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UNITED UTILITIES PLC

WEST CUMBRIA NETWORK MAINS, CUMBRIA

ARCHAEOLOGICAL EVALUATION REPORT

DECEMBER 2015

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archaeology

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United Utilities PLC

West Cumbria Network Mains

Archaeological Evaluation Report

October 2015

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SUMMARY

Wardell Armstrong Archaeology was commissioned by United Utilities PLC, to undertake an archaeological evaluation by trial trenching of 28 specific areas (Figure 1-10) of the network main from Quarry Hill to Stainton and Cockermouth, Cumbria (from NY 3450 9800 to 3219 5412). This work was undertaken to investigate the possible archaeological resource and the potential impact as a result of the construction of a proposed new water main.

The archaeological evaluation was undertaken over 15 days from the 14th September to the 2nd October 2015 and involved the excavation of 60 trenches. The majority of the 60 trenches were devoid of archaeological features. Archaeological features were observed in eleven trenches in six areas, from the west of Papcastle (Areas 17, 23 & 24), the northeast of Bridekirk (Area 58) and to the northeast of Bothel (Areas 52 & 54).

In Area 17, there was a small pit in Trench 37 dated to the Mesolithic period, a posthole in Trench 38 carbon dated to the early medieval period; and an undated ditch in Trench 39. These features are within an area of known archaeological interest highlighted by the two geophysical surveys that have been undertaken over the area (Wardell Armstrong Archaeology 2015c and Graham 2011). No finds were recovered from any of these features which could suggest they are more likely to represent prehistoric rather than Romano-British activity. In Area 23, in Trench 6, two layers were observed of which post-medieval pottery was recovered from the lower layer. In Area 24, an excavated pit in Trench 14 contained two fragments of pottery (**1404**), after carbon dating these fragments could be attributed to the Neolithic period.

In Area 52, a ditch/hedgerow that may have been associated with a demolished 18th century house known as Bog Hall, was observed in Trench 54. In Trench 55, there was a single pit that contained post-medieval pottery. In Area 54, two undated ditches were observed within Trench 60, of which the later ditch was cut into the earlier one, through its centre and on the same alignment.

Three trenches in Area 58 contained several archaeological features. The remains of stone walls were observed in Trenches 51 and 52. In Trench 53, a levelling layer, a ditch and demolition layer that sealed the two previous features were observed. A medieval silver long cross coin was recovered from the topsoil in Trench 53. This site is believed to be part of a medieval grange belonging to Guisborough Priory.

ACKNOWLEDGEMENTS

Wardell Armstrong Archaeology (WAA) thank United Utilities Water PLC for commissioning the project, and for all assistance throughout the work. Thanks also to Aisling Mulcahy and Ed Danaher of Jacobs UK Ltd. and Jeremy Parsons, Historic Environment Officer, Cumbria County Council, for all their assistance throughout the project.

Wardell Armstrong Archaeology also thanks John Elliott Ltd. and their staff for their help during this project.

The archaeological evaluation was undertaken by Ben Moore and Mike McElligott assisted by Ruby Neale, Karolina Siara, Eleonora Montanari, Ed Johnson, Kevin Horsley, Kevin Mounsey, Mark Lawson, Adam Mager and Sue Thompson. The report was written by Mike McElligott and Ed Johnson and the drawings were produced by Adrian Bailey and Helen Phillips. The finds assessment was undertaken by Megan Stoakley, WAA Finds Officer and Sue Thompson. The environmental assessment was undertaken by Don O'Meara, WAA Environmental Officer. The earthwork analysis and historical interpretation of Area 58 was undertaken by Richard Newman.

The report was edited by Richard Newman, Post excavation Manager for WAA. The project was managed by Frank Giecco, Technical Director for WAA.

1 INTRODUCTION

1.1 Circumstances of the Project

1.1.1 In September 2015, WAA undertook a programme of archaeological evaluation by trial trenching, on behalf of United Utilities Water PLC. This compromised of 28 sections along the network main from Quarry Hill to Stainton and Cockermouth, Cumbria (From NY 3450 9800 to 3219 5412), in support of an Environmental Statement. Following a geophysical survey undertaken in 2015, Jeremy Parsons, Historic Environment Officer, Cumbria County Council requested a programme of archaeological trial trenching to test the results of the geophysical survey (WAA 2015c) and the areas of archaeological potential identified in a desk based assessment and walkover survey (WAA 2015a). The purpose was to further elucidate and evaluate the potential archaeological resource and define the impact of the proposed construction works. The aims of the trial trenching were to confirm the presence or absence of archaeological remains within defined areas of archaeological potential, to define the level of preservation, to provide an indication of the extent of features and to establish where possible the date range of noted archaeological features.

1.1.2 This report outlines the evaluation works undertaken on-site, the subsequent programme of post-fieldwork assessment and the results of this scheme of archaeological works.

2 METHODOLOGY

2.1 Written Scheme of Investigation

2.1.1 Wardell Armstrong Archaeology (WAA) was commissioned by United Utilities PLC to prepare a Written Scheme of Investigation (WSI) for an archaeological trial trench evaluation. Following consultation with Aisling Mulcahy of Jacobs UK Ltd acting on behalf of the client, Jeremy Parsons, Historic Environment Officer, Cumbria County Council, accepted the WSI. Wardell Armstrong Archaeology subsequently was commissioned to undertake this work by United Utilities PLC.

2.1.2 The archaeological evaluation was undertaken following the Chartered Institute for Archaeologists *Standard and Guidance for Archaeological Field Evaluation* (CIfA 2014a), The fieldwork programme was followed by an assessment of the data as set out in the *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA 2014b) and in accordance with the WAA Excavation Manual (2012).

2.2 Aims and Objectives of the Archaeological Evaluation

2.2.1 The evaluation consisted of the excavation of 60 trenches within the proposed development area. These trenches were targeted either to investigate geophysical anomalies or areas of archaeological potential identified through desk-based assessment and walkover survey (see WAA 2015a and 2015c). All trenches excavated measured between 24-30 meters long and 1.55 meters wide. The main aim of the trial trenching was to establish the nature and extent of below ground archaeological remains within the vicinity.

2.2.2 In summary, the main objectives of the field evaluation were to:

- determine the presence or absence of buried archaeological remains within the proposed development site
- determine the character, date, extent and distribution of any archaeological deposits and their potential significance
- determine levels of disturbance to any archaeological deposits from plough damage or from any other agricultural/industrial practices or later building activities
- determine the likely impact on archaeological deposits from the proposed development

- disseminate the results of the fieldwork through an appropriate level of reporting.

2.2.3 Topsoil and subsoil was removed by mechanical excavator under close archaeological supervision. The trial trenches were subsequently cleaned by hand and all features were investigated and recorded according to the Wardell Armstrong Archaeology standard procedure as set out in the Excavation Manual (WAA 2012).

2.2.4 The 60 evaluation trenches were photographed before being opened and backfilled and photographed following excavation and recording.

2.3 The Archive

2.3.1 A full project archive has been compiled according to the Archaeological Archives Forum recommendations (Brown 2011). The archive will be deposited with Tullie House Museum, with copies of the report sent to Cumbria Historic Environment Record at Kendal, available upon request. The archive can be accessed under the unique project identifier WAA15 NMQ-A, CP 11503/15.

2.3.2 Wardell Armstrong Archaeology and Cumbria Council, support the Online AccesS to the Index of Archaeological InvestigationS (OASIS) project. This project aims to provide an on-line index and access to the extensive and expanding body of grey literature, created as a result of developer-funded archaeological work. As a result, details of the results of this project will be made available by Wardell Armstrong Archaeology, as a part of this national project. The unique OASIS identification number for this archive comprises wardella2-228244.

3 BACKGROUND

3.1 Location and Geological Context (Fig 1)

3.1.1 The proposed new water mains cross both arable and pasture situated to the east of Stainburn through to the Quarry Hill Reservoir at Mealsgate, Cumbria, between Ordnance Survey grid references NY 3450 9800 to 3219 5412. The sites are located adjacent to the line of the A595 from the reservoir in the northeast towards the northwest of Cockermouth before the route splits in two with one part heading towards Stainburn to the west and the other part heading towards Cockermouth to the southeast.

3.1.2 The underlying solid geology of the area consists of the Pennine Upper Coal Measures formation (Cumbria) deposited during the Carboniferous Period (331 – 335 million years ago) and Yoredale Group consisting of limestone, sandstone, siltstone, mudstone and Dination Rocks. The area to the south of Cockermouth comprises predominantly interbedded siltstone and mudstone of the Bitter Beck formation. Dination Rock comprises the solid geology between Papcastle Bridge and Bothel with Yoredale Group in the area to the north of Bothel. Coal was mined in the area primarily in the Derwent valley between Cockermouth and Stainburn. The superficial deposits consist of predominantly alluvium (clay, silt and sand) at Stainburn with some areas of till. Devensian – Diamiction glacial till that formed during the Quaternary Period (up to 2 million years ago) dominates the areas around Little Clifton and Cockermouth with some areas of till. North of Papcastle Bridge the area is comprised of till (Devensian – Diamiction) with some peat to the southwest of Redmain and around Bothel (BGS 2015).

3.2 Historic and Archaeological Background

3.2.1 ***Introduction***: this background is compiled mostly from secondary sources, and the primary records consulted during the desk-based assessment that was undertaken by WAA in 2015. It is intended only as a summary of historical developments around the study area, in order to provide a context for the evaluation results. It is a precis only of the desk-based assessment and that report should be consulted for a fuller assessment of the documentation.

3.2.2 ***Prehistoric (up to c.AD 72):*** Known Mesolithic activity in Cumbria is focused on coastal, estuarine, riverine and lacustrian locations (Hodgson and Brennand 2006, 25). The earliest evidence for cultivation in Cumbria, circa 4000BC, lies close to the coast and in the Eden Valley. Evidence from inland is more limited, but points

towards habitual use of valleys as important routeways, thus the valley of the River Derwent may be an area within which evidence of Mesolithic and Neolithic activity may be found.

3.2.3 Neolithic activity in the pipeline area is very limited. Evidence for local Bronze Age activity in the area comes primarily in the form of metalwork. A small cast copper alloy unlooped palstave axe dating from the Middle Bronze Age (1500-1150 BC) was found by metal detecting in the Bridekirk area in 2010 (LANCUM-D724A4). Although not much is known about the later prehistoric period in the area of the proposed pipeline, research around Papcastle has revealed probable pre-Roman structures in the vicinity of the later Roman fort and attached civilian settlement of *Derventio*. Potential later prehistoric features observed through geophysical survey include enclosures, boundaries, pit alignments and hut circles (WAA 2015a, 38; Graham 2011). It is known from elsewhere in Cumbria, such as Carlisle and the Solway Coast, that areas of intense Roman activity usually feature earlier Iron Age evidence.

3.2.4 ***Roman (c.AD 72 – c.410)***: Roman forts were established in north-western Cumbria at Carlisle, Old Carlisle (near Wigton) and Papcastle, with a road, the modern A595 route, established to link them. Ongoing research into Derventio, run by Grampus Heritage (largely unpublished), at Papcastle fort and within its environs, suggests that the fort was an important base, with several roads extending through it, and a possible harbour.

3.2.5 It is thought that Roman Papcastle may have been at a crossroads of four main routes, one of which was the former route of the current A595 and another of which may have run close to the modern A66 east towards Keswick (Shotter 2004, 76). The remains found in the vicinity of Papcastle that have been subject to excavation have suggested a considerable Roman civilian settlement associated with the fort of *Derventio*. This settlement has the size and characteristics of a town and include a water mill, domestic, industrial and probable commercial areas (pers. comm. Frank Giecco, the excavation director). Geophysical surveys undertaken to the south of Papcastle and west of Cockermouth have revealed evidence of a wider farmed Romano-British landscape surrounding this civilian settlement (Graham 2011), including field systems and possible farmsteads.

3.2.6 Whilst much of the modern A595 follows the exact course of the Roman road from Papcastle to Old Carlisle, there are significant departures especially where the

route was altered in the medieval period to pass through medieval settlements. This is particularly true around Bothel where the route of the Roman road lies to the west of the A595. It seems likely that the postulated route of the Roman road from Papcastle to Old Carlisle will be intersected by the pipeline route to the north of Bothel (WAA 2015a, 43).

3.2.7 ***Medieval (c.410 – c.1540):*** there is no archaeological evidence for early medieval (pre 1092) activity along the proposed pipeline route. Nearby place names are indicative of early medieval settlement origins but the first reference to there place names occur in the 12th century or later. By the end of the early medieval period it has been stated that Cumbria was neither rich or well settled (Sharpe 2005, 44)

3.2.8 The earliest medieval settlement along the proposed pipeline route to be referenced is Bothel, as 'Bothle' c. 1125, with several others referred to during the 12th century, including Stainburn, as 'Steinburn' in c. 1135, Clifton in c. 1160, , Brigham, as 'Briggham' in c. 1175, and Broughton Cross as 'Broctuna' (Armstrong 1950). A cast copper alloy damaged medieval mount from AD 1200-1600 was found in the Bothel area in 2011 (LANCUM-42BBB7); as was a silver hammered groat of Henry VII dating from c. AD 1490-1504, minted in London (LANCUM-42D6D7). Medieval clipped silver coinage has also been found by metal detectorists near Bridekirk (Mr Burkett pers. comm 2015). The site from which the coins were discovered is within the pipeline corridor and had been noted as an area of earthworks forming enclosures and platforms surrounded by ridge and furrow. It was postulated that the site was associated with a known medieval grange of Guisborough Priory (identified in Newman 2014).

3.2.9 The remains of former medieval common fields in the form of surviving ridge and furrow and enclosed strip fields[1] occur throughout the area traversed by the pipeline. These are especially evident along the route north of Cockermouth where the survival of ridge and furrow earthworks is generally good (WAA 2015a, 39; Figs 3-5). Most of the route between Stainburn and Cockermouth passes through former common field areas too, though the survival of associated strip field boundaries and ridge and furrow earthworks is generally poor in this area (WAA 2015a, 39).

[1] These are fields, usually enclosed in the early post-medieval period through piecemeal enclosure, that fossilise groups of ridges that occurred in the unenclosed medieval common field.

3.2.10 The town of Cockermouth was founded as a borough before 1210 (Leech and Gregory 2012, 1), situated to the south of the former Roman town at Papcastle. Medieval burgage plots line Main Street. The supposed location of St Leonard's chapel and its associated hospital, at Cockermouth, lies within the pipeline corridor (WAA 2015a, 42). The location appears to be a close called St Leonard's on the site of the later railway station. St Leonard is often associated with hospices or leper hospitals (https://bonesdontlie.wordpress.com/2011/02/20/leprosy-in-the-high-middle-ages-part-iv-archaeology/).

3.2.11 ***Post-Medieval and Modern (c.1540 – present):*** To the west of Cockermouth, along the Derwent valley towards Workington, the landscape has been influenced to a greater degree than elsewhere by 18th and 19th century industrial development, especially coal mining (WAA 2015a 24-5, 44). This led to improved roads and tramways, especially in the Derwent valley. In the mid-19th century, railways were constructed initially to assist with the transport of bulky goods like coal in the. The Cockermouth to Workington line was opened in 1847 with stops at Brigham, Broughton Cross, Camerton and Workington Bridge (Joy 1983, 152-3). The line closed in the 1960s and is now partly reused as the route of the A66 road.

3.2.12 Turnpikes were established between Workington and Bridgefoot, and Bridgefoot and Cockermouth in 1753 and to the west of Cockermouth (WAA 2015a 23), the route of the proposed pipeline follows much of the course of the turnpike. The turnpike road between Carlisle and Workington was first established in 1753, but went through Wigton to Allonby and along the coast through Maryport. It took the more direct route via Cockermouth at a later date along the current A595.

3.3 Previous Archaeological Work

3.3.1 A desk-based assessment and walkover survey was undertaken by WAA along the whole route (WAA 2015a). Geophysical surveys were carried out by WAA subsequently, mainly along the pipeline routes around Cockermouth and Papcastle (WAA 2015c).

3.3.2 The majority of the anomalies detected during the geophysical survey appeared to be agricultural features, including evidence of past ploughing, land drains and some former field boundaries. Possible ridge and furrow cultivation was detected in a distinct area to the south of the River Derwent and the A66. Potential archaeological features have been detected to the north of the River Derwent,

west of Papcastle. These may represent archaeological features relating to the extra-mural settlement activity around Roman Papcastle (WAA 2015c).

3.3.3 An archaeological evaluation was undertaken at Williamsgate, Cockermouth, Cumbria (WAA 2015b) and comprised the excavation of 12 trenches across three fields. A single pit containing a piece of animal bone was recorded in one trench and evidence of ploughed out ridge and furrow was visible in another trench. In general these remains were not considered to be significant.

4 TRIAL TRENCHING RESULTS

4.1 Introduction

4.1.1 The evaluation was undertaken in a single phase that took place from the 12th September to 2nd October 2015 and comprised the excavation of 60 trenches (Figure 1). Unless otherwise stated all trenches were positioned to target geophysical targets. The topsoil was stripped by a JCB 3CX with a toothless bucket to the level of the natural substrate. The areas under investigation were subsequently cleaned by hand and potential archaeological features were investigated. The trenches measured 30m in length except for trenches 25, 54 and 55 which were 24m in length. All trenches were 1.55m wide. Trenches 6, 14, 37 – 39, 51 – 55 and 60 contained possible archaeological features and will be discussed below. The remaining trenches were devoid of archaeological features and the summaries of these trenches are included in Appendix 1. The vast majority of the geophysical anomalies targeted proved to be either modern drainage features of variations in the natural geology.

4.1.2 No archaeological features were identified within any of the trenches in areas 1, 5, 6, 7, 9, 11, 14, 15, 16, 25, 29, 33, 37, 40, 48, 49, 50, 51, 53, 55, 56 and 57 (figures 2-8).

4.2 Results

4.2.1 **Area 17*:*** Area 17 was located to the west of Papcastle (Figure 5) and contained four trenches. This was an area highlighted as having a high archaeological potential from a previous geophysical survey undertaken as part of the ongoing *Discovering Derventio* community archaeology project managed by Grampus Heritage and Training (see Graham 2011). Archaeological features were observed in Trenches 37, 38 and 39 that tie into the landscape of pits and ditches highlighted by this earlier work. No archaeological features were observed in Trench 40.

4.2.2 ***Trench 37:*** Trench 37 was located near the centre of Area 17 and was aligned northwest-southeast (Figures 5 & 14) (Plate 1). The trench was excavated to a maximum depth of 0.82m, revealing a firm mid-yellow-brown natural clay (**3702**) below *c*.0.42m of a soft mid-orange-brown, silty clay, subsoil (**3701**) and *c*.0.29m of a loose dark grey-brown, silty clay, topsoil (**3700**).

4.2.3 Feature [**3704**] was located near the southeast end of trench (Figure 14) (Plate 2). It was sub-circular shaped that measured 0.62m wide by 0.22m deep. It had sharp,

steep sloping sides with a concave base. The fill (**3703**) was a soft mid-brown silt that contained occasional gravel and large pebbles. No finds were recovered. It may have been a small pit. This feature was dated to the later Mesolithic with a radiocarbon date from charred material of 5730-5640 cal. BC. The charred material was derived from a sample taken for archaeobotanical analysis.

4.2.4 ***Trench 38:*** Trench 38 was located in the western side of Area 17 and was aligned northeast-southwest (Figures 5 & 15) (Plate 3). The trench was excavated to a maximum depth of 0.50m, revealing a loose dark brown silt and gravel substrate (**3801**) below *c*.0.20m of a loose dark brown clayey silt topsoil (**3800**).

4.2.5 Feature [**3802**] was located near to the northeast end of the trench (Figure 15) (Plate 4). It was sub-circular shaped that measured 0.8m by 0.7m by 0.25m. It had sharp steep sloping sides with a round base. The fill (**3803**) was a moderately dark brown sandy silt that contained frequent pebbles and occasional charcoal flecks. No finds were recovered. This feature was radiocarbon dated to the early medieval period, with a radiocarbon date of 780-970 cal. AD, obtained from a sample taken for archaeobotanical analysis.

4.2.6 Feature [**3804**] was located near the northeast end of the trench and to the southwest of feature [**3802**] (Figure 15) (Plate 5). It was circular shaped that measured 1.14m in diameter by 0.53m. It had sharp, steep sloping sides with a rounded base. The fill (**3805**) was a compact mid brown clayey silt that contained very frequent pebbles and occasional gravel. No finds were recovered. It appeared to be a large pit that is likely to form part of a substantial double pit alignment measuring over 70m in length, highlighted in the previous geophysical survey.

4.2.7 ***Trench 39:*** Trench 39 was located in the northern end of Area 17 and was aligned northeast – southwest (Figures 5 & 16) (Plate 6). The trench was excavated to a maximum depth of 0.82m, revealing a compact mid-brown sandy silt (**3902**) below *c*.0.40m of a soft mid-orangey brown, clayey silt, subsoil (**3901**) and *c*.0.26m of a loose dark brown, clayey silt, topsoil (**3900**).

4.2.8 Feature [**3903**] was located in the southwest end of the trench (Figure 16) (Plate 7) and was aligned northeast-southwest. It was a gully/ditch with shallow sloping sides with a flattish base that measured 1.90m by 0.50m by 0.20m. The fill (**3904**) was a moderately compact mid-orange-brown, sandy silt that contained occasional pebbles. No finds were recovered. It is possible that the feature is

associated with the large pit alignment previously discussed in section 4.2.15, and hint at a possible shallow ditch running beside the pit alignment.

4.2.9 **Area 23**: Area 23 was located to the west of Cockermouth and was between the river Derwent, to the north and the A66 to the south (Figure 4). This area was targeted because the area contained a clear earthwork that was also recorded as a crop mark that made up a rectangular enclosure, which was presumed to date to the medieval period or earlier. It contained four trenches; 2, 3, 4 and 6 of which there were archaeological deposits in trench 6. Trenches 2 and 3 positioned to target the western and northern sides of the enclosure failed to find any evidence of a bank and proved that the northern and western sides of the feature were defined by a natural break of slope. The presence of post-medieval pottery beneath the eastern bank proved this earthwork to have been constructed no earlier than the early 20th century.

4.2.10 ***Trench 6:*** Trench 6 was located in the eastern side of Area 23 and was aligned east – west (Figures 4 & 12) (Plate 8) to target the eastern side of the enclosure. It was excavated to a maximum depth of 0.60m, revealing a compact mid-orange clay sand natural (**604**) below *c*.0.30m of a moderately compact mid-grey-brown clay sand subsoil (**602**) and *c*.0.27m of a loose dark brown, silty clay, topsoil (**600**).

4.2.11 Two deposits were visible in the eastern side of the trench (Plate 9). The lower deposit (**603**) was a moderately compact dark grey brown clay silt that contained moderate gravel and measured *c*.6m wide by 0.18m thick. A small amount of Post-medieval pottery was also recovered within this context. This deposit appeared to form a north-south bank on the eastern side of the trench. The second deposit (**601**) was loose silty clay that had gravel patches throughout and appeared to be a modern deposit between the subsoil and the topsoil and measured 1.6m wide by 0.1m thick.

4.2.12 **Area 24**: Area 24 was located to the west of Cockermouth and the roundabout junction between the A595 and A66 (Figure 4). It contained three trenches; 11, 13 and 14 with archaeological features observed in Trench 14.

4.2.13 ***Trench 14:*** Trench 14 was located on the eastern side of Area 24 and was aligned northwest-southeast (Figures 4 & 13) (Plate 10). It was excavated to a maximum depth of 0.75m, revealing a friable mid orangey brown sandy silt and gravel substrate (**1402**) below *c*.0.23m of a compacted mid brown sandy silt subsoil (**1401**) and *c*.0.27m of a friable dark brown sandy silt topsoil (**1400**).

4.2.14 Pit [**1403**] was located near the centre of the trench and was oval shaped with sharp, gradual sloping sides and an uneven base (Figure 13) (Plate 11). It measured 0.75m in diameter by 0.25m deep. The fill (**1404**) was a soft dark grey silty clay that contained frequent gravel and occasional charcoal flecks. Two sherds of pre-historic pottery were recovered. A sample was taken from which a hazelnut shell was radio carbon dated to 3650-3525 cal. BC, placing it within the Neolithic period.

4.2.15 **Area 52**: Area 52 was located to the northeast of Bothel and was to the south of A595 (Figure 11). It contained Trenches 54 and 55 that had archaeological features observed in both trenches.

4.2.16 ***Trench 54***: Trench 54 was located near the centre of area 52 and was aligned northeast-southwest (Figures 11 & 20) (Plate 12). It was excavated to a maximum depth of 0.43m, revealing a soft mid-orange-brown clay natural (**5401**) below *c*.0.27m of a loose dark brown, silty clay, topsoil (**5400**).

4.2.17 Feature [**5403**] was located on the eastern side of the trench and was aligned northwest-southeast. It was linear with gradual, irregular sloping sides with an uneven base that measured 0.63m wide by 0.14m deep (Figure 21) (Plate 13). The fill (**5402**) was a soft mid grey brown sandy clay that contained occasional stone. It may have been a property boundary ditch or a hedgerow ditch to a boundary noted on 19th century OS maps and was associated with Bog Hall, a post-medieval house that has been demolished and was located in the southwest corner of Area 54.

4.2.18 ***Trench 55***: Trench 55 was located near the centre of Area 52 and was aligned northwest-southeast (Figures 10 & 21) (Plate 14). It was excavated to a maximum depth of 0.47m, revealing a friable mid yellow grey clay natural (**5502**) below *c*.0.04m of a soft mid-brown, silty clay, subsoil (**5501**) and below *c*.0.29m of a loose dark brown silty clay topsoil (**5500**).

4.2.19 Pit [**5504**] was located in southeastern end of the trench and was only partially revealed (Figure 22) (Plate 15). It was sub-circular shaped with sharp, steep sloping sides and a flattish base that measured 0.60m by 0.25m by 0.30m. The fill (**5505**) was a friable mid greyish brown clayey silt that contained moderate stones and occasional charcoal flecks. Several sherds of 20th century pottery were recovered but not retained, as they did not add to our knowledge of the site which is known from documented evidence to have been an occupied farmstead into the 20th century.

4.2.20 **Area 54**: Area 54 was located roughly to the north of Bothel and to the north of the A595 (Figure 10). It contained two trenches. Trench 59 was only partially opened and had to be abandoned due to very poor waterlogged ground conditions. The area was targeted to clarify if the projected route of the main Carlisle to Papcastle Roman road crossed the area. Archaeological features were observed in Trench 60, but unlikely to relate to any potential Roman road.

4.2.21 ***Trench 60:*** Trench 60 was located near the centre of Area 54 and was aligned northwest-southeast (Figures 10 & 22) (Plate 16). It was excavated to a maximum depth of 0.40m, revealing a soft light orangey-grey to greyish-orange clay natural (**6001**) below *c*.0.28m of a soft mid-greyish brown, silty clay, topsoil (**6000**).

4.2.22 Ditch [**6003**] was located near the northwest end of the trench (Figure 23). It was linear shaped and was aligned east-northeast – west-southwest and measured 0.87m wide by 0.34m deep. It had sharp, steep sloping sides with a rounded base. The fill (**6004**) consisted of a loose mid orangey brown silty clay that contained moderate small stones and occasional charcoal flecks. It appeared to be a drainage ditch (Plate 17). It was cut by a later ditch re-cut, [**6005**] roughly through its centre and on the same east northeast-west southwest alignment. It measured 0.70m wide by 0.23m deep and had sharp, steep sloping sides with a rounded base. The fill (**6006**) was a friable mid orangey brown silty clay that contained occasional small stones. It appeared to be a re-cut drainage ditch. No finds were recovered from the two ditches.

4.2.23 **Area 58**: Area 58 was located to the northeast of Bridekirk (Figure 9). It contained three trenches; 51, 52 and 53 and archaeological features were observed in all three trenches. Historical research identified the site as likely to be part of Guisborough Priory's grange at Redmain (WAA 2015a, 22, see this report, paragraphs 3.2.8 and 7.1.7).

4.2.24 ***Trench 51:*** Trench 51 was located on the southwest side of Area 58 and was aligned northwest-southeast (Figures 9 & 17) (Plate 18). It was excavated to a maximum depth of 0.50m, revealing a firm mid-yellow brown clay natural (**5102**) below *c*.0.18m of a firm mid yellow-brown clay subsoil (**5101**) and *c*.0.13m of a loose dark brown silty clay topsoil (**5100**).

4.2.25 Structure {**5103**} was located near the centre of the trench and consisted of 2 – 3 courses of worked white limestone blocks that measured 0.66m wide by 0.24m high and was aligned northeast-southwest (Figure 18) (Plate 19). It appeared to be

the remains of a revetment as it lacked a squared wall front elevation and to butt natural clay to the north. It also occurred at a noted break in slope. To the southeast of {**5103**}, there was an uneven cobbled surface {**5104**} that appeared to abut the southeast side of the wall. It consisted of yellow/brown small to medium sized cobbles that measured 0.92m wide. The extent of the two features was unclear as they continued beyond the limit of excavation in both directions.

4.2.26 ***Trench 52:*** Trench 52 was located in the centre of Area 58 and was aligned northeast-southwest (Figures 9 & 18) (Plate 20). It was excavated to a maximum depth of 0.50m, revealing a firm light-yellow-brown clay natural (**5203**) below *c*.0.20m of a firm mid-grey-brown silty clay subsoil (**5201**) and *c*.0.30m of a loose dark brown silty clay topsoil (**5200**).

4.2.27 Wall {**5205**} was located in the northeast end of the trench and it consisted of a single course of roughly hewn limestone blocks and a rubble core through its centre that was aligned northwest-southeast (Figure 19) (Plate 21). It measured 0.82m wide by 0.17m high. There was no visible bonding agent so it appeared to be the drystone base of a wall. It was sealed by layer (**5204**) which consisted of moderately compact mix of grey-brown silty clay and rubble that contained stone blocks, gravel, cobbles and CBM. It was across the trench and measured 0.26m thick.

4.2.28 Wall {**5206**} was located near the centre of the trench and it consisted of a single course of roughly hewn limestone blocks with remnants of a light grey lime mortar on some of the blocks that were aligned northwest-southeast (Figure 19) (Plate 22). It measured 0.50m wide by 0.16m high. It appeared to be the base for a wall that was sealed by demolition layer (**5204**) as discussed above.

4.2.29 ***Trench 53:*** Trench 11 was located in the northeast end of Area 58 and was aligned northwest-southeast (Figures 9 & 19) (Plate 23). It was excavated to a maximum depth of 0.80m, revealing a compact mid-orange-brown silty clay natural (**5302**) below *c*.0.16m of a friable mid yellowish brown subsoil (**5301**) and *c*.0.20m of a soft mid reddish brown clay silt topsoil (**5300**).

4.2.30 Layer (**5306**) was located in the centre and southeastern sides of the trench and measured 17.6m by 1.50m by 0.15m and consisted of a compacted mid-brown silty clay that contained occasional rubble. It appeared to be a levelling layer. It was cut by ditch [**5304**] and was sealed by a demolition layer (**5303**).

4.2.31 Ditch [**5304**] was located near the centre of the trench, cutting levelling layer (**5306**) and was aligned northeast-southwest (Figure 20). It was straight in plan and measured 0.92m wide by 0.24m with gradual, gently sloping sides that had a slightly concave base (Plate 24). The fill (**5305**) was a loose black clayey silt that contained charcoal flecks, burnt slate tiles and pebbles. It was sealed by demolition layer (**5303**). A radiocarbon date from (5305) confirms this as a post-medieval feature with a date of 1650-1950 ca. AD.

4.2.32 Layer (**5303**) was located across the southeastern side and centre of the trench that measured 19m by 1.50m by 0.27m. It consisted of a compacted greyish brown clayey silt that contained rubble, slate tiles and large stones. There was a concentration of large stones near the centre that was initially thought to be the remains of a wall (Plate 25) but later appeared to be rubble within demolition layer (**5303**) that sealed ditch [**5304**] and levelling layer (**5306**).

4.2.33 Walls {**5205**} and {**5106**} are of very different character (see plates 21 and 22) and although aligned in the same direction, seem unlikely to have formed components of the same structure. The character of the lime mortar in wall {**5206**} suggest it is of post-medieval date.

4.2.34 Within the area of a raised platform, a building existed in the 20th century which was demolished in the 1990s (information Mr. Burkets, the landowner). The platform was not investigated but it is possible that some of the demolition material present relates to the demolition of this structure.

4.2.35 Wall {**5206**} could be of medieval date in its construction and was overlain by demolition deposit (**5204**) which, although possibly post-medieval derived or contaminated, contained medieval pottery.

5 ENVIRONMENTAL ASSESSMENT

5.1 Introduction

5.1.1 During the course of the archaeological evaluation eight samples were taken for the purposes of archaeobotanical analysis. All samples were taken from archaeological features. This material was taken to extract material that will aid the understanding of the depositional history of these contexts, as well as understand the levels of organic preservation found within the excavated area; as per Historic England recommendations (English Heritage 2011). Moreover it was seen as a priority that material suitable for radiocarbon dating be recovered from some of the identified features within their archaeological context.

5.2 Archaeobotancial Analysis

5.2.1 The samples were manually floated and sieved through a Siraf style flotation tank. In this case the residue and the flot are retained while the sand-silt-clay components are filtered out. The sample was flotted over a 1mm plastic mesh and the washover collected in a 250-micron geological sieve. The heavy residue was air-dried and sorted by eye for any material that may aid our understanding of the deposit; no such material was recovered from the samples however. The residue samples were also scanned with a hand magnet to retrieve forms of magnetic material. This was done to retrieve residues of metallurgical activity, in particular hammer scale, spheroid hammer scale, fuel-ash slag and vitrified material which might be indicative of other high temperature non-metallurgical processes. Processing procedures and nomenclature follows the conventions set out by the Historic England (2015), however, no such anthropogenic material was recovered from the samples upon examination.

5.2.2 The washover was dried slowly and scanned at x40-60 magnification for charred and uncharred botanical remains. Identification of these reference material held in the Environmental Laboratory at Wardell Armstrong Archaeology and by reference to relevant literature (Cappers et al. 2010; Jacomet 2006). Plant taxonomic nomenclature follows Stace (2010).

5.3 Discussion of the Remains

5.3.1 The ecofactual evidence recovered from the soil samples all contained low amounts of plant remains. The data from the analysis is presented on Table 1 below. This contains the details of the context, with its associated cut, as well as

the feature type from which the sample was taken. The recovered plant remains consisted mainly of desiccated seeds of common wild species such as goosefoots (*Chenopodiaceae* species), elder (*Sambucus nigra*) and sun spurge (*Euphorbia helioscopia*). The remains are summarised in Table 1 below. The desiccated nature of these remains, and the absence of waterlogging (all of the sites were on free-draining sandy/clay soils), suggests they may be modern intrusive material, rather than preserved archaeological material as highlighted in studies such as Pelling et al. (2015). The remains from sample **<4> (1404)** did produce archaeological plant remains with eight charred grains being recovered. The heavily charred nature of these remains did not enable further identification to be determined however. Three oat type grains were recovered from post-hole sample <2> (**3803**).

5.3.2 The remains from samples **<2> (3803**), **<3> (3703)** and **<4> (1404)** produced appreciable amounts of charcoal; 190grams, 25 grams, and 75 grams respectively. This was mainly of a diffuse porous type, which was provisionally identified as similar to an oak type charcoal (*Quercus* species), though it was noted that the differentiation between growth rings was much less distinct than normal for the species. In contrast the sample from <1> consisted of more highly fired ashy/clinker type material, indicative of a mixed fuel such as wood and coal. The post-medieval date of this material is confirmed below from the radiocarbon date from this sample.

5.4 Radiocarbon dating

5.4.1 For the purposes of radiocarbon dating there was sufficient charcoal from samples <1>, <2>, <3> and <4> for radiocarbon dates, Material was selected from these four samples for radiocarbon dating and sent to the Chrono Centre radiocarbon dating facility at Queens University Belfast. All material consisted of either roundwood, hazelnut shell or charred cereal grains. The four samples were given the designations UB-30572, UB-30573, UB-30575 and UB-30575. The samples are outlined on Table 2 below.

5.4.2 These results confirm some of the conclusions of the evaluation phase, as well as adding additional information. The ashy material from sample **<1> (5305)** was indeed from a post-medieval, as can be seen from date UB-30572; 1650-1950 cal. AD. The pottery recovered from **(1404)** is prehistoric, and based on the material from the radiocarbon sample has been dated to the early Neolithic based on sample UB-30575; 3650-3525 cal. BC. The other two dates were from features located relatively close to

each other. The pit alignments identified on the geophysical survey in trench 38 appear to date to the early medieval period with a date of AD 780-970 from UB-30573. It is possible that the pit alignments are the remains of large post pits for a substantial timber structure. Another unassociated pit feature has been dated to the later Mesolithic, 5730-5640 BC, based on the dates from roundwood and hazelnut shell from UB-30574.

Sample	1	2	3	4	5	6	7	8
Context	5305	3803	3703	1404	6006	6004	5505	5402
Cut	5304	3802	3704	1403	6005	6003	5504	5403
Feature	Ditch	P-hle	Pit	Pit	Ditch	Ditch	Pit	Linear
Volume processed (litres)	20	20	20	40	10	10	10	20
Weight of retent (kgs)	3.3	6.5	10.3	10.1	1.4	1.5	1.6	1.1
Weight of flot (grams)	230	190	30	75	10	>5	>5	>5
Residue contents (1-Low; 2-Moderately present; 3-Dominant)				-	-	-	-	-
Stones/gravel	3	3	3	3	3	3	3	3
Charred cereal grains (Total counts)	-	-	-	-	-	-	-	-
Avena sp grain (Oats)		3						
Indeterminate cereal				8				
Flot matrix (relative abundance 1-3)	-	-	-	-	-	-	-	-
Amorphous charred material	3							
Charcoal	2	3	3	2	1	1	1	1
Charred ash							3	2
Modern roots				2	3	3		2
Other plant remains (Total Counts)	-	-	-	-	-	-	-	-
Betula pendula (Birch)					1			
Chenopodioideae (goosefoots)				2				12
Corylus avellana (Hazelnut; charred shell)								
Euphorbia helioscopia (Sun Spurge)		1	2					
Poaceae species (Grasses)		1						
Ranunculus species (Buttercups)	1	1						
Sambucus nigra (Elderberry)				1				
*Taraxacum officinale (*Common Dandelion)		1						
Trifolium species (Clovers)			1					

Table 1: Summary of the remains from environmental samples

Lab Number	Sample	Material	C14 Age	+/-	cal date
UBA-30572	<1> (5305)	Heather Charcoal	239	20	AD 1650-1950
UBA-30573	<2> (3803)	Roundwood	1149	22	AD 780-970
UBA-30574	<3> (3703)	Roundwood/hazelnut shell	6802	33	5730-5640 BC
UBA-30575	<4> (1404)	Hazelnut shell	4807	29	3650-3525 BC

Table 2: Summary of the results of the radiocarbon dating

6 ARTEFACT ANALYSIS

6.1 Finds Assessment

6.1.1 A total of 48 artefacts, weighing 837g, were recovered during an archaeological evaluation at West Cumbria Network Mains, Cumbria.

6.1.2 All finds were dealt with according to the recommendations made by Watkinson & Neal (1998) and to the Chartered Institute for Archaeologists (CIfA) Standard & Guidance for the collection, documentation, conservation and research of archaeological materials (2014b). All artefacts have been boxed according to material type and conforming to the deposition guidelines recommended by Brown (2011), EAC (2014) and the Beacon Museum.

6.1.3 The material archive has been assessed for its local, regional and national potential and if applicable, further work will be recommended on the potential for the material archive to contribute to the relevant research frameworks.

6.1.5 The finds assessment was compiled by Megan Stoakley with contributions from Sue Thompson.

6.1.6 Quantification of finds by context is visible in Table 2.

6.2 Prehistoric Ceramics

6.2.1 Two fragments of prehistoric pottery, weighing 54g, were recovered from deposit (**1404**) (Table 2). The sherds, although fragile, are in moderate to good condition.

6.2.2 The pottery comprises a light brown to reddish-brown fabric with poorly sorted frequent angular flint and quartz inclusions (roughly 1mm – 5mm in diameter).

6.2.3 Based on the radiocarbon dating of charred remains from this sample this pottery is dated to the early Neolithic; 3650-3525 cal. BC.

6.2.4 Further analysis is warranted on these sherds if the results of this fieldwork are to be published.

6.3 Romano-British Ceramics

6.3.1 A single fragment of early Roman pottery, weighing 5g, was recovered from deposit {**5205**} (Table 2). The sherd is in poor condition and is abraded.

6.3.2 The sherd comprises samian ware of late 1st to 2nd century date.

6.3.3 No further analysis is warranted on this sherd.

6.4 Medieval Ceramics (Sue Thompson)

6.4.1 A total of five sherds of medieval pottery were recovered from trenches 52 and 53, weighing a total of 81g. The pottery was recorded and identified using standards from the MRPG (2001).

6.4.2 Two conjoining sherds of a strap handle of a large jug were recovered from Trench 52 from unstratified deposits. The fragments are of Partially Reduced Grey ware with a dark grey core and a pale grey margin below an olive green glaze. The inner surface is unglazed and oxidized. It is likely to date to the late 12th – 14th century.

6.4.3 The remaining three fragments were recovered from context (**5303**) and comprised one rim sherd and two body sherds, of a reduced fabric of which have a green glaze to their outer surface. The rim sherd has simple thumb print decoration above a scar for a handle, therefore representing a jug. Two remaining body sherds are from different vessels. All three sherds have a hard, smooth, fine sandy fabric and are Late Medieval Reduced Grey ware, part of a widespread northern 'Reduced Greenware' tradition, with a date range of 14th – early 17th century (McCarthy 2000).

6.4.5 There is no sooting or residue present on any of the sherds.

6.4.6 Further analysis may be warranted on one rim / shoulder sherd from deposit (**5303**) to determine vessel type if the results of this fieldwork are to be published. No further analysis is otherwise warranted on these sherds.

6.5 Post-medieval Ceramics

6.5.1 A total of four fragments of post-medieval pottery, weighing 201g, were recovered from two deposits (Table 2). The sherds are in good condition.

6.5.2 Part of a refined white earthenware tureen and a partial saucer sherd were recovered from deposit (**600**). A sherd of Staffordshire slipware and coarse red earthenware were recovered from deposit (**603**). The four sherds are of likely late 19th century to 20th century date.

6.5.3 No further analysis is warranted on these sherds.

6.6 Ceramic Building Material

6.6.1 Twenty fragments of ceramic building material, weighing 194g, were recovered from three deposits (Table 2). The fragments are in moderate condition and display some evidence of rolling and post-depositional damage.

6.6.2 Fourteen fragments of ceramic building material were recovered from {**5205**}; these fragments are potentially roman in date. Two fragments of potentially medieval ceramic building material (peg tile) were also recovered, although these fragments may be intrusive.

6.6.3 Two fragments of ceramic building material were recovered from {**5206**}. A broad date of medieval to post-medieval has been assigned to this wall; one of these small fragments appears very similar to medieval peg tile (13th to 16th century AD) (Eames 1976).

6.6.4 No further analysis is warranted on these fragments.

6.7 **Iron**

6.7.1 A total of eleven fragments of iron, weighing 139g, were recovered from two deposits (Table 2). The iron fragments are in moderate condition and display evidence of rust corrosion.

6.7.2 Three iron nail fragments of potentially medieval date were recovered from deposit (**5303**). Masonry nails of post-medieval to modern date were recovered from an unstratified deposit in Trench 53.

6.7.3 No further analysis is necessary.

6.8 **Silver**

6.8.1 A single silver coin weighing 2g was recovered by metal-detector from an unstratified deposit in Trench 53 (Table 2). It is in good condition, although it is very worn.

6.8.2 The coin likely comprises a long cross penny from the reign of Edward I and is likely to date to 1272-1279 AD (Mitchell & Reeds 1997, 99).

6.8.3 No further analysis is necessary on this coin.

6.9 **Burnt Bone**

6.9.1 Two fragments of burnt bone, weighing 1g, were recovered from deposit (**1404**). The bone is in a fragile condition and is chalky and friable.

6.9.2 These fragments were found in association with pottery of potentially Middle Bronze to Iron Age date. They likely comprise limb bone fragments and they are more likely to comprise animal bone rather than human bone.

6.9.3 No further analysis is necessary.

6.10 Glass

6.10.1 A total of two shards of glass, weighing 161g, were recovered from two deposits (Table 2).

6.10.2 One shard comprises a blue-green bottle fragment of post-medieval to modern date.

6.10.3 The other fragment comprises the neck of a Codd bottle manufactured by Brothwell & Mills Ltd in the late 19th / early 20th century. Brothwell & Mills Ltd were a drinks manufacturers based on Fletcher Street, Workington.

6.10.4 No further analysis is necessary on these fragments.

6.11 Statement of Potential

6.11.1 The recovery of prehistoric, Roman and medieval archaeological finds is of interest and provides evidence of domestic activity from these periods either on or within the vicinity of the site.

6.11.2 The recovery of post-medieval / modern artefacts is of low archaeological significance.

6.11.3 Although the recovery of earlier artefacts is of interest, no further work is warranted on this assemblage, unless further field investigation is undertaken which includes full post-excavation analysis and publication as an objective.

Context	Trench No	Material	Qty	Wgt (g)	Date	Comments
1404	14	Bone	2	1	MBA-IA	Dated by association with prehistoric pottery
5205	52	CBM	16	140	RB-Med	14 x potentially RB, 2 x med-pm
5206	52	CBM	2	23	Med-PM	1 frag potentially med
u/s	53	CBM	1	20	PM-Mod	Miscellaneous fragment
u/s	52	CBM	1	11	PM-Mod	Miscellaneous fragment
600	6	Ceramic	2	149	PM	Tureen frag and part of a RWE saucer
603	6	Ceramic	2	52	PM	1 x Staffordshire slipware
1404	14	Ceramic	2	54	MBA-IA	Body sherds
5205	52	Ceramic	1	5	ERB	Samian ware - very abraded
5303	53	Ceramic	3	31	Med	Rim frag
u/s	52	Ceramic	2	50	Med	Jug handle fragments
600	6	Glass	1	121	PM-Mod	BRO…', Brothwell & Mills - Fletcher St, Workington
u/s	55	Glass	1	40	PM	Body shard
5303	53	Iron	3	10	Med-PM	Nails
u/s	53	Iron	8	129	PM-Mod	Masonry nails
u/s	53	Silver	1	1	Med	Edward I long cross penny 1272-1279 AD
TOTAL			**48**	**837**		

Table 2: Quantification of Finds by Material and Context

Key:

Qty: Quantity
Wgt (g): Weight
MBA: Middle Bronze Age
IA: Iron Age
ERB: Early Romano-British
Med: Medieval
PM: Post-medieval
Mod: Modern
CBM: Ceramic Building Material

7 CONCLUSIONS

7.1 Evaluation results

7.1.1 During the archaeological evaluation of specified sections of the network main from Quarry Hill to Stainton and Cockermouth, Cumbria (From NY 3450 9800 to 3219 5412), 60 trenches totaling 2751.25m^2 were excavated across the area of the proposed new water main. The aim was to identify the presence or absence of archaeological remains.

7.1.2 Forty nine of the 60 trenches were devoid of archaeological features.

7.1.3 Trenches containing archaeological features and material were Trench 6 in Area 23, Trench 14 in Area 24, Trenches 37, 38 and 39 in Area 17, Trenches 51, 52, and 53 in Area 58, Trenches 54 and 55 in Area 52 and Trench 60 in Area 54. Of these the evidence retrieved from Areas 23, 52 and 54 were of little archaeological significance. Area 23 produced two of sherds of post-medieval pottery; Area 52 produced limited evidence of post-medieval occupation associated with Bog Hall, a farm believed to post-date the later 18th century. Area 54 produced evidence of undated intercutting drainage ditches.

7.1.4 The three identified areas of archaeological significance were Areas 17, 24 and 58. Area 17 produced sporadic features from which material for a radiocarbon date was retrieved, with a small pit observed in Trench 37, a large posthole in Trench 38 and a ditch in Trench 39.

7.1.5 The evidence of the activity in Area 17 contains contexts dated through radio carbon to both the Mesolithic and early medieval period. These features relate to a much wider landscape of undated ditches, circular features and pit alignments, noted through previous geophysical survey (Cumbria HER). The double pit alignment may be indicative of a building on this site and the dating evidence suggests it may be an early medieval structure. There are no known similar sites in this part of Cumbria. The Regional Research Framework notes the lack of excavated sites of this period in North West England (Newman and Brennand 2007, 81), and this site may have the potential to inform this aspect of the research agenda. The archaeological potential of Area 17 is considered high, especially in relation to early medieval remains.

7.1.6 Trench 14 within area 24 produced two sherds of prehistoric pottery from a pit and a sample from the same pit was carbon dated to 3650-3525 cal. BC. This

suggests Neolithic activity and there are no known sites of this date within the Derwent valley west of Cockermouth. Knowledge of Neolithic land-use and settlement is poor (Hodgson and Brennand 2007, 39), and this site may have the potential to inform this aspect of the research agenda. The archaeological potential of Area 14 is considered high.

7.1.7 The most significant site was in Area 58. This had already been identified as heritage asset 375 (WAA 2015a) in the walkover survey and desk-based assessment and the site was considered to be part of a medieval grange of Guisborough Priory (WAA 2015a, 22). In the 18th century the area was referred to as a field called the Trinities (Nicholson and Burn 1777, II, 95). This land was in the township of Redmain which was granted as a manor to Guisborough Priory in Yorkshire in the medieval period, when it seems the Trinities was the demesne land of the manor. Earthworks at the Trinities were noted on both Google Earth™ imagery and during the walkover survey. They appear to be respected by adjacent curvilinear ridge and furrow which suggests that they are medieval in origin (see Figure 23).

7.1.8 Google Earth™ imagery from 2003 clearly shows the earthworks to form the southern part of an embanked oval enclosure, the northern part of which contained ridge and furrow. This enclosure was ploughed out to the north by the current landowner after 2003 and before 2011 (Mr Burkett pers. comm.). Enclosures such as this are typical of medieval monastic grange sites in Cumbria (Newman 2014). As the site is within the demesne lands held by Guisborough Priory, it is likely that the earthworks relate to a grange farm of a monastic grange. The material found was consistent with this interpretation. The site appears to be of 12th – 14th century date. The excavated evidence suggests that there may have been medieval buildings on the site, as demolition deposits were found which contained medieval pottery and roof tile. There are more than 150 known grange sites in Cumbria (Newman 2014), but nowhere in the county are archaeological remains for a grange farm associated with such a wider landscape of likely contemporary remains as exhibited at the Trinities. Granges are a distinct form of settlement within a dispersed settlement pattern. The Regional Research Framework highlighted the need for a studies of how dispersed settlement evolved across a township/manor and related to other settlements (Newman and Newman 2007, 101) and this is a question that could be addressed at the Trinities. Dispersed settlements, such as farmsteads are generally less well recorded than

nucleated settlements (Newman 2012, 29) and specialised dispersed settlements, such as granges, are recognised nationally as requiring further study (Rippon 2002, 12-13; Newman 2012, 35). The archaeological potential of Area 58 is considered high.

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APPENDIX 1: TRENCH DESCRIPTIONS

Trench 2 (Area 23)

Length: 30m
Width: 1.55m
Maximum Depth: 0.66m
Minimum Depth: 0.40m
Orientation: NW-SE
OS Co-ordinates: (E) 309373 (N) 531075
(E) 309399 (N) 531060

Context Number	Context Type	Description	Maximum Thickness/Depth
(200)	Topsoil	Loose dark brown clayey silt	0.28m
(201)	Subsoil	Compact mid brown clayey silt	0.20m
(202)	Natural Substrate	Firm mid yellow brown clay	**N/A**

Trench 3 (Area 23)

Length: 30m
Width: 1.55m
Maximum Depth: 0.70m
Minimum Depth: 0.40m
Orientation: NW-SE
OS Co-ordinates: (E) 309404 (N) 531083
(E) 309423 (N) 531060

Context Number	Context Type	Description	Maximum Thickness/Depth
(300)	Topsoil	Loose dark brown clayey silt	0.30m
(301)	Natural Substrate	Compact mid orange brown sandy silt & gravel/pebbles	**N/A**

Trench 4 (Area 23)

Length: 30m
Width: 1.55m
Maximum Depth: 0.84m
Minimum Depth: 0.34m
Orientation: E-W
OS Co-ordinates: (E) 309430 (N) 531076
(E) 309460 (N) 531076

Context Number	Context Type	Description	Maximum Thickness/Depth
(400)	Topsoil	Loose dark brown silty clay	0.33m
(401)	Natural Substrate	Moderate mid orangey brown gravel	**N/A**

Trench 5 (Area 49)

Length: 30m
Width: 1.55m
Maximum Depth: 0.80m
Minimum Depth: 0.50m
Orientation: E-W
OS Co-ordinates: (E) 309400 (N) 530994
(E) 309430 (N) 530994

Context Number	Context Type	Description	Maximum Thickness/Depth
(500)	Topsoil	Loose dark brown silty clay	0.40m
(501)	Natural Substrate	Soft mid orange brown clay sand	**N/A**

Trench 6 (Area 23)

Length: 30m
Width: 1.55m
Maximum Depth: 0.60m
Minimum Depth: 0.35m
Orientation: N-S
OS Co-ordinates: (E) 309482 (N) 531088
(E) 309482 (N) 531058

Context Number	Context Type	Description	Maximum Thickness/Depth
(600)	Topsoil	Loose dark brown silty clay	0.27m
(601)	Deposit	Loose silty clay	0.10m
(602)	Subsoil	Moderate mid grey brown clay sand	0.30m
(603)	Deposit	Moderate dark grey brown clay silt	0.18m
(604)	Natural Substrate	Firm mid greyish yellow brown clay	**N/A**

Trench 7 (Area 50)

Length: 30m
Width: 1.55m
Maximum Depth: 0.75m
Minimum Depth: 0.60m
Orientation: E-W
OS Co-ordinates: (E) 309492 (N) 531017
(E) 309522 (N) 531017

Context Number	Context Type	Description	Maximum Thickness/Depth
(700)	Topsoil	Soft mid grey brown silty clay	0.60m
(701)	Natural Substrate	Compact mid orange brown gravel/clay	**N/A**

Trench 8 (Area 48)

Length: 30m
Width: 1.55m
Maximum Depth: 0.63m
Minimum Depth: 0.33m
Orientation: E-W
OS Co-ordinates: (E) 309552 (N) 531083
(E) 309552 (N) 531053

Context Number	Context Type	Description	Maximum Thickness/Depth
(800)	Topsoil	Loose dark brown clayey silt	0.27m
(801)	Subsoil	Moderate mid brown clayey silt	0.20m
(802)	Natural Substrate	Compacted mid reddish/orangey brown sandy silt & gravel	**N/A**

Trench 9 (Area 50)

Length: 30m
Width: 1.55m
Maximum Depth: 0.95m
Minimum Depth: 0.60m
Orientation: E-W
OS Co-ordinates: (E) 309592 (N) 531025
(E) 309622 (N) 531025

Context Number	Context Type	Description	Maximum Thickness/Depth
(900)	Topsoil	Soft mid grey brown silty clay	0.70m
(901)	Natural Substrate	Compact mid orange brown clay/gravel	**N/A**

Trench 10 (Area 48)

Length: 30m
Width: 1.55m
Maximum Depth: 0.78m
Minimum Depth: 0.30m
Orientation: N-S
OS Co-ordinates: (E) 309626 (N) 531088
(E) 309626 (N) 531058

Context Number	Context Type	Description	Maximum Thickness/Depth
(1000)	Topsoil	Friable dark brown sandy silt	0.23m
(1001)	Subsoil	Compacted mid brown sandy silt	0.50m
(1002)	Natural Substrate	Compacted mid reddish brown clayey silt	**N/A**

Trench 11 (Area 24)

Length: 30m
Width: 1.55m
Maximum Depth: 0.60m
Minimum Depth: 0.40m
Orientation: NE-SW
OS Co-ordinates: (E) 309711 (N) 531022
(E) 309719 (N) 531051

Context Number	Context Type	Description	Maximum Thickness/Depth
(1100)	Topsoil	Friable dark brown sandy silt	0.23m
(1101)	Subsoil	Friable mid brown sandy silt	0.27m
(1102)	Natural Substrate	Firm mid yellow brown clay	**N/A**

Trench 12 (Area 51)

Length: 30m
Width: 1.55m
Maximum Depth: 0.88m
Minimum Depth: 0.41m
Orientation: E-W
OS Co-ordinates: (E) 309748 (N) 531076
(E) 309778 (N) 531077

Context Number	Context Type	Description	Maximum Thickness/Depth
(1200)	Topsoil	Loose dark brown silty clay	0.50m
(1201)	Natural Substrate	Loose mid yellow brown sand & gravel	**N/A**

Trench 13 (Area 24)

Length: 30m
Width: 1.55m
Maximum Depth: 0.50m
Minimum Depth: 0.35m
Orientation: ENE-WSW
OS Co-ordinates: (E) 309801 (N) 530982
(E) 309831 (N) 530986

Context Number	Context Type	Description	Maximum Thickness/Depth
(1300)	Topsoil	Friable dark brown sandy silt	0.25m
(1301)	Subsoil	Friable light brown sandy silt	0.35m
(1302)	Natural Substrate	Firm mid yellow clay	**N/A**

Trench 14 (Area 24)

Length: 30m | Width: 1.55m

Maximum Depth: 0.75m | Minimum Depth: 0.40m

Orientation: NW-SE | OS Co-ordinates: (E) 309830 (N) 530961

(E) 309857 (N) 530947

Context Number	Context Type	Description	Maximum Thickness/Depth
(1400)	Topsoil	Friable dark brown sandy silt	0.27m
(1401)	Subsoil	Compacted mid brown sandy silt	0.23m
(1402)	Natural Substrate	Friable mid orangey brown sandy silt & gravel/pebbles	**N/A**
[1403]	Cut	Cut of an oval shaped pit	0.25m
(1404)	Deposit	Soft dark grey silty clay fill of [1403]	0.25m

Trench 16 (Area 29)

Length: 30m | Width: 1.55m

Maximum Depth: 0.60m | Minimum Depth: 0.20m

Orientation: NW-SE | OS Co-ordinates: (E) 310133 (N) 530646

(E) 310152 (N) 530622

Context Number	Context Type	Description	Maximum Thickness/Depth
(1600)	Topsoil	Friable dark brown silty sand	0.33m
(1601)	Natural Substrate	Compact mid orangey brown clay & bedrock	**N/A**

Trench 17 (Area 29)

Length: 30m | Width: 1.55m

Maximum Depth: 0.61m | Minimum Depth: 0.33m

Orientation: NW-SE | OS Co-ordinates: (E) 310188 (N) 530642

(E) 310207 (N) 530619

Context Number	Context Type	Description	Maximum Thickness/Depth
(1700)	Topsoil	Friable dark brown sandy silt	0.30m
(1701)	Subsoil	Compact mid brown sandy silt	0.50m
(1702)	Natural Substrate	Compact mid yellowish brown clay	**N/A**

Trench 18 (Area 29)

Length: 30m | Width: 1.55m

Maximum Depth: 0.61m | Minimum Depth: 0.30m

Orientation: NE-SW | OS Co-ordinates: (E) 310183 (N) 530591

(E) 310210 (N) 530603

Context Number	Context Type	Description	Maximum Thickness/Depth
(1800)	Topsoil	Friable dark brown clayey silt	0.22m

(1801)	Subsoil	Compacted mid brown silty clay	0.14m
(1802)	Natural Substrate	Compacted light yellowish brown silty clay & pebbles	**N/A**

Trench 19 (Area 33)

Length: 30m Width: 1.55m

Maximum Depth: 0.50m Minimum Depth: 0.20m

Orientation: NNW-SSE OS Co-ordinates: (E) 310364 (N) 530428

(E) 310366 (N) 530398

Context Number	Context Type	Description	Maximum Thickness/Depth
(1900)	Topsoil	Loose dark brown clayey silt	0.32m
(1901)	Natural Substrate	Mid compacted orangey brown silty clay	**N/A**

Trench 20 (Area 33)

Length: 30m Width: 1.55m

Maximum Depth: 0.40m Minimum Depth: 0.30m

Orientation: NW-SE OS Co-ordinates: (E) 310427 (N) 530364

(E) 310442 (N) 530338

Context Number	Context Type	Description	Maximum Thickness/Depth
(2000)	Topsoil	Loose mid grey brown clayey silt	0.25m
(2001)	Natural Substrate	Compacted light yellowish brown silty clay	**N/A**

Trench 21 (Area 33)

Length: 30m Width: 1.55m

Maximum Depth: 0.40m Minimum Depth: 0.30m

Orientation: NW-SE OS Co-ordinates: (E) 310413 (N) 530335

(E) 310425 (N) 530308

Context Number	Context Type	Description	Maximum Thickness/Depth
(2100)	Topsoil	Friable dark brown clayey silt	0.30m
(2101)	Natural Substrate	Compacted mid orangey brown silty clay & pebbles	**N/A**

Trench 22 (Area 37)

Length: 30m Width: 1.55m

Maximum Depth: 0.30m Minimum Depth: 0.20m

Orientation: NW-SE OS Co-ordinates: (E) 310575 (N) 530124

(E) 310590 (N) 53098

Context Number	Context Type	Description	Maximum Thickness/Depth
(2200)	Topsoil	Loose light brown silty sand	0.07m
(2201)	Subsoil	Loose mid brown silty sand	0.08m

(2202)	Natural Substrate	Compacted light greyish brown silty clay	**N/A**

Trench 23 (Area 40)

Length: 30m
Width: 1.55m
Maximum Depth: 0.35m
Minimum Depth: 0.25m
Orientation: NW-SE
OS Co-ordinates: (E) 310575 (N) 530124
(E) 310893 (N) 530722

Context Number	Context Type	Description	Maximum Thickness/Depth
(2300)	Topsoil	Loose light brown silty sand	0.07m
(2301)	Subsoil	Loose mid brown sandy silt	0.15m
(2302)	Natural Substrate	Compacted light greyish brown silty clay	**N/A**

Trench 25 (Area 7)

Length: 24m
Width: 1.60m
Maximum Depth: 0.32m
Minimum Depth: 0.25m
Orientation: NE-SW
OS Co-ordinates: (E) 311062 (N) 532472
(E) 311043 (N) 532449

Context Number	Context Type	Description	Maximum Thickness/Depth
(2500)	Topsoil	Friable mid brown clayey silt	0.32m
(2501)	Natural Substrate	Firm mid yellowish brown clayey silt and gravel	**N/A**

Trench 26 (Area 6)

Length: 30m
Width: 1.50m
Maximum Depth: 0.37m
Minimum Depth: 0.30m
Orientation: E-W
OS Co-ordinates: (E) 311120 (N) 532525
(E) 31090 (N) 532521

Context Number	Context Type	Description	Maximum Thickness/Depth
(2600)	Topsoil	Soft mid brown clayey silt	0.34m
(2601)	Natural Substrate	Compacted light brown silty clay	**N/A**

Trench 27 (Area 6)

Length: 30m
Width: 1.50m
Maximum Depth: 0.34m
Minimum Depth: 0.34m
Orientation: NW-SE
OS Co-ordinates: (E) 311139 (N) 532578
(E) 311146 (N) 532549

Context Number	Context Type	Description	Maximum Thickness/Depth
(2700)	Topsoil	Friable mid brown clayey silt	0.31m
(2701)	Natural Substrate	Compacted light greyish brown silty clay	**N/A**

Trench 28 (Area 5)

Length: 30m | Width: 1.50m

Maximum Depth: 0.50m | Minimum Depth: 0.32m

Orientation: E-W | OS Co-ordinates: (E) 311100 (N) 532725

(E) 311070 (N) 532726

Context Number	Context Type	Description	Maximum Thickness/Depth
(2800)	Topsoil	Friable mid brown clayey silt	0.35m
(2801)	Natural Substrate	Firm mid orangey brown silty clay	**N/A**

Trench 29 (Area 5)

Length: 30m | Width: 1.50m

Maximum Depth: 0.35m | Minimum Depth: 0.30m

Orientation: N-S | OS Co-ordinates: (E) 311067 (N) 532788

(E) 311071 (N) 532759

Context Number	Context Type	Description	Maximum Thickness/Depth
(2900)	Topsoil	Soft mid grey brown silty clay	0.30m
(2901)	Natural Substrate	Firm mid orange clay with stones	**N/A**

Trench 30 (Area 5)

Length: 30m | Width: 1.50m

Maximum Depth: 0.40m | Minimum Depth: 0.30m

Orientation: N-S | OS Co-ordinates: (E) 311038 (N) 532874

(E) 311043 (N) 532844

Context Number	Context Type	Description	Maximum Thickness/Depth
(3000)	Topsoil	Moderate mid grey brown silty clay	0.30m
(3001)	Natural Substrate	Firm mid orange grey sandy/stoney clay	**N/A**

Trench 37 (Area 17)

Length: 30m | Width: 1.50m

Maximum Depth: 0.82m | Minimum Depth: 0.52m

Orientation: NW-SE | OS Co-ordinates: (E) 310134 (N) 531209

(E) 310163 (N) 531200

Context Number	Context Type	Description	Maximum Thickness/Depth
(3700)	Topsoil	Loose dark grey brown silty clay	0.29m
(3701)	Subsoil	Soft orange brown silty clay	0.42m
(3702)	Natural Substrate	Loose dark grey brown gravel	**N/A**
(3703)	Deposit	Soft mid brown gravelly silt fill of [3704]	0.22m
[3704]	Cut	Cut of possible pit	0.22m

Trench 38 (Area 17)

Length: 30m | Width: 1.50m

Maximum Depth: 1.50m | Minimum Depth: 0.30m

Orientation: NE-SW | OS Co-ordinates: (E) 3101232 (N) 531224 (E) 310096 (N) 531211

Context Number	Context Type	Description	Maximum Thickness/Depth
(3800)	Topsoil	Loose dark brown clayey silt	0.20m
(3801)	Natural Substrate	Loose dark brown silt with gravel and pebbles	**N/A**
[3802]	Cut	Cut of posthole	0.25m
(3803)	Deposit	Moderate dark brown sandy silt fill of [3802]	0.25m
[3804]	Cut	Cut of pit	0.53m
(3805)	Deposit	Compacted mid brown stony clayey silt fill of [3804]	0.53m

Trench 39 (Area 17)

Length: 30m | Width: 1.50m

Maximum Depth: 0.82m | Minimum Depth: 0.62m

Orientation: NE-SW | OS Co-ordinates: (E) 310146 (N) 5312567 (E) 310127 (N) 531234

Context Number	Context Type	Description	Maximum Thickness/Depth
(3900)	Topsoil	Loose dark brown clayey silt	0.26m
(3901)	Subsoil	Soft mid orangey brown clayey silt	0.40m
(3902)	Natural Substrate	Hard/compacted mid brown sandy/stony clay	**N/A**
[3903]	Cut	Cut of possible ditch	0.20m
(3904)	Deposit	Moderate orangey brown sandy silt fill of [3903]	0.20m

Trench 40 (Area 17)

Length: 30m | Width: 1.50m

Maximum Depth: 0.40m | Minimum Depth: 0.30m

Orientation: N-S | OS Co-ordinates: (E) 310183 (N) 531269 (E) 310184 (N) 531239

Context Number	Context Type	Description	Maximum Thickness/Depth
(4000)	Topsoil	Loose dark greyish brown silty clay	0.25m
(4001)	Subsoil	Compact/soft mid orangey brown silty clay	0.15m
(4002)	Natural Substrate	Loose mid grey brown gravelly clay/cobbles	**N/A**

Trench 41 (Area 16)

Length: 30m | Width: 1.50m

Maximum Depth: 0.80m | Minimum Depth: 0.55m

Orientation: E-W | OS Co-ordinates: (E) 310255 (N) 531342

(E) 310226 (N) 531335

Context Number	Context Type	Description	Maximum Thickness/Depth
(4100)	Topsoil	Loose dark grey brown silty clay	0.35m
(4101)	Subsoil	Soft mid brown clay	0.35m
(4102)	Natural Substrate	Hard dark orange brown clay and gravel	**N/A**

Trench 42 (Area 16)

Length: 30m | Width: 1.50m

Maximum Depth: 1.05m | Minimum Depth: 0.89m

Orientation: NE-SW | OS Co-ordinates: (E) 310259 (N) 531380

(E) 310240 (N) 531357

Context Number	Context Type	Description	Maximum Thickness/Depth
(4200)	Topsoil	Loose mid grey brown silty clay	0.36m
(4201)	Subsoil	Soft mid brown clay	0.58m
(4202)	Natural Substrate	Soft dark orange brown clay	**N/A**

Trench 43 (Area 16)

Length: 30m | Width: 1.50m

Maximum Depth: 0.80m | Minimum Depth: 0.65m

Orientation: NE-SW | OS Co-ordinates: (E) 310285 (N) 531385

(E) 310265 (N) 531362

Context Number	Context Type	Description	Maximum Thickness/Depth
(4300)	Topsoil	Loose mid grey brown silty clay	0.24m
(4301)	Subsoil	Soft mid brown clay	0.55m
(4302)	Natural Substrate	Soft dark orange brown clay	**N/A**

Trench 44 (Area 16)

Length: 30m | Width: 1.50m

Maximum Depth: 1.40m | Minimum Depth: 0.63m

Orientation: E-W | OS Co-ordinates: (E) 310328 (N) 531415

(E) 310299 (N) 531429

Context Number	Context Type	Description	Maximum Thickness/Depth
(4400)	Topsoil	Loose dark brown silty clay	0.24m
(4401)	Subsoil	Soft mid orange brown clay	1.20m?
(4402)	Natural Substrate	Soft mid orange brown silty clay	**N/A**

Trench 45 (Area 14)

Length: 30m | Width: 1.80m

Maximum Depth: 1.35m | Minimum Depth: 0.45m

Orientation: NE-SW | OS Co-ordinates: (E) 310521 (N) 531568

(E) 310495 (N) 531552

Context Number	Context Type	Description	Maximum Thickness/Depth
(4500)	Topsoil	Loose dark brown clayey silt	0.31m
(4501)	Subsoil	Compacted dark brown silty clay with occasional modern debris	0.63m
(4502)	Natural Substrate	Compacted mid orangey brown clay	**N/A**

Trench 46 (Area 11)

Length: 30m | Width: 1.60m

Maximum Depth: 0.60m | Minimum Depth: 0.36m

Orientation: E-W | OS Co-ordinates: (E) 310720 (N) 531694

(E) 310690 (N) 531696

Context Number	Context Type	Description	Maximum Thickness/Depth
(4600)	Topsoil	Loose dark brown silty clay	0.30m
(4601)	Natural Substrate	Hard mid yellow brown clay with gravel	**N/A**

Trench 47 (Area 9)

Length: 30m | Width: 1.60m

Maximum Depth: 0.52m | Minimum Depth: 0.43m

Orientation: NE-SW | OS Co-ordinates: (E) 310752 (N) 531953

(E) 310723 (N) 531944

Context Number	Context Type	Description	Maximum Thickness/Depth
(4700)	Topsoil	Loose dark brown silty clay	0.32m
(4701)	Natural Substrate	Hard mid orange brown clay with gravel	**N/A**

Trench 48 (Area 9)

Length: 30m | Width: 1.60m

Maximum Depth: 0.65m | Minimum Depth: 0.40m

Orientation: NW-SE | OS Co-ordinates: (E) 310743 (N) 532037

(E) 310770 (N) 532025

Context Number	Context Type	Description	Maximum Thickness/Depth
(4800)	Topsoil	Loose dark brown silty clay	0.37m
(4801)	Natural Substrate	Hard mid orange brown clay	**N/A**

Trench 49 (Area 1)

Length: 30m | Width: 1.80m

Maximum Depth: 0.40m | Minimum Depth: 0.19m

Orientation: NE-SW | OS Co-ordinates: (E) 311196 (N) 533355

(E) 311176 (N) 533332

Context Number	Context Type	Description	Maximum Thickness/Depth
(4900)	Topsoil	Loose mid grey brown silty clay	0.40m
(4901)	Natural Substrate	Hard light yellow brown clay	**N/A**

Trench 50 (Area 1)

Length: 30m | Width: 1.55m

Maximum Depth: 0.32m | Minimum Depth: 0.20m

Orientation: NE-SW | OS Co-ordinates: (E) 311201 (N) 533884

(E) 311188 (N) 533356

Context Number	Context Type	Description	Maximum Thickness/Depth
(5000)	Topsoil	Loose mid grey brown silty clay	0.32m
(5001)	Natural Substrate	Hard light yellow brown clay	**N/A**

Trench 51 (Area 58)

Length: 30m | Width: 1.50m

Maximum Depth: 0.50m | Minimum Depth: 0.14m

Orientation: NW-SE | OS Co-ordinates: (E) 312530 (N) 534085

(E) 312549 (N) 534061

Context Number	Context Type	Description	Maximum Thickness/Depth
(5100)	Topsoil	Loose dark brown silty clay	0.13m
(5101)	Subsoil	Hard mid yellow brown clay	0.18m
(5102)	Natural Substrate	Hard light yellow brown clay	**N/A**
{5103}	Masonry	Limestone wall	0.24m
(5104)	Deposit	Cobbled surface in yellow brown clay matrix	N/A

Trench 52 (Area 58)

Length: 30m | Width: 1.40m

Maximum Depth: 0.50m | Minimum Depth: 0.23m

Orientation: NE-SW | OS Co-ordinates: (E) 312857 (N) 534135

(E) 312563 (N) 534116

Context Number	Context Type	Description	Maximum Thickness/Depth
(5200)	Topsoil	Loose dark brown silty clay	0.30m
(5201)	Subsoil	Hard mid grey brown silty clay	0.20m
5202	-	VOID	-

(5203)	Natural Substrate	Hard light yellow brown clay	**N/A**
(5204)	Deposit	Moderately compact grey brown silty clay demolition layer	0.6m
{5205}	Masonry	Wall	0.17m
{5206}	Masonry	Wall	0.16m

Trench 53 (Area 58)

Length: 30m Width: 1.50m

Maximum Depth: 0.80m Minimum Depth: 0.25m

Orientation: NW-SE OS Co-ordinates: (E) 312572 (N) 534166

(E) 312590 (N) 534142

Context Number	Context Type	Description	Maximum Thickness/Depth
(5300)	Topsoil	Soft mid reddish brown clayey silt	0.20m
(5301)	Subsoil	Friable mid yellowish brown silt	0.16m
(5302)	Natural Substrate	Compact mid orange brown silty clay	**N/A**
(5303)	Deposit	Compacted greyish brown clayey silt demolition layer	0.27m
[5304]	Cut	Cut of ditch	0.24m
(5305)	Deposit	Loose black clayey silt fill of [5304]	0.24m
(5306)	Deposit	Compacted mid brown silty clay levelling layer	0.15m

Trench 54 (Area 52)

Length: 24m Width: 1.60m

Maximum Depth: 0.43m Minimum Depth: 0.24m

Orientation: NE-SW OS Co-ordinates: (E) 318972 (N) 539894

(E) 318994 (N) 539905

Context Number	Context Type	Description	Maximum Thickness/Depth
(5400)	Topsoil	Loose dark brown silty clay	0.30m
(5401)	Natural Substrate	Soft mid orange brown clay	**N/A**
(5402)	Deposit	Soft mid grey brown sandy clay fill of [5403]	0.14m
[5403]	Cut	Cut of possible hedgerow	0.14m

Trench 55 (Area 52)

Length: 24m Width: 1.60m

Maximum Depth: 0.47m Minimum Depth: 0.30m

Orientation: NW-SE OS Co-ordinates: (E) 318963 (N) 539938

(E) 318973 (N) 539916

Context Number	Context Type	Description	Maximum Thickness/Depth
(5500)	Topsoil	Loose dark brown silty clay	0.29m
(5501)	Subsoil	Soft mid brown silty clay	0.004m
(5502)	Natural Substrate	Sticky mixed yellow and grey brown clay	**N/A**

[5504]	Cut	Cut of pit	0.30m
(5505)	Deposit	Friable mid greyish brown clayey silt fill of [5504]	0.30m

Trench 56 (Area 57)

Length: 30m
Width: 1.50m
Maximum Depth: 0.72m
Minimum Depth: 0.38m
Orientation: NW-SE
OS Co-ordinates: (E) 318204 (N) 539811
(E) 318223 (N) 539787

Context Number	Context Type	Description	Maximum Thickness/Depth
(5600)	Topsoil	Soft mid brown silty clay	0.20m
(5601)	Subsoil	Soft mid orange brown silty clay	0.30m
(5602)	Natural Substrate	Soft mid orangey brown clay	**N/A**

Trench 57 (Area 56)

Length: 30m
Width: 1.50m
Maximum Depth: 1.28m
Minimum Depth: 0.38m
Orientation: NW-SE
OS Co-ordinates: (E) 318276 (N) 539816
(E) 318295 (N) 539792

Context Number	Context Type	Description	Maximum Thickness/Depth
(5700)	Topsoil	Loose dark brown silty clay	0.30m
(5700)	Subsoil	Soft mid orange brown silty clay	0.61m
(1201)	Natural Substrate	Soft light yellow brown clay	**N/A**

Trench 58 (Area 55)

Length: 30m
Width: 1.50m
Maximum Depth: 0.58m
Minimum Depth: 0.35m
Orientation: N-S
OS Co-ordinates: (E) 318333 (N) 539850
(E) 318352 (N) 539827

Context Number	Context Type	Description	Maximum Thickness/Depth
(5800)	Topsoil	Soft mid grey brown silty clay	0.50m
(5801)	Natural Substrate	Soft mid grey brown clay	**N/A**

Trench 59 (Area 54)

Length: 5m
Width: 1.55
Maximum Depth: 0.40m
Minimum Depth: 0.38m
Orientation: NW-SE
OS Co-ordinates: (E) 318368 (N) 539869
(E) 318371 (N) 539865

Context Number	Context Type	Description	Maximum Thickness/Depth

(5900)	Topsoil	Loose/soft dark grey brown with orange patches silty clay	0.38m
(5901)	Natural Substrate	Soft light grey/orange clay	**N/A**

Trench 60 (Area 54)

Length: 30m Width: 1.50m

Maximum Depth: 0.40m Minimum Depth: 0.35m

Orientation: NW-SE OS Co-ordinates: (E) 318453 (N) 539891

(E) 318472 (N) 539868

Context Number	Context Type	Description	Maximum Thickness/Depth
(6000)	Topsoil	Soft mid greyish brown silty clay	0.28m
(6001)	Natural Substrate	Soft light orangey grey turning to greyish orange clay	**N/A**
[6003]	Cut	Cut of ditch	0.34m
(6004)	Deposit	Loose mid orangey brown silty clay fill of [6003]	0.34m
[6005]	Cut	Re-cut of ditch	0.23m
(6006)	Deposit	Friable mid orangey brown silty clay fill of [6005]	0.23m

Trench 61 (Area 53)

Length: 30m Width: 1.50m

Maximum Depth: 0.68m Minimum Depth: 0.40m

Orientation: NW-SE OS Co-ordinates: (E) 318550 (N) 539903

(E) 318569 (N) 539879

Context Number	Context Type	Description	Maximum Thickness/Depth
(6100)	Topsoil	Soft dark brown silty clay	0.20m
(6101)	Subsoil	Soft mid grey brown clay	0.20m
(6102)	Natural Substrate	Sticky mid orange brown clay	**N/A**

Trench 62 (Area 53)

Length: 30m Width: 1.50m

Maximum Depth: 0.54m Minimum Depth: 0.37m

Orientation: NW-SE OS Co-ordinates: (E) 318614 (N) 539950

(E) 318632 (N) 539926

Context Number	Context Type	Description	Maximum Thickness/Depth
(6200)	Topsoil	Soft mid brown silty clay	0.17m
(6201)	Subsoil	Soft mid grey clay	0.13m
(6202)	Natural Substrate	Sticky mid orange brown clay	**N/A**

Trench 72 (Area 25)

Length: 30m Width: 1.50m

Maximum Depth: 0.83m | Minimum Depth: 0.60m

Orientation: E-W | OS Co-ordinates: (E) 309964 (N) 530974 (E) 309937 (N) 530962

Context Number	Context Type	Description	Maximum Thickness/Depth
(7200)	Topsoil	Friable dark brown silty sand	0.30m
(7201)	Subsoil	Friable mid brown silty sand	0.18m
(7202)	Natural Substrate	Compacted orangey brown gravelly sand with clay patches	**N/A**

Trench 73 (Area 25)

Length: 30m | Width: 1.50m

Maximum Depth: 0.90m | Minimum Depth: 0.40m

Orientation: N-S | OS Co-ordinates: (E) 309959 (N) 530988 (E) 309971 (N) 530961

Context Number	Context Type	Description	Maximum Thickness/Depth
(7300)	Topsoil	Friable dark brown sandy silt	0.30m
(7301)	Subsoil	Friable mid brown silty sand	0.20m
(7302)	Natural Substrate	Compacted orangey brown gravelly sand with clay patches	**N/A**

Trench 76 (Area 15)

Length: 30m | Width: 1.50m

Maximum Depth: 0.50m | Minimum Depth: 0.32m

Orientation: NW-SE | OS Co-ordinates: (E) 310349 (N) 531424 (E) 310373 (N) 531407

Context Number	Context Type	Description	Maximum Thickness/Depth
(7600)	Topsoil	Loose dark brown silty clay	0.30m
(7601)	Natural Substrate	Hard mid orange brown clay	**N/A**

Trench 77 (Area 15)

Length: 30m | Width: 1.50m

Maximum Depth: 0.86m | Minimum Depth: 0.48m

Orientation: N-S | OS Co-ordinates: (E) 310395 (N) 531463 (E) 310407 (N) 531436

Context Number	Context Type	Description	Maximum Thickness/Depth
(7700)	Topsoil	Loose dark brown silty clay	0.36m
(7701)	Subsoil	Hard mid yellow brown clay	0.35m
(7702)	Natural Substrate	Hard mid grey brown gravel and clay	**N/A**

Trench 78 (Area 15)

Length: 30m | Width: 1.50m

Maximum Depth: 0.68m | Minimum Depth: 0.48m

Orientation: E-W | OS Co-ordinates: (E) 310429 (N) 531464

(E) 310402 (N) 531452

Context Number	Context Type	Description	Maximum Thickness/Depth
(7800)	Topsoil	Loose dark brown silty clay	0.40m
(7801)	Subsoil	Hard mid yellow brown clay	0.20m
(7802)	Natural Substrate	Hard mid orange brown gravel and clay	**N/A**

Trench 81 (Area 1)

Length: 30m | Width: 1.80m

Maximum Depth: 0.38m | Minimum Depth: 0.28m

Orientation: NE-SW | OS Co-ordinates: (E) 311175 (N) 533392

(E) 311162 (N) 533365

Context Number	Context Type	Description	Maximum Thickness/Depth
(8100)	Topsoil	Loose mid grey brown silty clay	0.38m
(8101)	Natural Substrate	Hard light yellow brown clay	**N/A**

Trench 82 (Area 1)

Length: 30m | Width: 1.80m

Maximum Depth: 0.45m | Minimum Depth: 0.24m

Orientation: NW-SE | OS Co-ordinates: (E) 311163 (N) 533398

(E) 311191 (N) 533386

Context Number	Context Type	Description	Maximum Thickness/Depth
(8200)	Topsoil	Loose mid grey brown silty clay	0.45m
(8201)	Natural Substrate	Hard light yellow brown clay	**N/A**

APPENDIX 2: PLATES

Plate 1: Trench 37, looking east

Plate 2: Feature [3704], looking northwest

Plate 3: Trench 38, looking southwest

Plate 4: Feature [3802], looking northwest

Plate 5: Feature [3804], looking south-southeast

Plate 6: Trench 39, looking south

Plate 7: Feature [3902], looking northwest

Plate 8: Trench 6, looking northeast

Plate 9: Deposits (603) & (601), looking southeast

Plate 10: Trench 14, looking northwest

Plate 11: Pit [1403], looking southwest

Plate 12: Trench 54, looking southwest

Plate 13: Feature [5403], looking northwest

Plate 14: Trench 55, looking northwest

Plate 15: Pit [5504], looking northeast

Plate 16: Trench 60, looking southeast

Plate 17: Ditches [6003] & [6005], looking east northeast

Plate 18: Trench 51, looking northwest

Plate 19: Structure {5103}, looking southwest

Plate 20: Trench 52, looking southwest

Plate 21: Structure {5205}, southwest

Plate 22: Structure {5206}, looking northeast

Plate 23: Trench 53, looking southeast

Plate 24: Ditch [5304], showing layers (5306) and (5303), looking northeast

Plate 25: Layer (5303), looking southwest

APPENDIX 3: FIGURES

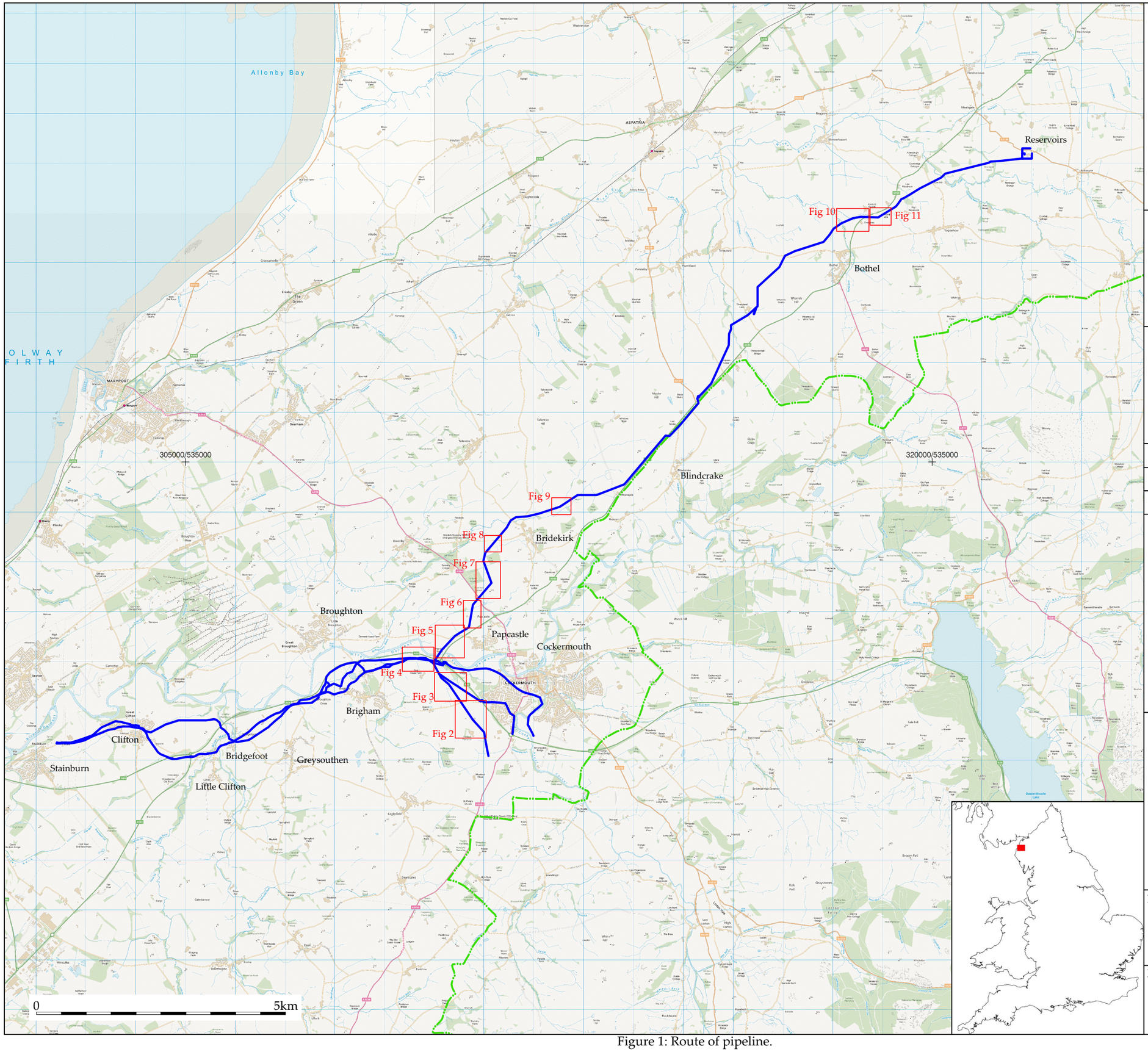

Figure 1: Route of pipeline.

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CLIENT:

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SCALE: 1:75,000 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

Route of pipeline

Lake District National Park Boundary

Location of evaluation areas (Figures 2-11)

REPORT No: CP11503

FIGURE: 1

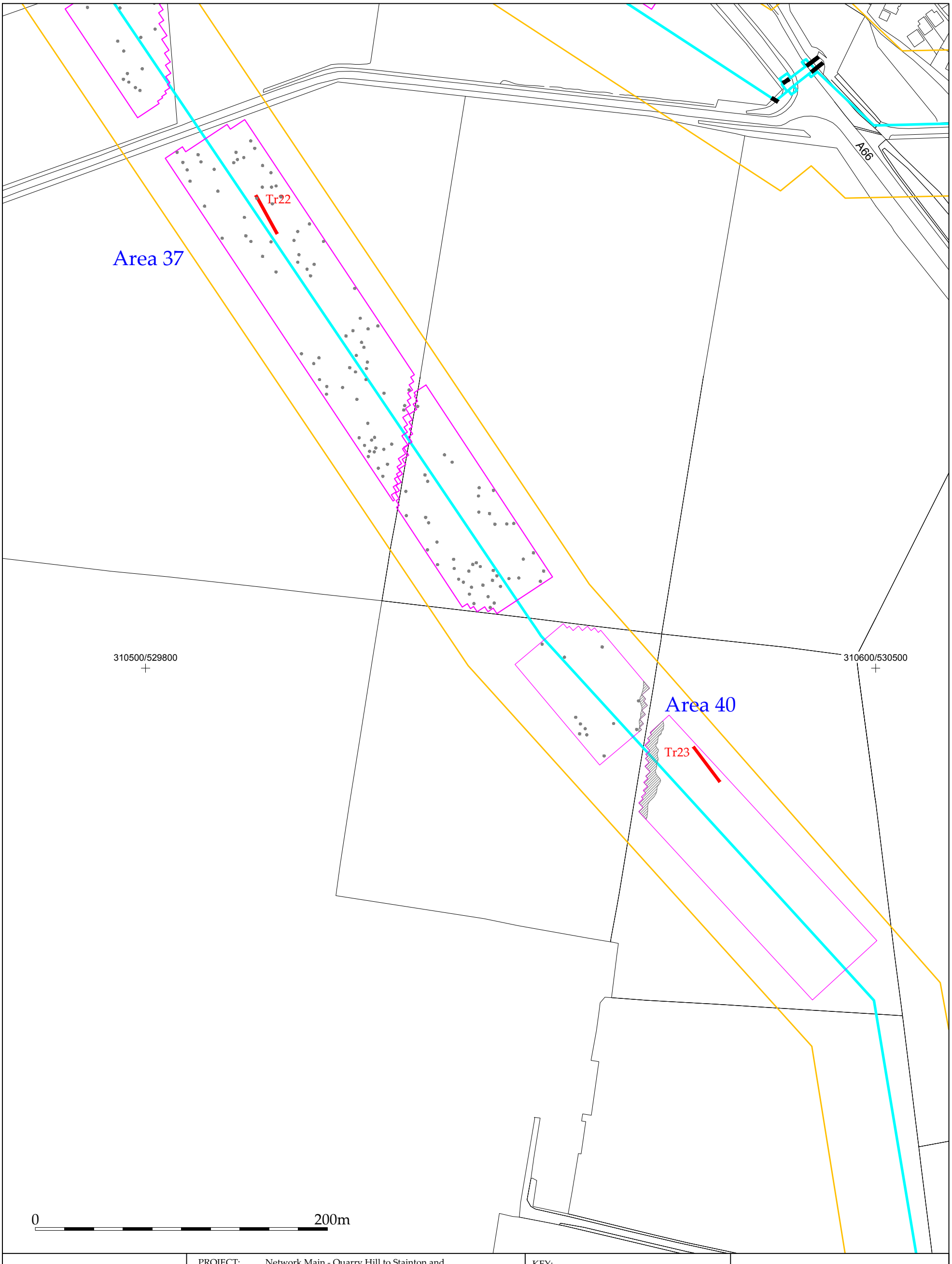
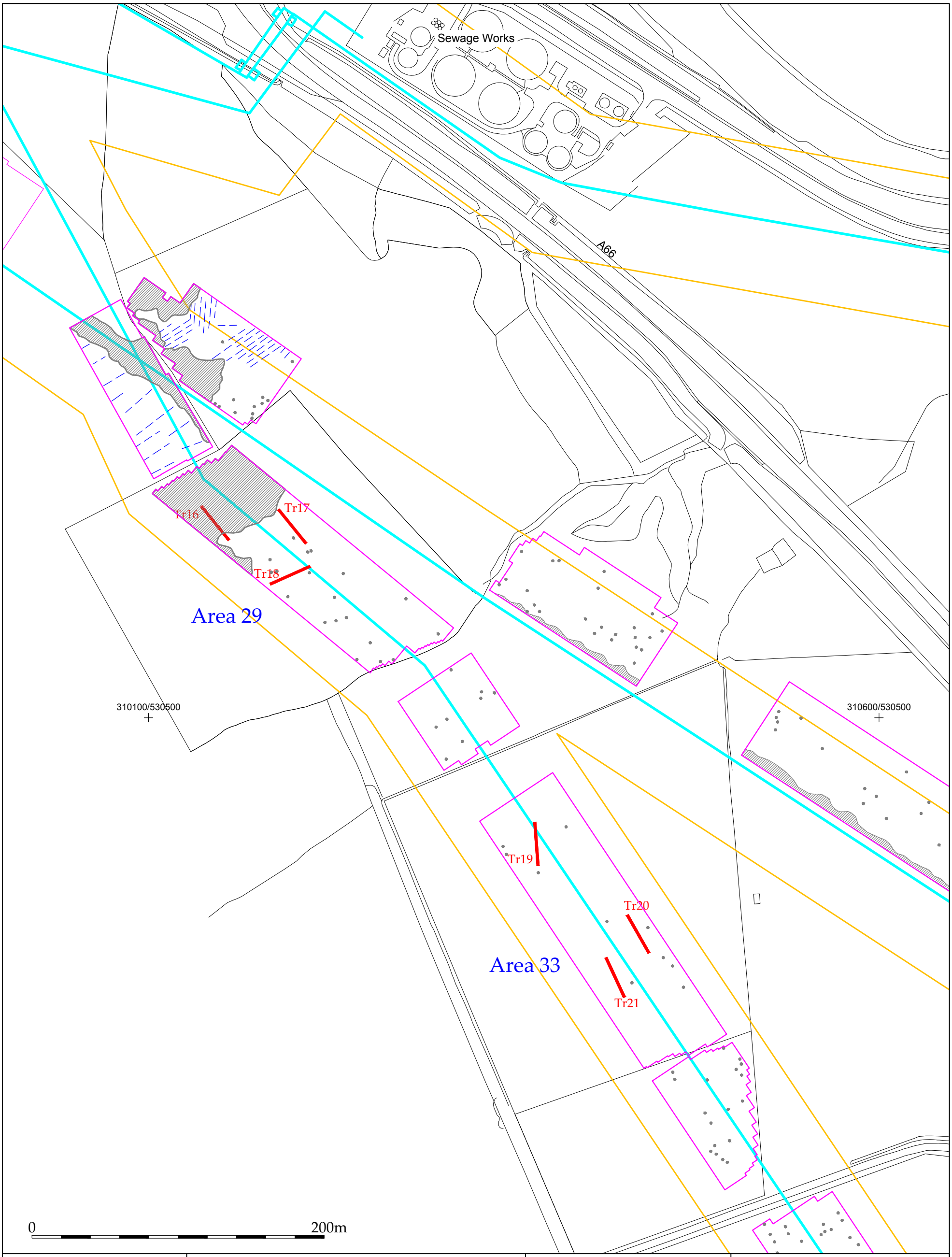


Figure 2: Detailed location of evaluation trenches in Areas 37 & 40 - west of Cockermouth.



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SCALE:	1:2,500 at A3
REPORT No:	CP11503
CLIENT:	United Utilities Water PLC
DRAWN BY:	AB
DATE:	October 2015
FIGURE:	3

KEY:

- Route of pipeline
- 100m corridor
- Evaluation trenches
- Targeted geophysical anomolies

Figure 3: Detailed location of evaluation trenches in Areas 29 & 33 - west of Cockermouth.

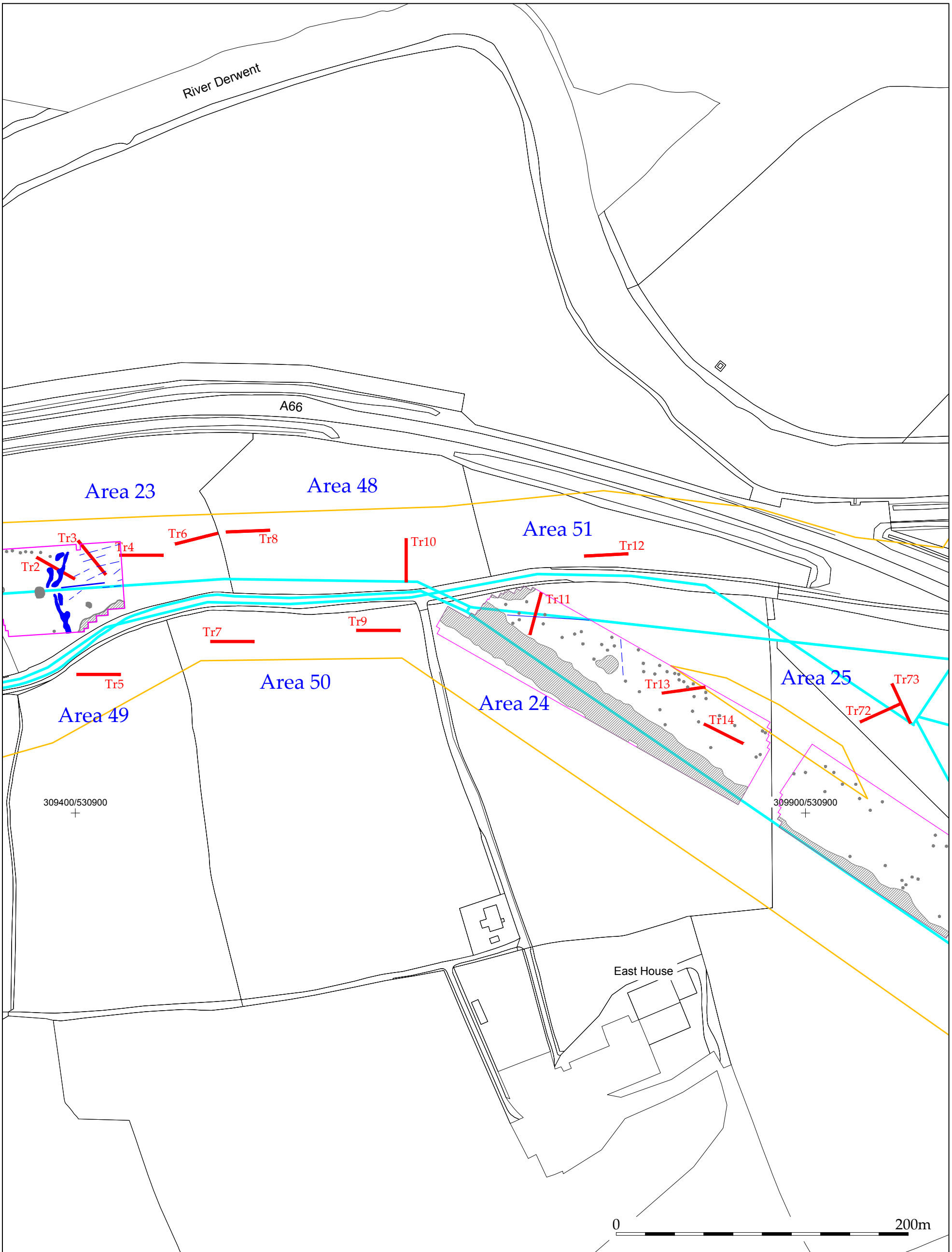
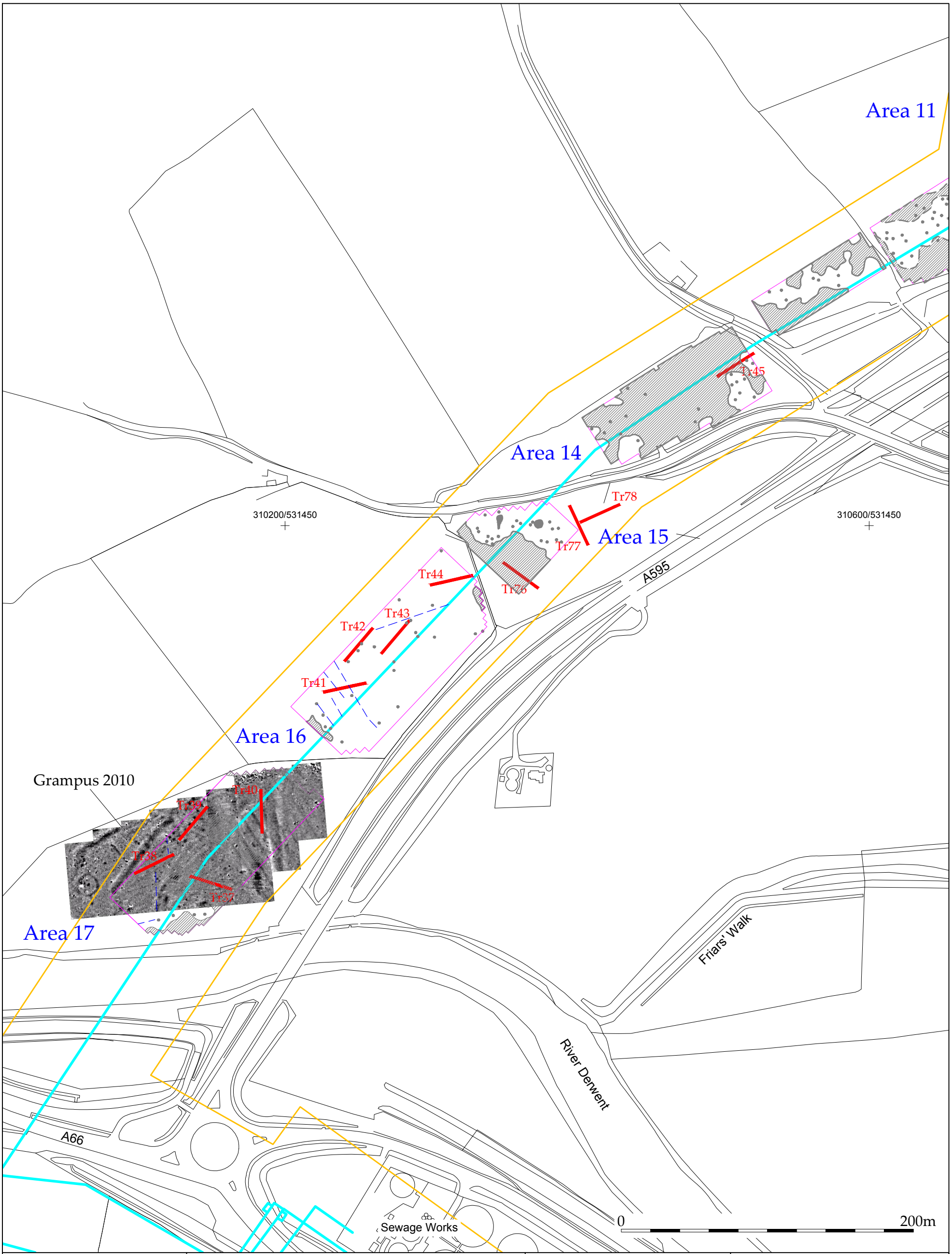


Figure 4: Detailed location of evaluation trenches in Areas 23, 24, 25, 48, 49, 50 & 51 - northwest of Cockermouth.



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SCALE:	1:2,500 at A3
REPORT No:	CP11503
CLIENT:	United Utilities Water PLC
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DATE:	October 2015
FIGURE:	5

KEY:

- Route of pipeline
- 100m corridor
- Evaluation trenches
- Targeted geophysical anomolies

Figure 5: Detailed location of evaluation trenches in Areas 14, 15, 16 & 17 - west of Papcastle.

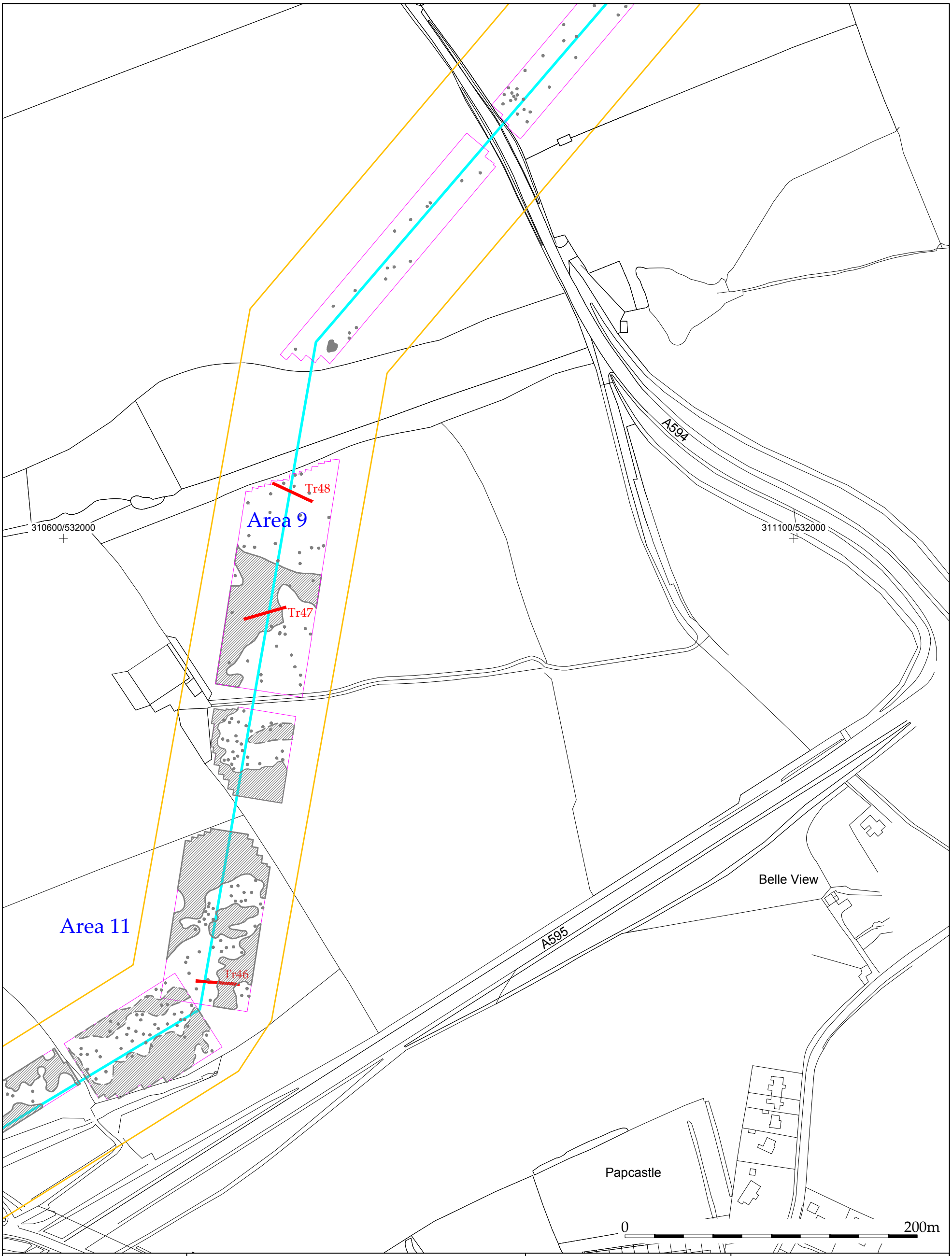

Figure 6: Detailed location of evaluation trenches in Areas 9 & 11 - north of Papcastle.

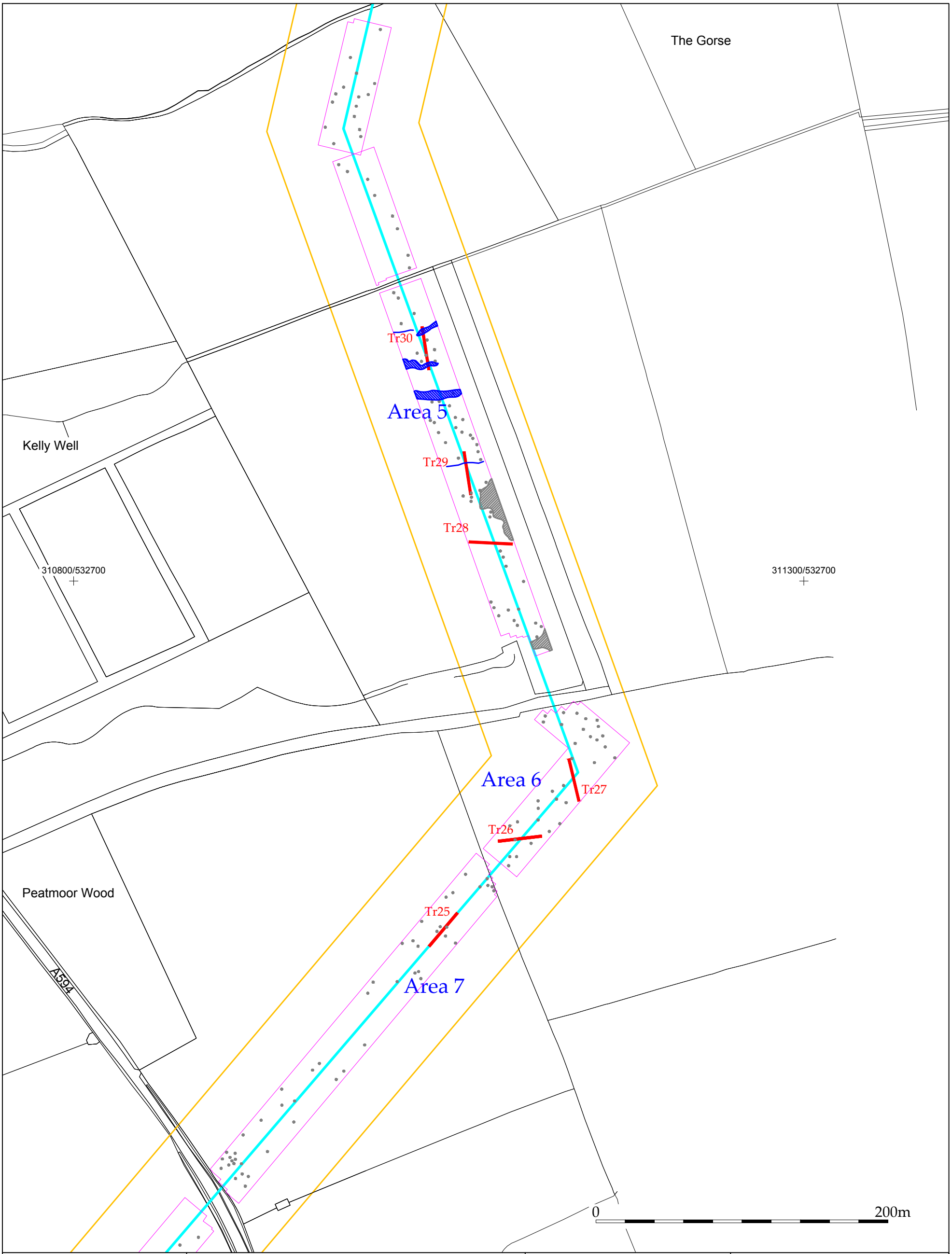

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FIGURE:	7

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KEY:

- Route of pipeline
- 100m corridor
- Evaluation trenches
- Targeted geophysical anomolies

Figure 7: Detailed location of evaluation trenches in Areas 5, 6 & 7 - southwest of Bridekirk.

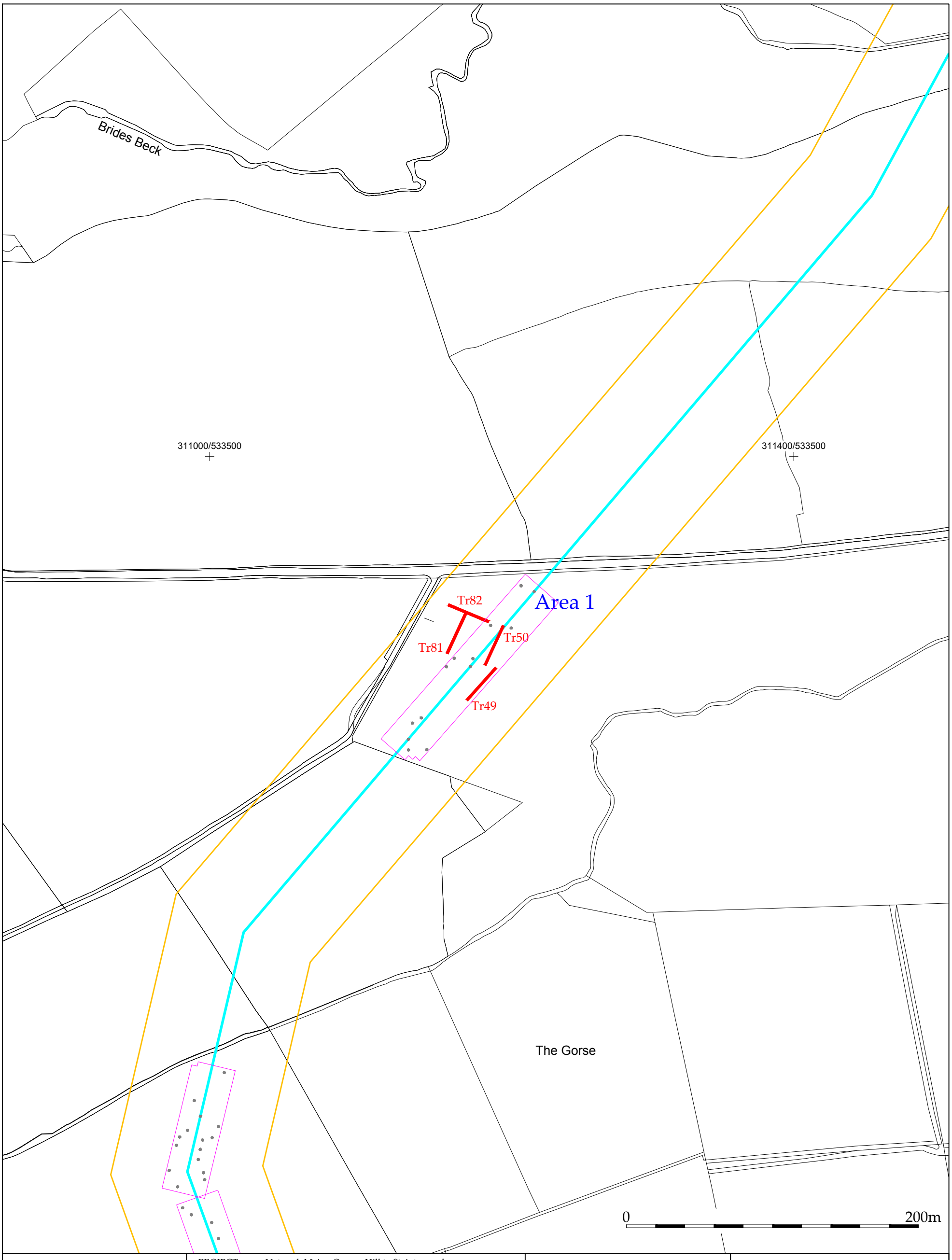
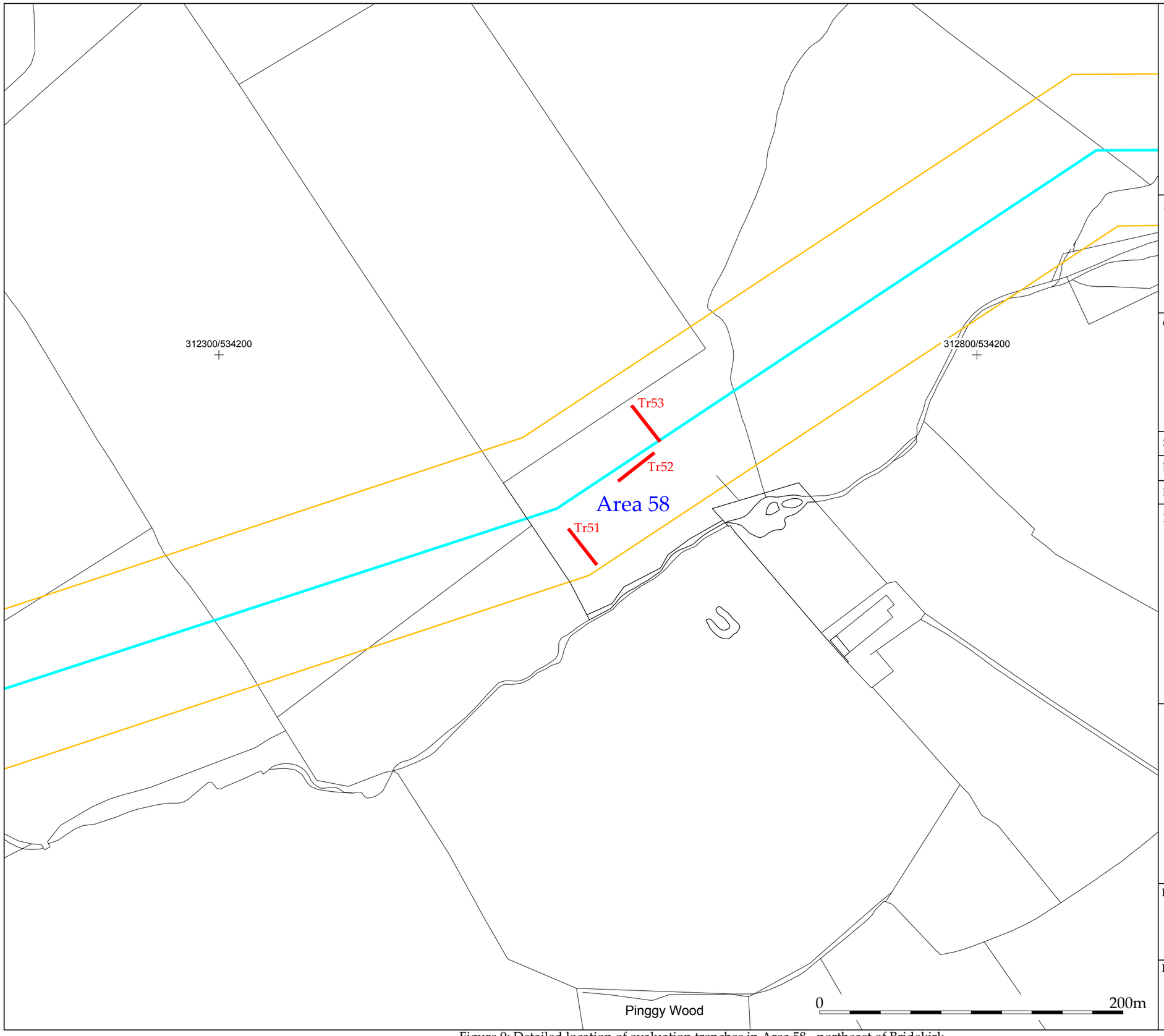


Figure 8: Detailed location of evaluation trenches in Area 1 - west of Bridekirk.



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SCALE: 1:2,500 at A3

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DATE: October 2015

KEY:

Route of pipeline
100m corridor
Evaluation trenches

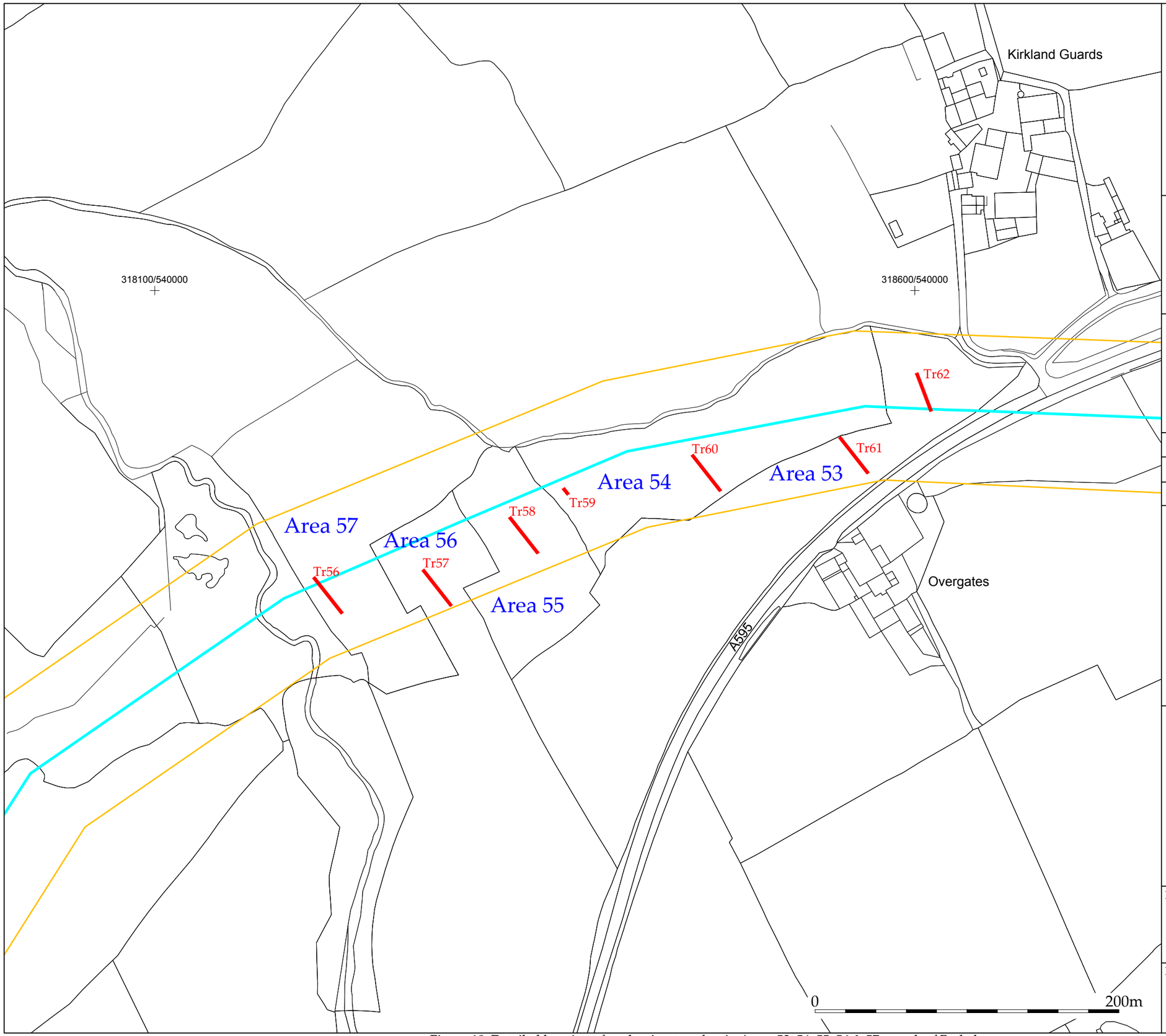
REPORT No:

CP11503

FIGURE:

9

Figure 9: Detailed location of evaluation trenches in Area 58 - northeast of Bridekirk.



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SCALE: 1:2,500 at A3

DRAWN BY: AB

DATE: October 2015

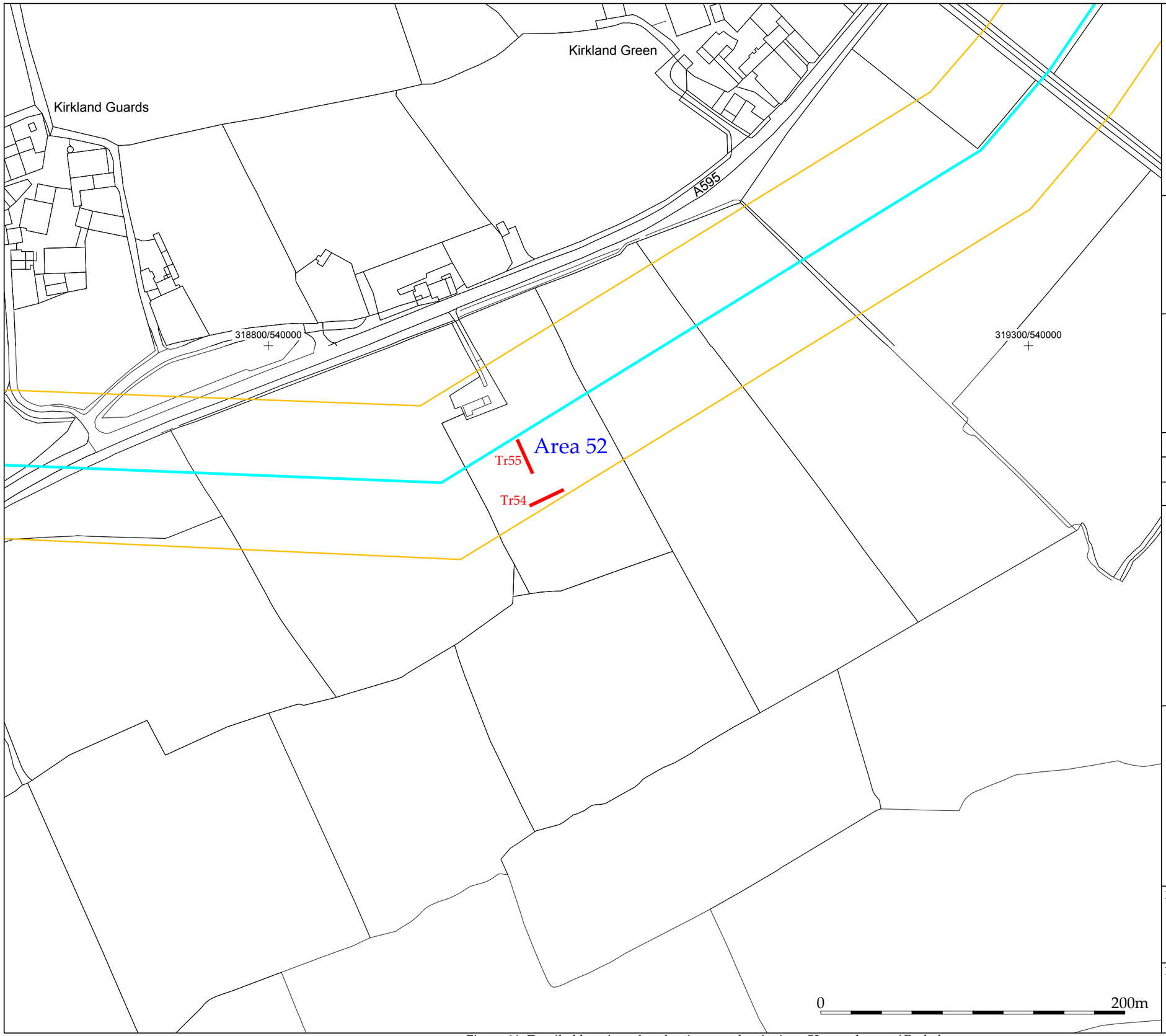
KEY:

- Route of pipeline
- 100m corridor
- Evaluation trenches

REPORT No: CP11503

FIGURE: 10

Figure 10: Detailed location of evaluation trenches in Areas 53, 54, 55, 56 & 57 - north of Bothel.



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CLIENT:

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SCALE: 1:2,500 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

Route of pipeline

100m corridor

Evaluation trenches

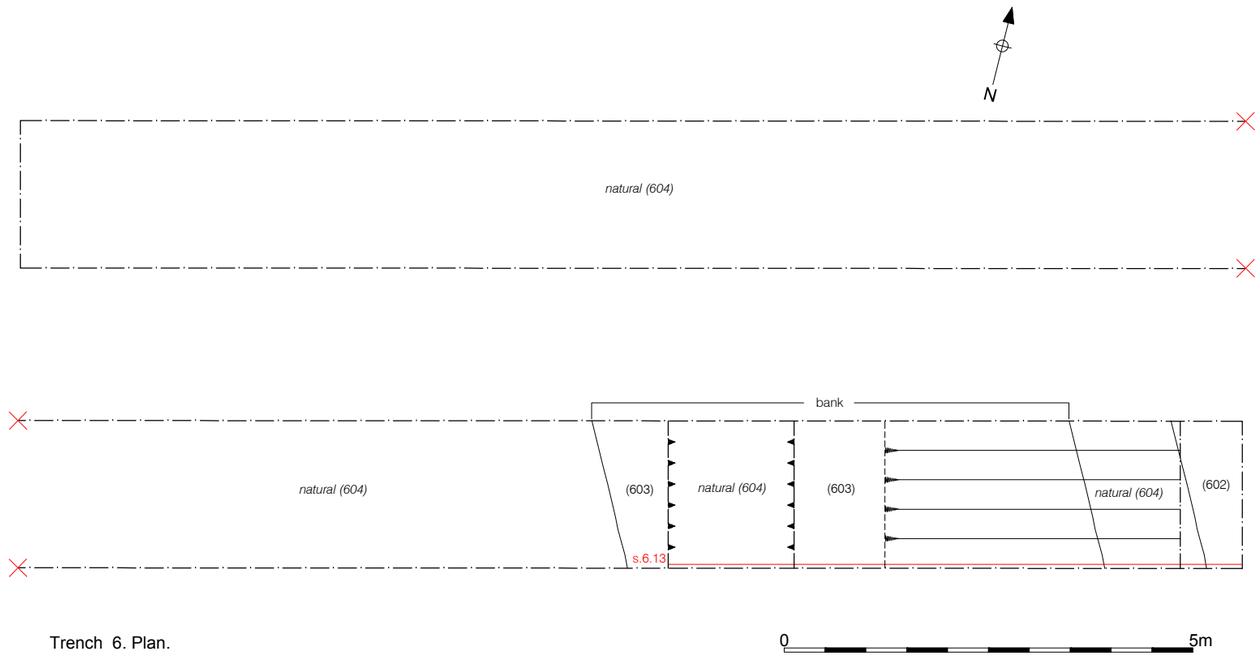
REPORT No:

CP11503

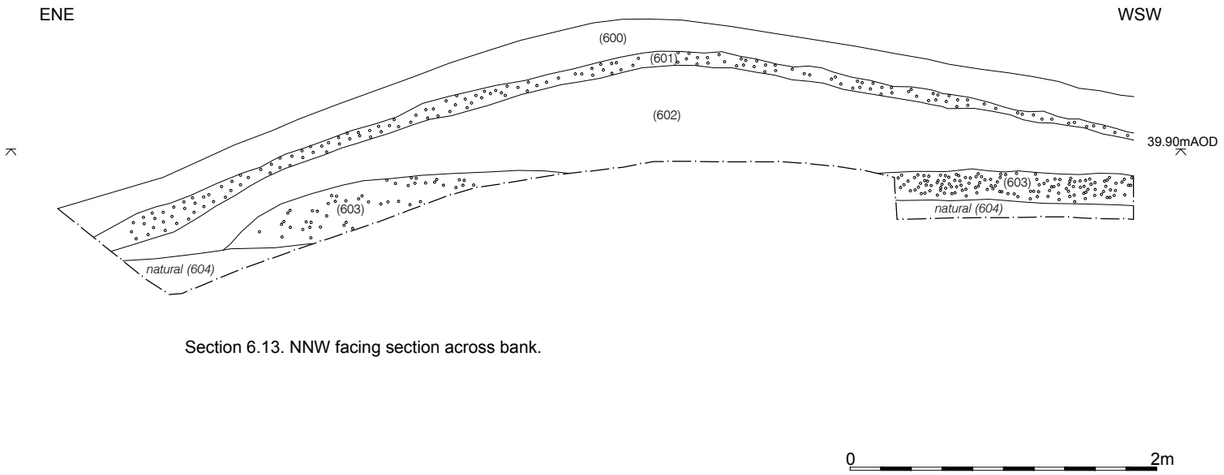
FIGURE:

11

Figure 11: Detailed location of evaluation trenches in Area 52 - northeast of Bothel.



Trench 6. Plan.



Section 6.13. NNW facing section across bank.

Figure 12: Trench 6; plan and section.

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SCALE: Plan 1:75/Section 1:50 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

(101) Context number

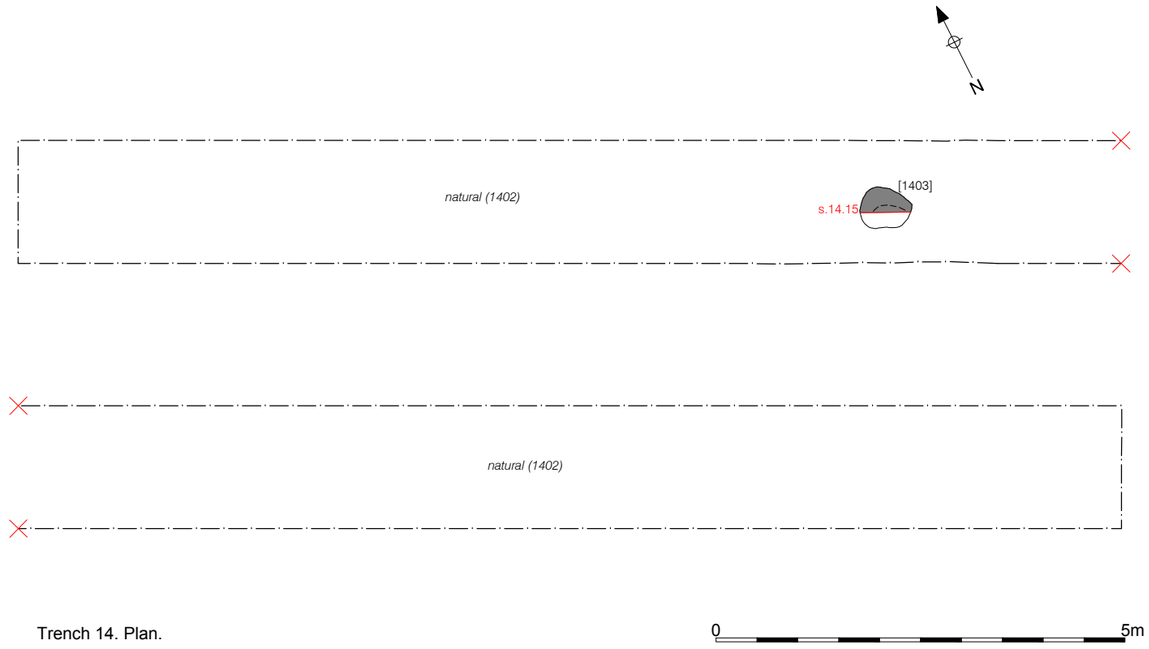
Height mAOD

Section location

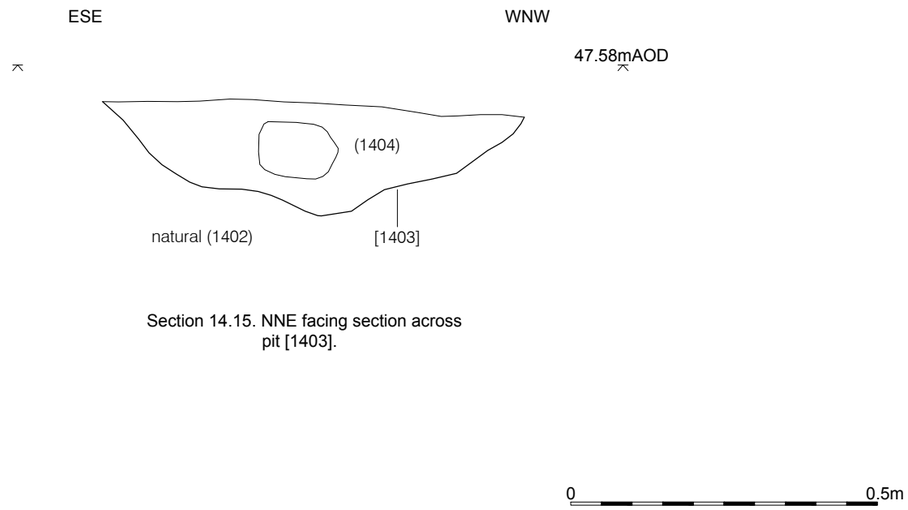
Limit of excavation

REPORT No: CP11503

FIGURE: 12



Trench 14. Plan.



Section 14.15. NNE facing section across pit [1403].

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SCALE: Plan 1:75/Section 1:10 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

(101) Context number

Height mAOD

Section location

Limit of excavation

REPORT No:

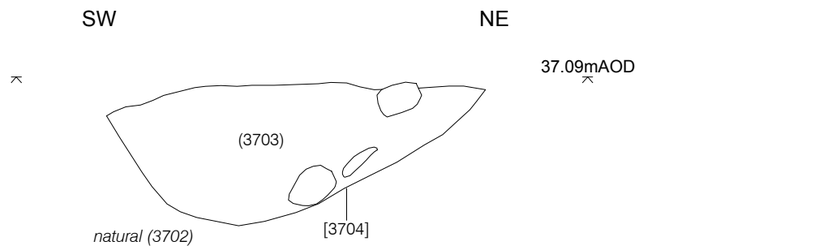
CP11503

FIGURE:

13

Figure 13: Trench 14 (Area 24); plan and section.

Trench 37. Plan.



Section 37.9. South-east facing section across posthole [3709].

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SCALE: Plan 1:75/Section 1:10 at A3

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DATE: October 2015

KEY:

(101) Context number

Height mAOD

Section location

Limit of excavation

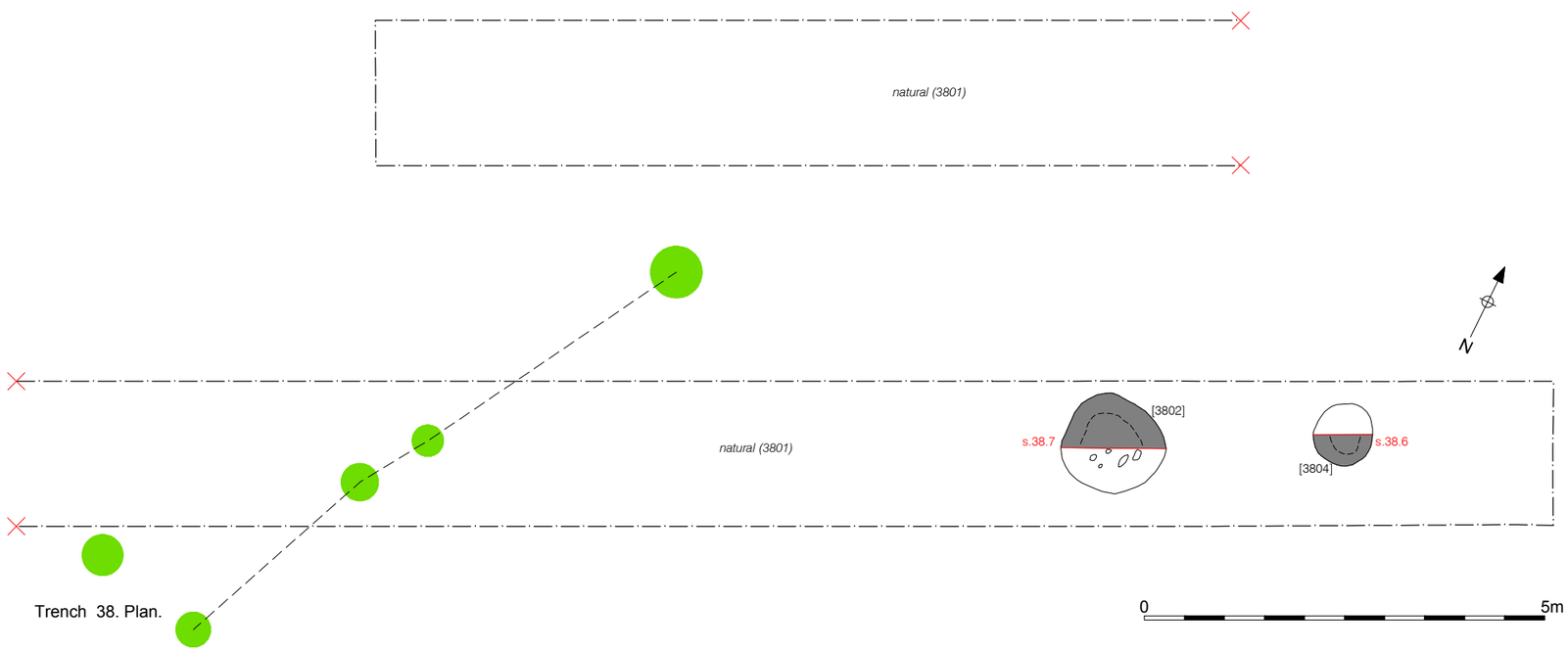
REPORT No:

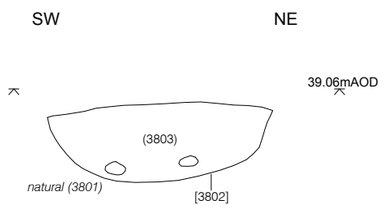
CP11503

FIGURE:

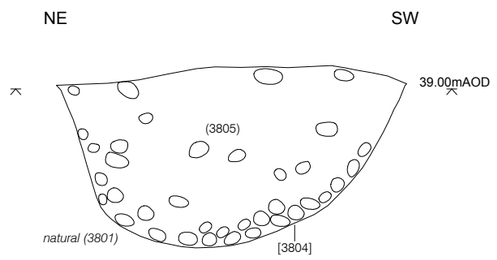
14

Figure 14: Trench 37 (Area 17); plan and section.





Section 38.6. South-east facing section across posthole [3802].



Section 38.7. North-west facing section across pit [3804].

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SCALE: Plan 1:75/Section 1:20 at A3

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DATE: October 2015

KEY:

(101) Context number

Height mAOD

Section location

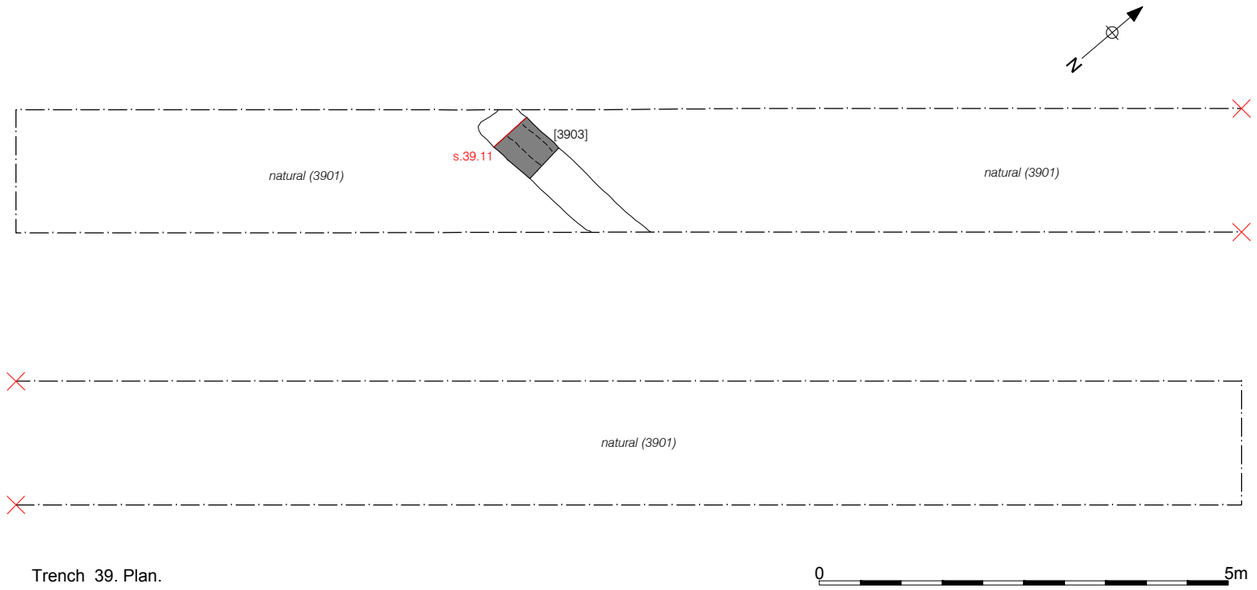
Limit of excavation

Pits - as seen on geophysical Survey (Grampus 2010)

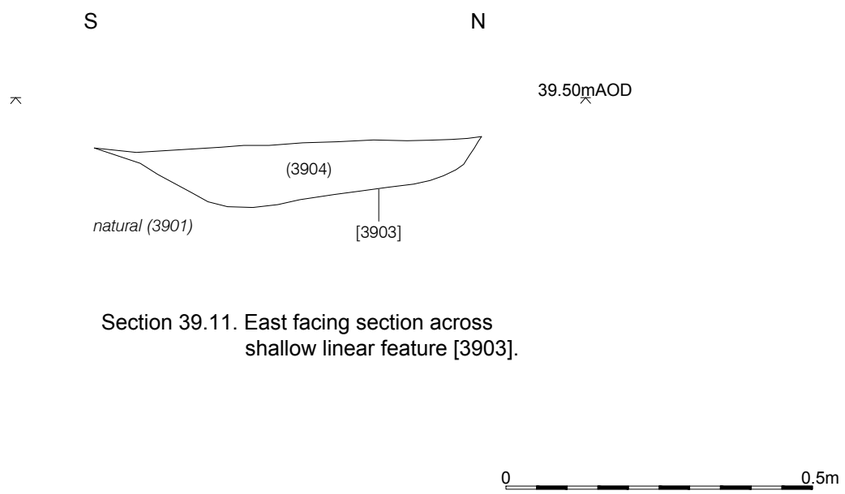
REPORT No: CP11503

FIGURE: 15

Figure 15: Trench 38 (Area 17); plan and sections.



Trench 39. Plan.



Section 39.11. East facing section across shallow linear feature [3903].

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CLIENT:

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SCALE: Plan 1:75/Section 1:10 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

(101) Context number

Height mAOD

Section location

Limit of excavation

REPORT No: CP11503

FIGURE: 16

Figure 16: Trench 39 (Area 17); plan and section.

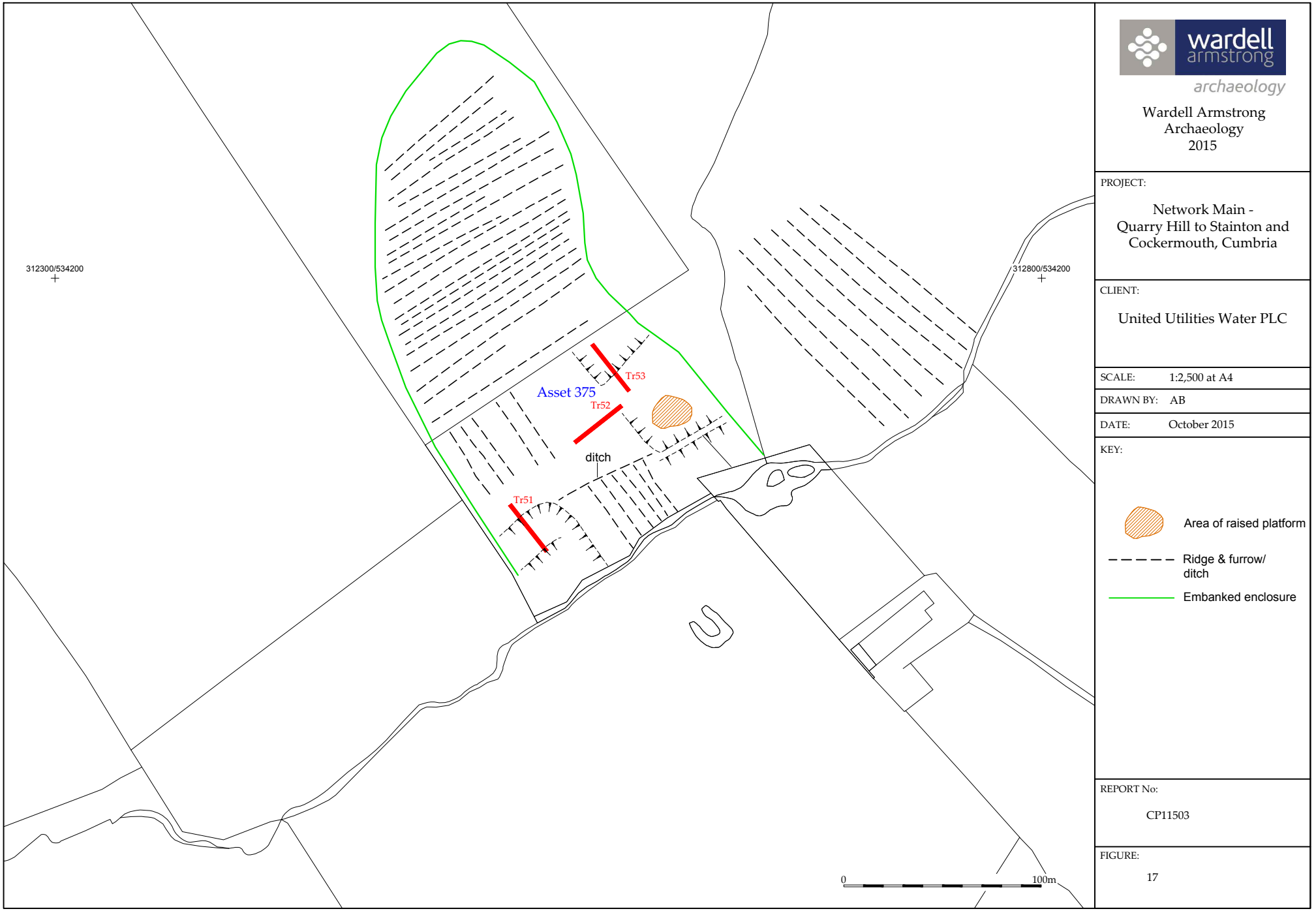
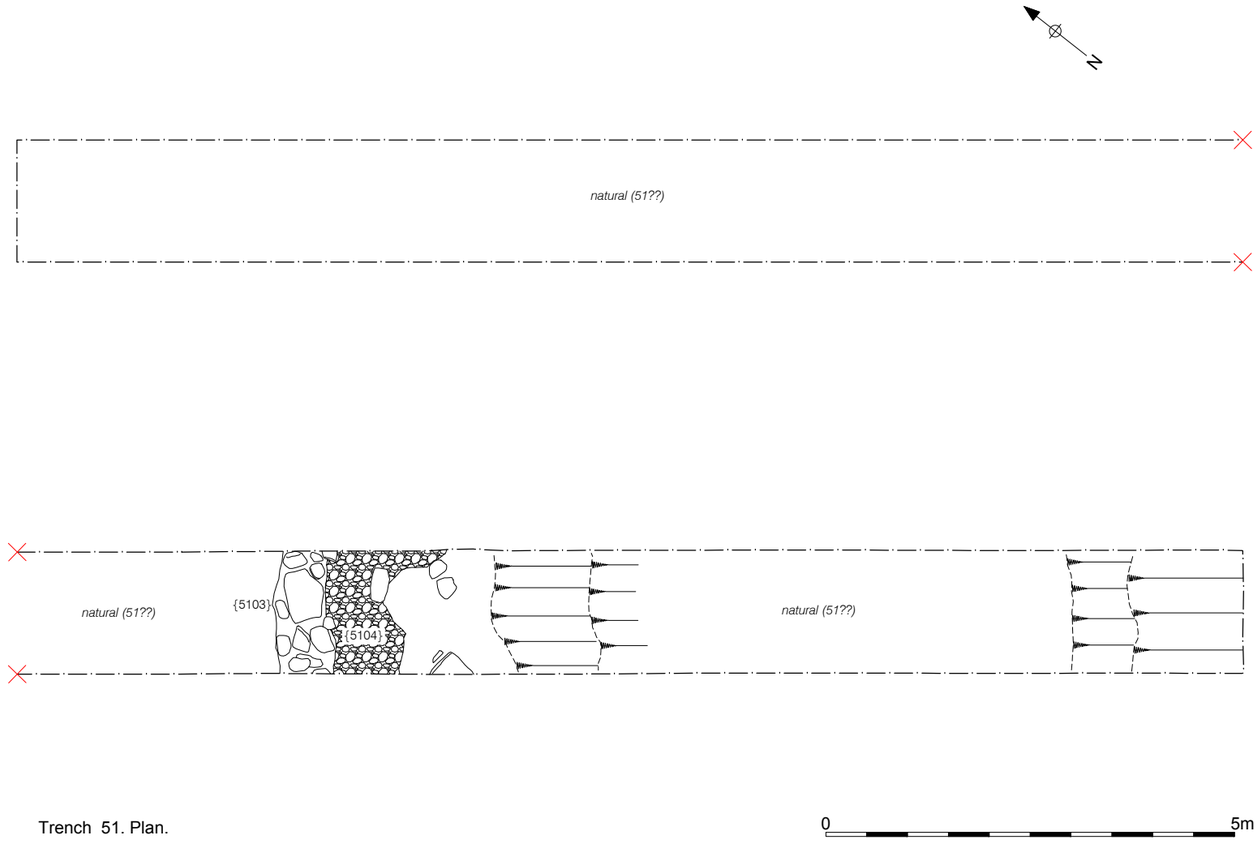


Figure 17: Trenches 51, 52 & 53 targeting Asset 375 in Area 58.



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SCALE: Plan 1:75 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

(101) Context number

Limit of excavation

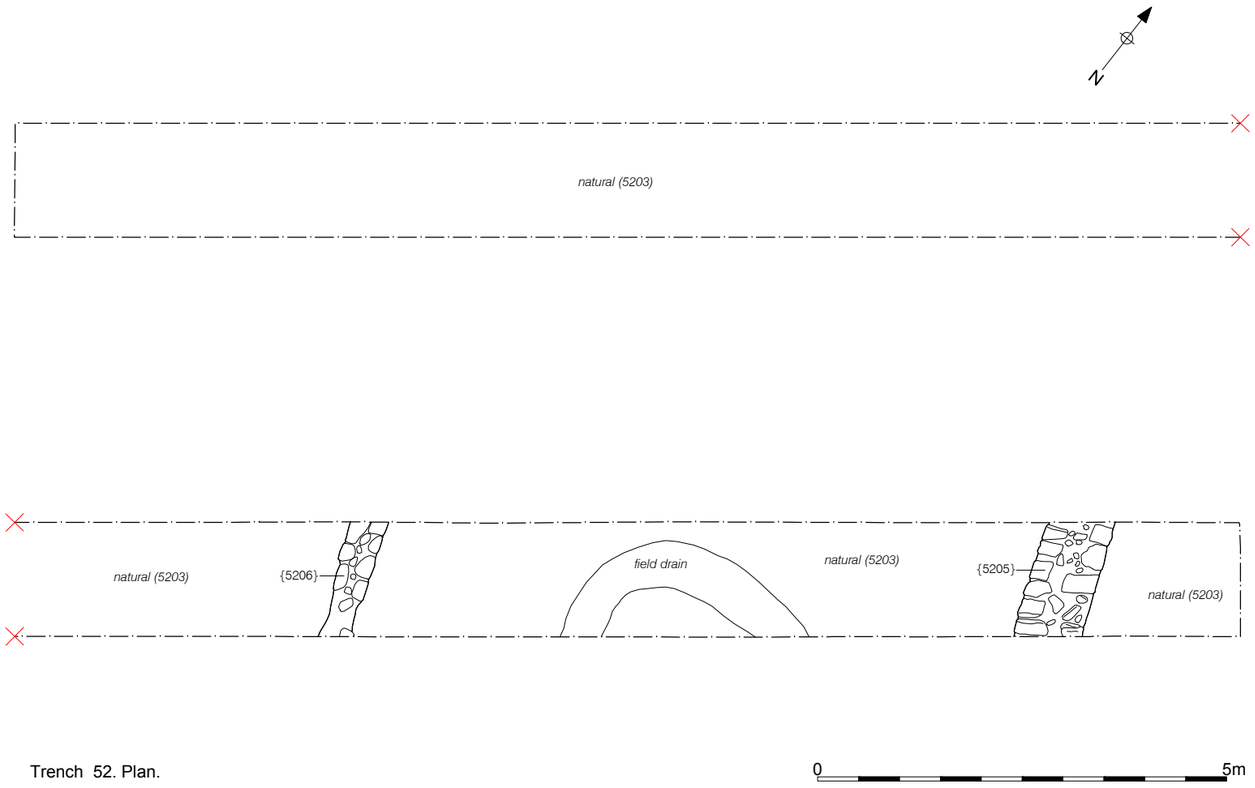
REPORT No:

CP11503

FIGURE:

18

Figure 18: Trench 51 (Asset 375); plan.



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SCALE: Plan 1:75 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

(101) Context number

Limit of excavation

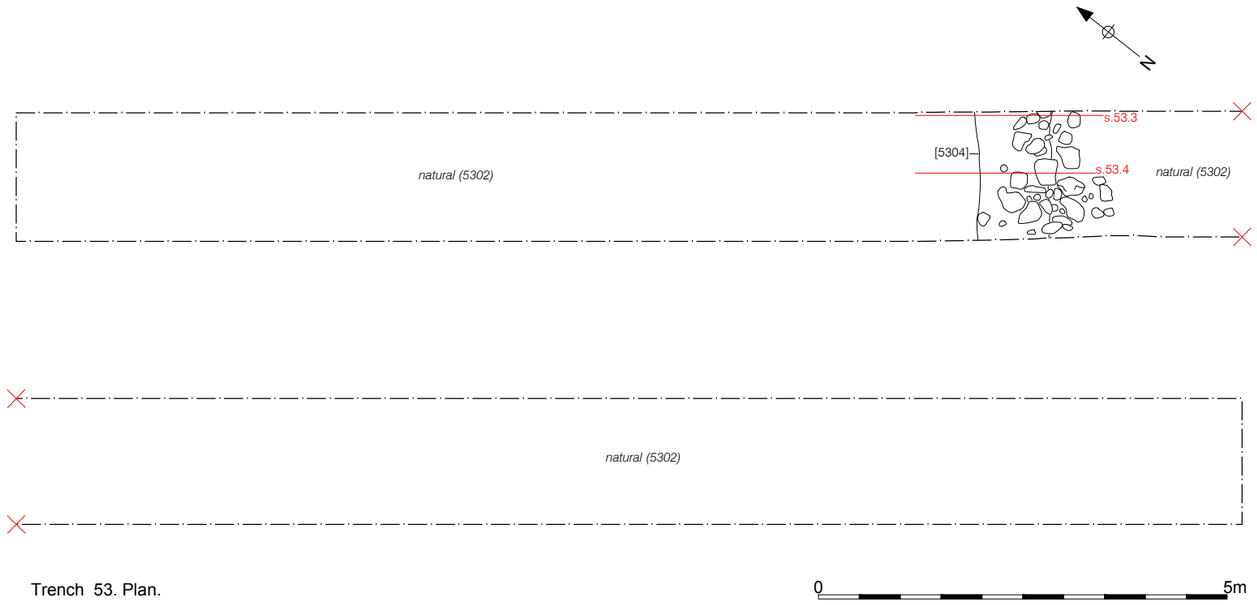
REPORT No:

CP11503

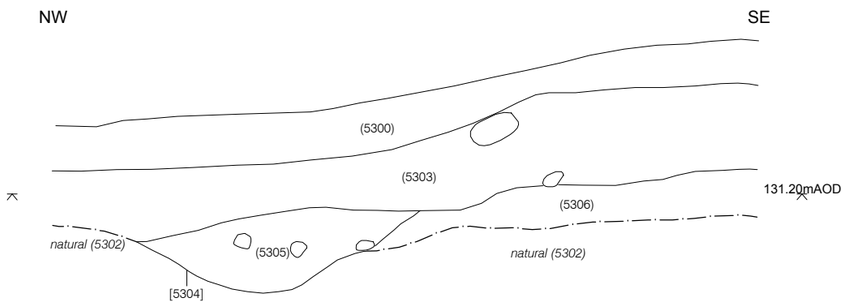
FIGURE:

19

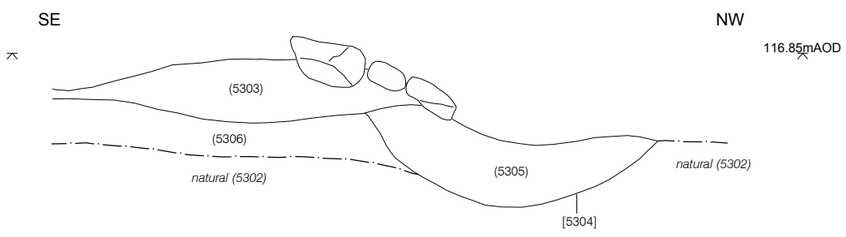
Figure 19: Trench 52 (Asset 375); plan.



Trench 53. Plan.



Section 53.3. South-west facing section across [5304].



Section 53.4. North-east facing section across [5304].

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PROJECT:

Network Main - Quarry Hill to Stainton and Cockermouth, Cumbria

CLIENT:

United Utilities Water PLC

SCALE: Plan 1:75/Sections 1:20 at A3

DRAWN BY: AB

DATE: October 2015

KEY:

(101) Context number

Height mAOD

Section location

Limit of excavation

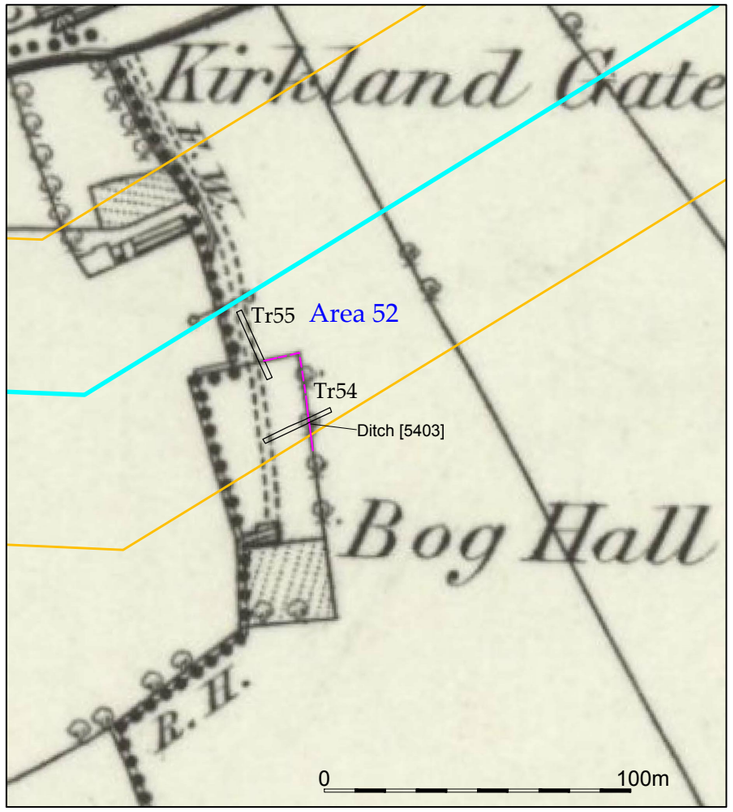
REPORT No:

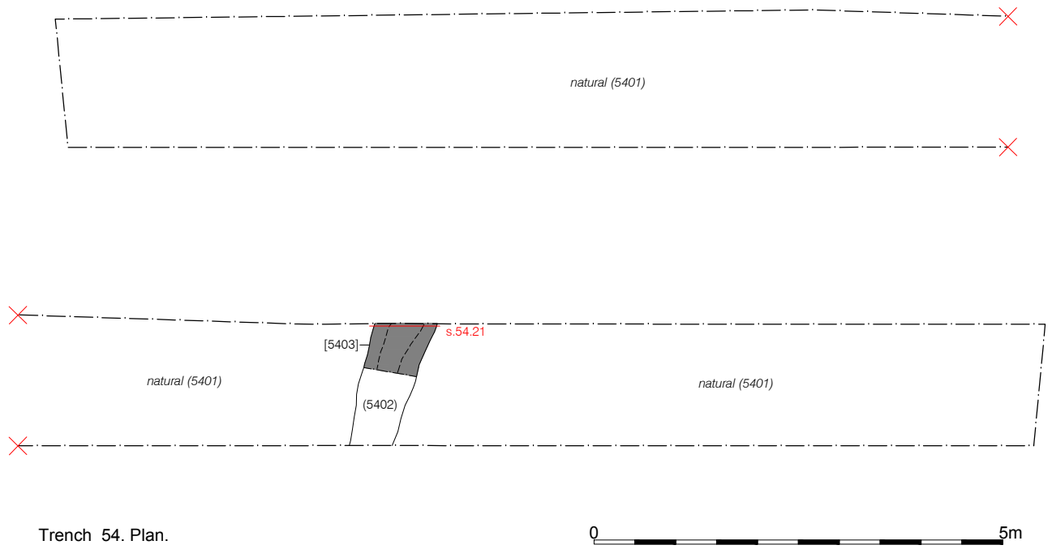
CP11503

FIGURE:

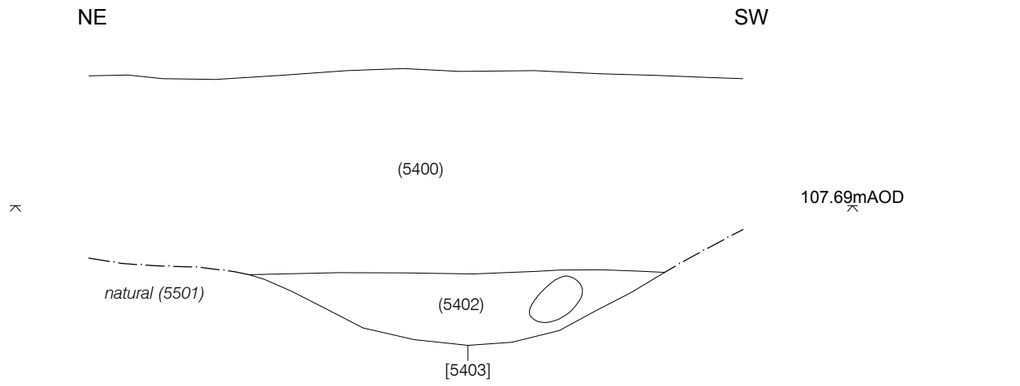
20

Figure 20: Trench 53 (Asset 375); plan and sections.





Trench 54. Plan.



Section 54.21. North-west facing section across ditch [5403].

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SCALE: Plan 1:75/Sections 1:10 at A3

DRAWN BY: HP

DATE: October 2015

KEY:

(101) Context number

Height mAOD

Section location

Limit of excavation

Inset: Ordnance Survey Map 1868
(6 inches to 1 mile)

REPORT No:

CP11503

FIGURE:

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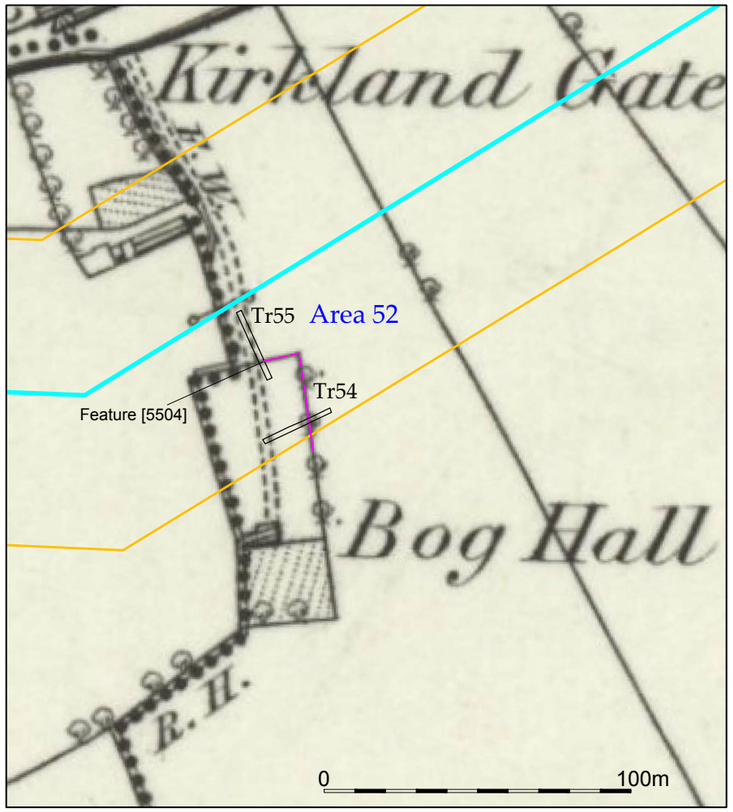
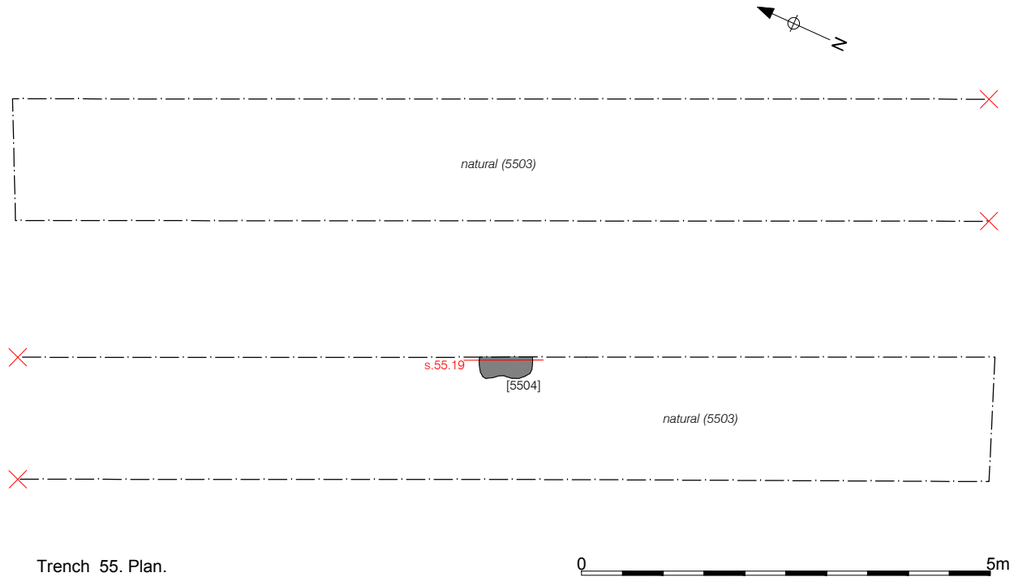
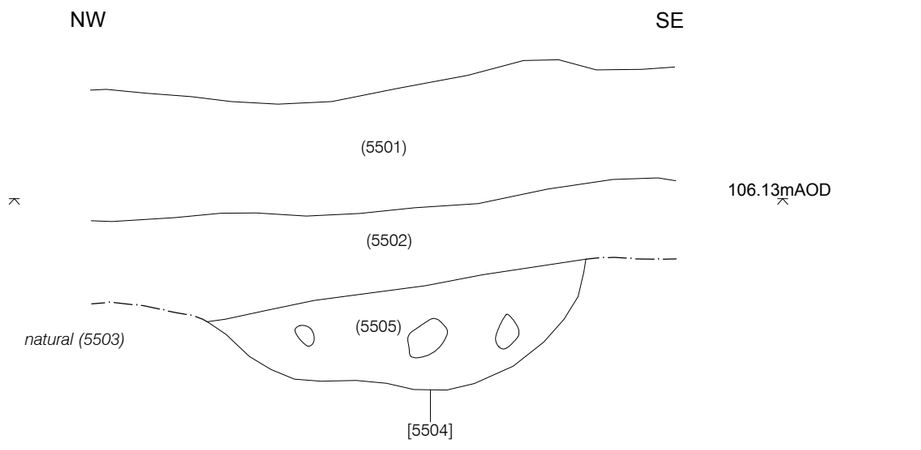
Figure 21: Trench 54 (Area 52); plan and section.





Trench 55. Plan.



Section 55.19. South-west facing section across [5504].

Figure 22: Trench 55 (Area 52); plan and section.

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KEY:

(101) Context number

Height mAOD

Section location

Limit of excavation

Inset: Ordnance Survey Map 1868
(6 inches to 1 mile)

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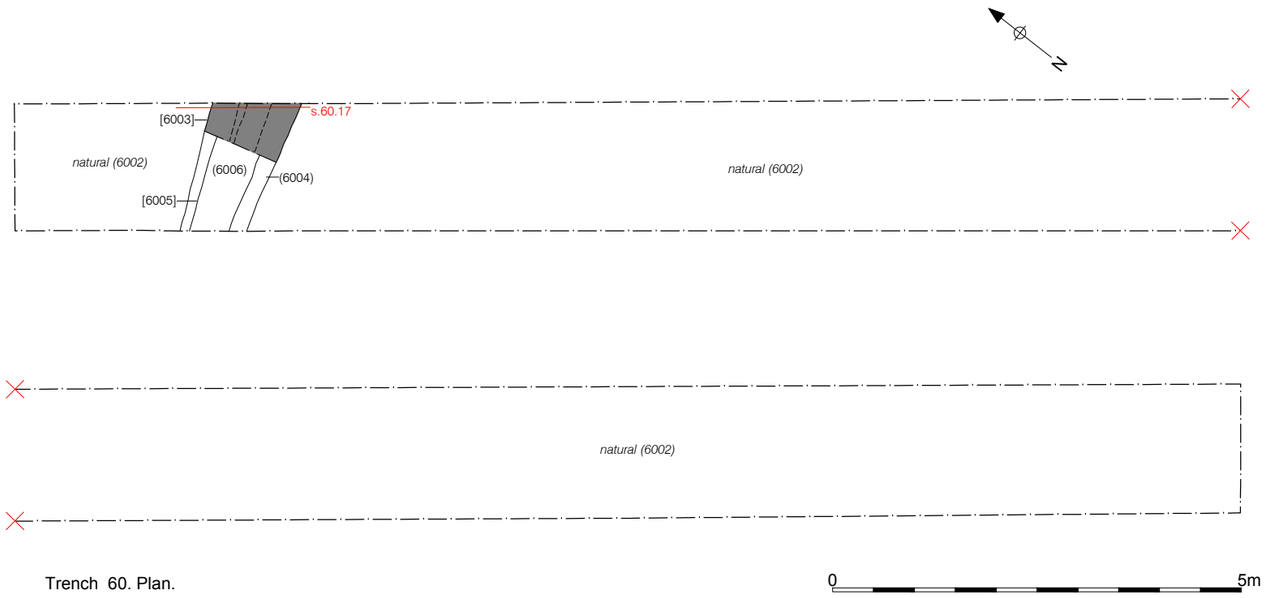
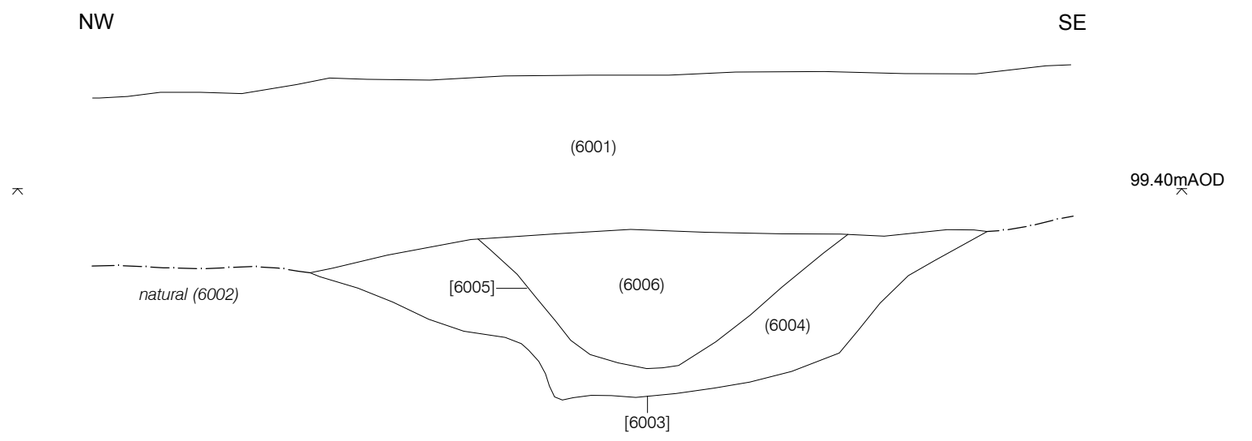
FIGURE:

22



Trench 60. Plan.



Section 60.17. South-west facing section across [6003] and [6005].

Figure 23: Trench 60 (Area 54); plan and section.

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DATE: October 2015

KEY:

(101) Context number
Height mAOD
Section location
Limit of excavation

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FIGURE:

23

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