

LAND OFF MEADOWLANDS AVENUE, BARROW-IN-FURNESS, CUMBRIA

Archaeological Evaluation



Client: Oakmere Homes

Planning Application No.:
B07/2016/0116

NGR: 321820 470796

© Greenlane Archaeology Ltd

September 2016



Greenlane Archaeology Ltd,
Lower Brook Street,
Ulverston, Cumbria, LA12 7EE

Tel: 01229 588 500
Email: info@greenlancearchaeology.co.uk
Web: www.greenlancearchaeology.co.uk

Contents

Illustrations and Tables	2
List of Figures	2
List of Plates	2
Non-Technical Summary	4
Acknowledgements	4
1. Introduction	5
1.1 Circumstances of the Project	5
1.2 Location, Geology, and Topography	5
2. Methodology	7
2.1 Desk-Based Assessment	7
2.2 Archaeological Evaluation	7
2.3 Finds	8
2.4 Environmental Samples	8
2.5 Archive	8
3. Desk-Based Assessment	9
3.1 Site History	9
3.2 Previous Archaeological Work	10
3.3 Conclusion	13
4. Fieldwork Results	14
4.1 Trench 1	14
4.2 Trench 2	14
4.3 Trench 3	15
4.4 Trench 4	19
4.5 Trench 5	25
4.6 Trench 6	26
4.7 Trench 7	28
4.8 Trench 8	29
4.9 Finds	35
4.10 Environmental Samples	35
5. Discussion	38
5.1 Results	38
5.2 Conclusion	38
6. Bibliography	39
6.1 Primary and Cartographic Sources	39
6.2 Secondary Sources	39
Appendix 1: Project Design	41
Appendix 2: Summary Context List	46

Appendix 3: Summary Finds List	49
Appendix 4: Environmental Sample Data	50
Appendix 5: Environmental Assessment Report	52

Illustrations and Tables

List of Figures

Figure 1: Site location	6
Figure 2: Trench locations overlaid on the results of the geophysical survey	11
Figure 3: Plan of Trenches 1 to 3	12
Figure 4: Detailed plan and section of ditch 307	18
Figure 5: Plan of Trench 4	20
Figure 6: Detailed plan and sections of features 404 and 407	21
Figure 7: Detailed plan and section of ditch 409 and feature 415	22
Figure 8: Plan of Trenches 5 and 6	31
Figure 9: Plan of Trenches 7 and 8	32
Figure 10: Detailed plan of pit 503, pit 603, and feature 605	33
Figure 11: Detailed plan of feature 703 and sections of pit 503 and features 605 and 703	34

List of Plates

Plate 1: Lidar view of the site showing the possible circular feature in the south-west corner (Houseprices.io 2016)	5
Plate 2 (left): Trench 1 following excavation, viewed from the south-west	14
Plate 3 (right): Trench 1 following excavation, viewed from the north-east	14
Plate 4 (left): Trench 2 following excavation, viewed from the south-west	15
Plate 5 (right): Trench 2 following excavation, viewed from the north-east	15
Plate 6 (left): Trench 3 after initial excavation, viewed from the south	16
Plate 7 (right): Trench 3 after initial cleaning, viewed from the north and showing deposit 309	16
Plate 8 (left): Ditch 307 prior to excavation, viewed from the south-east	16
Plate 9 (right): Section through ditch 307, viewed from the north-west	16
Plate 10: Sondage through deposit 309 showing natural 308 below, viewed from the south-west	17
Plate 11 (left): Trench 4 following initial excavation, viewed from the south-west	23
Plate 12 (right): Trench 4 following initial excavation and showing the land drain, viewed from the north-east	23
Plate 13 (left): Pit 404 before excavation, viewed from the east	23
Plate 14 (right): Pit 404 section, viewed from the east	23
Plate 15 (left): Pit 407 before excavation, viewed from the east	24
Plate 16 (right): Pit 407 section, viewed from the north-east	24
Plate 17 (left): Ditch 409 before excavation, viewed from the south-west	24
Plate 18 (right): Ditch 409 section, viewed from the east	24
Plate 19 (left): Feature 415 showing plan, viewed from the east	25
Plate 20 (right): Feature 415 section, viewed from the east	25

Plate 21 (left): Trench 5 following initial excavation, viewed from the east	26
Plate 22 (right): Trench 5 following initial excavation, viewed from the west	26
Plate 23 (left): Pit 503 showing plan, viewed from the north	26
Plate 24 (right): Pit 503 section, viewed from the north.....	26
Plate 25 (left): Trench 6 following initial excavation, viewed from the north-east.....	27
Plate 26 (right): Trench 6 following initial excavation, viewed from the south-west	27
Plate 27 (left): Pit 603 showing plan, viewed from the south-east.....	27
Plate 28 (right): Pit 603 post-excavation, viewed from the south-east	27
Plate 29 (left): Feature 605 showing plan, viewed from the north-west	28
Plate 30 (right): Feature 605 section, viewed from the north-west.....	28
Plate 31 (left): Trench 7 following initial excavation, viewed from the south-east	29
Plate 32 (right): Trench 7 following initial excavation, viewed from the north-west.....	29
Plate 33 (left): Feature 703 showing plan, viewed from the south	29
Plate 34 (right): Feature 703 post-excavation, viewed from the south-west	29
Plate 35 (left): Trench 8 following initial excavation, viewed from the north.....	30
Plate 36 (right): Trench 8 following initial excavation, viewed from the south.....	30
Plate 37: Trench 8, showing the drains at the north end, viewed from the north-west	30
Plate 38 (left): The cross-marked object from Sample 10 (context 502).....	36
Plate 39 (right): The cross-marked object from Sample 10 (context 502).....	36
Plate 40 (left): The possible whetstone from Sample 10 (context 502).....	36
Plate 41 (right): The possible whetstone from Sample 10 (context 502).....	36

Non-Technical Summary

Prior to the submission of a planning application for the construction of 44 dwellings on land off Meadowlands Avenue, Barrow-in-Furness, Cumbria, Greenlane Archaeology was commissioned to carry out a geophysical survey of the site, which was completed in May 2016. The geophysical survey showed features of possible archaeological interest and it was decided that these should be examined through the excavation of targeted evaluation trenches in order to ascertain their origin and function. The evaluation was undertaken by Greenlane Archaeology between the 18th and 22nd July 2016.

The site is situated on the eastern edge of modern Barrow-in-Furness in an area some distance from the centre of the town. It is, however, slightly less than 1km south of Furness Abbey, which was established in the 12th century, but the area probably saw relatively little development until the post-medieval period, following the Dissolution of the monasteries and after the coming of the railway.

Across the site the same sequence of deposits was encountered in each trench: topsoil overlay thin subsoil on top of the natural geology. However, in several of the trenches features of possible archaeological interest were encountered, some of which matched the results of the geophysical survey, although this had in other areas picked up later features such as field drains and copper earthing wires. In Trenches 3 and 4 a group of ditches and pits were encountered, although none of these could be readily dated, except by their relationship to later field drains of different types, as they contained very few finds, none of which were diagnostic. Elsewhere isolated amorphous pits and similar features were uncovered, none of which could be dated despite the presence of apparent artefacts recovered from a sample taken from one. Nevertheless, it is clear that there is some archaeological potential in parts of the site and only through further investigative work and scientific dating could this be more fully understood.

Acknowledgements

Greenlane Archaeology would like to thank Oakmere Homes for commissioning the project. Additional thanks are due to the staff of Cumbria Archive Centre in Barrow-in-Furness (CAC(B)) for help with accessing their archives, and Mark Brennand, Lead Officer Historic Environment and Commons, and Jeremy Parsons, Historic Environment Officer (Development Control), both at Cumbria Country Council (CCC), for their useful input regarding the project. Special thanks are due to the landowner, Russell Beck and family for their assistance on site and for providing and driving the plant.

The project was carried out by Dan Elsworth, Tom Mace, and Karen Mason. The report was written by Dan Elsworth and Tom Mace and the illustrations were produced by Tom Mace. The finds were processed by Dan Elsworth and assessed by Tom Mace (animal bone) and Jo Dawson (post-medieval finds) at Greenlane Archaeology, and Christine Howard-Davis at Oxford Archaeology North (clay and stone objects from **502**, with additional comments from Fiona McGibbon). The samples were processed and assessed by Dan Elsworth, with the exception of the flint, which was assessed by Angela Walker and Tim Holden at Headland Archaeology. The project was managed by Dan Elsworth, and the report was edited by Jo Dawson.

1. Introduction

1.1 Circumstances of the Project

1.1.1 Prior to the submission of a planning application for the construction of 44 dwellings on land off Meadowlands Avenue, Barrow-in-Furness, Cumbria (centred on NGR 321820 470796) Greenlane Archaeology was commissioned by the client to carry out an archaeological geophysical survey, which was completed by sub-contractors working on behalf of Greenlane Archaeology (Phase Site Investigations 2016). This revealed a number of anomalies, at least some of which are of potential archaeological interest, although it is not apparent from these results what they might be (*ibid*). In addition, a shallow circular earthwork of unknown purpose is visible on Lidar data in the south-west corner of the site (Houseprices.io 2016; Plate 1). Again, the purpose of this is unknown but it is possible that it is connected to the area being named 'Beacon Hill', although it is not clear when this originated.

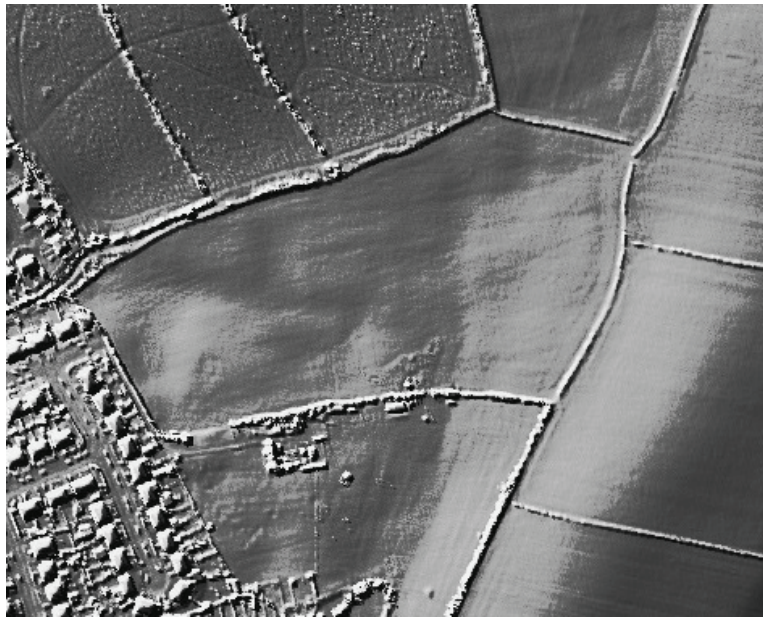


Plate 1: Lidar view of the site showing the possible circular feature in the south-west corner (Houseprices.io 2016)

1.1.2 Following submission of the planning application for the construction of 44 dwellings (ref. B07/2016/0116), a condition was placed on the decision notice by Barrow Borough Council, following advice from the Historic Environment Officer (HEO) at Cumbria County Council (CCC) requiring that the site be subject to an archaeological evaluation. This was to comprise the excavation of trial trenches totalling 350m², in order to assess whether any below-ground remains of archaeological interest are present, prior to the construction of the proposed new buildings on the site. In response to this a project design was produced by Greenlane Archaeology and after its acceptance by this HEO at CCC it was commissioned by Oakmere Homes (hereafter 'the client') to carry out the work, which was undertaken in July 2016.

1.2 Location, Geology, and Topography

1.2.1 The site is located towards the south-west end of the Furness Peninsula between the towns of Dalton-in-Furness and Barrow-in-Furness in southern Cumbria, approximately 1km south of Furness Abbey, at between 20m to 30m above sea level (Ordnance Survey 2011; Figure 1). This area, on the north side of Morecambe Bay, is on a sandy coastal plain, consisting of gently undulating pastureland, before the ground rises as it meets the Furness Fells to the north (Countryside Commission 1998, 65).

1.2.2 The solid geology of the area consists of Sherwood sandstone (Moseley 1978, plate 1). This is overlain by thick deposits of glacially derived boulder clay (Countryside Character 1998, 65).

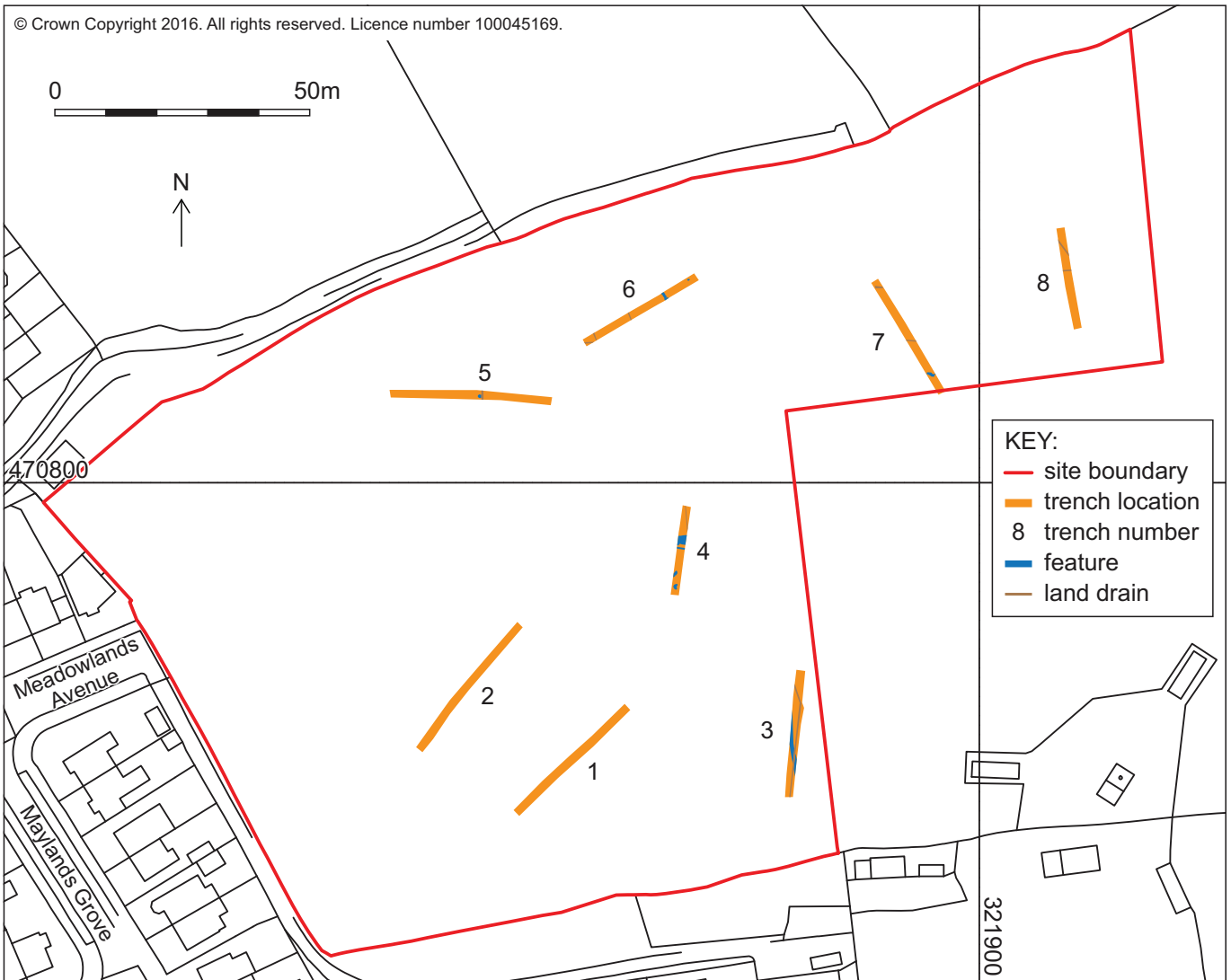
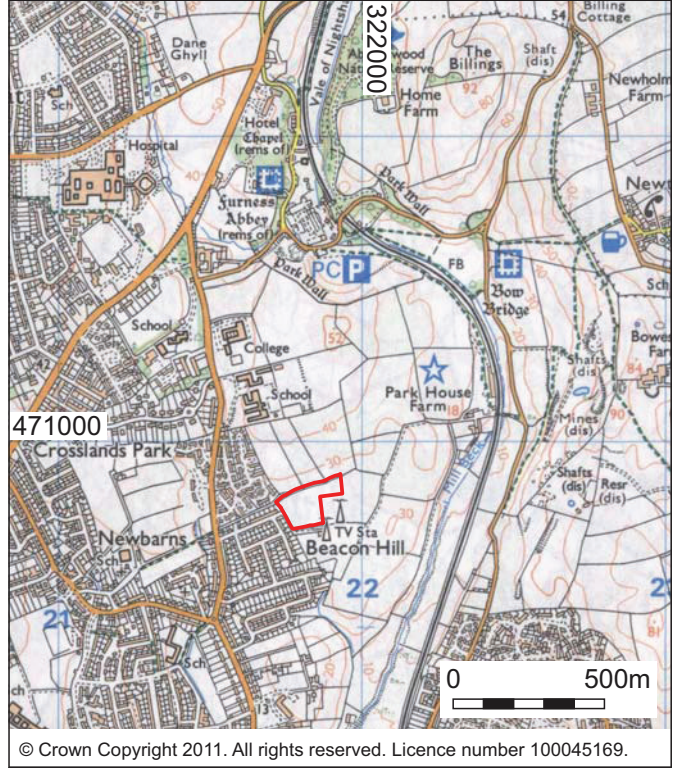
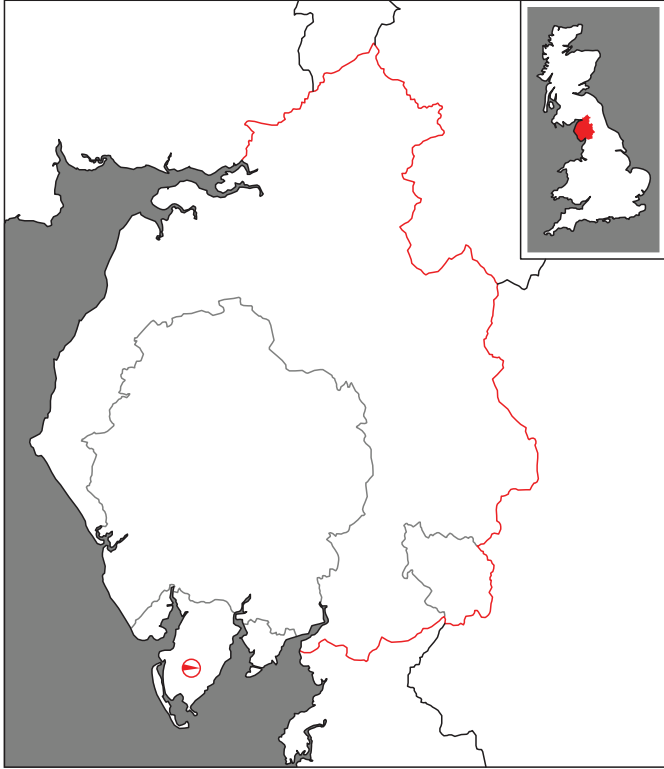


Figure 1: Site location

Client: Oakmere Homes

2. Methodology

2.1 Desk-Based Assessment

2.1.1 A desk-based assessment was carried out in accordance with the standards and guidance of the Chartered Institute for Archaeologists (CIfA 2014a). This principally comprised an examination of early maps of the site and published secondary sources. A number of sources of information were used during the desk-based assessment:

- **Cumbria Archive Centre, Barrow-in-Furness (CAC(B)):** primary sources, in particular early maps of the site, were consulted here, as well as secondary sources such as local histories;
- **Greenlane Archaeology library:** additional original maps held by Greenlane Archaeology and secondary sources, used to provide information for the site background, were also examined.

2.2 Archaeological Evaluation

2.2.1 The evaluation was carried out according to the standards and guidance of the Chartered Institute for Archaeologists (CIfA 2014b) and comprised eight evaluation trenches, which targeted features of possible archaeological interest identified by geophysical survey (Phase Site Investigations 2016; Figure 2). Three of the trenches were c25m long (Trenches 3, 6, and 7), three were c30m long (Trenches 1, 2, and 5) and two were c20m long (Trenches 4 and 8). A plan of the proposed trench locations, based on the geophysical survey results, was submitted to and approved by Jeremy Parsons, Historic Environment Officer at Cumbria County Council. Each trench was c1.6m-1.8m wide. The combined area evaluated totalled approximately 350m² (Figure 8). Excavation was discontinued once the natural geology was reached, which was consistently at a depth of c0.2-0.4m below the current ground surface at a height of between 22.4m and 25.2m above sea level.

2.2.2 The topsoil and subsoil deposits were removed using a mechanical excavator with a toothless bucket. Deposits below this were subsequently cleaned and further investigated by hand. The location of each trench was recorded relative to nearby property boundaries and other structures that were evident on the site plans and Ordnance Survey mapping utilising a total station. All finds were collected from all deposits, as far as was practical, and the trench and spoil were scanned periodically with a metal detector but no metal finds were found. The following recording techniques were used during the evaluation:

- **Written record:** descriptive records of all deposits and features (see *Appendix 2*) were made using Greenlane Archaeology *pro forma* record sheets, specifically trench record sheets and individual context record sheets where necessary;
- **Photographs:** photographs in both 35mm colour print and colour digital format were taken of all archaeological features uncovered during the evaluation, as well as general views of the site, the surrounding landscape, and working shots. A selection of the colour digital photographs is included in this report and the remainder are included in the archive. A written record of all of the photographs was also made using Greenlane Archaeology *pro forma* record sheets (Greenlane Archaeology 2007);
- **Instrument survey:** the trenches were surveyed using a Leica reflectorless total station coupled to a portable computer running AutoCAD 2006 LT and TheoLT, which captures the survey data in AutoCAD in real-time at a scale of 1:1. This enabled the location of each trench to be positioned and allowed levels above Ordnance Datum to be provided through reference to a nearby spot height;
- **Drawings:** plans and sections of features were drawn at a scale of 1:10 or 1:20 as appropriate, trench plans were drawn at a scale of 1:100, when it was considered necessary, and additional sketches were made on trench record sheets.

2.3 Finds

2.3.1 **Collection:** all of the finds were recovered by hand and stored in self-seal bags with white write-on panels on site before being removed for processing and assessment.

2.3.2 **Processing:** artefacts were washed (or dried and dry brushed in the case of glass and metal), dried in a drying oven or naturally air-dried, and packaged appropriately in self-seal bags with white write-on panels.

2.3.3 **Assessment and recording:** the finds were assessed through visual examination, identified where possible by comparison with published examples, and a list of them was compiled (see *Appendix 3*).

2.4 Environmental Samples

2.4.1 **Strategy:** a total of 11 samples were taken from 11 different contexts from eight different features. From each of these a single bucket of up to 10 litres was processed. A summary of all of the samples taken is presented in *Appendix 4*.

2.4.2 **Processing:** the samples were wet sieved by hand; the light fragments were floated off and collected in 250µm and 500µm sieves with the coarse component collected on a 1mm mesh. The flots and retents were then dried in a drying oven. The flots were sent for specialist assessment (see *Appendices 4 and 5*). The retent was also examined by eye and all ecofacts and artefacts extracted.

2.4.3 **Assessment and recording:** the ecofacts within the flots were assessed using a stereomicroscope at magnifications of x10 and up to x100 where necessary to aid identification. Identifications were confirmed using modern reference material and seed atlases including Cappers *et al* (2006), Stace (1997), and Zohary *et al* (2012). The content of the retent was recorded on *pro forma* record sheets. The results are discussed in *Section 5.4* and a full catalogue is produced in *Appendix 4 and 5*.

2.5 Archive

2.5.1 A comprehensive archive of the project has been produced in accordance with the project design, and current CfA and English Heritage guidelines (Brown 2007; English Heritage 1991). The paper and digital archive and a copy of this report will be deposited in the Cumbria Archive Centre in Barrow-in-Furness after the completion of the project. On completion of the project a copy of this report will be provided for the client and a copy will be retained by Greenlane Archaeology. In addition a digital copy will be provided to the Historic Environment Record at Cumbria County Council, and a record of the project will be made on the OASIS scheme.

3. Desk-Based Assessment

3.1 Site History

3.1.1 **Prehistoric Period (c11,000 BC – 1st century AD):** while there is some limited evidence for activity in the county in the period immediately following the last Ice Age, this is typically found in the southernmost part on the north side of Morecambe Bay. Excavations of a small number of cave sites have found the remains of animal species common at the time but now extinct in this country and artefacts of Late Upper Palaeolithic type (Young 2002). Again, the county was also clearly inhabited during the following period, the Mesolithic (c8,000 – 4,000 BC), as large numbers of artefacts of this date have been discovered during field walking and eroding from sand dunes along the coast, but these are typically concentrated in the west coast area and on the uplands around the Eden Valley (Cherry and Cherry 2002). Slightly closer to the site, however, large number of finds of this date and later have been found during field walking (see Evans 2008). These discoveries demonstrate that further remains of similar date are likely to exist in the local area, although in general such finds seem typically to be found in river valleys, lakesides, and coastal areas (Middleton *et al* 1995, 202; Hodgkinson *et al* 2000, 151-152).

3.1.2 In the following period, the Neolithic (c4,000 – 2,500 BC), large scale monuments such as burial mounds and stone circles begin to appear in the region and one of the most recognisable tool types of this period, the polished stone axe, is found in large numbers across the county, having been manufactured at Langdale to the north of the site (Hodgson and Brennand 2006, 45). During the Bronze Age (c2,500 – 600 BC) monuments, particularly those thought to be ceremonial in nature, become more common still, and it is likely that settlement sites thought to belong to the Iron Age have their origins in this period. It is very likely that the enclosure recorded at Stone Close, near Stainton, has its origins in the Neolithic or Bronze Age (Dobson 1912). Similar sites are also recorded in the local area, including an enclosure on Hoad hill near Ulverston (Elsworth 2005), and another at Skelmore Heads near Urswick (Powell 1963).

3.1.3 Sites that can be specifically dated to the Iron Age (c600 BC – 1st century AD) are very rare; the enclosures at Ulverston and Urswick may represent hillforts, a typical site of this period, but they have not been dated (Elsworth 2014). Burials that belong to the Iron Age are extremely rare in the county as a whole, a radiocarbon dated example at Levens being perhaps the only certain example (OA North 2004). There is, in general, likely to have been a considerable overlap between the end of the Iron Age and the beginning of the Romano-British period; it is evident that in this part of the country, initially at least, the Roman invasion had a minimal impact on the native population in rural areas (Philpott 2006, 73-74).

3.1.4 **Romano-British to Early Medieval Period: (1st century AD – 11th century AD):** late 18th and 19th century antiquarians considered a Roman military presence in the Furness area beyond question, but by the 20th century there was a complete reversal of opinion (summarised in Elsworth 2007, 31-37). Re-examination of the evidence however suggests a strong Roman influence or “background” presence in the peninsula during the Roman period, which doubtless would have been attractive for its rich iron reserves (Shotton 1995, 74; Elsworth 2007, 37, 41-43). There is little known Roman activity in the immediate area around the site, with the exception of stray finds, however. The early medieval period is not well represented in the area in terms of physical remains, which is a common situation throughout the county. The local area as a whole has a complex mixture of place-names of Celtic British, Anglian (Old English), and Norse type suggesting that the early medieval period was a time of dynamic and rapid population change (Edmonds 2013). However, physical evidence for settlement of this date is very limited. Local place-names such as Holbeck and Yarlside denote a Norse influence but further afield names such as Roose and Leece suggest the late survival of British people (Ekwall 1922; Coates and Breeze 2000, 317) while across the county the presence of place-names containing the element *eccles* is demonstrative of a surviving post-Roman church structure in some form (Elsworth 2011). Of potential interest in this regard is the lost settlement of Waltoncote, recorded from the early 16th century (Ekwall 1922, 203). This contains the Anglian element ‘wala’ which was used to denote native Britons (O’Sullivan

1980, 89). Waltoncote is associated in the documentary record with Parkhouse (Ekwall 1922, 203), which is a short distance to the east, and so was perhaps situated somewhere nearby.

3.1.5 Medieval Period (11th century AD – 16th century AD): the site is approximately 1km south of Furness Abbey, which is a Scheduled Monument (No. 13572). The following background to the Abbey is largely taken from the Victoria History of the County of Lancashire (Farrer and Brownbill 1914). The Abbey was founded by Stephen, Count of Boulogne and Mortain, later king of England. He gave a site at Tulketh, Preston in 1124, before transferring the monks of the Savignac order to Furness in 1127. By 1147 this order had been incorporated into the Cistercian tradition making Furness Abbey the first Cistercian house in England, and further expansion of the site began. Its increasing wealth led to greater political autonomy and independence, which attracted the attention of Scottish invaders; in the early 14th century it is recorded that the Abbot paid a ransom to Robert the Bruce in order to avoid further attack (NMR entry 13572). The remains of the Savignac monastery are still present above and below ground as well as the more extensive Cistercian monastery. The monastery grew in prosperity, and at the time of its dissolution in 1537 it was the second richest Cistercian monastery in England. The Abbey had acquired extensive property in the Lake District, Yorkshire, and Lincolnshire and the deep water port at Piel allowed access and trade with the Isle of Man and Ireland. Sheep farming played an important part in the Abbey's growing wealth, due to the price of wool, as did the continued exploitation of the Furness iron ore deposits, which paved the way for the region's post-medieval development. The site is in close proximity to Parkhouse Farm, a site recorded from the early 16th century as one of the properties of Furness Abbey (West 1805, 133-136 and 219); its name would seem to indicate that there was a park nearby. Immediately to the west, however, is the village of Newbarns, now part of the larger conurbation of Barrow-in-Furness. Newbarns is first recorded as a property of Furness Abbey, but only in 1535, a few years before the Dissolution, and was probably created shortly after 1516 to house twelve of the tenants of the village of Sellargarth, which had been destroyed by the abbot of Furness, Alexander Banks, in order to create a new deer park (Kelly 1946, 20), although whether this is the one referred to by Parkhouse is not clear. The tenants held an area of approximately 420 acres, which ran up to the western boundary of the site (*ibid*).

3.1.6 Post-medieval Period (16th century AD – present): following the Dissolution the monastery was taken under the control of the crown and the land was subsequently granted to the king's minister Thomas Cromwell (Dickinson 1987, 8). By the beginning of the 17th century it had passed to the Preston family, members of whom were occupying nearby Parkhouse (Greenlane Archaeology 2006) and from whom these estates were passed to the Cavendish family. The particular field in which the evaluation was carried out was clearly part of their estates, as it is depicted on a plan of 1806 and named 'Moor Garth', while the land to the west remained part of the customary lands for Newbarns (Chatsworth House/4130 1806). During the later 19th century the town of Barrow-in-Furness grew until it effectively surrounded the original hamlet from which it developed and also a number of outlying hamlets, including Newbarns, a short distance to the south-west of the site. While Barrow became known for its industry and rapid growth (Marshall 1981) the outer edges remained largely rural, although the arrival of the railway had a considerable impact on the immediate locality around the site and there was a substantial iron mine to the east of Parkhouse Farm in the late 19th century (Greenlane Archaeology 2006).

3.2 Previous Archaeological Work

3.2.1 As part of the current development a geophysical survey was carried out (Phase Site Investigations 2016; Figure 2). This revealed a number of anomalies many of which probably related to modern material/objects, possible former agricultural activity, and geological/pedological variations. However, there were several weak, diffuse linear/curvi-linear trends of unknown origin, which could be of archaeological interest also identified, although the exact cause of the responses could not be determined without further investigation. There were also several areas where very strong responses or magnetic disturbance from modern features dominated the surrounding data and it was noted that these could mask anomalies from other sub-surface features in the area.



KEY:	
	trench location
	site boundary
	surface / near-surface ferrous or fired material
	interference caused by modern magnetic feature
	trench number
	possible remnants of an agricultural regime
	possible sub-surface feature
	possible geological / pedological variation but could also be deeper buried ferrous / fired material or infilled isolated feature

Figure 2: Trench locations overlaid on the results of the geophysical survey

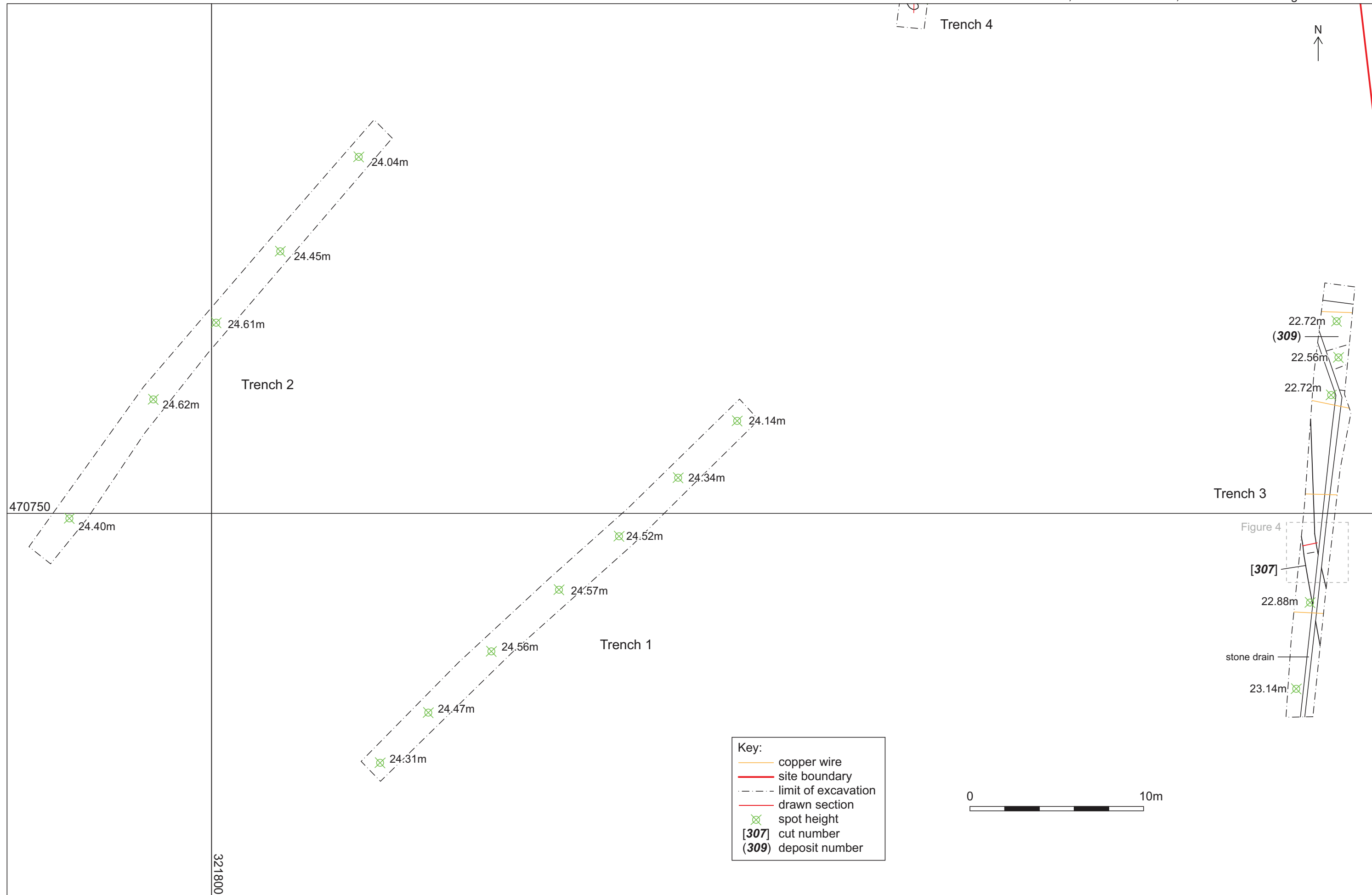


Figure 3: Plan of Trenches 1 to 3

3.3 Conclusion

3.3.1 The history of the local landscape is arguably dominated by the site's proximity to Furness Abbey, but the wider landscape is rich in remains from early in the prehistoric period onwards. However, there is only limited, if tantalising, evidence for activity in the Roman and early medieval periods. The area remained primarily rural in character until late into the post-medieval period, although industry, particularly that associated with iron mining and the growth of the town of Barrow-in-Furness, had encroached upon this by the end of the 19th century.

3.3.2 The earlier geophysical survey revealed a number of features of potential archaeological interest, although none of these could be dated or quantified without further investigation.

4. Fieldwork Results

4.1 Trench 1

4.1.1 This was approximately 32m long and orientated north-east/south-west and while not targeting any specific feature on the geophysical survey it was intended to cover the area of the possible earthwork visible on the Lidar (see Figure 2, Figure 3 and Plate 1). The topsoil comprised a soft mid-greyish brown sandy silt, 0.2-0.25m thick (**100**), which overlay a mid-orangey brown firm sandy-silt subsoil no more than 0.1m thick (**101**). This in turn overlay the natural, which comprised a firm mid-orange sandy clay with 5% rounded cobbles (**102**). The trench was excavated to a typical depth of 0.3m and no finds or features of archaeological interest were encountered (Plate 2 and Plate 3).



Plate 2 (left): Trench 1 following excavation, viewed from the south-west

Plate 3 (right): Trench 1 following excavation, viewed from the north-east

4.2 Trench 2

4.2.1 This was also approximately 32m long and orientated north-east/south-west and again intended to target the area of the possible earthwork visible in the Lidar data (see Figure 2, Figure 3 and Plate 1). The topsoil comprised a soft mid greyish-brown silty clay typically 0.2m thick (**200**), below which was a mid-orangey-brown firm silty clay subsoil no more than 0.1m thick (**201**). This in turn overlay a firm mid-orange clay, although also with mottled patches of pink and yellow sandy clay with 5% rounded pebbles (**202**). There were possible plough furrows observed orientated approximately north/south throughout the trench and the topsoil was notably deeper at the north-east end where the natural was more yellow. In general the trench was excavated to a depth of 0.4m. No features of archaeological interest were revealed (Plate 4 and Plate 5) and only finds of post-medieval date were recovered from the topsoil.



Plate 4 (left): Trench 2 following excavation, viewed from the south-west

Plate 5 (right): Trench 2 following excavation, viewed from the north-east

4.3 Trench 3

4.3.1 This was approximately 25m long and orientated north/south and targeting an approximately east/west linear anomaly revealed during the geophysical survey (Figure 2 and Figure 3). The topsoil comprised a soft mid-greyish brown silty clay 0.2m-0.3m thick (**300**); four copper wires running perpendicular across the trench were present in the topsoil, apparently acting as earths for the telecommunications mast to the east (Russell Beck pers comm.). Below the topsoil was a mottled soft mid-orange brown silty clay 0.15m thick, possibly partially re-deposited natural (**301**). Running along the east side of the trench, almost parallel before turning at 45° to the north-west, was a linear feature 0.2m wide filled with sub-angular cobbles in a soft mid-grey silt (**302**), evidently a stone-filled field drain (Plate 6 and Plate 7). The cut was very straight-sided but was not investigated [**303**]. Mid-way along the trench was a wide linear feature [**307**], running approximately north-west/south-east, clearly cut by the drain [**303**] (see Figure 4). The upper fill of this feature comprised a soft mid-grey silty clay with 1% rounded gravel, between 0.15m and 0.2m thick (**304**) (Plate 8). Below this was a lower fill comprising a similar material – a soft mid grey silty clay, but stickier and 0.1m thick (**305**), with a small lense of yellow sand between it and **304**. The lowest fill comprised firm pale grey clayey-silt with the occasional sub-angular boulder, but typically less than 0.1m thick (**306**) (Figure 4). The cut of the feature was 0.7m wide, over 5m long (extending out of both sides of the trench) and 0.3m deep with the north-east sides cut at greater than 45° and the south-west at less than 45° and a rounded base [**307**] (Plate 9). This feature and the drain [**303**] were cut into the underlying natural deposits (**308**), which varied from a firm mid-brownish orange clay at the south end to a more yellowish sandy clay at the north, underlying a mottled deposit containing soft dark brown material only a few centimetres thick, perhaps a thin layer of peat (**309**) (Plate 10), although this too was cut by the field drain [**303**]. The trench was typically excavated to a depth of 0.45m thick, although deeper sondages were cut through **307** and **309**.



Plate 6 (left): Trench 3 after initial excavation, viewed from the south

Plate 7 (right): Trench 3 after initial cleaning, viewed from the north and showing deposit 309



Plate 8 (left): Ditch 307 prior to excavation, viewed from the south-east

Plate 9 (right): Section through ditch 307, viewed from the north-west



Plate 10: Sondage through deposit 309 showing natural 308 below, viewed from the south-west

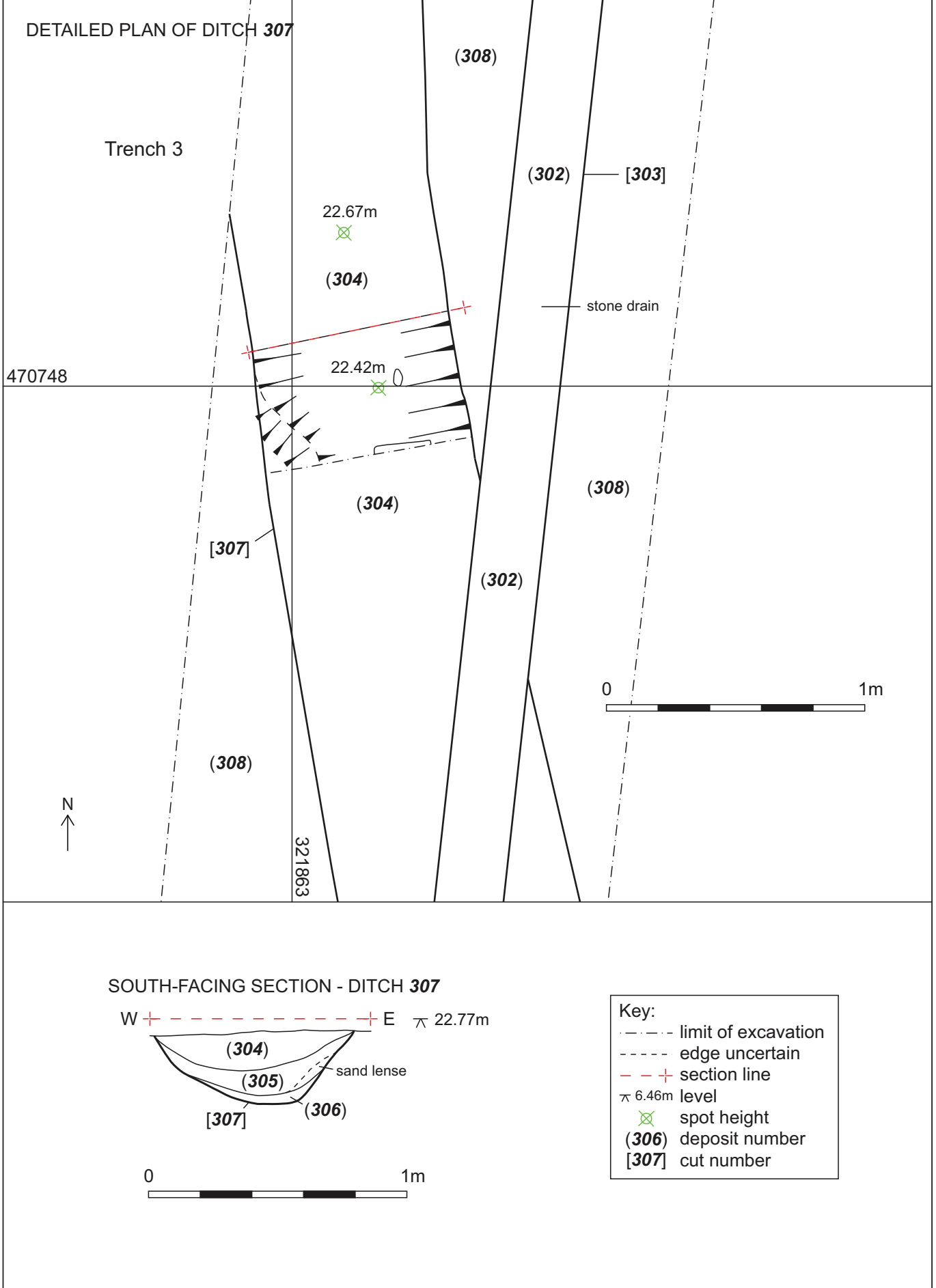


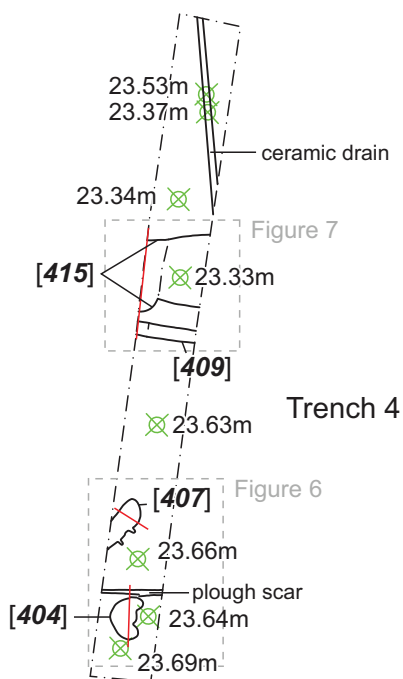
Figure 4: Detailed plan and section of ditch 307

4.4 Trench 4

4.4.1 This trench was approximately 20m long and orientated north-east/south-west in order to target a linear anomaly orientated approximately east/west (Figure 2 and Figure 5). The topsoil comprised a soft mid-grey silty clay, 0.25m thick (**400**), below which was a firmer mottled mid-orangey brown sandy clay subsoil, 0.1m thick (**401**). A variety of features were present below this, cutting into the underlying natural, which comprised a firm mid orangey-brown sandy clay with 5% rounded pebbles (**416**) (Plate 11). At the south-west end of the trench was a shallow pit (Plate 13), the upper fill of which comprised a soft dark grey silty clay mottled with orange and containing 1% rounded gravel, no more than 0.1m thick (**402**). Below this was a firmer paler grey sandy clay again no more than 0.1m thick (**403**) (Plate 14). The cut of the pit [**404**] was irregular in plan but orientated approximately north-west/south-east and comprised a cluster of smaller depressions linked together (Plate 14; Figure 6). It was approximately 1m long and 0.6m-0.7m wide with shallow sloping sides at approximately 45° and rounded base, although coming to various points. The north-east edge was slightly truncated by what was probably a narrow plough scar running essentially east/west. North-east of this was a further more linear pit extending to the edge of the trench (Plate 15) and with an upper fill comprising a soft dark grey silty clay with 2% rounded pebbles, 0.15m thick (**405**), over a lower fill of pale grey slightly firmer silty clay up to 0.2 thick and slumping down from the north-west side (**406**). The cut of the pit was essentially oval although with two small depressions on the south-east side and orientated north-east/south-west [**407**] (Plate 16; Figure 6). It was at least 1.1m long and 0.55m – 0.6m wide and 0.3m deep on average with the north-west side near vertical and the south-east closer to 45°.

4.4.2 North-east of this pit was a narrow linear feature extending across the trench (Plate 17) with a single fill comprising a firm mid-brown silty clay with 2% rounded cobbles up to 0.22m thick (**408**). The cut of the feature was orientated approximately north-west/south-east, 0.3m wide and 0.22m deep, with a v-shaped profile, although with a narrow vertical slot at the base in the north-west end [**409**] (Plate 18; Figure 7). Immediately south-west of this was a much larger linear feature (or possibly a very long and wide pit) extending across the trench and running almost parallel to **409** but at slightly more of an angle (Plate 17). The upper fill of this comprised a firm mid-brown silty clay with 1% rounded gravels and 1% angular fragments of red sandstone up to 0.3m thick (**410**). Below this was a firm mottled deposit comprising mid-orange clay and mid-brown silty clay with 1% sub-angular gravel up to 0.1m thick and forming a slump deposit down from the north side (**411**). This was essentially the same as a similar to a much stoney mottled deposit containing 20% rounded cobbles and 1% angular red sandstone forming a level deposit (**413**). This also contained two possible circular post holes with a diameter of 0.2m, which were packed with stones. Below **411** was an initial deposit of slumped material comprising a soft mid-grey sandy silt with 1% sub-angular cobbles 0.2m-0.25m thick (**412**). This was essentially the same as a layer of mid-grey firm silty clay towards the base of the feature with 1% rounded gravel up to 0.25m thick (**414**). The cut of the feature itself, although not completely bottomed, was 1.6m wide and at least 0.6m deep with the slope on the north side initially close to vertical before flattening out and then continuing at 45° [**415**] (Plate 20; Figure 7). The south-west corner seemed to take a much more irregular shape, although it is conceivable that this is due to it being overcut. At the north-east end of the trench there was narrow cut running almost exactly north/south, which had vertical sides and contained a ceramic land drain (Plate 12).

470800

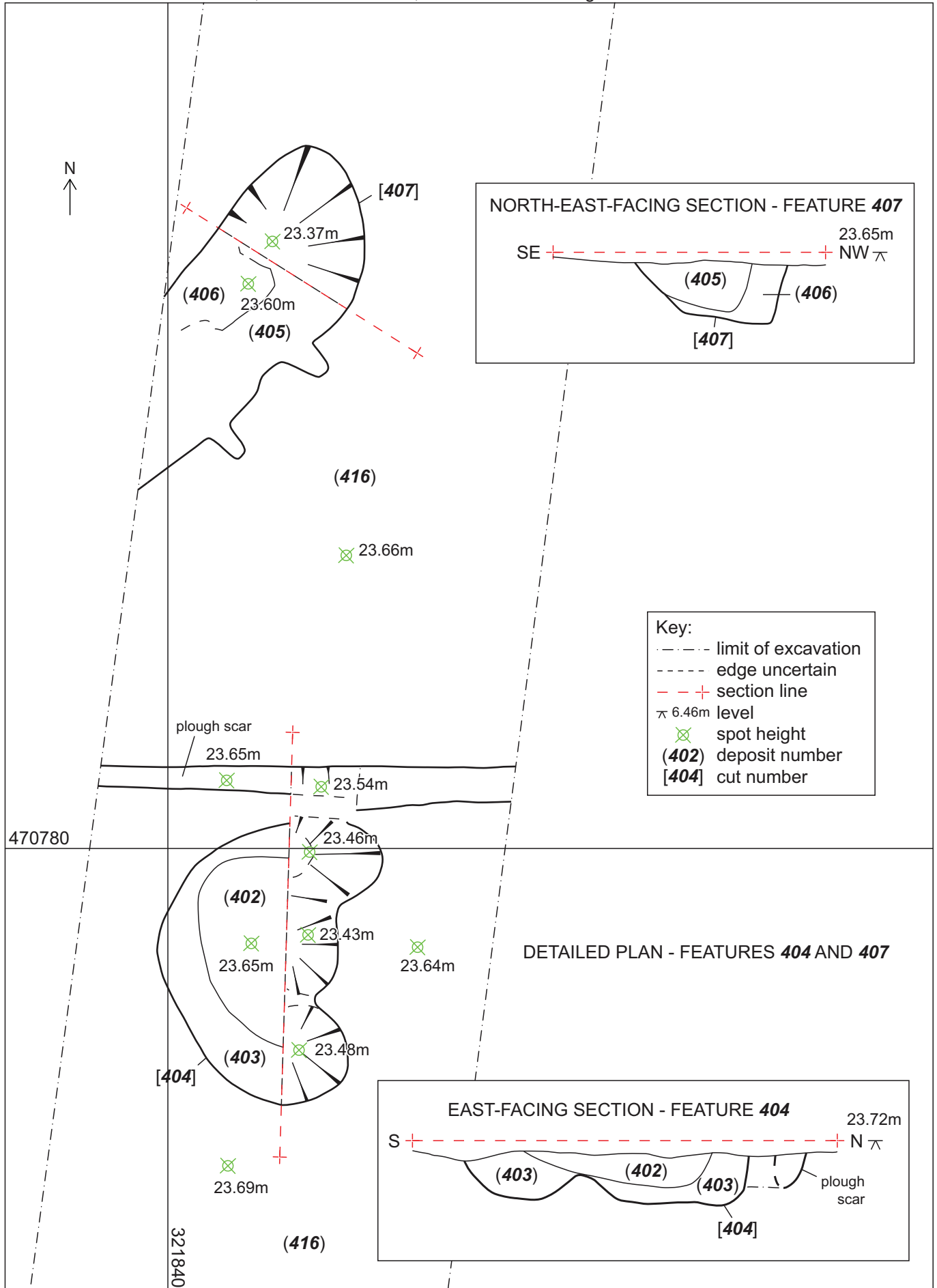


Key:
- - - - - limit of excavation
— drawn section
⊗ spot height
[404] cut number



321850

Figure 5: Plan of Trench 4



Client: Oakmere Homes

© Greenlane Archaeology Ltd, September 2016

Figure 6: Detailed plan and sections of features 404 and 407

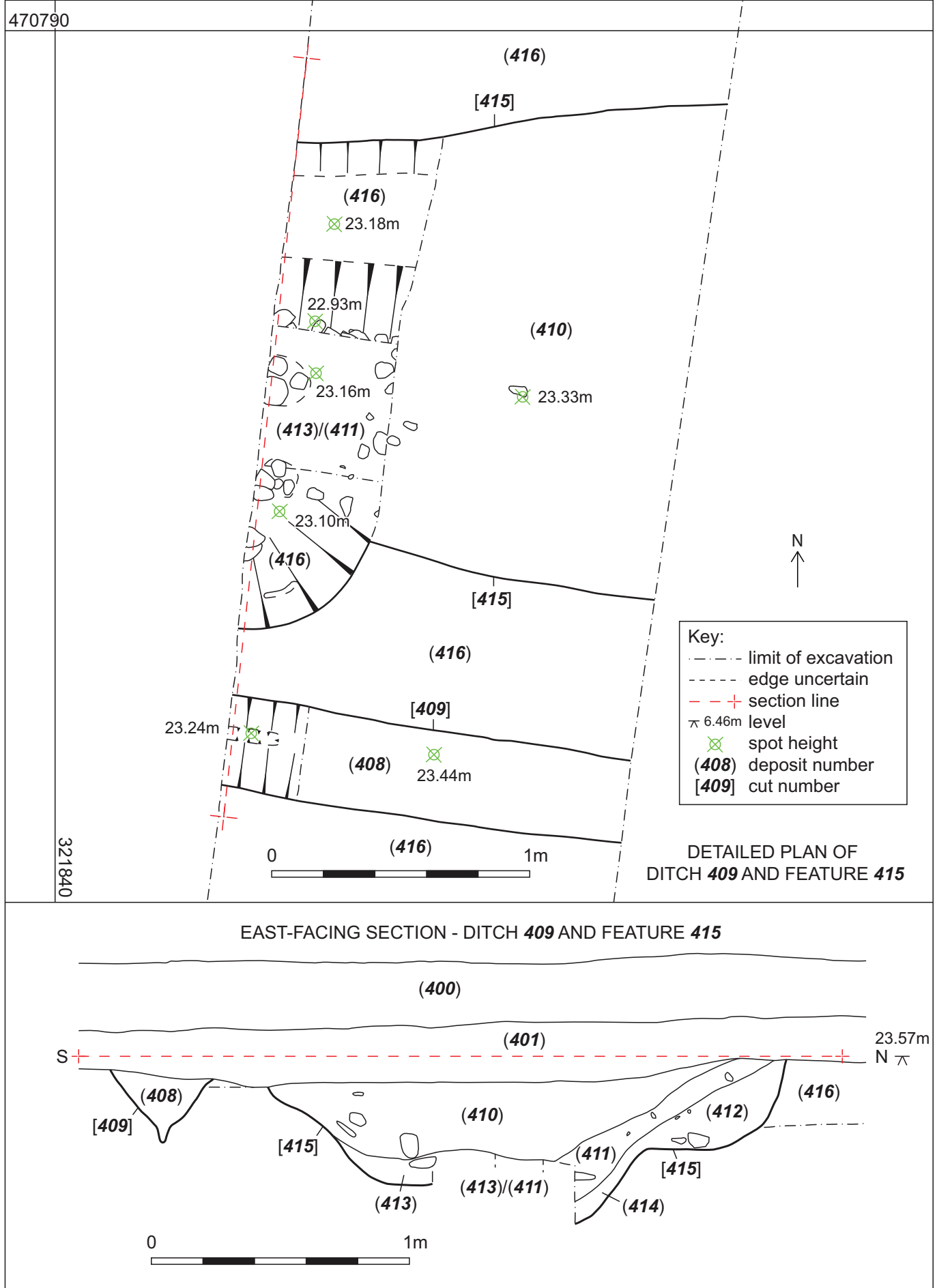


Figure 7: Detailed plan and section of ditch 409 and feature 415

Client: Oakmere Homes

© Greenlane Archaeology Ltd, September 2016



Plate 11 (left): Trench 4 following initial excavation, viewed from the south-west



Plate 12 (right): Trench 4 following initial excavation and showing the land drain, viewed from the north-east



Plate 13 (left): Pit 404 before excavation, viewed from the east



Plate 14 (right): Pit 404 section, viewed from the east



Plate 15 (left): Pit 407 before excavation, viewed from the east

Plate 16 (right): Pit 407 section, viewed from the north-east



Plate 17 (left): Ditch 409 before excavation, viewed from the south-west

Plate 18 (right): Ditch 409 section, viewed from the east



Plate 19 (left): Feature 415 showing plan, viewed from the east

Plate 20 (right): Feature 415 section, viewed from the east

4.5 Trench 5

4.5.1 Trench 5 was around 30m long and orientated approximately east/west and positioned to target a linear anomaly orientated approximately north-west/south-east recorded in the geophysical survey (Figure 2 and Figure 8; Plate 21 and Plate 22). The topsoil (**500**) was a mid-greyish-brown silty-clay, around 0.1m thick. Below that was an orangey-brown sandy-clay subsoil (**501**), c0.1m thick. Close to the centre of the trench was a shallow, roughly oval-shaped pit [**503**] (Figure 10 and Figure 11) cut into the underlying natural (**504**) (Plate 23 and Plate 24). The pit was 0.6m across, had sloping sides, and was filled with a mid-brownish-grey, silty-clay (**502**). It was truncated by a ceramic land drain on its east side. The underlying geological deposit was a firm, dark orange clay with patches of gravel at the west end (**504**). A further possible pit feature north-west of **503** was observed but this was very shallow and amorphous and considered likely to be a former animal burrow.



Plate 21 (left): Trench 5 following initial excavation, viewed from the east

Plate 22 (right): Trench 5 following initial excavation, viewed from the west



Plate 23 (left): Pit 503 showing plan, viewed from the north

Plate 24 (right): Pit 503 section, viewed from the north

4.6 Trench 6

4.6.1 Trench 6 was 25m long and orientated approximately north-east/south-west and intended to target a linear anomaly orientated approximately east/west revealed during the geophysical survey (Figure 2 and Figure 8). The topsoil (**600**) was a mid-brownish-grey silty-clay, c0.2m thick, on top of a mid-orangey-brown sandy-clay subsoil (**601**). The underlying natural (**606**) was firm orange clay, which was sandier and softer at the west end, and had a gravelly patch towards the east end (Plate 25 and Plate 26). The natural was cut by two stone-filled land drains orientated roughly north/south and another aligned east/west at the south-west end and there was a small pit [**603**] at the east end of the trench,

filled with a soft, dark grey, silt (**602**) (Figure 10). The pit was 0.33m wide by 0.60m long and 0.1m deep (Plate 27 and Plate 28). It is assumed to be fairly modern since the fill (**602**) was almost indiscernible from the topsoil (**600**). Approximately a third of the way from the north-east end of the trench, the trench was cut by a north/south aligned linear feature [**605**], filled with a firm, loamy, mid brown, silty-clay (**604**) (see Figure 10 and Figure 11). The cut extended beyond the limits of the trench to the north-west and south-east. It was 0.4m to 0.6m wide, 0.09m wide, and at least 1.5m long. Its north-east side was gently sloping whereas the west side was steeper with a sharp break of slope at the top. The base was gently rounded and almost flat in parts.



Plate 25 (left): Trench 6 following initial excavation, viewed from the north-east

Plate 26 (right): Trench 6 following initial excavation, viewed from the south-west



Plate 27 (left): Pit 603 showing plan, viewed from the south-east

Plate 28 (right): Pit 603 post-excitation, viewed from the south-east



Plate 29 (left): Feature 605 showing plan, viewed from the north-west

Plate 30 (right): Feature 605 section, viewed from the north-west

4.7 Trench 7

4.7.1 This trench was 25m long and orientated north-west/south-east and targeting a linear anomaly orientated approximately east/west revealed during the geophysical survey (Figure 2 and Figure 9; Plate 31 and Plate 32). The topsoil (**700**) was a soft, mid brownish-grey silt, c0.3m thick above a brownish-orange sandy-clay subsoil (**701**). East/west aligned stone-filled land drains cut across the centre and north end of the trench and there was also a feature [**703**] cut into the natural (**704**) at the south end. This pit-like feature was a long oval shape, with irregular edges, and very shallow sides, however, there was some undercutting and several small dips in the base (Figure 11). It was filled with a gritty clay/sand (**702**). The natural (**704**) was a firm orange-brown sandy-clay.



Plate 31 (left): Trench 7 following initial excavation, viewed from the south-east

Plate 32 (right): Trench 7 following initial excavation, viewed from the north-west



Plate 33 (left): Feature 703 showing plan, viewed from the south

Plate 34 (right): Feature 703 post-excitation, viewed from the south-west

4.8 Trench 8

4.8.1 This trench was 20m long and orientated north/south and targeting a linear anomaly orientated approximately east/west revealed during the geophysical survey (Figure 2 and Figure 9). The topsoil (**800**) was a mid-brownish-grey soft silt, c0.25m thick. Below that the subsoil (**801**) was a mid to pale orangey-brown sandy-clay, 0.1m thick on top of the firm mid orange clay natural (**802**) (Plate 35 and

Plate 36). There were two stone-filled land drains at the north end of the trench, one orientated east/west and the other approximately north-west/south-east (Plate 37).



Plate 35 (left): Trench 8 following initial excavation, viewed from the north
Plate 36 (right): Trench 8 following initial excavation, viewed from the south



Plate 37: Trench 8, showing the drains at the north end, viewed from the north-west

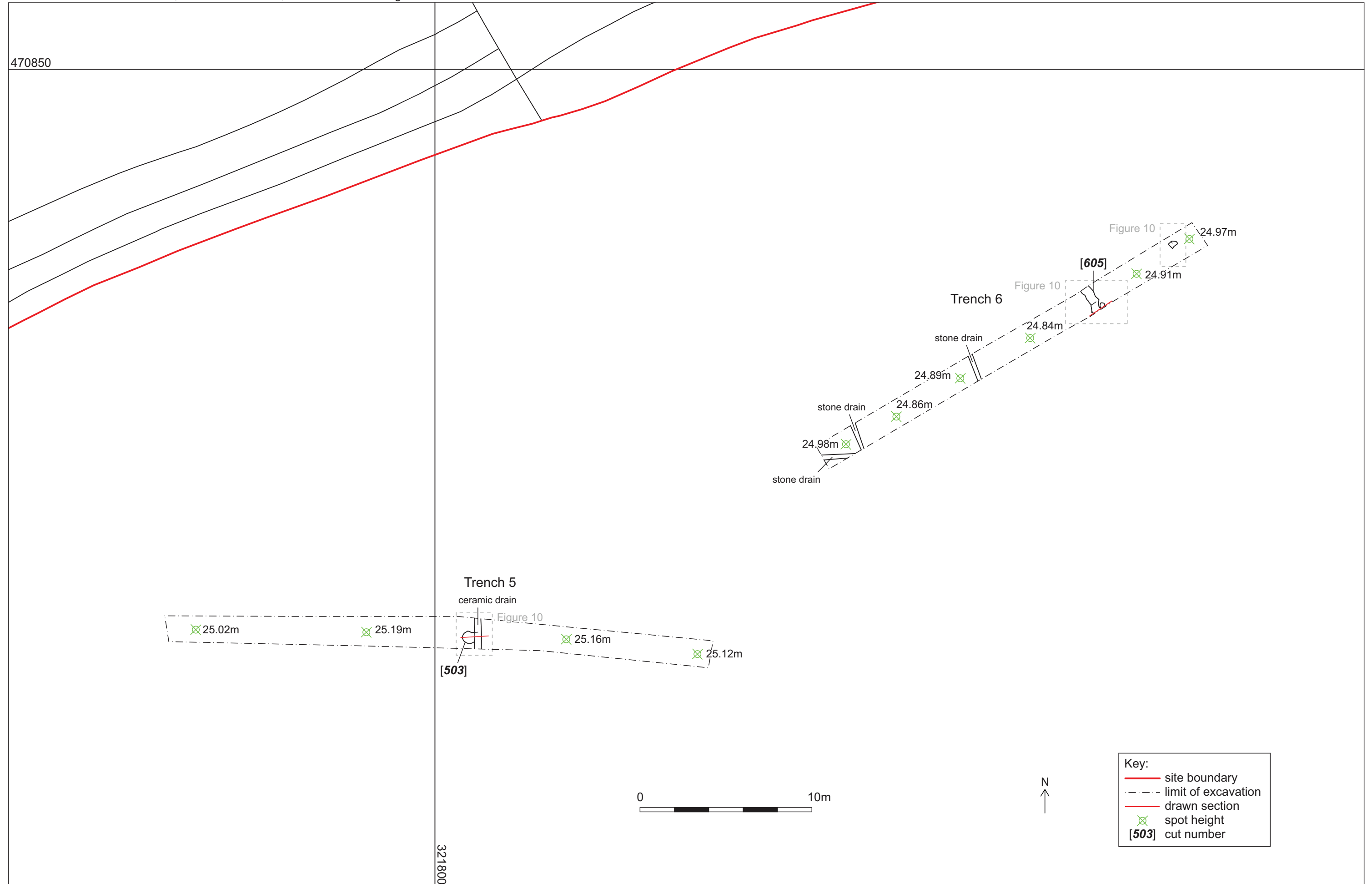
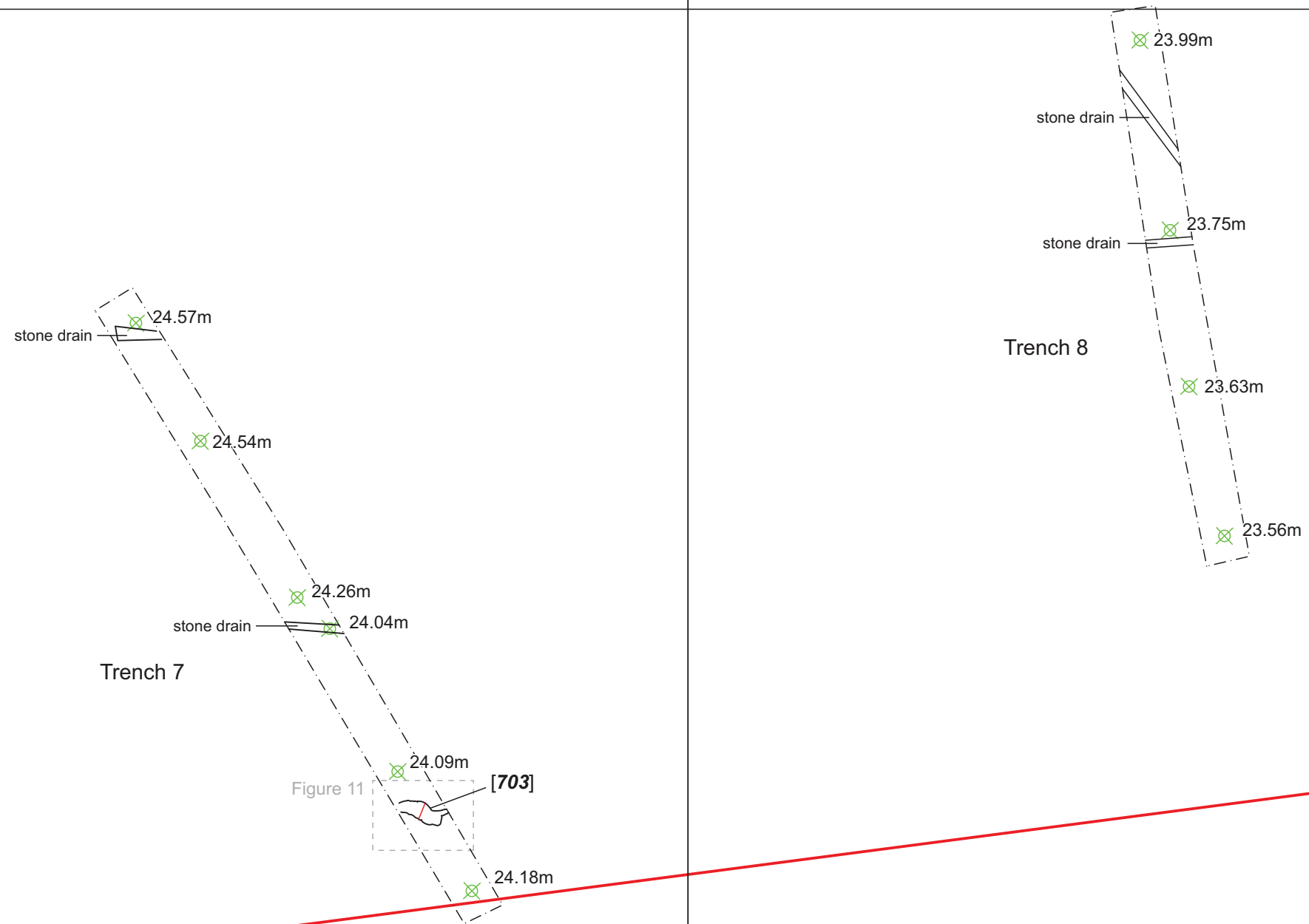


Figure 8: Plan of Trenches 5 and 6

470850



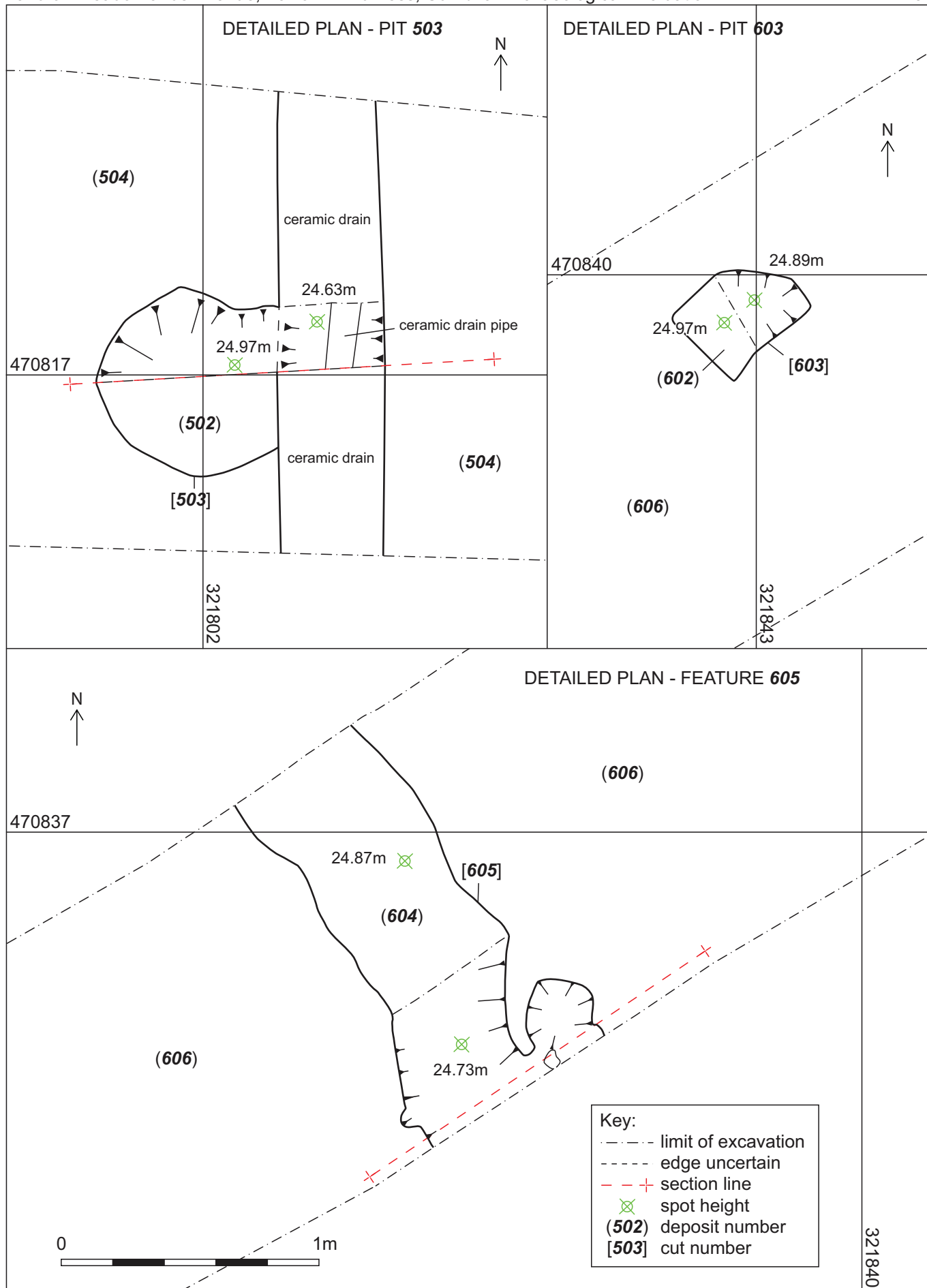
321900



Key:

- site boundary
- - - - - limit of excavation
- drawn section
- ⊗ spot height
- [703]** cut number

Figure 9: Plan of Trenches 7 and 8



Client: Oakmere Homes

© Greenlane Archaeology Ltd, September 2016

Figure 10: Detailed plan of pit 503, pit 603, and feature 605

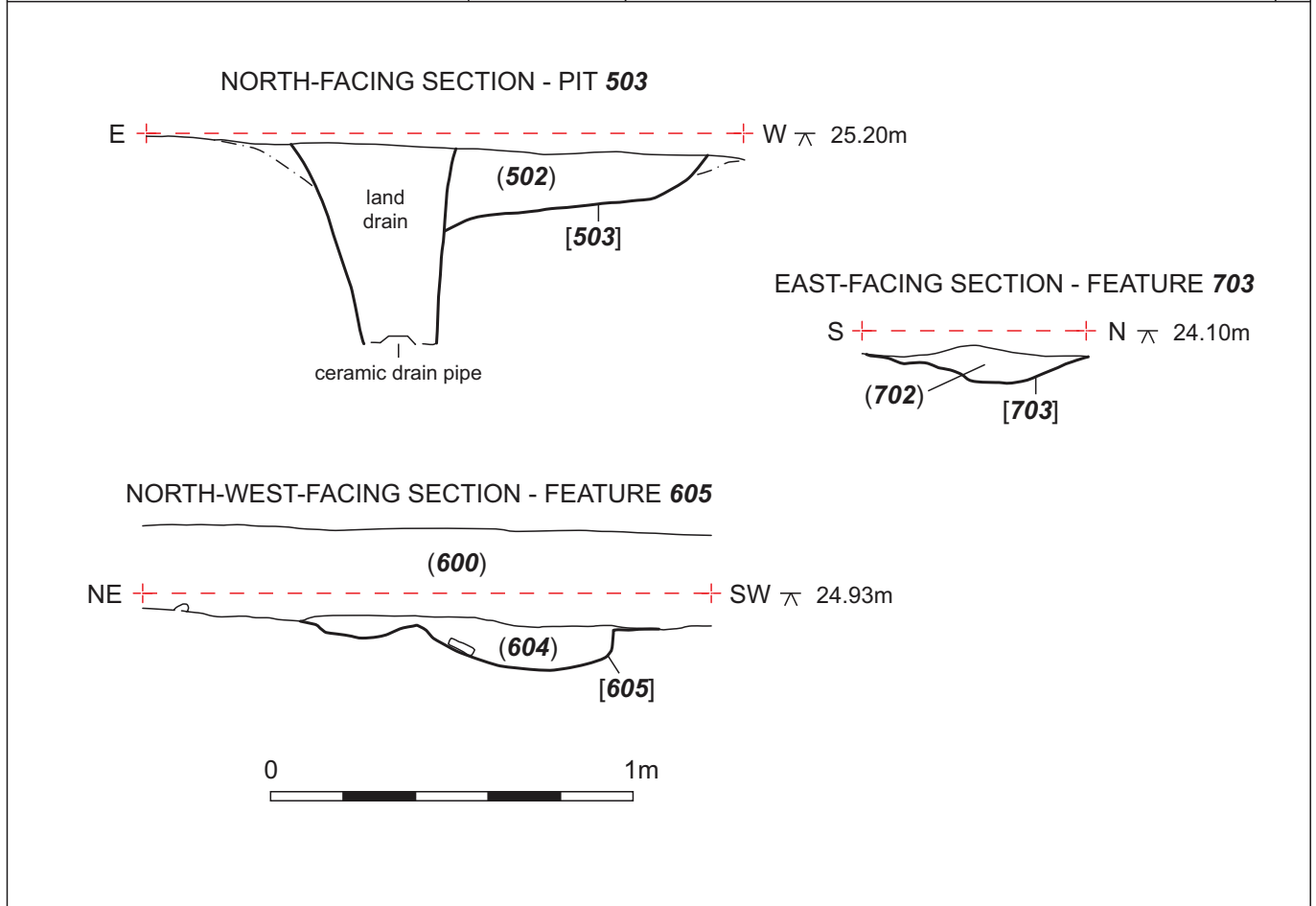
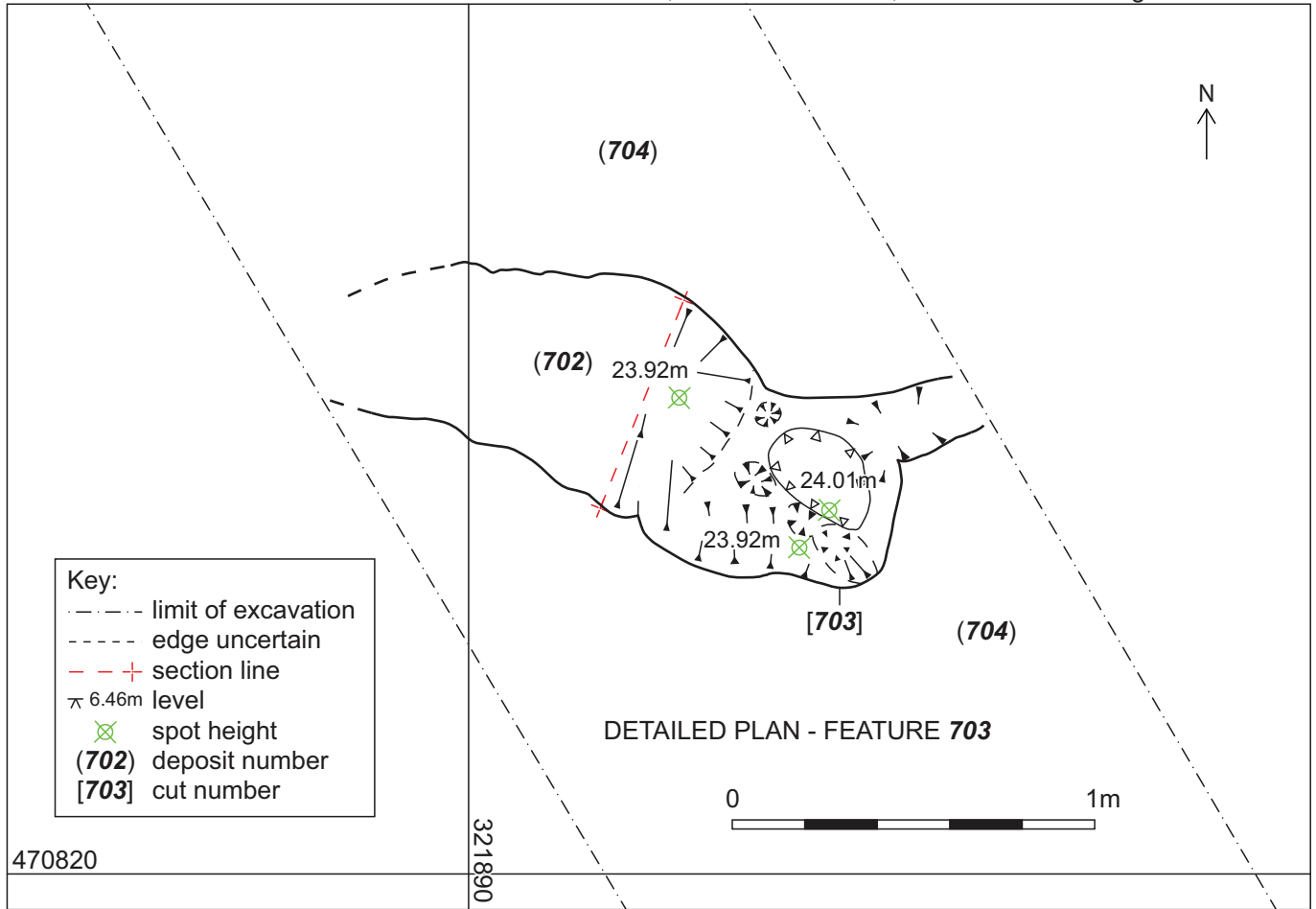


Figure 11: Detailed plan of feature 703 and sections of pit 503 and features 605 and 703

4.9 Finds

4.9.1 **Introduction:** in total only 10 finds were recovered by hand during the evaluation, the majority comprising pieces of post-medieval ceramics found in the topsoil. The remaining finds varied in type and date. Each type is discussed in the following sections, which are organised in chronological order where possible. A summary of all of the finds is present in *Appendix 3*.

4.9.2 **Stone:** a single lump of unworked brown flint was recovered from the subsoil in Trench 5. Despite being unworked, flint is not native to the area and so any material of this type is likely to have been brought in through human agency. However, this piece is entirely un-diagnostic and so of limited significance.

4.9.3 **Undated ceramic:** a single piece of very crude but hard fired ceramic was recovered from the fill of ditch **409 (408)**. Although essentially updateable is unlike any of the typical medieval or post-medieval fabrics from the area and so is more likely to Romano-British, Prehistoric or perhaps early medieval.

4.9.4 **Post-medieval pottery:** three fragments of glazed red earthenware were recovered, one each from the topsoil in Trenches 3, 5 and 6. Pottery of this type is very common throughout the post-medieval period and was used for a variety of utilitarian vessels over a long period. It is likely to have derived from domestic waste deposited in the fields as part of manuring, although the small amount would suggest that this had been very limited.

4.9.5 **Post-medieval ceramic building material:** four fragments of red earthenware fragments used for the production of bricks and drainage 'tiles' were recovered from the topsoil in Trenches 2 and 6. The more intact examples match the drains found *in situ* in Trenches 4 and 5. Based on the profile of these the drains in this field had a relatively unusual hexagonal outer section (2½" wide) with oval inner bore (2" wide). Such a form is not recorded in the recent survey of drainage tiles (Davis and Davis 2013), although based on the diameter they would seem likely to date to the middle of the 19th century (*op cit*, 78-80). Drainage of land in this manner became common during the 19th century as part of an increasing emphasis on the improvement of farmland, although it is clear that elements of the site had been partially subject to earlier drainage using stone drains (see *Section 5* below).

4.9.6 **Animal bone:** a single large piece of animal bone in several fragments was retrieved from the upper fill of feature **415 (410)**. Although in poor condition this is likely to be from a large mammal such as cattle and had clearly been butchered as one end was entirely chopped through. Although not dated this form of butchery suggests the use of a metal blade, presumably iron, and so logically indicates a date from the Iron Age onwards.

4.10 Environmental Samples

4.10.1 Bulk environmental samples from 11 contexts were recovered during the evaluation (see *Appendix 4*). Of these a single bucket from each was wet sieved and material in the flots and retents was recorded. The results are tabulated in *Appendix 4* and summarised below, with a full report presented in *Appendix 5*. The significant information recovered from the environmental samples is summarised below.

4.10.2 **Artefacts:** several of the samples had tiny fragments of ceramic material and flint, but these were so small as to be entirely undiagnostic and only indicate that these features were the result of human activity. Flint, although potentially suggestive of prehistoric activity, was used over a considerable period of time for strike-a-lights and later for gun flints so small fragments are not useful for dating. Two small objects were recovered from sample 10, the fill of pit **503**, although there is some uncertainty as to what these represent. The first is either a small lump of very hard well-fired and fully reduced clay with a lines scored into it while still soft (perhaps actually cut in with a wire or thread) intersecting at 90° to form a cross on each side and with two pinch marks on one side perhaps where it had been held between the thumb and forefinger while still soft, or a naturally occurring piece of stone, the lines caused by eroding mineral content. The second object comprises a finger-sized piece of fine-grained green volcanic stone, very polished on all sides with a flattish base, and was perhaps a very small *ad hoc* whetstone or part of a larger whetstone. The purpose and date of the first object is unclear, although if natural it is of no

archaeological interest. If it is a clay artefact it is perhaps a gaming piece and can therefore be paralleled with similar pieces, made from a variety of materials, dating from the Roman period onwards. At the Roman fort at Ravenglass a group of bone counters marked with crosses, albeit it much cruder, was found during excavations there in the 1970s (Potter 1979). The use of a cross, could also be indicative of a connection to Christianity and so make it more likely to be early medieval or later. Further scientific analysis would be necessary to establish what material it was manufactured from and therefore whether it was an artefact or not. The possible whetstone, although again essentially undated, is perhaps also likely to be early medieval or later.



Plate 38 (left): The cross-marked object from Sample 10 (context 502)



Plate 39 (right): The cross-marked object from Sample 10 (context 502)



Plate 40 (left): The possible whetstone from Sample 10 (context 502)



Plate 41 (right): The possible whetstone from Sample 10 (context 502)

4.10.3 Industrial Residue: several of the samples included small amounts of material suggestive of metal working, typically slag, mostly deriving from iron-working but some from copper-working, but also hammer scale and haematite. Haematite occurs naturally in the area and so is of limited interest, while the other material, while no doubt derived from human activity, is in such small quantities that it is of limited significance, although it is presumably indicative of industrial activity taking place nearby.

4.10.4 Plant remains: samples were recovered from the fills of various pits, a ditch, and a feature interpreted as a ditch/large pit. The majority had varying proportions of modern roots and soil fungal spores. The samples from deposits **410** and **414**, the upper and lower fills respectively of ditch/large pit **415**, contained abundant uncharred seeds of brambles (*Rubus fruticosus* L. agg.) that were considered a

modern intrusive component. Wood charcoal was present in varying quantities in all 11 samples, but only four contained fragments possibly suitable for Accelerator Mass Spectrometry (AMS) dating. These were deposits **402** and **403**, the upper and lower fills respectively of pit **404**, deposit **405**, the upper fill of pit **407**, and deposit **702**, the fill of pit **703**. A single charred cereal indeterminate grain was recovered from deposit **408**, the fill of ditch **409**. Due to the poor level of preservation exhibited by the grain it was not possible to take the identification to species level. It is not possible to offer information on agricultural practices undertaken at the site based on a single grain, nor is it possible to suggest a date or use for ditch **409**. The cereal grain may be sufficient to use for AMS if required, but its suitability cannot be guaranteed.

5. Discussion

5.1 Results

5.1.1 Across the site the same general sequence of deposits was encountered in each trench: a layer of grey-brown topsoil overlay the subsoil, which was generally more clayey, on top of the natural. The natural varied although it generally comprised an orangey clay but colour variations were noted and sometimes it was noticeably sandier and/or more yellow, with a possible thin layer of peat in Trench 3.

5.1.2 A number of features of possible archaeological interest were encountered, with a concentration in Trenches 3 and 4, but with outlying ones also present in Trenches 5-7, although those in Trenches 6 and 7 were very shallow and ill-defined. However, across the site associated dating evidence for these features was not present. In general, no stratigraphic relationships could be determined between the different features, although it is clear that the ditch in Trench 3 [307] pre-dates the stone field drain and the pit in Trench 5 [503] pre-dates the ceramic field drain and so both of these features must pre-date the post-medieval period. In addition, the two possible artefacts from pit 503, while undateable, and possibly even natural, are suggestive of an early medieval date. The orientation of the ditch [409] and large pit or ditch [415] in Trench 4 suggests that they would intersect at some point to the west and so there is the potential for their relationship to each other to be determined.

5.1.3 Nevertheless, it is clear that there is some potential archaeological interest in the site and that the potential of this could only be ascertained through further work. Even then the possibility that few or no finds would be recovered to aid with dating is quite likely and it might be necessary to carry out scientific dating, most feasibly radiocarbon dating, of any features encountered.

5.1.4 The evaluation has also highlighted the potential but also limitations of geophysical survey in such areas. While there is some evident correlation between anomalies revealed by the geophysical survey with the features revealed during the evaluation they were not all of archaeological interest and some confusion had been caused by relatively late features. For example, in Trench 3, the geophysical survey appeared to have picked up two (of the four) copper wires used to earth the telecommunications mast the east, but it did not reveal the large ditch orientated in the opposite direction. It is possible that this had been masked by the wires and the presence of a stone drain, which was almost on the same alignment. By contrast, in Trench 4, the geophysical survey had recorded an anomaly that corresponded with the two features running across this trench, but does not seem to suggest that they extend very far. In the other trenches the anomalies recorded by the geophysical survey seem to correspond to either field drains or shallow features of possible archaeological interest, but it was not possible to distinguish which without excavation. It is also noteworthy in this case how beneficial carrying out the more detailed level of geophysical survey was; it seems unlikely that any useful results would have been produced at the less detailed leading to a much less focussed phase of evaluation. No archaeological remains were encountered at all in the trenches (Trench 1 and Trench 2) excavated in the area of the feature visible in the Lidar, so it is likely that this is entirely natural or it has been destroyed since that data was collected.

5.2 Conclusion

5.2.1 It is clear that further archaeological work is necessary to better understand the form, date and function of the features revealed, particularly those in Trenches 3 and 4, where there were notable concentrations. Such work would also allow the extent of these features to be more fully revealed; at present the geophysical survey, which did reveal a corresponding anomaly in Trench 4, suggests that the features in Trench 4 do not extend very far to the east and west, but this could only be revealed through further archaeological investigation. Elsewhere there is seemingly less potential; the area around Trenches 1 and 2 and 6-8 seemingly largely devoid of significant archaeological features. Trench 5 contained a single feature of debatable archaeological significance. The finds recovered from it are difficult to date; if they were confirmed as early medieval, which is a possibility, they would be of considerable significance, but this is not certain and it seems unlikely that further work on site would help to confirm or deny this. However, further post-excavation work such as scientific dating, if possible, would potentially be useful.

6. Bibliography

6.1 Primary and Cartographic Sources

Chatsworth House/4130, 1806 *Furness Abbey Park*

Ordnance Survey, 2011 *The English Lakes South-Western Area Coniston, Ulverston & Barrow-in-Furness*, Explorer **OL6**, 1: 25,000

6.2 Secondary Sources

Brown, DH, 2007 *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer, and Curation*, IfA, Reading

Cappers, RTJ, Bekker, RM, and Jans, JEA, 2006 *Digital seed atlas of the Netherlands*, Barkhuis Publishing and Groningen University Library, Groningen

Chartered Institute for Archaeologists (CIfA), 2014a *Standard and Guidance for Historic Environment Desk-Based Assessment*, revised edn, Reading

Chartered Institute for Archaeologists (CIfA), 2014b *Standard and Guidance for Archaeological Field Evaluation*, revised edn, Reading

Cherry, PJ, and Cherry, J, 2002 Coastline and Upland in Cumbrian Prehistory – A Retrospective, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 3rd ser, **2**, 1-20

Countryside Commission, 1998 *Countryside Character, Volume 2: North West*, Cheltenham

Davis, E, and Davis, SB, 2013 *Draining the Cumbrian Landscape*, CWAAS research series **11**, Bowness-on-Windermere

Dobson, J, 1912 Report on an Ancient Settlement at Stone Close, near Stainton-in-Furness, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 2nd ser, **12**, 277-284

Elsworth, DW, 2005 *Hoad, Ulverston, Cumbria: Archaeological Landscape Investigation*, unpublished report

Elsworth, DW, 2007 The “Streetgate” at Conishead, the “Castellum” at Dalton, and Roman Furness, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 3rd ser, **7**, 31-48

Elsworth, DW, 2011 Eccles Place-Names in Cumbria, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 3rd ser, **11**, 234-238

Elsworth, DW, 2014 Hillforts Around Morecambe Bay, in T Saunders (ed), *Hillforts in the North West and Beyond*, Archaeology North West, n ser, **3**, Manchester, 51-60

English Heritage, 1991 *The Management of Archaeological Projects*, 2nd edn, London

Evans, H, 2008 *Neolithic and Bronze Age Landscapes of Cumbria*, BAR British Ser, **463**, Oxford

Farrer, W and Brownbill, J 1914 *The Victoria History of the County of Lancaster* **8** London

Greenlane Archaeology, 2006 *Parkhouse Farm, Parkhouse Road, Barrow-in-Furness, Cumbria: Archaeological Building Recording*, unpubl rep

Greenlane Archaeology, 2007 *Archaeological Excavation Manual*, unpubl rep

Hodgkinson, D, Huckerby, E, Middleton, R, and Wells, CE, 2000 *The Lowland Wetlands of Cumbria*, North West Wetlands Survey **6**, Lancaster Imprints **8**, Lancaster

Hodgson, J, and Brennand, M, 2006 The Prehistoric Period Assessment, in M Brennand (ed), *The Archaeology of North West England – An Archaeological Research Framework for North West England: Volume 1 Resource Assessment*, Archaeology North West, **8**, Manchester, 23-58

Houseprices.io, 2016 *Lidar Map*, <https://houseprices.io/lab/lidar/map>

- Kelly, PV, 1946 Newbarns: the Story of a Furness Village, *Proc Barrow Naturalists' Field Club*, n ser, **5**, 19-37
- Marshall, JD, 1981 *Furness and the Industrial Revolution*, Barrow-in-Furness
- Middleton, R, Wells, CE, and Huckerby, E, 1995 *The Wetlands of North Lancashire*, North West Wetlands Survey **3**, Lancaster Imprints **4**, Lancaster
- Moseley, F (ed), 1978 *The Geology of the Lake District*, Yorkshire Geological Society, occ publ **3**, Leeds
- OA North (Oxford Archaeology North), 2004 *7 Nelson Square, Levens: Excavation Assessment Report*, unpubl rep
- O'Sullivan, D, 1980 *A Reassessment of the Early Christian Archaeology of Cumbria*, unpubl thesis, University of Durham
- Phase Site Investigations, 2016 *Meadowlands, Barrow-in-Furness, Cumbria: Archaeological geophysical survey*, unpubl rep
- Philpott, R, 2006 The Romano-British Period Resource Assessment, in M Brennan (ed), *The Archaeology of North West England – An Archaeological Research Framework for North West England: Volume 1 Resource Assessment*, Archaeology North West, **8**, Manchester, 59-90
- Powell, TGE, 1963 Excavations at Skelmore Heads near Ulverston, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 2nd ser, **63**, 1-27
- Shotter, D, 1995 Romans in South Cumbria, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 2nd ser, **95**, 73-77
- Stace, C, 1997 *New Flora of the British Isles* (second edition), Cambridge University Press, Cambridge
- West, T, 1805 *The Antiquities of Furness*, 2nd edn with additions by W Close, Ulverston
- Wood, J, 1998 History, in English Heritage (ed) *Furness Abbey*, London, 22-33
- Young, R, 2002 The Palaeolithic and Mesolithic Periods in Northern England: An Overview, in Brooks, C, Daniels, R, and Harding, A (ed), *Past, Present and Future: The Archaeology of Northern England*, Architect Archaeol Soc Durham Northumberland, res rep **5**, 19-36
- Zohary, D, Hopf, M, and Weiss, E, 2012 *Domestication of Plants in the Old World*, Oxford University Press, Oxford

Appendix 1: Project Design

LAND OFF MEADOWLANDS AVENUE, BARROW-IN-FURNESS, CUMBRIA

Archaeological Evaluation Project Design



Client: Oakmere Homes

NGR: 321820 470796

Planning application ref.: B07/2016/0116

June 2016

1. Introduction

1.1 Project Background

1.1.1 Prior to the submission of a planning application for the construction of 44 dwellings on land off Meadowlands Avenue, Barrow-in-Furness, Cumbria (centred on NGR 321820 470796) an archaeological geophysical survey was carried out (Phase Site Investigations 2016). This revealed a number of anomalies, some of which are of potential archaeological interest. Following the submission of a planning application (ref. B07/2016/0116) for the construction 44 dwellings on land off Meadowlands Avenue, Barrow-in-Furness, Cumbria, a condition was placed on the decision notice by Barrow Borough Council, following advice from the Historic Environment Officer at Cumbria County Council, requiring that the site be subject to an archaeological evaluation. This was to comprise the excavation of trial trenches totalling 350 square meters, in order to assess whether any below-ground remains of archaeological interest are present, prior to the construction of the proposed new buildings on the site. Greenlane Archaeology was appointed by Oakmere Homes (hereafter 'the client') to carry out the archaeological evaluation and this project design was produced in response.

1.1.2 The site is situated on the eastern edge of modern Barrow-in-Furness in an area some distance from the centre of the historic part of the town, and slightly less than 1km south of Furness Abbey, which was established in the 12th century. The geophysical survey revealed a number of anomalies, at least some of which are of potential archaeological interest, although it is not apparent from these results what they might be (Phase Site Investigations 2016). In addition, a shallow circular earthwork of unknown purpose and data is visible on Lidar data in the south-west corner of the site (Houseprices.io 2016). Again the purpose of this is unknown but it is possible that it is connected to the area being named 'Beacon Hill', although it is not clear when this originated.

1.2 Greenlane Archaeology

1.2.1 Greenlane Archaeology is a private limited company based in Ulverston, Cumbria, and was established in 2005 (Company No. 05580819). Its directors, Jo Dawson and Daniel Elsworth, have a combined total of over 20 years continuous professional experience working in commercial archaeology, principally in the north of England and Scotland. Greenlane Archaeology is committed to a high standard of work, and abides by the Chartered Institute for Archaeologists' (CIfA) Code of Conduct. The evaluation will be carried out according to the Standards and Guidance of the Chartered Institute for Archaeologists (CIfA 2014).

1.3 Project Staffing

1.3.1 The project will be managed by **Dan Elsworth (MA (Hons), ACIfA)**, who will also supervise the evaluation with appropriately experienced assistance. Daniel graduated from the University of Edinburgh in 1998 with an honours degree in Archaeology, and began working for the Lancaster University Archaeological Unit, which became Oxford Archaeology North (OA North) in 2001. Daniel ultimately became a project officer, and for over six and a half years worked on excavations and surveys, building investigations, desk-based assessments, and conservation and management plans. These have principally taken place in the North West, and Daniel has a particular interest in the archaeology of the area. He has managed a large number of recent projects in the North of England, primarily Cumbria and Lancashire, including several archaeological building recordings, ranging from small-scale domestic properties to large industrial complexes. He has also managed numerous archaeological evaluations and excavations over the last 10 years, including large industrial complexes, medieval urban areas, and prehistoric cremation burials.

1.3.2 All artefacts will be processed by staff at Greenlane Archaeology, and it is envisaged that they will initially be assessed by Jo Dawson, who will fully assess any of post-medieval date, and Tom Mace, who will fully assess any medieval pottery. Other types of finds will be assessed by specialist sub-contractors as appropriate, for example Roman pottery would be examined by Ruth Leary, and animal bones by Jane Richardson at Archaeological Services West Yorkshire Archive Services (ASWYAS).

1.3.3 Environmental samples, and faunal or human remains will be processed by Greenlane Archaeology. It is envisaged that the flots from any environmental samples would be assessed by staff at Headland Archaeology, Other remains, such as industrial material, will be assessed by specialist sub-contractors as appropriate and the Cumbria County Council Historic Environment Service (CCCHES) will be informed and their approval will be sought for these arrangements.

2. Objectives

2.1 Archaeological Evaluation

2.1.1 To excavate evaluation trenches totalling 350 square meters across the site, primarily targeting the most promising anomalies revealed during the geophysical survey, in order to identify the presence of any archaeological deposits, features, and structures on the site and establish their form, function, and date where possible.

2.2 Report

2.2.1 To produce a report detailing the results of the evaluation, which will outline the form and date of any archaeological features encountered.

2.3 Archive

2.3.1 Produce a full archive of the results of the project.

3. Methodology

3.1 Archaeological Evaluation

3.1.1 It is anticipated that eight evaluation trenches each ranging from 20m to 35m long by 1.7m (a standard excavator bucket width) wide will be excavated (see attached figure). These will be located to target the most promising of the anomalies revealed during the geophysical survey as well as a possible earthwork revealed on lidar data, as shown in the attached figure. The evaluation methodology, which is based on Greenlane Archaeology's excavation manual (Greenlane Archaeology 2007), will be as follows:

- The trenches will be excavated with regard to the position of any known constraints, focussing on the areas of high archaeological interest or potential, and avoiding areas which are likely to have been severely damaged or truncated by later activity, unless they are considered to have a high potential;
- The overburden, which is unlikely to be of any archaeological significance, will be removed by machine under the supervision of an archaeologist until the first deposit beneath it is reached;
- All deposits below the overburden will be examined by hand in a stratigraphic manner, using shovels, mattocks, or trowels as appropriate for the scale. Deposits will only be sampled, rather than completely removed, below the first identified level of archaeological interest, unless specified by CCCHES, with the intension of preserving as much *in situ* as possible;
- The position of any features, such as ditches, pits, or walls, will be recorded and where necessary these will be investigated in order to establish their full extent, date, and relationship to any other features. Negative features such as ditches or pits will be examined by sample excavation, typically half of a pit or similar feature and approximately 10% of a linear feature;
- All recording of features will include hand-drawn plans and sections, typically at a scale of 1:20 and 1:10, respectively, and photographs in colour digital and 35mm colour print format;
- All deposits, trenches, drawings and photographs will be recorded on Greenlane Archaeology *pro forma* record sheets;
- All finds will be recovered during the evaluation for further assessment as far as is practically and safely possible. Should significant quantities of finds be encountered an appropriate sampling strategy will be devised;
- All faunal remains will also be recovered by hand during the evaluation, but where it is considered likely that there is potential for the bones of fish or small mammals to be present appropriate volumes of samples will be taken for sieving;
- Deposits that are considered likely to have, for example, preserved environmental remains, industrial residues, and/or material suitable for scientific dating will be sampled. Bulk samples of between 20 and 60 litres in volume (or 100% of smaller features), depending on the size and potential of the deposit, will be collected from stratified undisturbed deposits and will particularly target negative features (e.g. gullies, pits and ditches) and occupation deposits such as hearths and floors. An assessment of the environmental potential of the site will be undertaken through the examination of samples of suitable deposits by specialist

sub-contractors (see *Section 1.3.3* above), who will examine the potential for further analysis. All samples will be processed using methods appropriate to the preservation conditions and the remains present;

- Any human remains discovered during the evaluation will be left *in situ*, and, if possible, covered. The CCCHES will be immediately informed as will the local coroner. Should it be considered necessary to remove the remains this will be carried out under the guidance of the local coroner, and a licence sought from the Home Office, under Section 25 of the Burial Act of 1857, should this be considered necessary;
- Any objects defined as 'treasure' by the Treasure Act of 1996 (HMSO 1996) will be immediately reported to the local coroner and securely stored off-site, or covered and protected on site if immediate removal is not possible;
- The evaluation trenches will be backfilled following excavation although it is not envisaged that any further reinstatement to its original condition will be carried out.

3.1.2 Should any significant archaeological deposits be encountered during the evaluation these will immediately be brought to the attention of the Cumbria County Council's Historic Environment Service (CCCHES) so that the need for further work can be confirmed. Any additional work will be carried out following discussion with the CCCHES and subject to a new project design, and the ensuing costs will be agreed with the client.

3.2 Report

3.2.2 The results of the evaluation will be compiled into a report, which will provide a summary and details of any sources consulted. It will include the following sections:

- A front cover including the appropriate national grid reference (NGR);
- A concise non-technical summary of results, including the date the project was undertaken and by whom, incorporating the results of the geophysical survey and any additional background information where relevant;
- Acknowledgements;
- Project Background;
- Methodology, including a description of the work undertaken;
- Results of the evaluation, including finds and samples;
- Discussion of the results including phasing information;
- Bibliography;
- Illustrations at appropriate scales including:
 - a site location plan related to the national grid;
 - a plan showing the location of the evaluation trenches in relation to nearby structures and the local landscape, and the features revealed during the geophysical survey;
 - plans and sections of any features discovered during the evaluation;
 - photographs of any features encountered during the evaluation and general shots of the evaluation trenches.

3.3 Archive

3.3.1 The archive, comprising the drawn, written, and photographic record of the evaluation trenches, formed during the project, will be stored by Greenlane Archaeology until it is completed. Upon completion it will be deposited with the Cumbria Archive Centre in Barrow-in-Furness, together with a copy of the report. The archive will be compiled according to the standards and guidelines of the ClfA (Brown 2007), and in accordance with English Heritage guidelines (English Heritage 1991). In addition details will be submitted to the Online Access to the Index of archaeological investigations (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public.

3.5.2 A paper and digital copy of the report will be provided to the client and a digital copy of the report will be provided to the Cumbria Historic Environment Record. In addition, Greenlane Archaeology Ltd will retain one copy.

4. Work timetable

4.1 Greenlane Archaeology will be available to commence the project from **11th July 2016**, or at another date convenient to the client. It is envisaged that the elements of the project will be carried out in the following order:

- **Task 1:** archaeological evaluation;
- **Task 2:** processing and assessment of finds and samples;
- **Task 3:** production of draft report including illustrations;
- **Task 4:** feedback on draft report, editing and production of final report;
- **Task 5:** finalisation and deposition of archive.

5. Other matters

5.1 Access and clearance

5.1.1 Access to the site will be organised through co-ordination with the client and/or their agent(s).

5.2 Health and Safety

5.2.1 Greenlane Archaeology carries out risk assessments for all of its projects and abides by its internal health and safety policy and relevant legislation. Health and safety is always the foremost consideration in any decision-making process.

5.3 Insurance

5.3.1 Greenlane Archaeology has professional indemnity insurance to the value of **£1,000,000**. Details of this can be supplied if requested.

5.4 Environmental and Ethical Policy

5.4.1 Greenlane Archaeology has a strong commitment to environmentally and ethically sound working practices. Its office is supplied with 100% renewable energy by Good Energy, uses ethical telephone and internet services supplied by the Phone Co-op. In addition, the company uses the services of The Co-operative Bank for ethical banking, Naturesave for environmentally-conscious insurance, and utilises public transport wherever possible. Greenlane Archaeology is also committed to using local businesses for services and materials, thus benefiting the local economy, reducing unnecessary transportation, and improving the sustainability of small and rural businesses.

6. Bibliography

Brown, DH, 2007 *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer, and Curation*, IfA, Reading

CIfA, 2014 Standards and Guidance for Archaeological Field Evaluation, http://www.archaeologists.net/sites/default/files/CIfAS&GFieldevaluation_1.pdf

English Heritage, 1991 *The Management of Archaeological Projects*, 2nd edn, London

Houseprices.io, 2016 *Lidar Map*, <https://houseprices.io/lab/lidar/map>

Phase Site Investigations, 2016 *Meadowlands, Barrow-in-Furness, Cumbria; Archaeological Geophysical Survey*, unpubl rep

Appendix 2: Summary Context List

Context	Type	Description	Interpretation
100	Deposit	Mid greyish-brown sandy silt, soft, 0.2m-0.25m thick	Topsoil
101	Deposit	Mid orange- brown sandy silt, firm, 0.10m thick	Subsoil
102	Deposit	Firm mid-orange sandy clay, 5% rounded cobble, mostly green volcanics	Natural
200	Deposit	Mid greyish-brown silty clay, 0.2m thick	Topsoil
201	Deposit	Mid orangey-brown firm silty clay, 0.1m thick	Subsoil
202	Deposit	Firm mid-orange or pinkish and yellowish sandy clay, 5% rounded pebble.	Natural
300	Deposit	Mid greyish-brown silty clay, soft, 0.2m-0.3m thick	Topsoil
301	Deposit	Mottled mid orange-brown soft silty clay 0.15m thick, possibly partly redeposited	Subsoil
302	Deposit	Sub-angular cobbles in mid grey soft silt, 0.2m wide	Fill of field drain 303
303	Cut	Linear, running approximately north/south and turning to north-west at north end, 0.2m wide with vertical sides but not excavated to base	Field drain, filled by 302
304	Deposit	Soft, mid-grey silty clay, with 1% rounded gravel, c.5m long, 0.7m wide, 0.15m-0.2m thick	Upper fill of ditch 307
305	Deposit	Soft, mid-grey silty clay, slightly sticky, up to 0.1m thick	Middle fill of ditch 307
306	Deposit	Firm, pale grey clay silt, with occasional sub-angular boulders, less than 0.1m thick	Lowest fill of ditch 307
307	Cut	Linear, north/south orientated, 0.7m wide, 5m+ long, 0.3m deep, east side >45°, west side <45°, with rounded base, truncated by drain 303 , filled by 304 , 305 , and 306	Ditch
308	Deposit	Firm clay, varying colour – mid-brown orange at south end but more yellow at north, with 5% rounded cobbles in the clay and peaty material at the north end	Natural
309	Deposit	Thin layer of mottled black-grey peaty(?) material over the yellower deposits at the north end of Trench 3	Natural peat?
400	Deposit	Mid-grey soft silty clay, typically 0.25m thick	Topsoil
401	Deposit	Mottled mid orange brown sandy clay, fairly soft, 0.1m thick	Subsoil
402	Deposit	Mottled dark grey and orange soft silty clay with 1% rounded gravel covering an area 0.6m by 0.7m and up to 0.1m thick	Upper fill of pit [404]
403	Deposit	Pale grey soft sandy clay, covering an area 0.6-0.7m across and up to 0.1m thick	Lower fill of pit [404]
404	Cut	Roughly oval but essentially irregular pit orientated approximately north-east/south-west, 1m long by 0.6m – 0.7m wide but with three distinct depressions where excavated, sides at 45° and with a rounded base, truncated by a probable plough furrow at the north-east end	Pit
405	Deposit	Dark grey soft silt with 2% rounded pebble, 0.2m wide, 0.8m long and 0.15m thick	Upper fill of pit [407]
406	Deposit	Pale grey firm silty clay up to 0.2m wide and 0.2m thick	Lower fill of pit [407]
407	Cut	Oval but essentially irregular, orientated east/west, 1.1m long, up to 0.6m wide and 0.3m deep with very steep, near vertical sides on the north-west side and closer to 45° on the south-east and a rounded base	Pit
408	Deposit	Mid brown firm silty clay with 2% rounded cobbles, 0.3m wide, 1.5m long and 0.22m thick	Fill of ditch [408]

Context	Type	Description	Interpretation
409	Cut	Linear, orientated north-west/south-east, 0.3m wide, extending across full width of trench, and 0.22m deep, with sides at 45° forming a v-shaped section but with a narrow vertical-sided slot at the north-west side 0.03m wide	Ditch
410	Deposit	Mid-brown firm silty clay with 1% rounded gravel, 1m wide and up to 0.3m thick	Upper fill of feature [414]
411	Deposit	Mottled mid-orange and brown firm silty clay, 1% sub-angular gravel, 0.1m thick	Part of middle fill of feature [415], same as 413
412	Deposit	Mid grey soft sandy silt with 1% sub-angular cobbles, 0.2m-0.25m thick	Part of lowest fill of feature [415], same as 414
413	Deposit	Mottled mid-orange and greyish-brown firm clay and silty clay with 20% rounded cobbles and 1% angular red sandstone, 0.25m thick. Possibly incorporating two post holes of 0.2m diameter but not fully investigated at this stage	Middle fill of feature [415], deliberate backfill?
414	Deposit	Mid grey firm silty clay with 1% rounded gravel, up to 0.25m thick	Lowest fill of feature [415], initial silting? Same as 412
415	Cut	Presumed to be linear and orientated east/west although seemingly slightly bulging out at south-west, 1.6m wide (north/south), at least 1.6m wide, and more than 0.6m deep. Cut initially almost vertical on north side before flattening out and then returning to approximately 45°. South side more gradual, not fully excavated	Ditch or large pit?
416	Deposit	Mid-orange firm clay with 10% rounded cobbles, varying to a more pinkish firm clay and yellower sandy clay in places	Natural
500	Deposit	Mid greyish-brown soft silty clay, 0.2m thick	Topsoil
501	Deposit	Mid orangey-brown soft sandy clay, 0.1m thick	Subsoil
502	Deposit	Mid brownish-grey soft silty clay, 0.15m thick over an area of 0.6m diameter, cut by line of field drain containing ceramic pipe on east side	Fill of pit [503]
503	Cut	Roughly oval, 0.6m diameter, with shallow sloping sides to a depth of no more than 0.15m. Cut by line of field drain containing ceramic pipe on east side	Pit
504	Deposit	Mottled dark orange firm clay, 10% rounded pebbles and patches of gravel at west end	Natural
600	Deposit	Mid brownish-grey soft silty clay, 0.2m thick	Topsoil
601	Deposit	Mid orangey-brown soft sandy clay, 0.1m thick	Subsoil
602	Deposit	Dark grey soft silt with 5% rounded pebbles, essentially the same as 600	Fill of pit [603]
603	Cut	Squarish oval, 0.6m long north/south by 0.33m wide east/west and only 0.1m deep	Pit (modern?)
604	Deposit	Mid brown firm silty clay, 2% sub-angular and rounded pebbles, 0.4m-0.6m wide, at least 1.5m long and 0.09m thick	Fill of ditch [605]
605	Cut	Linear, orientated approximately north/south, 0.4m-0.6m wide, at least 1.5m long and 0.09m deep. The east side is gently sloping, the west has a steeper break of slope at the top. The base is gently rounded, almost flat	Ditch
606	Deposit	Firm orange clay, although sandier and softer at the west end with gravelly patches towards the west.	Natural
700	Deposit	Soft, mid brownish-grey, silt, with 5% rounded gravel, c0.3m thick	Topsoil
701	Deposit	Firm, mid brownish-orange, sandy-clay, with 1% rounded gravel	Subsoil

Context	Type	Description	Interpretation
702	Deposit	Firm, mottled pale grey and reddish-brown, gritty clay-sand; very shallow, no more than 0.1m deep; 0.6m wide north/south by >1.5m long east/west; 15% rounded pebble inclusions	Fill of pit 703
703	Cut	Long pit, rounded rectangle or oval shape, with very shallow sides; <0.1m deep; >1.5m long by 0.6m wide, with an irregular base	Pit
704	Deposit	Firm, mid orange-brown sandy-clay, with 20% rounded cobble inclusions	Natural
800	Deposit	Soft, mid brownish-grey, silt, 0.2tm thick, with 2% rounded gravel	Topsoil
801	Deposit	Firm, mid to pale orange-brown sandy-clay, 0.1m thick, with 2% rounded gravel and pebble inclusions	Subsoil
802	Deposit	Firm, mid orange clay, with 1% rounded pebbles and cobbles	Natural

Appendix 3: Summary Finds List

Context	Type	Qty	Description	Date range
200	Ceramic	3	Three refitting fragments red earthenware ceramic field drain	Mid to late 19 th century
300	Pottery	1	Fragment of brown-glazed red earthenware, probably hollow ware vessel, poorly fired glaze	Late 17 th to 19 th century
408	Ceramic	1	Very crude but hard fired ceramic, pale pinkish buff with some large inclusions	Not closely dateable - prehistoric or Romano-British?
410	Animal bone	1	Piece of large mammal bone, probably cattle, in several fragments, sawn at distal end and with cut marks	Not closely dateable
500	Pottery	1	Fragment of brown-glazed red earthenware, hollow ware vessel, with yellow slip stripe	Late 17 th to 19 th century
501	Stone	1	Lump of brown flint, still mostly covered by cortex	Not closely dateable
600	Pottery	1	Fragment of black-glazed red earthenware, thick base fragment of hollow ware vessel	Late 17 th to 19 th century
600	Ceramic	1	Fragment of red earthenware with one complete face, probably a fragment of drainage pipe or brick	19 th century

Appendix 4: Environmental Sample Data

Sample number	1	2	3	4	5	6	7	8	9	10	11
Context number	304	305	309	402	403	405	408	410	414	502	702
Size (litres)	45	25	20	20	10	20	15	40	10	10	10
Context type	Upper fill of ditch [307]	Middle fill of ditch [307]	Peat(?) deposit over natural	Upper fill of pit [404]	Lower fill of pit [404]	Upper fill of pit [407]	Fill of ditch [409]	Upper fill of [415]	Lower fill of [415j]	Fill of pit [503]	Fill of pit [703]

Summary of samples taken

Sample number	1	2	3	4	5	6	7	8	9	10	11
Uncharred organic			+ (roots & wood)						+ (roots & seeds)		
Charred organic	+	+	+	++++	++++ (incl. nutshell?)	++	+	+	+	++	++
Calcined bone									+		
Ceramic	+	+						+			
Slag	+	+	(copper?)					+		+	
Hammerscale								+			
Haematite	+	+		+		+		+	+	+	
Flint	+	+		+	+	+		+	+	+	
Other stone										+ (ceramic lump with incised cross, and possible whetstone)	
Mineralized organic						? wood +					
Insect egg case	+					+					

Contents of retents (Key: + = 1-9, ++ = 10-20, +++ = 21-50, +++++ = >51)

Sample number	Context Number	Total flot volume (ml)	Feature	Indeterminate cereal	Charcoal quantity	Charcoal max size	Material available for AMS	Comments
1	304	165	Upper fill of ditch [307]		+	4	No	No charred plant remains present
2	305	100	Middle fill of ditch [307]		+	2	No	No charred plant remains present
3	309	240	Peat(?) deposit over natural		++	1	No	No charred plant remains present
4	402	90	Upper fill of pit [404]		+++	11	Yes	Less than 10 fragments present at >10 mm in size, not enough for ID purposes. No charred plant remains present
5	403	85	Lower fill of pit [404]		+++	16	Yes	The material sufficient for AMS dating is scrappy and sediment coated. No charred plant remains present
6	405	90	Upper fill of pit [407]		+++	12	Yes	The material sufficient for AMS dating is rather scrappy and so should only be used as a last resort. No charred plant remains present
7	408	70	Fill of ditch [409]	+	+	5	Yes	Single charred cereal indeterminate grain, exhibiting a poor level of preservation, which may be sufficient enough to be used for AMS dating
8	410	50	Upper fill of ditch/large pit [415]		+++	9	No	No charred plant remains present. Abundant uncharred blackberry (<i>Rubus fruticosus</i> L. agg.) seeds
9	414	57	Lower fill of ditch/large pit [415]		+	6	No	No charred plant remains present. Abundant uncharred bramble (<i>Rubus fruticosus</i> L. agg.) seeds
10	502	150	Fill of pit [503]		+++	6	No	No charred plant remains present
11	702	140	Fill of pit [703]		+++	13	Yes	The material sufficient for AMS dating is rather scrappy and so should only be used as a last resort. No charred plant remains present

Volume and contents of flot (Key: + = rare (1-5), ++ = occasional (6-15), +++ = common (16-50), ++++ = abundant (>50); Note: charcoal over 10mm is sufficient for identification and AMS dating)

Appendix 5: Environmental Assessment Report

MA16 - Meadowlands Avenue, Barrow-in-Furness Environmental Assessment

Angela Walker

Eleven samples recovered during archaeological works at lands off Meadowlands Avenue, Barrow-in-Furness were received for palaeoenvironmental assessment. The samples derived from the fills of various pits, a ditch and a feature interpreted as a ditch/large pit. The aims of the assessment were to assess the presence, preservation and abundance of any environmental remains in the samples.

Method

The sample was subjected to flotation and wet sieving by hand flotation. The floating debris (the flot) was collected in 250 µm and 500 µm sieves, and the remaining material (retent) was wet-sieved through a 1mm mesh. The flot and retent material was then dried in a drying oven. The samples were scanned using a stereomicroscope at magnifications of x10 and up to x100. Identifications, where provided, were confirmed using modern reference material and seed atlases including Cappers *et al.* (2006), Stace (1997) and Zohary *et al.* (2012). After careful consideration of the uncharred seeds present in the samples they were determined to be a modern intrusive component and were therefore not considered further.

Results

Results of the assessment are presented in *Appendix 4* (Flot samples). Material sufficient for AMS (Accelerated Mass Spectrometry) radiocarbon dating is shown in the table. The majority of samples had varying proportions of modern roots and soil fungal spores. The two samples from deposits **410** and **414**, the upper and lower fills respectively of ditch/large pit **415** contained abundant uncharred seeds of brambles (*Rubus fruticosus* L. agg.) that were considered a modern intrusive component.

Wood charcoal

Wood charcoal was present in varying quantities in all 11 samples (*Appendix 4*) but only four contained fragments sufficient for AMS dating. These were deposits **402** and **403**, the upper and lower fills respectively of pit **404**, deposit **405**, the upper fill of pit **407**, and deposit **702**, the fill of pit **703**.

Cereal grain

A single charred cereal indeterminate grain was recovered from deposit **408**, the fill of ditch **409**. Due to the poor level of preservation exhibited by the grain it was not possible to take the identification to species level.

Discussion

Only one sample out of the 11 assessed contained any charred plant remains (a single cereal grain) other than charcoal, the rest comprised modern root material and soil fungal spores. It is not possible to offer information on agricultural practices undertaken at the site based on a single grain, nor is it possible to suggest a date or use for ditch **409**. The cereal grain may be sufficient to use for AMS if required, but its suitability cannot be guaranteed.

REFERENCES

Cappers, RTJ, Bekker, RM, and Jans, JEA, 2006 *Digital seed atlas of the Netherlands*, Barkhuis Publishing and Groningen University Library, Groningen

Stace, C, 1997 *New Flora of the British Isles* (second edition), Cambridge University Press, Cambridge

Zohary, D, Hopf, M, and Weiss, E, 2012 *Domestication of Plants in the Old World*, Oxford University Press, Oxford