

Crosby-on-Eden Wastewater Treatment Works Pipeline, Cumbria



Supplementary Report: Topographic Survey



Oxford Archaeology North

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SUMMARY

Following proposals by United Utilities for the construction of a waste water pipeline from the north of Linstock to Low Crosby in Cumbria (NGR NY 4268 5891 to NY 4461 5131), the Cumbria County Council Planning Archaeologist recommended that rapid archaeological desk-based research and a walkover survey of the proposed pipeline route be undertaken. Oxford Archaeology North (OA North) was subsequently commissioned by United Utilities to undertake this work (OA North 2008).

As a consequence of the desk-based assessment and walkover survey, Site **20** was recommended for a topographic survey in order to record the extent and size of the earthworks. The topographic survey was carried out in November 2008, the results of which are presented below. The site comprises a series of east/west aligned uneven linear features measuring approximately 5m in length. It is recommended that the site be subject to an archaeological evaluation to determine its date and function ahead of any proposed development.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project. Thanks are also due to Jo Mackintosh at Cumbria County Council Historic Environment Record (CCCHER) and the staff at Cumbria County Record Office in Carlisle.

Will Gardner carried out the topographic survey and Mark Tidmarsh produced the illustrations. Alison Plummer managed the project and also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 United Utilities proposed the construction of a pipeline from the north of Linstock to Low Crosby in Cumbria (Fig 1). The total length of the proposed pipeline is approximately 2km. Following recommendations made by the Cumbria County Council Historic Environment Officer, United Utilities commissioned Oxford Archaeology North (OA North) to undertake rapid archaeological desk-based research and a walkover survey of the proposed development area.
- 1.1.2 The proposed pipeline is located to the south of the line of Hadrian's Wall and within the "Frontiers of the Roman Empire" World Heritage Site (UNESCO serial id 430bis-001). This is a trans-national UNESCO (United Nations Educational, Cultural and Scientific Organisation) monument designation which initially comprised the Hadrian's Wall complex and the German 'limes'. Hadrian's Wall and its associated features were first inscribed as a World Heritage Site in 1987.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The proposed pipeline route (Fig 1) runs from the north of Linstock to Low Crosby (NGR NY 4268 5891 to NY 4461 5131), within an area of improved pastoral and arable farmland on the northern side of the River Eden, approximately 3km to the north-east of Carlisle (Countryside Commission 1998, 145–7). The proposed route is located on relatively flat land at approximately 20m AOD (Ordnance Survey 1983).
- 1.2.2 The underlying solid geological deposits comprise mainly mudstones and sandstones of Permo-Triassic age, created under marine conditions between 280 and 195 Ma. The most important sandstone formation, the St Bees Sandstone, has been quarried extensively for use as building stone, and this material creates the distinctive appearance of much of the area's architecture (Countryside Commission 1998, 20). Overlying drift geology comprises glacial deposits with some fluvial sediment along the Eden valley.

1.3 HISTORICAL BACKGROUND

- 1.3.1 The following section presents a summary of the historical and archaeological background of the general area and has been taken from the desk-based research report (OA North 2008). This is presented by historical period, and has been compiled in order to place the study area into a wider archaeological context.

Period	Date Range
Palaeolithic	30,000 – 10,000 BC
Mesolithic	10,000 – 3,500 BC
Neolithic	3,500 – 2,200 BC
Bronze Age	2,200 – 700 BC

Iron Age	700 BC – AD 43
Romano-British	AD 43 – AD 410
Early Medieval	AD 410 – AD 1066
Late Medieval	AD 1066 – AD 1540
Post-medieval	AD 1540 – c 1750
Industrial Period	c AD1750 – 1901
Modern	Post-1901

Table 1: Summary of British archaeological periods and date ranges

1.4 THE PREHISTORIC PERIOD

- 1.4.1 **Mesolithic-Neolithic (c 8000–2400 cal BC):** during the Mesolithic period the inhabitants of the British Isles employed a subsistence strategy traditionally viewed as the exploitation of natural resources by activities based on hunting, gathering, and fishing. Approximately commensurate with the adoption of farming, from c 4000 BC, the Neolithic period saw an increase in more permanent settlement, and the beginnings of widespread construction of monumental architecture (OA North 2008).
- 1.4.2 There are no Mesolithic or Neolithic sites from the study area.
- 1.4.3 **The Bronze Age (c 2400–700 cal BC):** the beginning of the Bronze Age in Britain developed gradually from the preceding Neolithic during the mid third millennium BC, although beyond the appearance of metal artefacts the distinction is somewhat overstressed (Hodgson and Brennand 2006, 29-30). Little in the way of firm settlement evidence during this period has been encountered in Cumbria, although numerous cairnfields suggest the widespread practice of agricultural field-clearance (Hodgson and Brennand 2006, 34–5) and intimate the presence of associated areas of domestic activity. There is also some evidence of other activity, in the form of Bronze Age collared urns found at the Garlands Hospital site in Carlisle in 1861 (Perriam 1992, 3), and a Bronze Age burnt mound identified at the same site (LUAU 1996). A metallised trackway, thought to be prehistoric, was found during The Lanes excavations in Carlisle, east of Scotch Street, associated with plough-marks indicating agricultural activity. Isolated finds, including barb-and-tanged arrowheads, also attest to prehistoric activity within the area (McCarthy 2000).
- 1.4.4 Findspots of Early Neolithic and Bronze Age material are located approximately 500m to the north-east of the east end of the study area at Vicarage Lane, High Crosby (HER no. 16919, at NGR NY 45204 59802).
- 1.4.5 There are no Bronze Age sites within the study area.
- 1.4.6 **The Iron Age (c 700 cal BC – AD 43):** a comparative lack of material culture in the North West relating to the Iron Age has historically made sites of this period difficult to identify in the archaeological record, particularly with reference to small-scale rural sites. Both the uplands and lowlands of Cumbria have produced evidence of enclosures that may date to the Iron Age, although a lack of identifiable material culture has made it difficult to assign these sites firmly to the Iron Age (Hodgson and Brennand 2006, 52). Intensive aerial

survey has revealed extensive settlement remains across the Solway plain, to the south-west of the study area (Bewley 1994), and large field systems and agriculturally improved areas have been identified in the uplands of the Lake District (Quartermaine and Leech forthcoming). A potential prehistoric agricultural system (HER no 41950, at NGR NY 42700 55830) comprising ditches and enclosures was identified within the village of Linstock, approximately 350m to the south of the east end of the study area, associated with a possible droveway or trackway (Carlisle Archaeological Unit 1998, 5-6, see *section 3.4*). This did not, however, seem to indicate the presence of a settlement focus nearby (*ibid*).

1.4.7 Carlisle is located in the Solway Plain, which is characterised by a relatively large number of prehistoric settlement sites, many apparently dating to the Iron Age, which took advantage of the fertile soils (Bewley 1994). The promontory on which Carlisle stands has been used as a defended settlement probably since at least the Iron Age and while the Victoria County History of the County of Cumberland suggests that the site of Carlisle Castle may have been a pre-Roman dun (Doubleday 1901, 285), there is no excavated evidence for this. The study area lies within the territory suggested to have been controlled by a group called the Carvetii at the time of the Roman Conquest (Shotter 2004, 3-4), and it has further been suggested that the tribal centre at this time was Carlisle itself (*op cit*, 3; 17).

1.4.8 There are no known Iron Age sites within the study area.

1.5 THE HISTORIC PERIOD

1.5.1 ***The Romano-British Period (c AD 43 – AD 410)***: Carlisle occupies a naturally well-defined promontory between the Eden and Caldew rivers, topography exploited by the Roman army who established a fort here in the early AD 70s, under the governorship of Petilius Cerialis (*op cit*, 34-5). By the late Roman period the town of *Luguvalium* acquired the status of an administrative capital, *Civitas Carvetiorum*, demonstrating the importance and significance of this urban centre (Charlesworth 1978, 123). Evidence suggests that civilian settlement decayed during the fourth century (McCarthy 1982), although 'Roman' activity has been noted at Blackfriars Street (McCarthy *et al* 1990), apparently extending beyond the traditional end of Roman government into the fifth century.

1.5.2 The creation of a physical barrier across the Solway-Tyne isthmus by the Emperor Hadrian was described by a biographer in the fourth century (Breeze 2006, 27). The Wall was constructed in the AD 120s, parallel to the broad line of the supply route between Carlisle and Corbridge, known as the Stanegate (*op cit*, 49). Hadrian also appears to have extended this system west of Carlisle, to protect the fertile Solway plain against incursions from the adjacent Scottish coast (Daniels 1978, 33). The original scheme seems to have comprised the construction of a stone wall measuring 10 Roman feet wide (3m) marking a line from the Tyne to the River Irthing, with a rampart of turf sealing the remaining 31 miles to Bowness-on-Solway (Breeze 2006, 50). Fortified gateways (milecastles) would have punctuated this line at 1-mile

intervals, with two turrets in between these milecastles. The line of watchtowers at 1/3-mile intervals (milecastles were also constructed with a tower above their north gate) was initially bereft of integrated forts (*op cit*, 51). During construction, this arrangement was altered, with the introduction of a new series of forts as part of the barrier, and an earthwork (the *Vallum*) which was constructed to the south of the wall; these features are unique to the Roman Solway-Tyne frontier. The stone wall was also altered to measure eight Roman feet at most, probably a result of these other changes (*ibid*).

- 1.5.3 The stretch of Hadrian's Wall between Birky Lane at Walby and the east side of the M6 in wall miles 62 and 63 (Site 1) is located within the north extent of the west end of the study area and approximately 850m to the north of the east end of the study area. Milecastle 64 lies approximately 700m to the west of the study area, although it has been extensively robbed of its stone, and there is no evidence to indicate any site chronology (Caruana and Gladwin 1984, 19-21). The putative site of Milecastle 63 lies 500m to the north of the study area (HER no. 492, at NGR NY 43149 59741). Geophysics results indicate that the milecastle may survive as a buried feature.
- 1.5.4 The Stanegate Roman road ran from the fort at Carlisle to the west to the forts of Brampton and Castlesteads. It has been located to the east of the study area approximately on the route of the road from High Crosby to Low Crosby (HER no. 507, at NGR NY 45162 59623). Within the study area, to the north east of Eden Grove (Site 8) a Roman Road has been identified (Site 3). This road is marked 'Ancient Road (Site of)' on the first edition mapping, heading east from Eden Grove and joining with the Stanegate on the west side of High Crosby. A second stretch of 'ancient road' is marked on the first edition (Site 15), running from west of Eden Grove to north of Linstock Cottage at the west end of the study area, and is assumed to be a putative continuation of the route of the Stanegate.
- 1.5.5 The findspot of a single coin is located approximately 500m to the south-west of the western end of the proposed pipeline route (HER no 19517, at NGR NY 42150 55850). The date of this coin indicates activity subsequent to the reign of Trajan (AD 112-114). A Roman rotary quern has been found approximately 250m to the south-east of the eastern end of the proposed pipeline route in the River Eden (HER no. 19220, at NGR NY 44996 59000). Site 7 (*section 3.4*) could also be Romano-British in date.
- 1.5.6 **Early Medieval (AD 410 - 1066):** throughout Cumbria evidence for early medieval activity is extremely limited. At Blackfriars Street in Carlisle, later 'Roman' layers were succeeded by features which have been identified as 'Anglian', although close dating is impossible (McCarthy *et al* 1990). Documentary evidence suggests that some elements of Roman urban life had survived to the seventh century when, according to Bede (Colgrave 1940), St Cuthbert observed still-functioning elements of the Roman water systems. Bede also records a nunnery and possibly a monastery within the town (*ibid*). Artefactual evidence for early medieval occupation includes coins which date between the eighth and eleventh centuries (McCarthy *et al* 1990). Nothing certain is known of settlement in Carlisle from the ninth to the eleventh centuries, although metalwork of this period has been found to the west of the

present cathedral (Gaimster *et al* 1989), and the Danes are recorded as having overrun the region in AD 876, under Halfdan (Earle and Plummer 1892).

- 1.5.7 There are no known early medieval sites within the study area.
- 1.5.8 **Medieval (AD 1066 - 1540):** from the eleventh century Carlisle and the surrounding areas were disputed between the expanding kingdoms of England and Scotland. According to the Anglo-Saxon Chronicle, William Rufus is said to have 'set up the walls' in 1092, restoring the town and erecting the castle (*ibid*). Rufus garrisoned the town and '*sent a number of labourers from the south of England to settle in and around Carlisle, to reclaim the neighbouring lands and to bring them into cultivation*' (Whellan 1860, 84). In 1122, Henry I ordered the city to be fortified with '*castles and towers*' (Arnold 1885, 267).
- 1.5.9 In 1135, the town was granted to the Scots as part of a wider political bargain, but Henry II re-established English control by 1157 (McCarthy *et al* 1990). Scottish kings continued to lay claim to many parts of Northern England throughout the rest of the twelfth century and, in 1173, William the Lion attempted to take the town (*op cit*, 126). In 1216 it fell to the Scots, but in the following year was restored to English rule once more, and it was not until the mid-thirteenth century that the dispute between kingdoms was settled, and a Papal Bull proclaimed Northumberland and Cumberland to be part of England (McCarthy *et al* 1990).
- 1.5.10 Political instability in the study area is manifest in the twelfth-century construction of Linstock Castle, a moated pele-tower (English Heritage Listed Building no 77660/ HER no. 3809; at NGR NY 42895 58484), located approximately 100m to the south of the west end of the study area. Also, approximately 700m to the west of the west end of the study area, Drawdykes Castle (English Heritage Listed Building no 77642; at NGR NY 41900 59543) was built in the fourteenth century as a tower home. This building contains a re-used lintel stone inscribed to Alan de Penitona, mayor of Carlisle in 1287, and a Roman altar also survives amongst the architectural fabric.
- 1.5.11 The first reference to Linstock is in the twelfth century when the manor was granted by Henry I to Walter the Priest, who is sometimes credited with the foundation of Carlisle Cathedral (Carlisle Archaeological Unit 1994, 1). Also at this time the Barony of Crosby, as the parish was then known, was given to the priory of Carlisle (Hutchinson 1797, 575). In the early thirteenth century the manor at Linstock was acquired by the Bishops of Carlisle and it became an episcopal residence for a short time. In 1307 Edward I stayed at Linstock Castle as the guests of Bishop Halton after holding parliament in Carlisle (Carlisle Archaeological Unit 1994, 1).
- 1.5.12 In the fourteenth century, Carlisle was subject to numerous raids and skirmishes during the Wars of Scottish Independence, and in 1391 was sacked and burnt by the Scots. The impact of the attack was long felt, and a late seventeenth century writer recounted that the city '*was never able to recover itselfe from soe many desolations and even at this day the scars of those dreadful wounds are yet apparent for ye town is so thin and empty of inhabitants that it looks like a country village well walld [sic] about rather*

than a citty [sic]’ (Todd 1890, np). Despite the supervision of the border by wardens, each controlling one of three marches defined along each side of the border (of which Carlisle was the centre of the Wardenry of the West March), from the late fifteenth century a state of anarchy developed along the border, a situation which was exploited by the border reivers (Fraser 1971).

- 1.5.13 Medieval pottery and possible medieval cobbled surfaces have been recorded to the south of the study area, in the village of Linstock (Carlisle Archaeological Unit 1995, 7, *see Section 3.4*).
- 1.5.14 A hollow way to the south-west of Park Broom, towards the south-west extent of the study area, may represent the medieval route between Rickerby, Linstock and Low Crosby (Carlisle Archaeological Unit 1994, 1).
- 1.5.15 The Church of St John in Low Crosby, built in 1854, is located approximately 100m to the east of the study area (HER no. 3806, at NGR NY 44801, 59585). This church contains a Norman font and is built over the site of a medieval church. It has been suggested that the church is built on the site of a motte, as there is an oval mound c 2m high and a crescent-shaped mound in the churchyard.
- 1.5.16 There are no known medieval sites within the study area, although Site 7 (*Section 3.4*) could be medieval in date.
- 1.5.17 ***Post-medieval (AD 1540 - present)***: following the unification of the crowns in 1603, the border was forcibly pacified, and Carlisle’s importance diminished. During the Civil War, Carlisle was initially held by the Royalists but it was recaptured by Parliament in 1645 (McCarthy *et al* 1990). Following disturbances associated with the Jacobite rebellions of 1715 and 1745, the later eighteenth and first half of the nineteenth centuries saw the development of industry in Carlisle, led by the ‘first factory’, a woollen mill, in 1724 (Whellan 1860, 97). Textiles, mainly woollen manufacture, were especially important, and a number of biscuit manufacturers also operated in the town (*ibid*). Industrial growth was steady rather than meteoric – Carlisle has been alluded to as ‘*a good instance of what may be called the normal growth of an English town. It owes nothing to mineral wealth and has made no sudden stride, but merely responded to the industrial impulse in proportion to its position as a chief town of a large district and a place which was accessible as a centre of distribution*’ (Creighton 1889, 192). The latter role was helped by the arrival of the railway, which was laid in the 1840s (Asquith 1853).
- 1.5.18 During the later medieval period, Hadrian’s Wall provided an ideal source of building materials for houses and boundary walls along its length, and was consequently extensively robbed. The single most destructive event inflicted on the Wall was the construction of the Newcastle to Carlisle Military Road between 1751 and 1759. The specification for the works noted that stones ‘*that may easily be got out of the ruin of the Old Roman Wall must be reserved to make a Stone Wall on each side of the Road...*’ (Lawson 1966, 181). A letter written by the Rev Henry Wastell in 1754 recorded that the Wall had been entirely destroyed for miles and the stones beaten to pieces to make a foundation (*ibid*). For some of its course the Military Road is built directly on

top of Hadrian's Wall, re-using the rubble core for foundations and facing stones for the flanking walls. Two surviving milestones (Sites **5** and **9**) are probably associated with the Military Road, which crosses the study area on an approximate east-north-east/west-south-west alignment. The proposed pipeline runs south of, and approximately parallel with, the road. This, in turn, is to the south of Hadrian's Wall, close enough to have suffered robbing activity, particularly of the facing stones. This road later became the Carlisle-Temon turnpike in 1811.

- 1.5.19 The domestic buildings within the study area date predominantly from the post-medieval period. Whilst Drawdykes Castle and Linstock Castle had survived from the medieval period, they were altered considerably during the seventeenth and subsequent centuries by successive owners.

2. METHODOLOGY

2.1 TOPOGRAPHIC SURVEY

- 2.1.1 Based on the findings of the walkover survey, an enhanced Level 2 Topographic Survey was conducted with Leica differential GPS equipment, using real-time (RTK) corrections and equipped with mobile SmartNet technology to achieve an accuracy of $\pm 0.01\text{m}$. The digital survey data was transferred, via Leica Geo Office (V.3), as dxf drawing files into a CAD system (AutoCAD 2004), and was superimposed onto the embedded digital Ordnance Survey data. The descriptive records and sketch plans were hand annotated on-site on to pro-forma recording sheets.

3. TOPOGRAPHIC SURVEY

3.1 INTRODUCTION

- 3.1.1 Following the desk-based assessment and walkover survey, Site **20** was recommended for a topographic survey in order to record the extent and size of the earthworks, and this was carried out in November 2008.

3.2 RESULTS

- 3.2.1 The site is located in Field 2 to the east of Eden Grove (Fig 2), and comprises a series of linear earthworks measuring between 10m and 60m in length (Plates 1-3). These are spread over an area some 30,000m², and there is seemingly no definitive pattern to them. Three, to the east, are broadly parallel and are aligned north-west/south-east, while a further pair is aligned east/west and the remaining pair is aligned north-east/south-west. However, consultation of the historic mapping (Ordnance Survey 1868) suggests that the three linear features to the east relate to two of three strip field boundaries. This cartographic source also suggests that Willow Beck was prone to flooding, and the remaining four earthworks represent former attempts to counter this. Further archaeological investigation of this feature would confirm whether this was the case.

4. RECOMMENDATIONS

4.1 SUMMARY

- 4.1.1 Site **20** comprises a series of east/west aligned uneven linear features measuring approximately 5m in length and lies directly north of the proposed pipeline. The site may be affected by the topsoil stripping activities and there is potential for below-ground remains to be affected by the proposed pipeline. Due to its unknown date and function, it is recommended that this site be subject to an archaeological evaluation to determine its origin and function prior to the commencement of the proposed development.

5. BIBLIOGRAPHY

5.1 PRIMARY SOURCES

Cumbria Record Office

Ordnance Survey map 1868 (6": 1 mile) *Sheets XVII and XVI*

Other Cartographic Sources

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6. ILLUSTRATIONS

6.1 LIST OF FIGURES

Figure 1: Site Location

Figure 2: Topographic detail of Site **20**

6.2 LIST OF PLATES

Plate 1: General shot facing west, across the north portion of Field **2**

Plate 2: General shot facing west, across the south portion of Field **2**

Plate 3: General shot facing north-west, across Field **2**

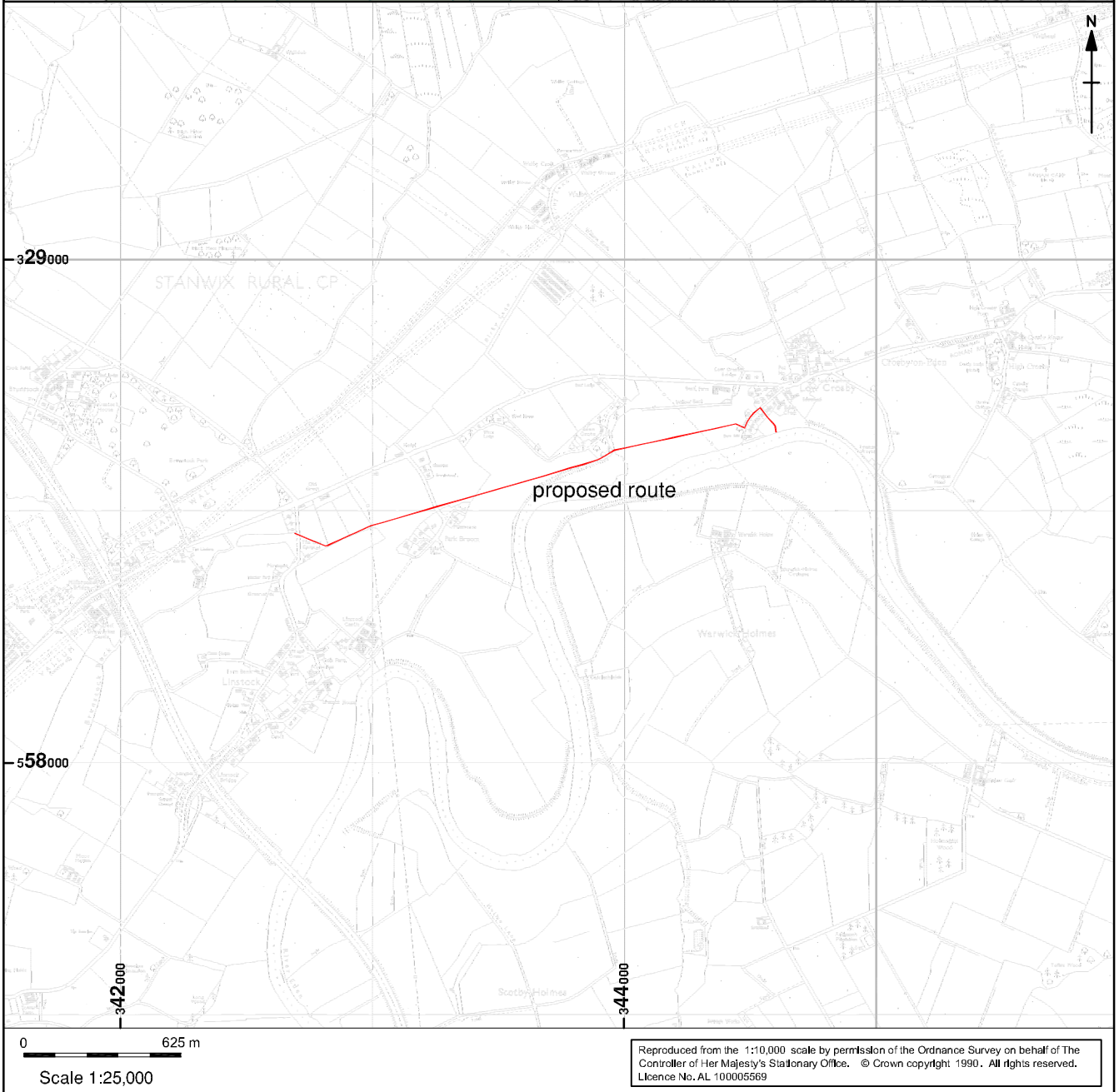
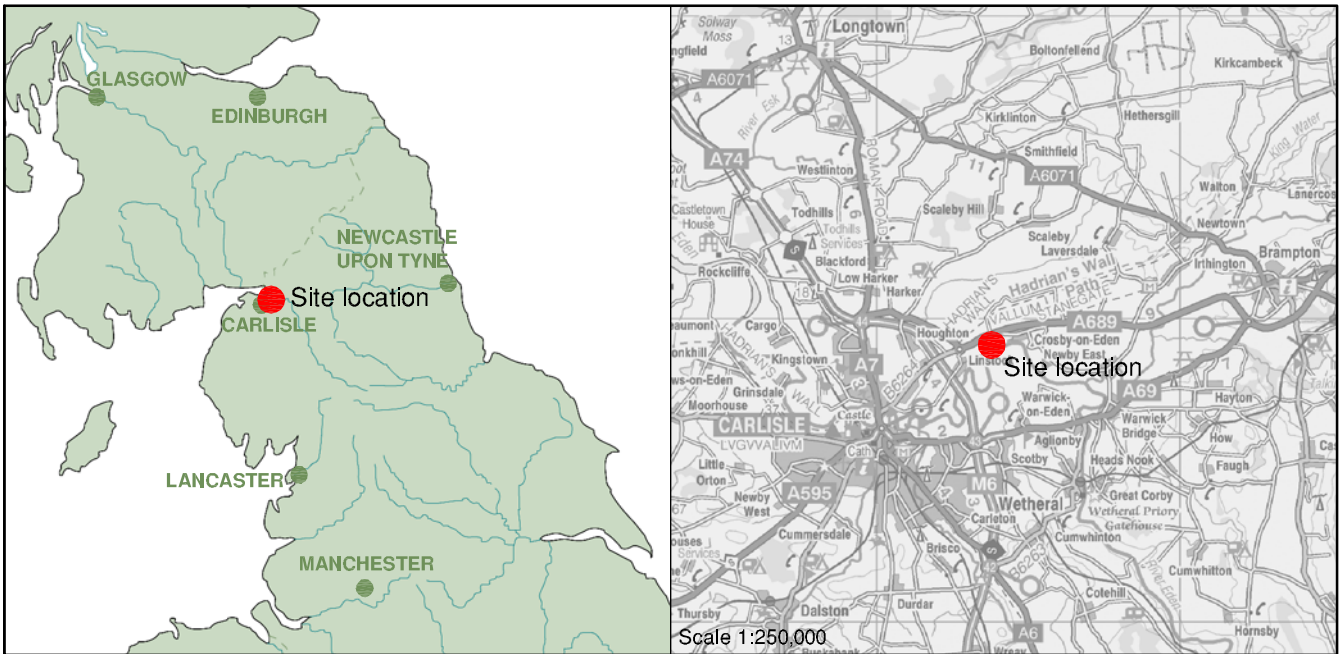


Figure 1: Site Location



59,500

East Lodge

Eden Grove

24,000

20

Key:

Proposed route

OS detail

Ridge and furrow

20
Gazetteer site

Topographic survey

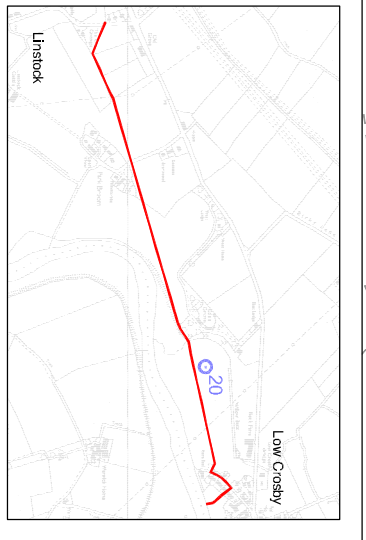


Figure 2: Topographic detail of site 20



Plate 1: General shot facing west, across the north portion of Field 2



Plate 2: General shot facing west, across the south portion of Field 2



Plate 3: General shot facing north-west, across Field 2