dendrochronological dating.

Context (33011) Posthole [33010]

This is an oak flat-bottomed stake, measuring 220mm by 182mm by 56mm. It was roughly fashioned from oak roundwood which has been split in half. It is broken in two and very decayed and fragile. The top has decayed away.

Context (33012)

A small assemblage of waterlogged wood was recovered from this context, consisting of more than 20 small fragments of oak, which appear unworked. The largest fragment measures 35mm by 16mm by 5mm.

Context (33013)

This is a small flat-bottomed stake, measuring 171mm in length, 35mm in width and 22mm in thickness. It has been fashioned from radially split oak, and roughly squared on four sides. It is very decayed and the top is missing. A mortar-like substance adheres to one side of the stake. It was noted in the field that this stake potentially represents support for stake (33011).

Table 1: summary of the wood assemblage from VPI Immingham

Context	Species	Description	l x w x th (mm)	Conversion
16010	Oak	A flat-bottomed stake, rectangular in cross-section and faceted on all four sides, the top is decayed away. Saw marks visible on base. A branch near the base has been sawn around.	256x141x67	Central tangential
33011	Oak	A flat-bottomed stake roughly fashioned from half split roundwood, broken in two, fairly decayed and fragile, the top is missing	220x182x56	B
33012	Oak	20+ unworked oak fragments	max 35x16x5	N/A
33013	Oak	A flat-bottomed stake, square in cross-section and faceted on all four sides, very decayed and fragile, the top is missing. Staining from mortar-like substance on one side.	171x35x22	D

Discussion and statement of significance

The wood assemblage from VPI Immingham was small, but a range of objects were recovered, including three flat-bottomed stakes from contexts (16010), (33011), and (33013). All three were fashioned from oak but were very different in terms of size, conversion, and general shape, potentially indicating different function. The fragments from deposit (33012) showed no evidence of being worked.

Recommended further work

The wood assemblage has been fully assessed. The stake from (16010) has a high ring count, and it is recommended it undergoes dendrochronological analysis. The following tasks will be needed:

1. Cut sample slice of timber
2. Prepare surface of sample for measurement using razor blade
3. Measurement & analysis
4. Reporting

The rest of the assemblage requires no further work. Once work on this site has been completed, the assemblage is recommended for discard.

Appendix 7

The Shellfish and land snail from VPI Immingham, Humber Zero Project Geoarchaeological and Archaeological Evaluation (AOC 53122): an assessment by Jackaline Robertson

Introduction

A small assemblage (43.8g) of shellfish and land snails were submitted for assessment from the archaeological works undertaken at Immingham, North Lincolnshire. The samples were collected from five ditches believed to date to the prehistoric, Roman and medieval/post medieval periods. The main aim of this report was to provide species identifications and give recommendations for further work if needed.

Methodology

The shell were identified to species using reference material and guides stored at AOC Archaeology Group (Hayward *et al* 1996). Whole shells were recorded by counting the shell apices for gastropods and valve umbos for bivalve species. Broken fragments were also counted but recorded separately from intact shells. This was done in an effort not to over represent certain species.

The assemblage

The results are recorded in Table 1 the shell species.

The shellfish (3.4g) were two common cockle (*Cerastoderma edule*) recovered from context (28033). The land snails (40.4g) belonged to the *Helicella* family and were composed of 22 shells and 41 fragments. The land snails were scattered among six deposits (6022), (28020), (28023), (28029), (28033) and (28040). Preservation of the assemblage ranged from poor to excellent.

Discussion and statement of significance

Common cockles are edible and readily available in the waters around the British Coast. As only two shells were found their archaeological potential for providing further information for their dietary role at this site if any is negligible.

The land snails are common finds throughout Britain that typically favour moderately dry ground, including dunes, grassland and hedgerows (Kerney & Cameron 1979, 161-178). The land snails may have derived from later activity and are not archeologically secure within the ditches. Therefore, this species is of little interest.

Conclusion

The shell assemblage has been identified in full and no further species identifications are required. Given the small size of the assemblage its archaeological potential for further study is limited. Once all work is completed at this site the shell is recommended for discard.

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Table 1. The Shell species

Feature	Context	Species	Name	Whole	Frag	Weight
Ditch 6019	6022	<i>Helicella</i> sp.	Land snail		6	0.3
Ditch 28020	28020	<i>Helicella</i> sp.	Land snail	5		11.2
Ditch 28020	28023	<i>Helicella</i> sp.	Land snail	6		5.9
Ditch 28028	28029	<i>Helicella</i> sp.	Land snail	11		18.1
Ditch 28031	28033	<i>Cerastoderma edule</i>	Common cockle	2		3.4
Ditch 28031	28033	<i>Helicella</i> sp.	Land snail		19	3.7
Ditch 28039	28040	<i>Helicella</i> sp.	Land snail		16	1.2

Key: Whole=whole shell, Frag=fragment, weight recorded in grams

Appendix 8

The Vitrified Materials from VPI Immingham, Humber Zero Project, Lincolnshire (AOC Project Code: 53122): an assessment by Andrew Morrison

Introduction

A small assemblage of vitrified and other materials (Mass: 9.2g) was assessed in April 2023 following a recent archaeological evaluation undertaken by AOC Archaeology Group at land adjacent to VPI Immingham, Rosper Road, in North Lincolnshire, as part of the carbon-capturing Humber Zero Project. This report presents a summary of the assemblage, providing information on the quantity and classifications of the vitrified and other materials recovered, assessing their form and what this can tell us about the processes that led to their formation, as well as considering the site distribution and the inherent significance of the material.

Methodology

This assessment report provides a summary of the assemblage with information on form and function based on visual examination only; no scientific analysis was undertaken at this stage. The assemblage was examined with the aid of a low-powered binocular microscope to clarify surface details with the aim of identifying object type, function, and date, and to compile an inventory for assessment purposes, with the classifications following the guidelines set out by Historic England's *Archaeometallurgy* guidelines for best practice document (Dungworth 2015) and follows established terminologies (Bayley et al 2001; Starley 2000; Dungworth & McLaren 2021).

The material discussed was retrieved during the post-excavation processing of soil sample retent, and is identified within this report by sample number (e.g., <15>). Recommendations for further work, conservation, and illustration are provided following a statement on the potential significance of this material. The fragments were scanned with a magnet to allow recognition of magnetic response and were weighed using a Sartorius digital scale accurate to 0.1g. A complete inventory of the material by context has been included as an appendix at the end of this assessment.

The assemblage

Vitrified materials, often referred to by the general term 'industrial residues', can typically be split into two broad groups: those that are indicative of metalworking and those which, although heat-affected, are not diagnostic of a particular process or craft (e.g., fuel residues produced in a domestic hearth) (McDonnell 1994). Macroscopic examination allows diagnostic types to be identified but, in the absence of scientific analysis, it is often not possible to provide close identifications of all vitrified materials (Crew & Rehren 2002).

The vitrified materials assemblage from Immingham consist of a small amount of small to tiny coal and heavily vitrified charcoal fragments (8.3g), two tiny fragments of stone (0.8g), and a tiny fleck of iron (<0.1g) that were retrieved during the post-excavation processing of soil sample retent from a total of three separate contexts. The charcoal fragments <52> likely represent residual fuel remains later incorporated within the fill of the agricultural gully [32006], with their heavily vitrified state and vesicular structure indicative of a high temperature process taking place, possibly within a domestic hearth. The coal fragments may also represent residual fuel remains, though with no evidence of use or modification, these are likely to be naturally occurring within the soils.

The two tiny stone fragments <15> recovered from the fill of a posthole [16009] display a vesicular structure and appear to be silica-rich with crystals visible; they are naturally occurring with no visible

signs of modification. The tiny fleck of iron <34> that was retrieved from the fill of a ditch [17010] likely represents a shatter shard from a broken tool or implement and is not considered to be closely dateable.

Summary of the contextual units

The table below (Table 1) summarises the vitrified and other materials recovered from each contextual unit across the site. For a more detailed summary of the material, please see Table 2. The vitrified and other materials were recovered from a total of three separate contexts, including the fill of a posthole, a ditch fill, and the fill of a likely agricultural gully.

Table 1 : Summary of the contextual units from VPI Immingham, Humber Zero Project

<i>Context no</i>	<i>Context Description</i>	<i>Material</i>	<i>Mass (g):</i>
16011	Fill of posthole/ stake hole [16009], contains wooden stake [16010]. Trench 16.	Natural unmodified stone fragments x2	0.8
17011	Fill of ditch [17010]. Trench 17.	Tiny iron fleck	<0.1
32007	Fill of linear agricultural gully [32006]. Trench 32.	Coal and charcoal, including heavily vitrified x60	8.3

The vitrified material assemblage recovered during the archaeological evaluation at land adjacent to VPI Immingham, Rosper Road, in North Lincolnshire comprises 8.3g of vitrified charcoal and coal, 0.8g of natural, unmodified stone, and a tiny fleck of iron that were retrieved from soil samples derived from three separate contexts. The heavily vitrified charcoal fragments likely represent residual fuel remains later incorporated within the fill of an agricultural gully, the tiny iron fleck from the fill of a ditch is thought to represent a shatter fragment from a possible tool or implement breakage and may be intrusive, while the coal fragments and stone from the gully and posthole fills show no signs of use or modification and are all likely to be naturally occurring. These materials are considered to be of limited archaeological significance as they possess little potential for further work and can contribute very little to the overall site interpretation.

Recommended further work

No further work is recommended of the vitrified materials assemblage. Should any further site reports or publications be produced, then it is recommended that this assessment be drawn upon to provide any required information.

Conservation: No specialist conservation is required.

Specialist analysis: No further specialist analysis is recommended.

Illustration: No illustration is merited.

Retention: All of the material discussed is recommended for eventual discard.

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Table 2 : VPI Immingham, Humber Zero Project, Lincolnshire Vitrified Material by sample number.

<i>RT #</i>	<i>Context #</i>	<i>Context description</i>	<i>Full Description</i>	<i>Quantity</i>	<i>Intact?</i>	<i>Mass (g):</i>	<i>Magnetic?</i>	<i>Notes</i>
<15>	16011	Fill of posthole/ stake hole [16009], containing wooden stake {16010}. Trench 16.	Stone	2	No	0.8	No	Tiny, natural unmodified stone fragments. Silica-rich with a vesicular structure. One rounded fragment. Naturally occurring.
<34>	17011	Fill of ditch [17010]. Trench 17.	Iron	1	No	<0.1	Yes	Tiny shatter fragment of iron. Partial surface remaining with linear wear marks. Iron corrosion present along with areas of sheen possibly suggesting high carbon steel.
<52.1>	32007	Fill of likely agricultural gully [32006]. Trench 32.	Coal	4	No	0.9	No	Small fragments of natural, unmodified coal.
<52.2>	32007	Fill of likely agricultural gully [32006]. Trench 32.	Coal and heavily vitrified charcoal	4	No	7.4	No	Small to tiny fragments of coal and heavily vitrified charcoal, with one tiny fragment of roundwood charcoal also present. Likely fuel remains.

Appendix 9

Soils and Sediments from VPI Immingham, Humber Zero Project: an assessment (AOC:53122) by Lynne Roy (AOC Archaeology Group)

Introduction

This assessment report presents the results of preliminary analysis of four monolith samples from two sedimentary sequences (<19> and <20>) collected during a programme of archaeological trial trenching of the land adjacent to VPI Immingham, Rosper Road, South Killingholme, Immingham, North Lincolnshire (hereafter 'the Site') (NGR: 516904 416940, Figure 1).

Geological Context

The British Geological Survey indicates that the bedrock geology underlying the Site is the Burnham Chalk Formation. Comprising white, thinly bedded chalk with common flint bands, this unit was deposited during the Turonian to Santonian Age (93.9-83.6 million years ago), within the Cretaceous period (BGS 2023). The Chalk has an undulating top surface and is also characterised by a highly fractured zone resulting from glacial and periglacial processes.

Overlying the Chalk bedrock toward the northern and southern limits of the Site are Late Pleistocene (c. 33,000-12,000 years ago), deposits of boulder clay or till. The advance of the last Devensian glacial ice sheet, the maximum extent of which is thought to occur at around 18,000BP covered the wider area leaving widespread deposits of stiff brown clays with erratic inclusion. The till still is a very poorly sorted unit. It comprises gravelly sandy silty clay with boulders and contains numerous lenses of sand and gravel. The till is also likely to contain interdigitating units of glaciolacustrine clay, plus sand and gravel formed during ice advance and retreat (Burke et al., 2015).

Extending across the central and eastern parts of the Site are tidal flat deposits (BGS 2023) relating to Holocene sea level rise and its effect on deposition within the River Humber and surrounding areas (Ellis et al. 2001). These comprise generally clay, silt, and sand, with organic horizons. The tidal flat deposits formed under marshy conditions with the rising and falling tide under temperate conditions of the Holocene (up to c. 12,000 years ago). The tidal flat deposits form a linear feature entering the site from the east (BGS 2022) marking a relic river mouth, creek, or inlet, that opened into the edge of the estuary. The extent of the intrusion of these deposits from the east into the Site suggests a possible coastal inlet may have existed here during the Prehistoric period onwards.

The local soils have a mix of sand, silt and clay and are thus loamy and clayey in places. The soils are slowly permeable, seasonally wet and slightly acidic (Soilscapes 2023).

Archaeological Context

Archaeological features uncovered during the evaluation included numerous occurrences of small quantities of material indicative of early prehistoric activity. A cluster of potentially Iron Age or early Roman features were recorded in the southeastern corner of the Site. A concentration of late Roman features centred on a large rectilinear enclosure were recorded in the northwest of the Site. A ditched trackway and multiple ditches and gullies in the north of the Site suggest that land division associated with the enclosure may extend across other parts of the Site. These features appear to link directly with wider evidence for activity from these periods in the locality, much of it derived from cropmarks in the fields surrounding the Site (AOC 2023a).

A sequence of alluvial deposits was identified across the central area of Site, where the topography showed a slight decline on both the north and south sides towards a central drainage feature. This aligns with the potential coastal inlet and suggests the area was frequently inundated. Alluvial deposits were identified in Trenches 2, 4, 6, 7, 8, 10, 12, 13, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30a, 30b, 31b and 33. The stratigraphic sequence of the deposits was generally consistent across the Site with the earliest deposits consisting of mixed blue/grey clay and sandy gravels overlying the diamicton Till.

Trench 17 was located in the southeast corner of the north half of the Site at the edge of the hypothesised coastal inlet. Diamicton Till was encountered at the base of the trench and was overlain by alluvial deposits comprised of mixed blue/grey clays and orange sands.

Archaeological features within Trench 17 comprised a single ditch (17010) which was a wide, shallow feature aligned E/W, measuring 1m wide and 0.15m deep and infilled by a firm, mid purple/brown clay with blue striations which was deposited via natural silting facilitated by water. The ditch was hypothesised as a possible drainage feature or flooding defence feature at the edge of the coastal inlet protecting the area of activity on higher ground to the north. The ditch is also potentially a boundary feature marking the edge of the coastal inlet 'basin'. The ditch was sealed by a marine alluvial deposit 0.8m thick with marine shell inclusions. The marine alluvium was overlain by a mixed blue/grey alluvial deposit which in turn was sealed by a yellow/brown hardcore made ground deposit.

Trench 33 was located along the eastern boundary of the Site, close to the potential alignment of the coastal inlet. The basal deposits comprised diamicton Till which was sealed by up to 0.25m of clayey gravels. The gravels were overlain by alluvial deposits comprised of mixed, alternating layers of blue/grey clays with lenses of possible humic/organic material similar to the sequence identified to the north in Trench 17. The stratigraphic sequence was sealed by topsoil comprised of mid grey/brown silty clay up to 0.25m thick.

Archaeological features within Trench 33 included two-sub oval post holes, (33008) and (33010), the latter of which contained two worked wood fragments. Both postholes were sealed by alluvial deposits (AOC 2023a).

Research questions relating to the sequences focus on site formation processes specifically better understanding the formation processes responsible for the depositional sequences observed.

An assessment of the potential for further palaeoenvironmental analysis has also been undertaken.

Methodology

The monolith samples were cleaned prior to recording and was visually examined and described using a simplified version of the Troels-Smith system of sediment classification (Troels-Smith, 1955; Table 1), and a Munsell soil chart (Munsell, 2009), with any distinguishing features or stratigraphic layers being recorded. This is an objective method of sediment classification to identify each lithostratigraphic context. The presence of any inclusions such as macrofossils and charcoal, or wood was also noted. The descriptions were recorded on a proforma. The sample was photographed to provide a permanent record of the stratigraphy.

Table 1: Modified Troels-Smith system of sediment description.

Physical Features	
Degree of darkness	Varies from 0 in the lightest occurring shades (eg. clear (Nigror) quartz sand and lake marl), through 1 (eg. calcareous clay), 2 (e.g. fresh swamp peat), 3 (e.g. partly humified peat) to 4 in the darkest sediments (e.g. completely disintegrated peat).
Degree of stratification	Visual or structural horizontal banding or layering. Varies (Stratification) from 0 where the deposit is completely homogeneous or breaks in all directions, to 4 which consists of clear thin layers or bands.
Degree of elasticity	The sediment's ability to regain its shape after being (Elasticitas) squeezed or bent. Varies from 0 in plastic clay, sand, disintegrated peat etc. to 4 in fresh peat.
Degree of dryness	Deposits fall between 0 (clear water) and 4 (air dry material). (Siccitas) 1 indicates very wet runny sediment such as surface lake muds, 2 represents saturated sediments, the normal condition below the water table, while sicc. 3 indicates moist, unsaturated sediments.
Colour	Best determined by reference to Munsell soil colour charts. Changes in colour
Structure	The dominant structural feature (eg. fibrous, homogeneous)
Sharpness of boundary	The boundary can be diffuse (> 1cm: lim. 0), very gradual (Limes superior)(<1cm to > 2mm: lim. 1), gradual (< 2mm to >1mm: lim. 2), sharp (<1mm to > 0.5mm) or very sharp (< 0.5mm).
Humicity	The degree of humification or disintegration of organic (Humicitas) substances. It is measured by determination of the nature and amount of material passing through the fingers on squeezing; 0 (fresh peat yielding clear water), 1 (slightly decomposed peat yielding dark coloured, turbid water), 2 (decomposed peat yielding half its mass), 3 (very decomposed peat yielding three-quarters of its mass) and 4 (totally decomposed peat yielding almost all its mass).
Components	
Mosses	Sphagnum is the most common peat-former.
Woody plants	Roots of trees and shrubs together with attached stumps and branches,
Herbs	Roots of herbaceous plants together with attached stems and leaves,
Woody detritus	Fragments of woody plants >2mm.
Components	
Herb detritus	Fragments of herbaceous plants >2mm.
Fine detritus	Fragments of woody or herbaceous plants <2mm.
Charcoal	Carbonised fragments of predominantly woody plants.
Organic lake mud	Homogeneous organic lake sediment composed of remains (Limus detrituosus)

Humus	Completely disintegrated organic substances and precipitated humic acids.
Organosilicates	Siliceous skeletons or skeleton fragments of diatoms, sponges etc.
Carbonates	Calcium carbonate or marl. Similar in colour and texture to L. siliceous but
Iron oxides	Iron oxides of various types and colours.
Clay (Argilla steatodes)	Mineral particles <0.002mm
Silt (Argilla granosa)	Mineral particles 0.002-0.06mm
Sand (Grana minora)	Mineral particles 0.06 - 2mm.
Gravel (Grana majora)	Mineral particles >2mm.

The assemblage

The monolith samples were taken through two stratigraphic sequences through a total of 12 contexts. These are described briefly below in order of sample number and sediment deposition and are detailed in Appendix A.

A note of the Munsell (2009) colour assessment made in the laboratory is provided alongside the colour noted in the field. In many instances the colours observed differ, but this is likely a result of weathering and exposure of the sequence rather than any inaccuracy in field recording. For example, the mottling effects of iron oxides often become more strongly developed over time and colour changes also frequently occur when reduced deposits are first exposed to the air.

Sample <19>

(17009): Located at the base of the monolith sample and hypothesised as a natural clay Till deposit. Described in the field as a mid greyish blue, compact clay with chalk flecks. In the laboratory this was classified as a brown (7.5YR 4/2) homogenous sandy clay. Inclusions were limited to rounded to sub-angular rock fragments the majority of which were less than 2mm in diameter. Larger rounded stones up to 7.5mm were occasionally present. Rock fragments and stones were of mixed lithologies.

(17008): Described in the field as a mid orange, grey, brown clay with rare manganese and iron features. This was observed in the laboratory to be a heterogeneous brown (7.5YR 4/3) sandy clay with discontinuous patches of strong brown (7.5YR 4/6) and rare ferruginous features. Inclusions comprise occasional charcoal flecks (<2mm) and rare larger charcoal fragments up to 10mm. Rare rock fragments including chalk were also observed (17008) has a diffuse with the underlying (17009)

(17007): Found in the centre of the monolith sample this sedimentary unit was described during excavation as a mid yellow to orange sand. In the laboratory it was found to comprise a heterogeneous brown (7.5YR 4/4) sand with frequent patches of coarse orange and grey sand. Sub-angular rock fragments and rounded stones 1-10mm in diameter are frequent. The presence of sand and frequent coarse inclusions is indicative of higher energy deposition when compared to the underlying sedimentary units. It has a very gradual boundary with the underlying (17008).

(17006): Described in the field as a mid greyish blue, compact, clay with a layer of black clay across the centre. This was found to comprise a grey (7.5YR 5/1) very weakly banded clay with occasional

iron and manganese mottles as well as occasional charcoal flecks. The black band recorded in the field was not visible although it is noted that the band was located at the boundary between the two monolith tins. Inclusions larger than 1mm are rare and limited to rare, rounded stones. It has a sharp boundary with the underlying (17008).

(17005): Described in the field as a mid orange, grey, brown compact, clay, this was observed in the laboratory to be a brown (7.5YR 4/2) clay with no observed inclusions. This is a heterogenous deposit with a patchy appearance caused in part by small areas of grey sediment indicative of iron leaching and orange areas indicative of its precipitation. The frequent ferruginous features and manganese mottling area indicative of fluctuating water levels.

(17004): This deposit was located at the top of monolith sample. It was described in the field as a mid purple brownish clay with marine shells, and hypothesised as an alluvial deposit. In the laboratory this was observed to be a brown (7.5YR 4/2) clay with occasional marine shell (limpet) inclusions).

Sample <20>

(33007): Located at the base of the monolith sample and hypothesised as an alluvial deposit. Described in the field as a dark yellow and orange coarse sand with patches of pale blue sand. In the laboratory this was classified as a brown (7.5YR 4/2) clayey sand. Inclusions were noted to be rare and comprised of sub-rounded to sub-angular rock fragments of mixed lithologies Rare charcoal flecks are indicative of general background human activity. The coarse nature of the deposit is consistent with relatively high energy alluvial deposition.

(33006): Described in the field as a mid blue grey sandy clay. This was observed in the laboratory to be a dark grey (7.5YR 4/1). Inclusions are limited to occasional fine ferruginous mottles (<2mm) and rare charcoal flecks (<1mm). (33006) has a very gradual boundary with the underlying (33007)

(33005): Found in the centre of the monolith sample this sedimentary unit was described during excavation as a dark grey to black organic clay. In the laboratory it was found to comprise a weakly banded very dark grey (7.5YR 3/1) clay with occasional iron and manganese mottles. The dark colour is indicative of a high organic content however no organic inclusions were observed. The fine organic and banded nature of the deposit is consistent with a deposit that has formed in slow flowing or standing water. This unit has a gradual boundary with the underlying (33006) .

(33004): Described in the field as a pale blue clay with streaks of bright yellow clay. This was found to comprise banded grey (7.5YR 5/1) clay with common iron and manganese mottles. It is very similar in character to the underlying (33005) with the principal difference between the two being that this deposit is lighter in colour which may be indicative of leaching of iron and manganese. The fine gleyed and banded nature of the deposit is consistent with a deposit that has formed in slow flowing or standing water. This unit has a gradual boundary with the underlying (33005) .

(330033): Described in the field as a compacted purple, brown clay, this was observed in the laboratory to be a brown (7.5YR 4/2) clay with frequent ferruginous features which become less frequent upwards. This is a heterogenous deposit with a patchy appearance caused in part by small areas of grey sediment indicative of iron leaching and orange areas indicative of its precipitation. Numerous vertical root channels are present and are identifiable though iron accumulation along their length and leaching of the surrounding sediment. Modern fibrous roots represent towards the top of this deposit where it also has a moderate sub-angular blocky structure consistent soil formation.

Discussion and statement of significance

The location of the Site within an area that has been influenced by estuarine, coastal and intertidal processes has resulted in a complex depositional history which is reflected in the two stratigraphic sequences studied here. The deposits studied are of varying composition and have formed under rapidly changing conditions. The earliest deposit within the sampled sequence (17009) is a diamicton Till deposit and represents deposition during ice age conditions in the Pleistocene.

Average rates of Relative Sea Level (RSL) rise of greater than 7 mm year were experienced in the southern North Sea region during the early Holocene, c. 11700–8200 cal years BP (Waller and Kirby, 2021) and this resulted in the landward encroachment of coasts and dominance of tidal sedimentation; a process which is reflected in the sedimentary sequence recorded within the monolith samples. The earliest deposit of likely Holocene date within Sample <19> (17008) are sandy clays deposited under relatively low energy conditions possibly alluvially derived but given the location of the Site more likely to be estuarine in nature. Estuarine clay deposits such as (17008) typically post-date the last glaciation and thus the deposit is likely of Holocene date. (17008) similarly likely represents Holocene low energy alluvial deposition. The presence of micro charcoal throughout this deposit is indicative of human activity in the wider area.

At the mid-late Holocene boundary, at 4200 years BP (Walker et al., 2012), the mean RSL rate continued to slow and the role of more regional and local mechanisms such as changes in tidal range, sediment supply and human activity in the late-Holocene became more dominant. In this period minerogenic sedimentation became frequent (Waller and Kirby, 2021). Higher energy deposition is indicated by the much coarser (17007) (33007) and (33006) which may reflect a period of intertidal sedimentation. These deposits are interpreted as Holocene estuarine alluvium and tidal flat deposits.

The clays of (17006) and (33005) likely represent by a period of relative stability and these clay deposits are perhaps of greatest interest in terms of the deposit sequence and may relate to deposition within a saltmarsh environment with a high water level and thus likely represent the best potential for the preservation of palaeoenvironmental remains. The slower rates of RSL rise experienced from the early-mid Holocene boundary, at 8200 years BP (Walker et al., 2012), provided optimum conditions for the establishment of coastal wetlands.

Deforestation in the late-Holocene altered the sediment mobilisation within the Humber catchment (Beckett, 1981; Buckland and Sadler, 1985) increasing the delivery of sediment supplied to coastal lowlands. The Humber has also experienced rapid changes during the last several centuries due to the land reclamation and management practices (Waller and Kirby, 2021), resulting in a significant reduction in the area of intertidal and wetland environments and corresponding changes in tidal regime and resilience (Metcalf et al., 2000). The uppermost sedimentary unit (17004) recorded in Sample <19> contained marine shell and suggests a continued dominance of estuarine infilling into the late-Holocene. This upper unit is also likely influenced by the anthropogenic changes in the local sediment dynamics and land practices, such as reclamation, that has significantly altered the sedimentary regime and estuary morphology over the last several centuries (Sheppard, 1966). There is uncertainty over the timings for wetland reclamation and embanking in the Humber, with evidence of the practice along the estuary from at least the Medieval period (Sheppard, 1966), and the land drainage practices and shift to arable agriculture resulting in the desiccation of the surrounding wetland areas (Metcalf et al., 2000).

Recommended Further Work

The deposits represented in the monolith samples from the Site attest to a dynamic depositional environment representative of landscape in flux throughout the Holocene.

An investigation into diatom assemblages within the sequence of the Humber Estuary (Metcalf et al., 2000) provides a broad framework for comparison and interpretations. Diatom taxa have been grouped through this study to show association between certain assemblages and the sedimentary environment. One of these specifies an assemblage representative of an intertidal creek environment in this catchment and may be comparable to the sequence of deposition represented within Sample <19>. Accordingly, it is advised that a samples from each context within the stratigraphic sequence represented either by Sample <19> or one of the borehole samples (see AOC 2023b) is subject to diatom analysis to ascertain if a comparable assemblage can better inform us with regards to depositional environments within the Site. It should be noted that the hypothesised intertidal inundation represented within Sample <19> appears to post-date the main period of occupation at this Site.

Additionally organic rich clay deposits identified in the centre of each sequence (17006) and (33005) have the potential to preserve palaeoenvironment proxies which could provide further detail regarding the wider environment at the time of deposition. While no charcoal or macrofossil inclusions suitable for radiocarbon dating within either of these deposits were observed, the deposits themselves may be sufficiently organic to be dateable and could help to refine the dating sequence of alluvial deposition in the Holocene. It is considered that some limited further analysis of the clay deposits represented by (17006) and (33005) in combination with other geoarchaeological analyses undertaken following borehole investigations (AOC 2023b) would assist with better understanding the past environment during the Holocene and most likely contemporaneous with the occupation of the Site prior to subsequent periods of flooding.

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*Appendix A – Summary of sediment characteristics Queens Road Monolith Sample***Note: Deposits are described from the base up in order of sediment deposition**

Context	Depth (measured from base)	Darkness	Stratification	Elasticity	Dryness	Structure	Boundary	Description
17009	0-6cm	2	1	1	3	Homogenous	-	7.5YR 4/2 Brown. Sandy Clay. Moderately stoney (sub rounded to rounded) occasional rock fragments of mixed lithologies. Rare ferruginous mottles. Likely boulder clay (diamtic till). No anthropic indicators observed. Low paleoenvironmental potential.
17008	6-25cm	2	1	1	3	Heterogeneous	Diffuse	7.5YR 4/2 Brown with patches of 7.5YR 4/6 Strong Brown and 2.5Y Grey. Sandy Clay Relatively dry. Low Occasional charcoal flecks typically <1mm and insufficient size for dating. Rare charcoal fragments up to 0.5cm. Rare chalk inclusions Low paleoenvironmental potential.
17007	25-37cm	3	1	1	3	Heterogeneous Mottled	Very Gradual	7.5YR 4/4 Brown with patches of 7.5YR 4/6 Strong Brown and 2.5Y Grey. Relatively dry. Clayey Sand. Coarser than underlying. Commons stones and rock fragments rounded to sub angular 1mm-1cm diameter. Rare chalk inclusions. Relatively high energy deposition. Low paleoenvironmental potential.
17006	37-54cm	3	0	0	3	Heterogeneous Mottled	Sharp	7.5YR 5/1 Grey with 5YR 4/6 yellowish red mottles. Slightly banded. Silty Clay. Rare stones. Band of black material not observed but rare charcoal flecks are present. Moderate paleoenvironmental potential.

Context	Depth (measured from base)	Darkness	Stratification	Elasticity	Dryness	Structure	Boundary	Description
17005	54-82cm	2	1	1	3	Heterogeneous Mottled	Very Gradual	7.5YR 4/2 Brown with 5YR 3/4 dark reddish brown ferruginous mottles. Silty Clay. Low paleoenvironmental potential.
17004	82-100cm	2	1	1	3	Heterogeneous Mottled	Diffuse	7.5YR 4/2 Brown with 5YR 3/4 dark reddish brown ferruginous mottles. Silty Clay. Marine shells (limpet) occasionally present. Low paleoenvironmental potential.

Context	Depth (measured from base)	Darkness	Stratification	Elasticity	Dryness	Structure	Boundary	Description
33007	0-21cm	2/3	1	2	3	Homogenous	-	7.5YR 4/2 Brown. Clayey Sand. Rare rock fragments of mixed lithologies. Likely boulder clay (diamtic till). No anthropic indicators observed. Low paleoenvironmental potential.
33006	21-31cm	3	1	2	3	Heterogeneous/ patchy	Very Gradual	7.5YR 4/1 Dark Grey with patches of 7.5YR 4/6 Strong Brown. Silty Sand. Rare charcoal flecks typically <1mm and insufficient size for dating. Low paleoenvironmental potential.
33005	31-40cm	3/4	2	1	2	Heterogeneous Mottled	Gradual	7.5YR 3/1 Very Dark Grey Silty Clay. Rare ferruginous mottles. Low energy deposition. Moderate paleoenvironmental potential.
33004	40-43cm	3/4	2	1	2	Heterogeneous Mottled	Gradual	7.5YR 5/1 Grey with 5YR 4/6 yellowish red mottles. Silty Clay. Rare ferruginous mottles. Low energy deposition. Moderate paleoenvironmental. potential.

Context	Depth (measured from base)	Darkness	Stratification	Elasticity	Dryness	Structure	Boundary	Description
33003	43-89cm	3	2	1	3	Heterogeneous Mottles - vertical	Diffuse	7.5YR 4/2 Brown with grey vertical fissures along root channels. Silty Clay. Low paleoenvironmental potential.
33003	89-100cm	3	2	1	3	Heterogeneous Mottled	Diffuse	7.5YR 4/2 Brown with grey mottles. Frequent modern roots. Moderately developed subangular blocky structure. Low paleoenvironmental potential.

OASIS Form

Summary for aocarcha1-515526

OASIS ID (UID)	aocarcha1-515526
Project Name	Evaluation at Rosper Road, South Killingholme, United Kingdom
Sitename	Rosper Road, South Killingholme, United Kingdom
Activity type	Evaluation
Project Identifier(s)	53122
Planning Id	
Reason For Investigation	Planning: Pre application
Organisation Responsible for work	AOC Archaeology Group
Project Dates	23-Jan-2023 - 10-Mar-2023
Location	Rosper Road, South Killingholme, United Kingdom NGR : TA 16907 16867 LL : 53.635275, -0.233374 12 Fig : 516907,416867
Administrative Areas	Country : England County : Lincolnshire District : North Lincolnshire Parish : South Killingholme
Project Methodology	AOC Archaeology Group was commissioned by AECOM, on behalf of VPI Immingham LLP, to undertake an archaeological evaluation by trial trenching at the site of a proposed carbon capture plant at VPI Immingham, Rosper Road, North Lincolnshire, as part of the Humber Zero scheme. The evaluation formed part of a program of works at the site in advance of the development, following a geophysical survey and in conjunction with a Geoarchaeological Borehole survey. Thirty-two trenches were machine excavated at the site.
Project Results	<p>Three areas of occupational activity were encountered which were concentrated in the northwest, northeast and southeast corners of the Site, centred on the higher ground. The central area of site was characterised by a flooding deposit sequence associated with a possible coastal inlet which was aligned west to east across the site.</p> <p>The northwestern corner of site featured a number of ditches containing some Romano-British pottery and animal bone. There were also a small number of pits beside a possible palaeochannel; these were potentially prehistoric in date, indicated by the recovery of late Mesolithic/ early Neolithic lithic fragments. The northeastern corner of Site featured an alignment of postholes, one of which contained a surviving timber post, and several small ditches which were possible small boundary or enclosure ditches. The southeastern corner featured dense Iron Age/ Romano British activity including a large multiphase curvilinear ditch within a possible enclosure, as well as small ditches associated with field systems. The finds assemblage was small, with deposition of finds largely concentrated in the southeastern corner, and many features remained undated. The finds assemblage included late Mesolithic/ early Neolithic scrapers and blades as well as industrial waste in the form of slag.</p> <p>The location of archaeological activity within the Site indicates that this activity probably represents the continuation of settlement activity and features identified in adjacent areas. This was identified during archaeological works completed in the early 2000s as part of the construction of VPI Immingham and improvement works on Rosper Road.</p>

Keywords	Ditch - IRON AGE - FISH Thesaurus of Monument Types Post Hole - IRON AGE - FISH Thesaurus of Monument Types Pot - IRON AGE - FISH Archaeological Objects Thesaurus Animal Remains - IRON AGE - FISH Archaeological Objects Thesaurus
Funder	
HER	North Lincolnshire HER - unRev - STANDARD
Person Responsible for work	
HER Identifiers	
Archives	Physical Archive, Documentary Archive - to be deposited with North Lincolnshire Museum Service; Digital Archive - to be deposited with Archaeology Data Service Archive;



AOC Archaeology Group, The Raylor Centre, James Street, York, YO10 3DW
tel: 01904 413 404 | e-mail: york@aocarchaeology.com

www.aocarchaeology.com