

**Dunwich Quarry  
Dunwich Forest  
Suffolk**

**Archaeological Topographic Survey**

**Prepared for  
Forestry England**



**Project No. 180702  
ASE Report No. 2019108**

**April 2019**

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## **Summary**

*This Archaeological Topographic Survey has been prepared for Forestry England, in relation to the re-opening and extension of Dunwich Quarry, situated within the Dunwich Forest, Suffolk. The quarry was established in the late 19<sup>th</sup> century and is currently disused. However, it is proposed to re-open and extend into an area to the north.*

*Previous desk-based assessment identified known non-designated heritage assets within the Site. These comprise a series of four low mounds, recorded in 1990 as possibly being artificial rabbit warrens and as being in poor condition.*

*The archaeological topographic survey has been undertaken following the removal of trees from the area of the earthworks. It identified the remains of four linear mounds (**A** to **D**) on the northern side of a spoil heap marking the northern edge of the extant quarry. The mounds were orientated on a north-west to south-east axis, broadly parallel to the extant forest track which runs along the east side of the quarry. Whilst there was brush in places along the edge of the mounds they were clearly defined. The south-east ends of the earthworks were not defined as it extended below the spoil heap. A shallow irregular earthwork (**E**) which ran on an approximate south-west to north-east axis, was also identified.*

*On the basis of the available evidence from the survey and published studies it seems most likely that the surviving earthwork features are something other than pillow mounds, although that interpretation cannot be entirely discounted. If it is assumed that the earthworks are not Pillow Mounds it would seem most likely that they are associated with the quarrying and forestry activities in the area. This is almost certainly the case for earthwork **E** which has not been previously observed and thus is likely to post date 1990.*

*It should be noted non-intrusive appraisal cannot be seen to be a definitive statement on the age and purpose of the earthworks on site. Machine excavated trial-trenching is scheduled to be undertaken to more conclusively define this.*

## **CONTENTS**

- 1.0 Introduction
- 2.0 Background
- 3.0 Aims and Objectives
- 4.0 Methodology
- 5.0 Fieldwork Results
- 6.0 Discussion and Conclusions
- Acknowledgments
- References
- Appendix 1: Summary Table of Heritage Assets
- Appendix 2: Location of Heritage Assets
- Appendix 3: OASIS Form

## **LIST OF ILLUSTRATIONS**

- Fig. 1 Site location
- Fig. 2 Existing site topography and earthworks (LiDAR)
- Fig. 3 Site plan showing contour data and mounds
- Fig. 4 Digital elevation model
- Fig. 5 Mound A, B, C and D transects
- Fig. 6 Interpretative hachure plan
- Fig. 7 Mound A – Plan and photographs
- Fig. 8 Mound B – Plan and photographs
- Fig. 9 Mound C – Plan and photographs
- Fig. 10 Mound D – Plan and photographs

## **1.0 INTRODUCTION**

- 1.1 Archaeology South-East (a division of the Centre for Applied Archaeology UCL) has been commissioned by Forestry England to carry out an archaeological topographic survey in relation to the re-opening and extension of a gravel quarry (currently not in use) situated within Dunwich Forest, Suffolk (NGR 645485 271586; Fig. 1). This stage of works follows on from a desk-based assessment and preliminary walkover survey in relation to heritage assets of archaeological interest (ASE 2018; Project Ref. 180494).
- 1.2 The Site is centred on National Grid Reference 645485 271586 (Fig. 1). The Site is located within Dunwich Forest, an area of coniferous and broadleaved woodland situated to the west of the Suffolk coast and the village of Dunwich (c. 2.3km away) and north-east of Westleton (c.2.9km away). The Site is partially occupied by a disused quarry in an area of former woodland and scrub which has recently been felled.
- 1.3 The development proposals seek to re-open and extend an existing quarry site. Initial consultation between Forestry England and their advisors with the LPA have indicated that it is likely the works can proceed under Permitted Development rights on the basis that it is FE land and excavated material will be utilised on the FE forest roads. Whilst the works were likely to be considered permitted development FE policy requires that the proposals be assessed in line with the National Planning Policy Framework (revised 2019).
- 1.4 Archaeological Desk-Based Assessment was undertaken in 2018 as a first stage of works to present a synthesis of readily available archaeological and historical data relating to the Site and its environs, in order to identify any known or potential heritage assets of archaeological interest within the Site. The DBA established that there were non-designated heritage assets within the quarry extension area; a series of four low mounds (**A** to **D**, Fig.2), recorded in 1990 as possibly being artificial rabbit warrens and as being in poor condition and at least one of which was noted to be still extant.
- 1.5 As upstanding earthworks were present an archaeological topographic survey was recommended in order to better understand them and provide an enhanced baseline for the development of the archaeological trial-trenching works. The topographic survey (these works) has been undertaken in accordance with a Written Scheme of Investigation (WSI) produced by ASE and submitted to AGB Environmental Ltd, acting for Forestry England. The survey was carried out in accordance with this document, as well as Standards for Field Archaeology in the East of England (Gurney 2003) and the Standards and Guidance of the Chartered Institute for Archaeologists (CIfA 2014a-c), other codes and relevant documents of the CIfA.

## **2.0 BACKGROUND**

### **2.1 Location and Topography**

- 2.1.1 The Site is located towards the western edge of Dunwich Forest, on the Suffolk coast between the B1125 (Dunwich/Blythburgh Road) and the village of Dunwich. It is situated at the junction of an unnamed road and a forest track.
- 2.1.2 The topography of the Site is illustrated on Fig. 2. Much of the site is occupied by the existing quarry which has been used from at least the late 19<sup>th</sup> century. The upper edge of the quarry is between c.19m and 22maOD and its deepest point at c. 11.6m aOD. The quarry extension is situated to the north of it, on an area of woodland/scrubland that is relatively level but with some variations including a number of long, low mounds.
- 2.1.3 In general the forest is situated on slightly higher ground sloping to the Dunwich River to the south, the marshes and coast to the east and the Westwood/Walberswick Marshes to the north. The forest lies on the Suffolk Sandlings, an area of sand and gravel geology with thin acid soils which developed into areas of heather and gorse heathland. The sandy soils were historically used for sheep farming and rabbit warrens. These landscapes have been usually enclosed in places and converted to farmland. Other areas, including that around the Site, were established as forest plantations in the 20<sup>th</sup> century.

### **2.2 Geology**

- 2.2.1 According to the British Geological Survey 1:50,000 scale geological mapping available online<sup>1</sup>, the natural geology of the Site comprises sedimentary sand/gravels of the Lowestoft Formation. This is a 'Till' formation which in the area of the Site comprises sands and gravels.
- 2.2.2 The bedrock geology, gravel of the Crag Group, is mapped as outcropping at the surface (i.e. there are no mapped superficial deposits) in the base of the quarry within the site and on the slopes around it. The lithology in the vicinity of the Site is described on BGS mappings as being 'gravel'.
- 2.2.3 Reference to publicly accessible borehole records in the area of St Helena's Farm provide some additional detail, describing white sands, iron pan and yellow sands, presumably Lowestoft deposits and/or sands of the Crag Group, over Cillesford Beds and Red Crag – also part of the Crag Group.
- 2.2.4 Borehole investigations within the Site have identified the 'topsoil' as soft fine brown sands with an organic component overlying deposits of sands and gravels.

### **2.3 Historical and Archaeological Background**

#### ***Introduction***

- 2.3.1 The following information is drawn from the recent archaeological desk-based assessment (ASE 2018). The more detailed historical and archaeological background to the site and study area (a 1km radius) can be found in that document.
- 2.3.2 Heritage assets comprise a site, building, place, area or landscape of heritage interest and thus include buildings, archaeological sites and landscape features such as ancient woodland and hedgerows. Identified heritage assets have been assigned an

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<sup>1</sup> <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> accessed 02/05/2018

identifying number shown in **bold** in the text, and are tabulated in Appendix 1 and shown plotted in Appendix 2 unless otherwise indicated.

- 2.3.3 The timescale of the archaeological periods referred to in this report is shown below. The periods are given their usual titles. It should be noted that for most cultural heritage assessment purposes the boundaries between them are not sharply distinguished, even where definite dates based on historical events are used. All site numbers refer to those listed in Appendix 1 and illustrated in Appendix 2.

Prehistoric: Palaeolithic (c. 750,000 BC - c. 10,000 BC)

Prehistoric: Mesolithic (c. 10,000 BC - c.5,000 BC)

Prehistoric: Neolithic (c. 5,000 BC - c.2,300 BC)

Prehistoric: Bronze Age (c. 2,300 BC - c. 600 BC)

Prehistoric: Iron Age (c. 600 BC - AD 43)

Romano-British (AD 43 - c. AD 410)

Early Medieval (c. AD 410 - AD 1066)

Medieval (AD 1066 - AD 1540)

Post-medieval (AD 1540 to date)

### ***Prehistoric***

- 2.3.4 The Palaeolithic period is that in which Britain was first occupied by hominid species. Pakefield, where the earliest evidence of human activity in Britain has been recorded lies on the Suffolk coast c.24km north of the Site. The Mesolithic period saw re-colonisation following the end of the last glacial maximum and eventually the separation of the British Isles as sea levels rose. The Mesolithic coastline would have been considerably distant from that of the present day with a greater land area available for exploitation. The Neolithic saw woodland clearance take place, opening up land for crops and the domestication of animals. No remains of these periods are recorded within the Site or the study area.

- 2.3.5 The later Neolithic/early Bronze Age saw changes in funerary practice, from communal monuments to individual barrows, and also possibly of the reversion of cultivated soils to grass and scrub, perhaps through soil depletion (Ashwin 1996a, 47). A scheduled barrow (**1**) of probable Bronze Age date is located on the very edge of the study area to the north of the site. It is visible as an earthen mound standing to a height of c.1m and covering a sub-circular area which measures 22m E-W by 25m N-S. A possible barrow cemetery (**2**) is also visible on Lidar imagery between (**1**) and the Site. These are remains of four mounds but their archaeological origin has not yet been confirmed (SHER WLN 068).

### ***Romano-British***

- 2.3.6 The Roman invasion in 43AD saw the establishment of features such as roads and military sites; however the Suffolk coast appears to have been marginal and there are no known early forts along it (Good & Plouviez 2007). The Site lies in an area some distance from the main Roman road network which linked the main settlements such as *Venta Icenorum* (Caistor St Edmunds) and *Combretovium* (Coddensham). Some of the more minor/local road lines can be identified on the clay land of the county but appear to stop before the coastal zone. High status Roman rural settlement (villas)



area are rare in east Suffolk but there are a larger number of small settlements and examples of rectilinear enclosure systems. Some locations along the coastline proper may have functioned as ports, and Dunwich may have been one of these. It has been suggested that it may have been a significant settlement, *Sitomagus*, but this remains unconfirmed and it should be noted that the Roman coastline will have been some distance from that of the present day and thus any such port is now offshore (Good & Plouviez 2007). There are no known remains of Romano-British date within the study area and it has been noted that, despite the suggestion the Dunwich may have been a significant Roman settlement, Roman finds are scarce in the vicinity of the village

### ***Early Medieval (Anglo-Saxon) and Medieval***

- 2.3.7 The Site lies in the historic parish of Westleton, the parish of Dunwich lies to the east. Westleton is an inland village south-west of the Site (outside the study area). A church was already present by the time of the Domesday survey (1086), suggesting settlement of pre-conquest date, as does the placename 'Vestlithi's farm/settlement' – the former element being an Old Norse personal name. The adjacent coastal parish of Dunwich was the site of a significant coastal settlement by the 10<sup>th</sup> century, by which time it was minting its own coins and thus may have been a small defended town. By 1086 there were some 236 burgesses and three churches in the town. It was a thriving medieval port but the town began to decline following the loss of its port when storms blocked the harbour. Much of the settlement has since been lost to coastal erosion.
- 2.3.8 The wider medieval landscape would have been largely made up of common and heathland. Dispersed settlement was scattered around the edges of the commons and heaths. The dry sandy heaths, like the landscape in which the Site is located, remained largely unenclosed, typically utilised for grazing and rabbit warrens.
- 2.3.9 The HER record, dating to 1990, describes the visible mounds (4) and suggests that they may be 'Rabbit warrens'. The medieval period had seen the re-introduction of rabbits to Britain, probably in the 12<sup>th</sup> century, utilised for their fur and meat. By the 13<sup>th</sup> century they were bred in enclosures and there was a steady increase through the 14<sup>th</sup> and 15<sup>th</sup> centuries, through to decline in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries (Williamson 2006 and 2007). A more detailed description of the location and morphology of warrens is provided in paragraph 2.3.13.

### ***Post Medieval and Modern***

- 2.3.10 In the post-medieval period the Site lay within an extensive area of heath, criss-crossed by tracks. Reference to early 19<sup>th</sup> century mapping show that the site was situated on Burnt House Heath, which extended from what is now the edge of the woodland to the north and the vicinity of the Dunwich River to the south. In the 1840s the heath was under pasture and the adjacent 'walks' in arable cultivation; sheep grazing on the heath are likely to have been close-folded into the latter overnight<sup>2</sup>.
- 2.3.11 The area around the Site appears to have been little changed through the 19<sup>th</sup> and early 20<sup>th</sup> centuries, remaining a largely unpopulated rural area. Some industry was undertaken – most noticeably brickmaking which is reflected in a number of local placenames such as Brick Kiln Farm, Brick Kiln Heath and a possible kiln to the west (14).
- 2.3.12 By the 1884 the gravel pit was established on a small scale, perhaps for the use of gravel on the nearby tracks or the sand required in brickmaking. In the 1920s the newly established Forestry Commission acquired lands from the Dunwich and Westleton

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<sup>2</sup> <http://villagevoices.org.uk/Sandlings.htm> Accessed July 2018

estates and began establishing a new coniferous forest. The woodland had extended to the track on the west side of the Site by 1945 (Google Earth) but the Site remained unwooded at this time other than what would appear to be wood/scrub in the footprint of the old gravel pit within the Site. By the 1970s the quarry had been reopened and grown to somewhere near its current extents and the surrounding area, including the remainder of the Site was wooded. The quarry edge in 1999 would appear c.20m further south than that of the current edge. The current extents appear to have been reached between 2011 and 2014.

### **Rabbit Warrens**

- 2.3.13 The HER describes the mounds (4) which lie within the quarry extension area as follows:

*Four long low mounds, parallel to each other, running SE-NW. Rabbit warrens. All slightly damaged by Forestry Commission machinery - to be put on FC restraint maps. Sketch plans on map in (S1), dimensions:- Mound 1, circa 50m long, 4.5m wide, 1.2m high; Mound 2, circa 30m long, 4.5m wide, 0.8m high; Mound 3, circa 55m long, 5m wide, 1.4m high; Mound 4, circa 40m long, 6m wide, 1.2m high' (S1). Adjoins former extraction pit! (SHER WLN 007).*

This record was compiled in 1990, prior to the establishment of scrub woodland across the site. A walkover was undertaken as part of the DBA in July 2018. At this time the quarry extension area was a largely wooded area with bracken of varying thickness below the canopy and as such visibility was limited. At this time two of the mounds were partially visible.

- 2.3.14 The medieval period saw the re-introduction of rabbits to Britain, probably in the 12<sup>th</sup> century, utilised for their fur and meat. These were domesticated or semi-domesticated animals – the adults known as coneys and the young as rabbits. These naturally live in large hierarchical groups in underground burrows and have a preference for light, well-drained soils (being prone to foot rot) and sloping ground to enable soil excavated from the burrows falls away from the entrance (Williamson 2006 and 2007). They could utilise marginal land, being able to survive on thin, coarse or rank vegetation and breed rapidly, having 5-6 litters in a breeding season and 6-8 offspring per litter (ibid). Rabbits were vulnerable to predators and poorly adapted to the British climate. When re-introduced they were initially kept on offshore islands and then in small enclosures, *coneygarths*, close to high status sites such as manor houses and monasteries, and in deer parks (Williamson 2006 and 2007).
- 2.3.15 Whilst the word warren initially referred to hunting/game rights it became more specifically associated with rabbits from the middle 14<sup>th</sup> century onwards and was generally applied to the burrows of both wild and farmed rabbits by the 17<sup>th</sup> century (ibid). The number of warrens increased through the 14<sup>th</sup> and 15<sup>th</sup> centuries, spreading both down the social scale and geographically, proliferating on marginal land including commons (ibid). The expansion continued through subsequent centuries, including a spread of large commercial warrens. They were still under active management in the 19<sup>th</sup> century but the status of the rabbit declined as in closure and agricultural developments meant marginal land could be brought into cultivation or improved pasture, with a greater economic return. Rabbit farming became perceived as wasteful. The view of rabbits as a pest began to take root in the mid-18<sup>th</sup> century but they remained an important product – with large commercial interests surviving in, for example, the Breckland. Small domestic warrens also continued in use. The final decline occurred in the mid-20<sup>th</sup> century with the decimation of the rabbit population by myxomatosis (ibid).

- 2.3.16 A number of features could be present in rabbit warren such as '... Gates Stiles Posts

Railes Traps Mounds and Fences whatsoever as well belonging to the said Warren' recorded in a 1722 lease at Knebworth (quoted in Williamson 2007). Examples are also depicted on historic maps. Features include some or all of the following :-

- 2.3.17 Enclosures: fences, walls or banks, the latter sometimes topped by faggots of spiky plants such as gorse or hedges. The profile could be asymmetrical, being steeper on the inner side. These served to protect the rabbits from predators/poaching and straying onto neighbouring land and to define legal extents. Various factors could influence whether a warren was enclosed or not. Rabbits would not typically make great efforts to leave a warren unless there was a shortage of grazing in, for example, winter weather, thus concerns about escape were greater when the warrens abutted arable land which they could damage and would find attractive. Size could also be a factor, smaller warrens were most likely to be enclosed.
- 2.3.18 Pillow Mounds: low-mounds, known as pillow mounds, which comprised artificial rabbit accommodation (see Williamson 2006 and 2007). They show variation in both shape and size; some are rectangular with fairly square ends whilst others are more ovoid in plan. Length varies from 9m to some 234m, the latter being recorded at Hartfield in Sussex. Width is more consistent, c.4-7m, and longer examples have broad level tops at less than 1.5m in height. A distinguishing feature is a ditch which runs all the way around the mound. Within or below the mounds slots and gullies could be present to encourage burrowing and facilitate capture of the rabbit. Williamson notes that although rabbit farming was important in the east of England, including the Suffolk coastal heaths, there are relatively few recorded mounds, suggesting they were not as commonly a necessity as in the west of the country (Williamson 2007). In terms of dating they are sometimes thought to be medieval but documentary and excavated evidence suggests a late medieval and post-medieval date (Williamson 2007).
- 2.3.19 Lodge: Houses or lodges provided storage space and accommodation for the Warrener whose job it was to look after the rabbits on their masters' lands, and to ward off predators and poachers (Williamson 2006 and 2007).
- 2.3.20 Traps: to trap vermin and, in some cases, the rabbits themselves. Rabbits would usually have been caught by dogs/ferrets and nets but traps were sometimes used.
- 2.3.21 Other earthworks: other forms of rabbit accommodation, for example cross shaped mounds or conjoined mounds are sometimes present as are internal divisions within the warren (Williamson 2006 and 2007).

### **3.0 AIMS AND OBJECTIVES**

- 3.1 The general aim of the archaeological topographic survey was to identify any archaeological features or deposits that will be impacted upon by the proposed development, and to enable an informed mitigation strategy for any remains to be implemented.
- 3.2 More specifically, the archaeological topographic survey aimed to better define the low mounds (4) recorded on the HER, Lidar and, partially during previous surveys and the site walkover undertaken as part of the DBA. The quarry extension area lies to the north in what was largely wooded area with bracken of varying thickness below the canopy and such visibility was limited during previous works. The current survey therefore sought to (as far as practicable) define location, extent and quality of preservation of surviving earthworks which may be of archaeological origin within the quarry extension area – i.e. identification and basic interpretation.
- 3.3 The survey also sought to provide additional information, for example the presence or absence of external ditches, with regards to the earthworks to better define their character as the purpose of the mounds is unconfirmed.
- 3.4 Site specific research aims:
  - To determine, as far as reasonably practicable, the location, extent, character, condition, significance and quality of any surviving archaeological earthworks.
  - Is there any evidence for their date of origin?

## **4.0 METHODOLOGY**

- 4.1 The topographic survey was undertaken following the felling of the trees across the quarry extension area. It focussed on the area to the north west of the quarry, between it and a Forestry England track, where the earthworks had been previously observed and were identifiable on Lidar data (Fig. 2).
- 4.2 The survey was undertaken using a Digital Global Navigation Satellite System (DGNSS) and a robotic Total Station (Leica TS16). It took place on the 12-13 March 2019 in generally windy and wet weather conditions. Trees has been felled but stumps left in, to avoid damage to the earthworks resulting from pulling up roots. Much of the undergrowth was cleared but some branches were present across the surface which was generally uneven.
- 4.3 The field survey recorded:
- Form lines for hard and soft detail; for example the limits of features and breaks of slopes (e.g. Fig. 3)
  - 3D data points regularly spaced across the site – suitable for the creation of surface contour/surface mesh models (Fig.4). Approximately 8000 individual point measurements were taken.
  - The density of levels was, as far as practicable on the uneven ground conditions, c.1-2m for surfaces with earthworks and 5m for open ground as per the WSI and Historic England guidance (2015, Chapter 6.6).
- 4.4 Survey data was processed via Leica Infinity, AutoCAD Map 3D and ArcGIS 3D Analyst to provide surface contour plans at 0.5m intervals and surface models (Fig. 4) and transects (Fig. 5).
- 4.5 This data was combined with previous (non-archaeological) topographic survey field observations to create an interpretive hachure plan of the earthworks (Fig. 6).
- 4.6 The field survey was supplemented with a digital photographic record. The photographic record comprised individual feature shots, an overview of the survey works and the surrounding area.

## 5.0 FIELDWORK RESULTS

### 5.1 Introduction

- 5.1.1 The field survey identified the remains of four linear mounds (**A** to **D**; Fig.3 and 4) on the northern side of a spoil heap marking the northern edge of the extant quarry. The mounds were orientated on a north-west to south-east axis, broadly parallel to the extant forest track which runs along the east side of the quarry. Whilst there was brush in places along the edge of the mounds they were clearly defined. The south-east ends of the earthworks were not defined as it extended below the spoil heap.
- 5.1.2 A shallow irregular earthwork (**E**) which ran on an approximate south-west to north-east axis, was also identified.
- 5.1.3 The following section of the report provides a descriptive record of the earthworks identified by the field survey.

### 5.2 Mound A

- 5.2.1 Mound **A** (Fig. 7) is the easternmost of the group, close to the track, and rather than being a single linear mound of a consistent length it comprises a wide 'trunk' at its south-east end which branches into three arms; in plan it has the appearance of a saguaro cactus.
- 5.2.2 The trunk of the mound, at the south-east end is c.4.6m across in total, with the top being c.3.5m wide. This flat area widens out to c.6.2m where the arms branch off. The longest of the branches is that to the east, which extends for c. 44m from the spoil heaps. It is up to 5.4m across, with its flat top being c.2 wide. The central branch is slightly shorter, at c.41m, is up to 4.7m wide, with its very slightly domed top being up to 2.3m wide. The side of these two branches were observed as being of a moderate angle and relatively straight where they had not been disturbed by tree stumps/root systems or (modern) animal burrows. In contrast the easternmost branch is more irregular in appearance, with a slighter and more uneven slope. It was c.24m long, 3.7m wide with a slightly domed uneven top being 1.5m wide.
- 5.2.3 The upper surface of the banks which make up mound **A** are generally at a level of between 22.15m AOD and 22.51m AOD, with a general slight downward trend to the south-east reflecting that of the surrounding topography. The ground level to the east is generally at c.21.6-21.7m AOD and that to the west at 21.7-21.8mAOD. The mound stands at an average height of c.0.9m above the present surface level (PSL) along much of its length but gradually being less pronounced to the south east where it is c.0.4-0.5m above PSL.

### 5.3 Mound B

- 5.3.1 Mound **B** (Fig. 8) is situated 12-13m to the east of **A** and on broadly the same orientation. It is more consistent in morphology, being 5.5-6m wide, with a flat top that is 2.5-2.7m wide. The only exception to this is a bulge towards the north-west end which is made up of a tangle of large tree stumps and roots which cannot be distinguished from the mound proper.
- 5.3.2 Mound **B** is on the same orientation as **A**, and relatively straight with exception of a kink approximately 20m along it, which is also marked by a dip on the surface of the mound. The plan gives the impression of two conjoined lengths of earthwork which have not quite lined up properly. The upper surface of the banks is at between 22.62-22.39mAOD and the bank typically stands at c.0.65m above PSL.

#### **5.4 Mound C**

5.4.1 Mound **C** (Fig. 9) is situated roughly centrally between **B** and **D**, c.12m to the east and west respectively. It is 20m long and between 7.5m and 4.5m across and 3.5m-2.4m wide, being widest at the south-east end. It runs parallel with the other mounds and, like **B**, has a flat top which is at 22.57m-22.13mAOD. The bank stands at between 0.75m-0.85m above PSL.

#### **5.5 Mound D**

5.5.1 Mound **D** (Fig. 10) is situated to the west of the site, c. 12m from **C** and parallel with it and **B**. It is c.48m long and, on average, 5.65-5.75m wide. Small lengths were wider, extending to 7.7m across, with the wider sections being formed by material on the western side of the mound. The top of the mound is slightly domed and has a consistent width of c.2.5m at 22.68m-22.94mAOD. The bank stands between 0.60m-0.92m above PSL.

#### **5.6 Earthworks (E)**

5.6.1 A low irregular length of earthwork was identified running roughly perpendicular to Mounds **A** to **D**. This earthwork was ill-defined on site, being an area where branches were present, and its extents have been identified through the analysis of the topographic survey data. It was generally at a level of between 22m-22.5mAOD and up to 0.5m above the surrounding ground level. It is not identifiable to the west of Mound **D** and peters out eastwards before it meets the forest track.

#### **5.5 Areas F and G**

5.5.1 Area **F** is situated between mounds **A** and **B**, its southern extent defined by the spoil heap and northern extent by earthwork **E**. This area was noticeably level at c.21.8m AOD, with the variations in height generally being a maximum of 100mm. Area **G**, situated between mounds **B**, **C** and **D**, had a greater variation in height, generally rising to the west. It also had a more uneven appearance, in part due to the numerous tree stumps across it. No ditched features were identified within these areas.

## **6.0 DISCUSSION AND CONCLUSIONS**

- 6.1 The general aim of the archaeological topographic survey was to confirm the presence/absence of and better define the low mounds identified through the previous observations on the site. The results of the survey, reported on above, have confirmed the presence of the four mounds (**A** to **D**) and identified a fifth possible earthwork (**E**).
- 6.2 The survey has enabled the earthworks to be better defined than previously through the collection and analysis of 3D survey data and its integration into and comparison with existing data sets. The resulting drawn record, coupled with the photographic record, serves to preserve the earthworks 'by record' in advance of any intrusive groundworks.
- 6.3 The initial record of the earthworks, in the HER, dated to 1990, suggested that the four mounds were possible "...?Rabbit warrens" (SHER WLN 007). Presumably the mounds were thought to be Pillow Mounds – artificial rabbit accommodation. In considering this interpretation more recent published works relating to rabbit warrens (Williamson 2006 and 2007) have been consulted. These have noted that there is variation of both shape and size of such features but that there are some common features, for example a ditch running all the way around the mound. No such feature was noted around any of the mounds on the site. Similarly no clear entrance/exit points for the rabbits to access the mounds were observed other than those of clearly recent origin. In the wider landscape none of the other features common to warrens, such as the surrounding enclosure and warreners lodge, have been identified. Additionally Williamson (2007; 104) notes that "*East Anglian warrens can boast few pillow mounds. Those that do exist probably served as 'clappers', or accommodation for pioneer populations.*". On the basis of the available evidence from the survey it seems most likely that the surviving earthwork features are something other than pillow mounds, although that interpretation cannot be entirely discounted.
- 6.4 If it is assumed that the earthworks are not Pillow Mounds it would seem most likely that they are associated with the quarrying and forestry activities in the area. This is almost certainly the case for earthwork **E** which has not been previously observed and thus is likely to post date 1990. Quarrying activities typically result in a number of bunds in and around them which are temporary storage for excavated material, either for reuse or export. Such features would be of relatively modern date and not considered heritage assets of archaeological interest
- 6.5 It should be noted non-intrusive appraisal cannot be seen to be a definitive statement on the age and purpose of the earthworks on site. Machine excavated trial-trenching is scheduled to be undertaken to provide a more conclusive definition.



## ACKNOWLEDGMENTS

Archaeology South-East would like to thank Alex Brearly and agb Environmental Ltd for their help and advice in the preparation of this report.

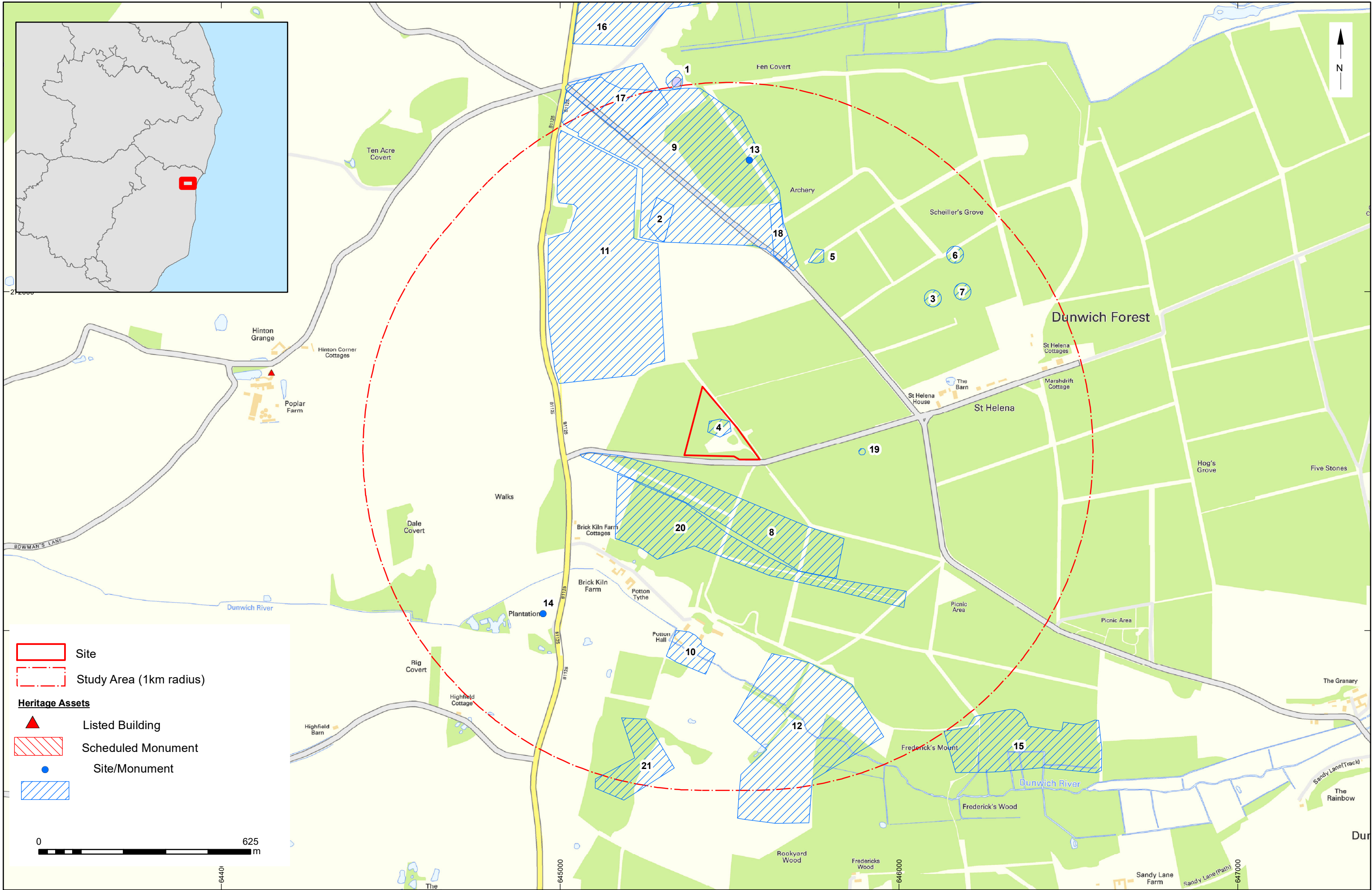
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## Appendix 1 - Summary Table of Heritage Assets within the Study Area

ASE No	HER Ref.	Summary
1	WLN 003	Round barrow near Newdelight and Hinton walks, W of Fen Covert. Scheduled.
2	WLN 068	Earthworks of a possible Bronze Age barrow cemetery are visible on Lidar imagery on an area of heath to the west of Dunwich Forest, Westleton.
3	WLN 016	1991: Fieldwalking survey by John Newman following forest clearance, located scatter of eleven crudely worked flints including two scrapers (S1).
4	WLN 011	Small scatter Med pottery (C13/C14) consisting of 1 rim & 7 body sherds (50g), found fieldwalking, circa 35m transects, on Forestry Commission replanted areas (S1).
5	WLN 007	Four long low mounds, parallel to each other, running SE-NW.
6	WLN 017	1991: Fieldwalking survey by John Newman following forest clearance located scatter of Med pottery (S1).
7	WLN 018	1991: Fieldwalking survey by John Newman following forest clearance located scatter of Med pottery (S1).
8	WLN 080	Multiple trackways of possible medieval to post medieval date are visible as earthworks on aerial photographs on land to the south of Dunwich Forest, Westleton.
9	WLN 065	Earthworks of multiple abraded trackways of probable medieval to post medieval date are visible on aerial photographs across the area of heath to the south of Newdelight Walks, Blythburgh.
10	WLN 088	Earthworks of ditches and banks which may be associated with Potton Hall are visible on aerial photographs to the south of Potton Hall, Westleton.
11	WLN 069	Fragmentary undated linear cropmarks are visible on aerial photographs on land to the west of Dunwich Forest, Westleton. They are visible against a background of multiple geological marks, and consequently it was difficult to discern the extent of the ar
12	WLN 090	Undated possible field boundaries are visible as cropmarks on aerial photographs to the south of Potton Hall, Westleton.
13	DUN 027	Cropmarks of earthworks of possible trackways, for details of the extent of the cropmarks see AP.
14	WLN Misc	Brick kiln.
15	WLN 086	An area of possible World War Two military activity is visible on aerial photographs on an area of land to the south of Dunwich Forest, Westleton.

16	BLB 104	A large area of Second World War practice trenches, including at least four possible gun emplacements or spigot mortar emplacements, along with areas of disturbed ground and possible bomb craters are visible as earthworks on aerial photographs. These earthworks are now levelled.
17	WLN 066	Earthworks of World War Two anti-glider ditches are visible on aerial photographs across the area of heath in Westleton to the south of Newdelight Walks, Blythburgh. At least one pillbox is also visible to the west of the ditches, along with two possible weapons pits or training trenches.
18	WLN 067	Earthworks of two possible World War Two training trenches are visible on aerial photographs across the area of heath to the south of Fen Covert, Westleton.
19	WLN 079	A Second World War bomb crater is visible as an earthwork on aerial photographs on land to the south of Dunwich Forest, Westleton. It is difficult to determine from recent photography whether the earthwork is still extant, but it is assumed to have been levelled as it is not visible on Lidar imagery of the area.
20	WLN 081	Second World War bomb craters, possible practice trench and gun emplacements are visible as earthworks on aerial photographs on land to the south of Dunwich Forest, Westleton.
21	WLN 089	Earthworks of at least seven Second World War bomb craters are visible on aerial photographs to the south of Potton Hall, Westleton.



**Site**

**Study Area (1km radius)**

**Heritage Assets**

- ▲ Listed Building
- Scheduled Monument
- Site/Monument



## Appendix 3- OASIS Form

OASIS ID: archaeo16-349665

### Project details

Project name	Dunwich Quarry
Short description of the project	Archaeological topographic survey of four earthwork mounds, possible rabbit warren, in advance of quarrying
Project dates	Start: 04-04-2019 End: 30-04-2019
Previous/future work	Yes / Yes
Any associated project reference codes	180702 - Contracting Unit No.
Any associated project reference codes	WLN 007 - Related HER No.
Type of project	Recording project
Site status	None
Current Land use	Woodland 3 - Mixed
Monument type	PILLOW MOUND Uncertain
Significant Finds	NONE None
Investigation type	"Field observation"
Prompt	Environmental (unspecified schedule)

### Project location

Country	England
Site location	SUFFOLK SUFFOLK COASTAL WESTLETON Dunwich Quarry
Postcode	IP12 3EE
Study area	0.3 Hectares
Site coordinates	TM 45485 71586 52.286877296703 1.599876099757 52 17 12 N 001 35 59 E Point
Height OD / Depth	Min: 19m Max: 22m

### Project creators

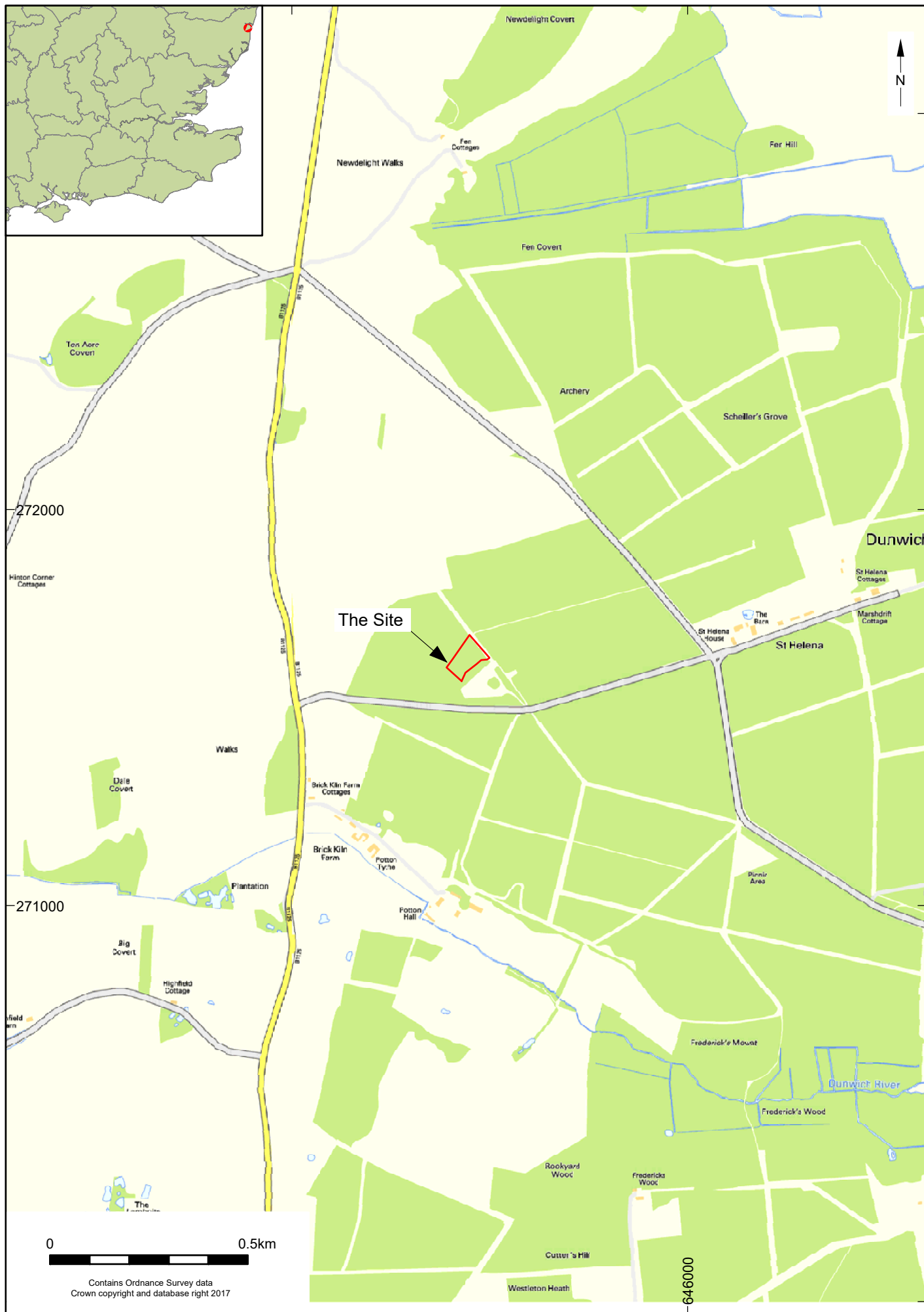
Name of Organisation	Archaeology South-East
Project brief originator	ASE
Project design originator	ASE
Project director/manager	Vasilis Tsamis
Project supervisor	E Heppell
Type of sponsor/funding body	Client
Name of sponsor/funding body	Forestry Commission (England)

**Project archives**

Physical Archive Exists?	No
Digital Archive recipient	Suffolk County Council Archive Store
Digital Contents	"other"
Digital Media available	"Images raster / digital photography","Images vector","Survey","Text"
Paper Archive Exists?	No

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Entered by	Ellen Heppell (e.heppell@ucl.ac.uk)
Entered on	23 April 2019



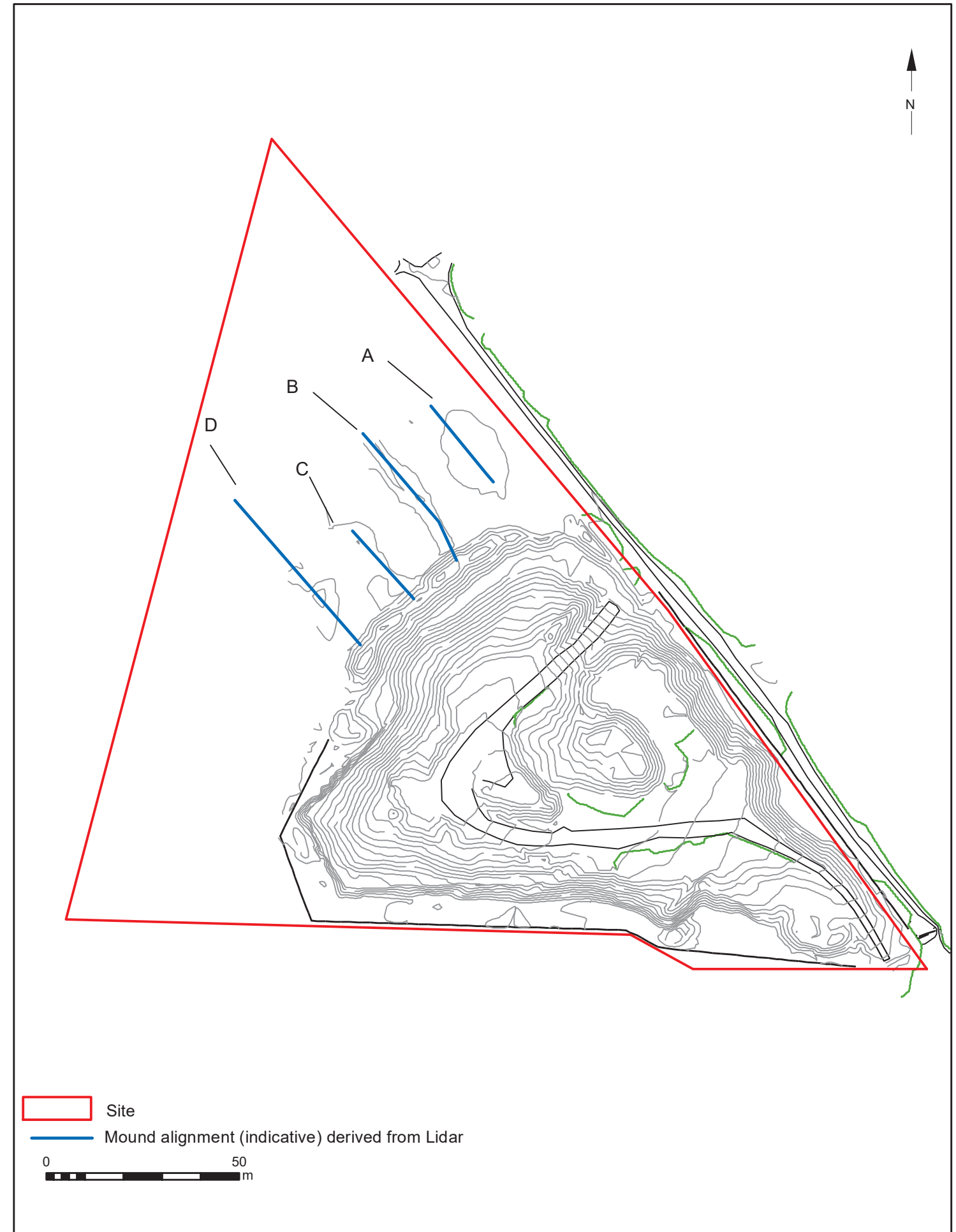
Contains Ordnance Survey data  
Crown copyright and database right 2017

© Archaeology South-East		Dunwich Forest Quarry	Fig. 1
Project Ref: 180702	04 - 2019	Site location	
Report Ref: 2019108	Drawn by: NG/EH		





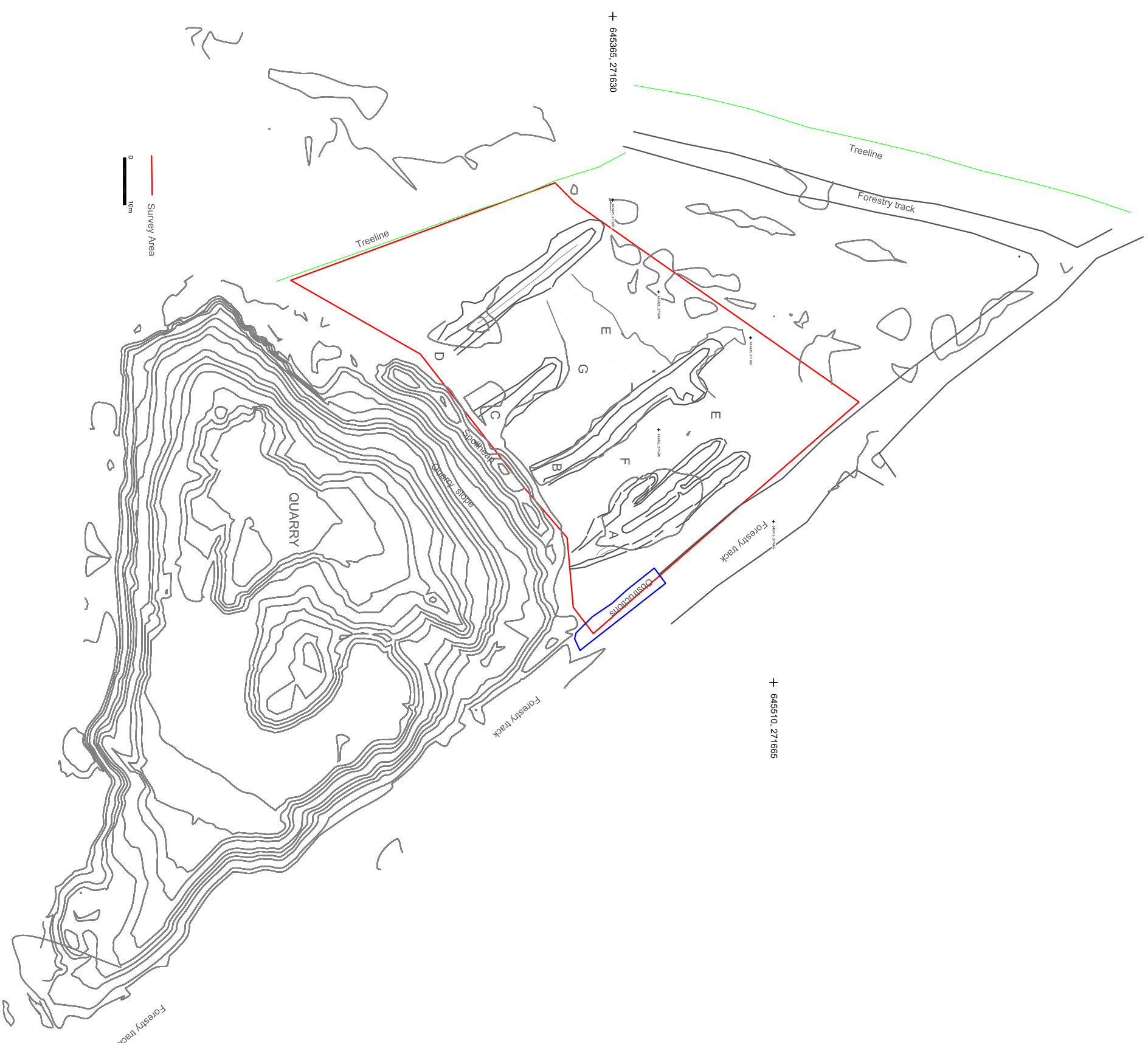
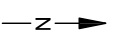
A. Digital Elevation Model (derived from Environment Agency 1m DTM Lidar data)



B. Topographical survey showing existing quarry (excluding trees and foliage) pre dating tree felling

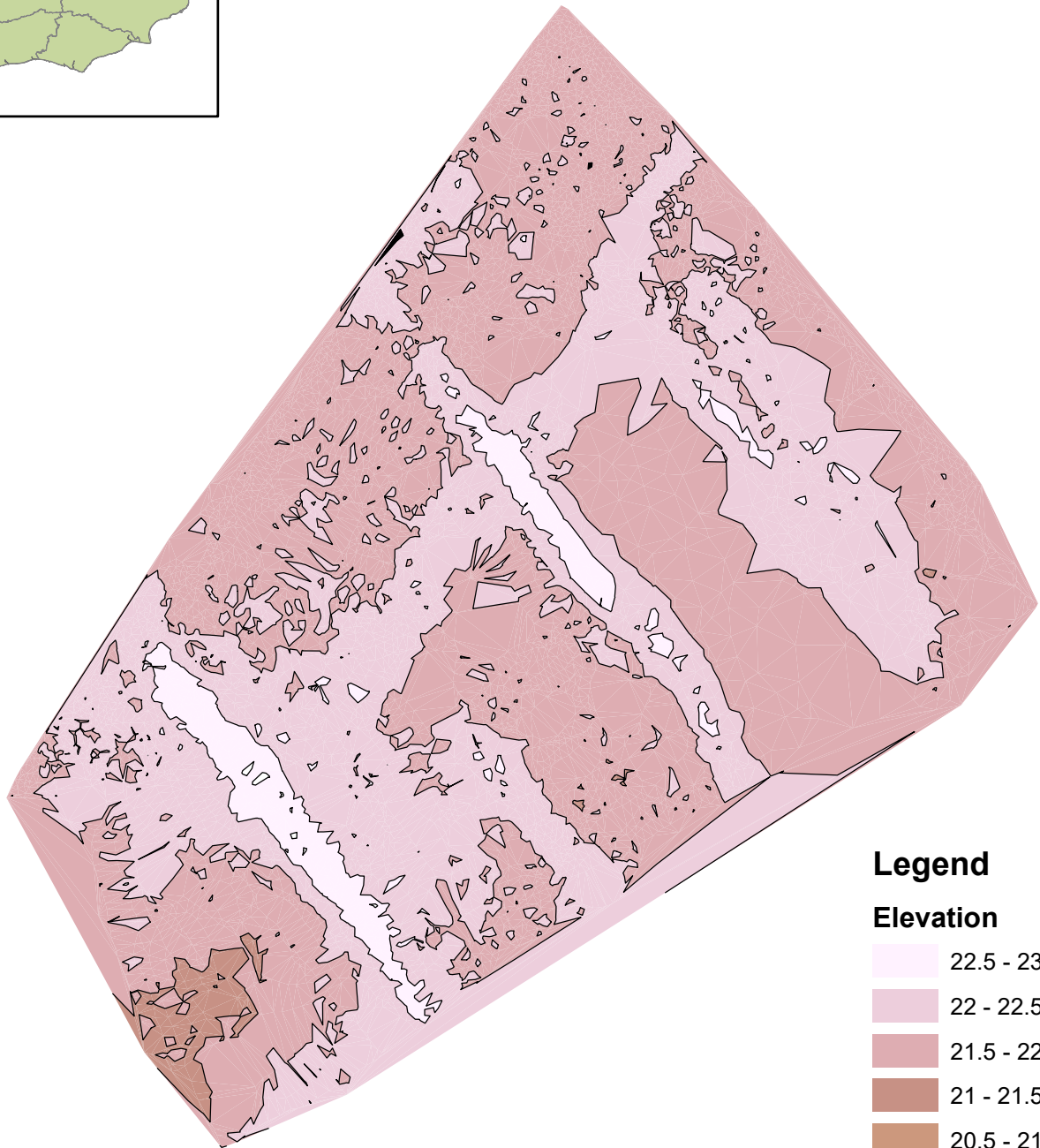
Courtesy of agb Environmental





0 100m  
Survey Area

© Archaeology South-East	Dunwich Forest Quarry	Fig.3
Project Ref: 180702	04 - 2018	
Report Ref: 2019108	Drawn by: NG/EH	
Site Plan - showing contour data and mounds		



### Legend

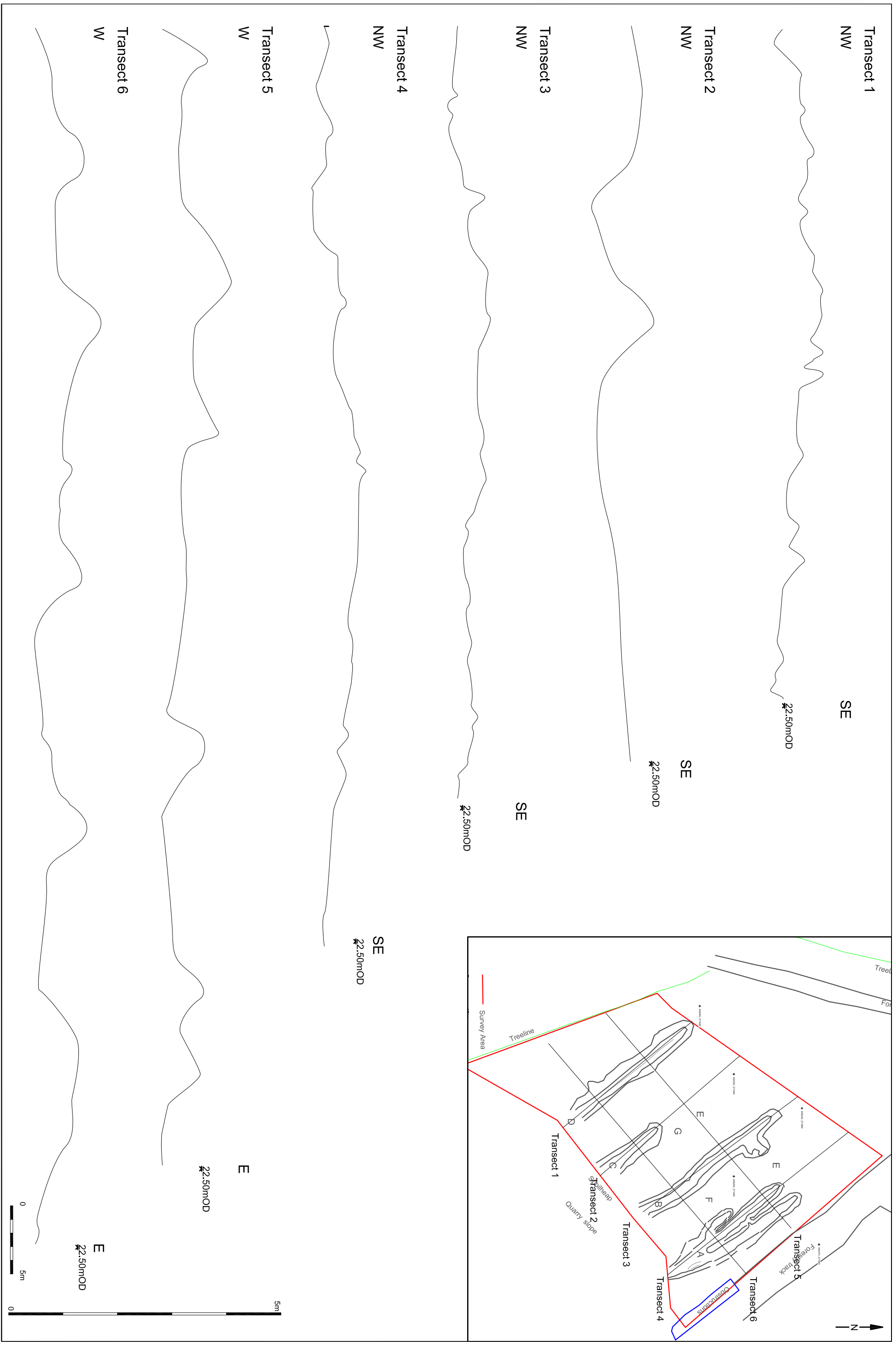
#### Elevation

- 22.5 - 23
- 22 - 22.5
- 21.5 - 22
- 21 - 21.5
- 20.5 - 21
- 20 - 20.5
- 19.5 - 20
- 19 - 19.5
- 18.5 - 19
- 18 - 18.5
- 17.5 - 18
- 17 - 17.5
- 16.5 - 17
- 16.301 - 16.5

0 0.02km

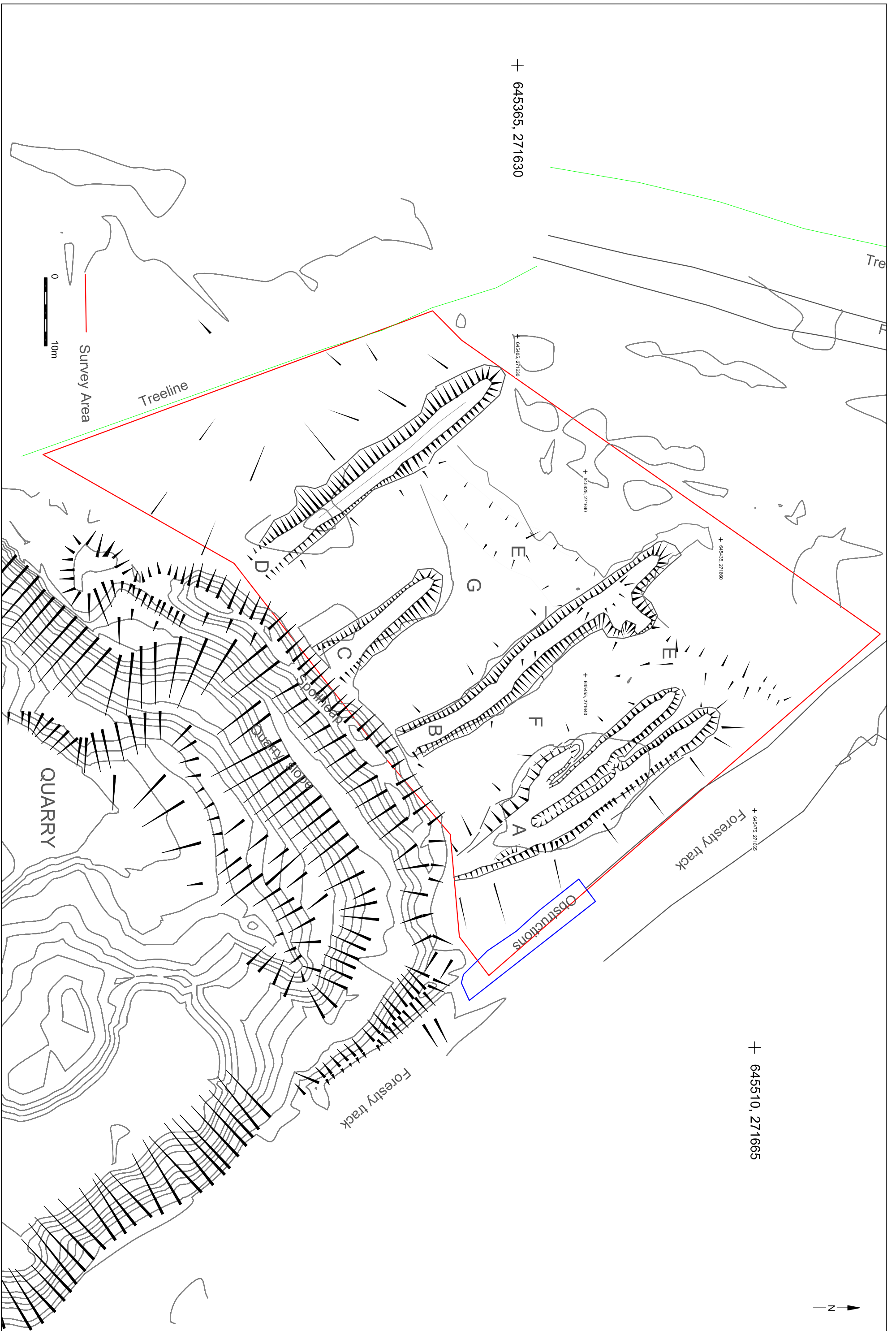


© Archaeology South-East		Dunwich Forest Quarry	Fig. 4
Project Ref: 180702	04 - 2019	DEM	
Report Ref: 2019108	Drawn by: NG		

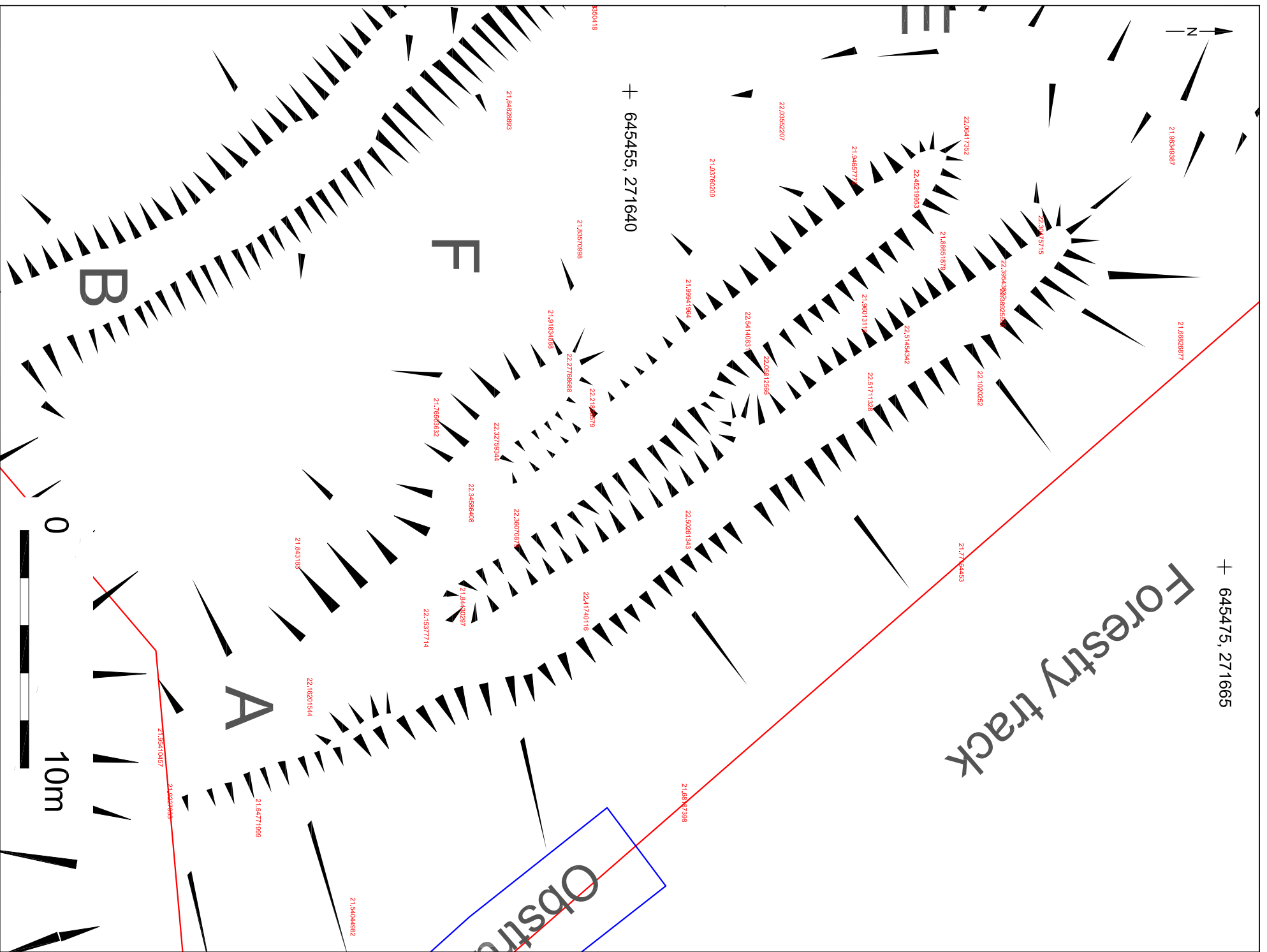


© Archaeology South-East		Dunwich Forest Quarry
Project Ref: 180702	04 - 2018	Transects (vertical scale exaggerated)
Report Ref: 2019108	Drawn by: NG	

Fig.5







Mound A - View north-west along length of mound



Mound A - View north-west along the eastern branch

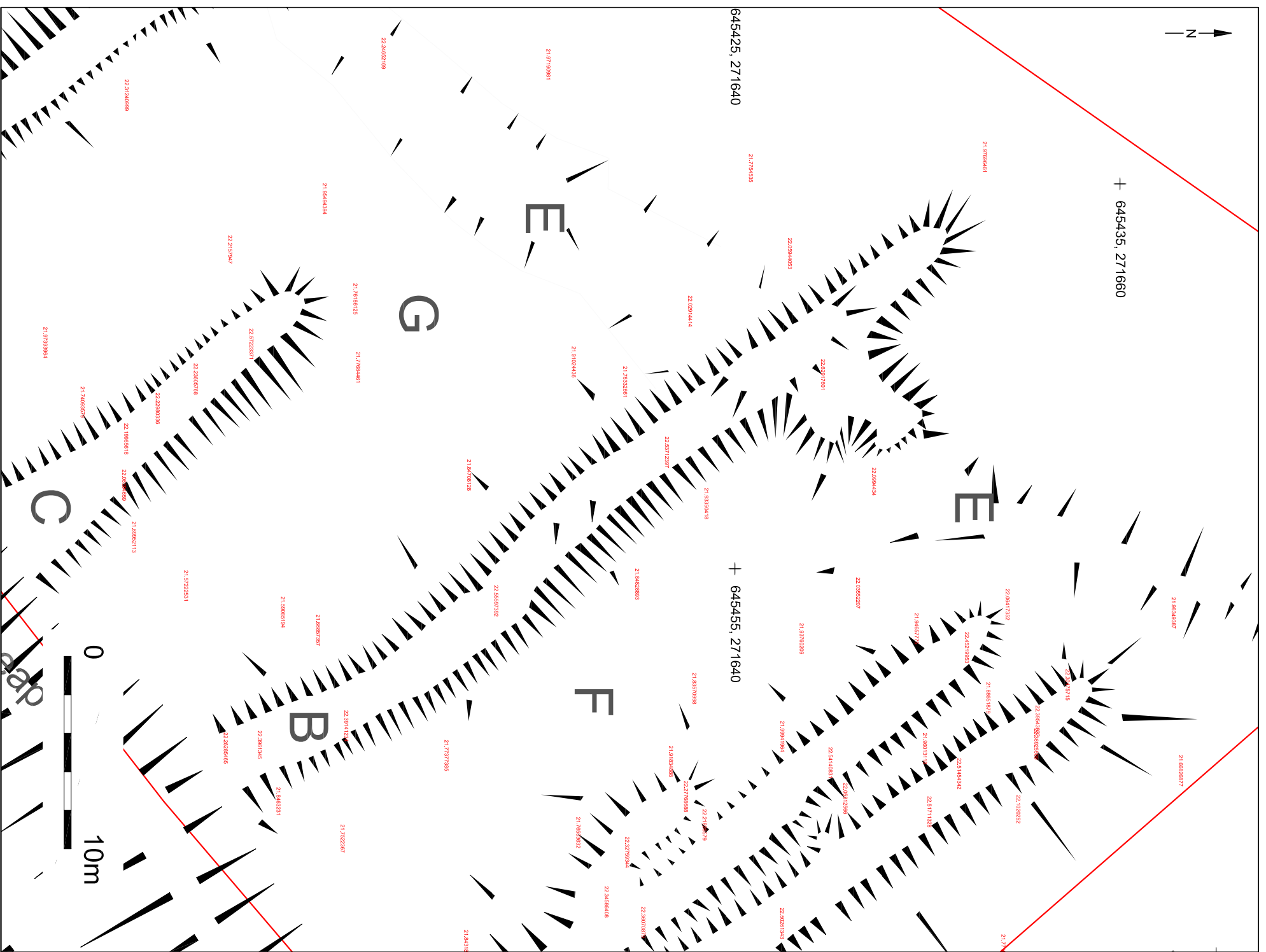


Mound A - View south-east along the western branches



Mound A - View south-east along length of mound





Mound B - View south-east along length of mound

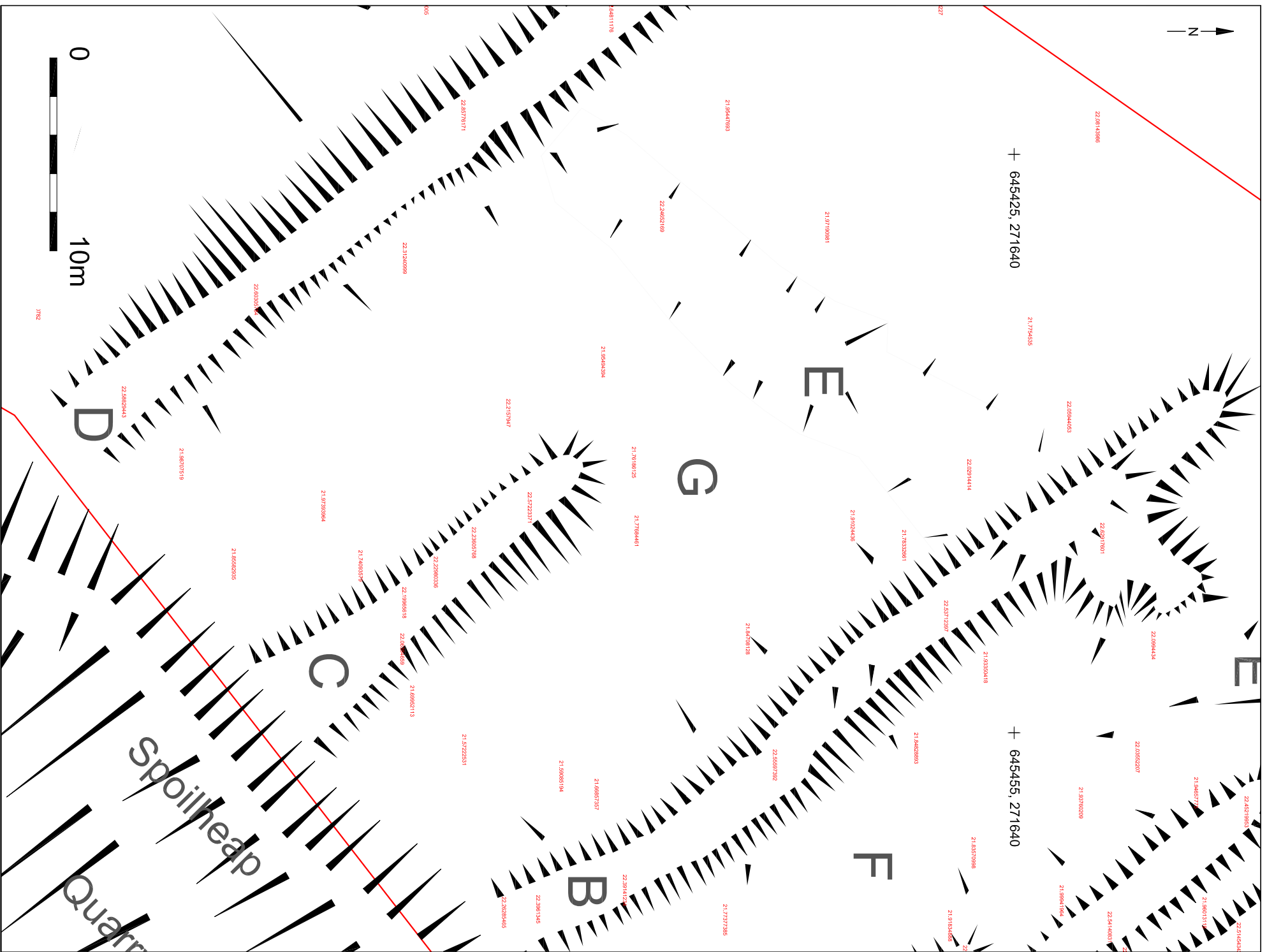


Mound B - View north-west along length of mound



Mound B (left) and Area G (right) looking north-west





Mound C - north-west end of mound (looking south-east)

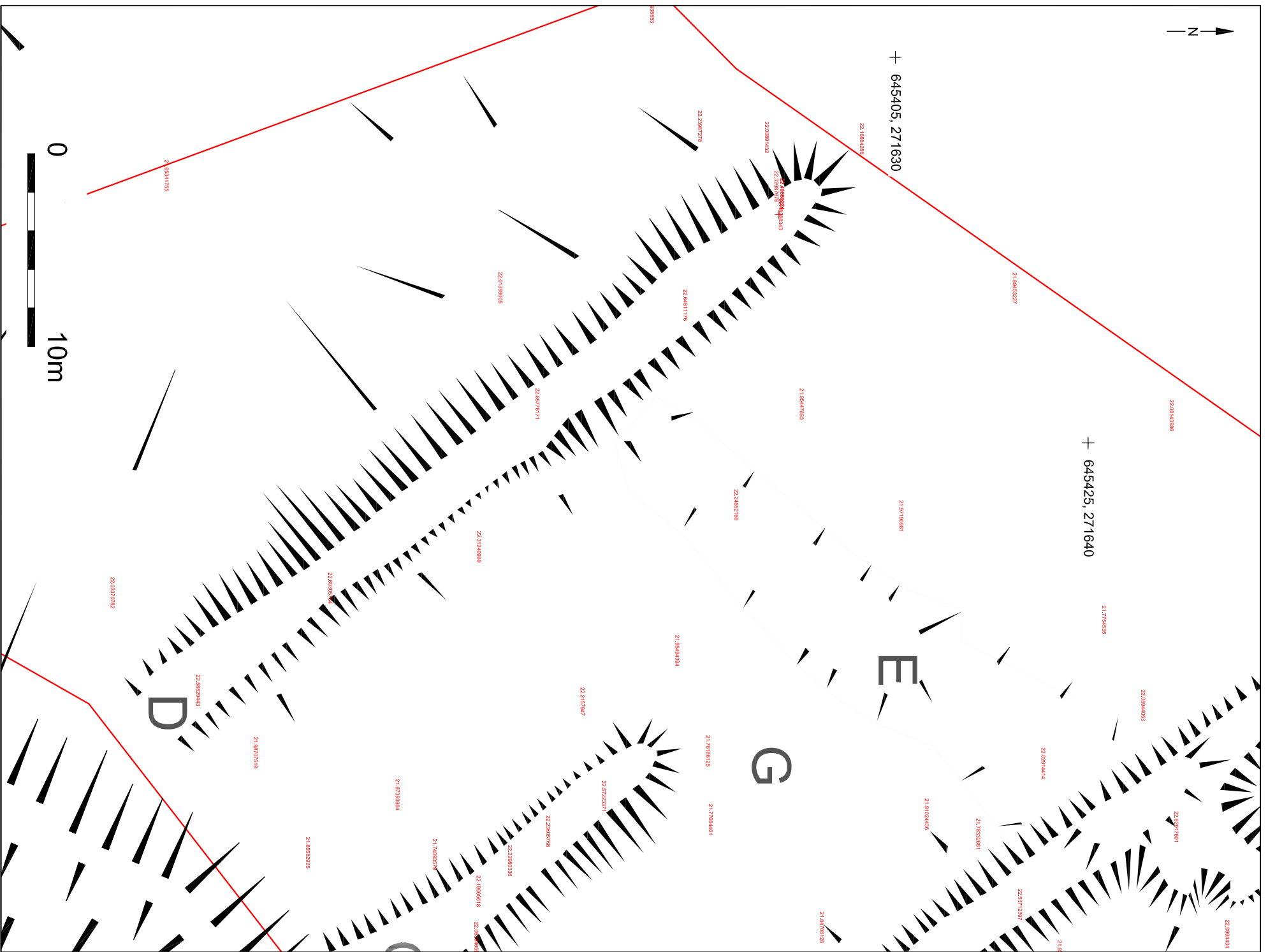


Mound C - View south-east along length of mound



Mound C - View north-west along length of mound





Mound D- view north-west along the length of the mound

Mound D - View south-east along length of mound



Mound D - View south-east along length of mound