

CASTEN DYKE NORTH AND CASTEN DYKE SOUTH,  
KILBURN MOOR AND SCAWTON MOOR PLANTATIONS,  
HAMBLETON, NORTH YORKSHIRE

ARCHAEOLOGICAL SURVEYS



Ed Dennison Archaeological Services Ltd  
18 Springdale Way  
Beverley  
East Yorkshire  
HU17 8NU

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Report no: 2016/516.R01  
Version: Final  
Date: October 2016  
Author: Shaun Richardson & Ed Dennison

Ed Dennison Archaeological Services Ltd  
18 Springdale Way  
Beverley  
East Yorkshire  
HU17 8NU

On behalf of

North York Moors National Park Authority  
The Old Vicarage  
Bondgate  
Helmsley  
York YO62 5BP

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## EXECUTIVE SUMMARY

*In January 2016, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Mr Graham Lee, Archaeological Conservation Officer for the North York Moors National Park Authority (NYMNP), to undertake a Level 3 archaeological survey of Casten Dyke South and the main part of Casten Dyke North, located close to Sutton Bank in North Yorkshire.*

*The work was required as part of ongoing research into the 1322 Battle of Byland, a little-known but important engagement between English and Scottish armies on Sutton Bank, specifically to try and determine whether the dykes had been modified or indeed wholly created to serve as defensive positions before or during the battle. The 571m length of Casten Dyke North along the south side of Kilburn Moor Plantation was surveyed, as was the surviving 263m length of Casten Dyke South between Boar's Gill and High Town Bank Road. A number of profiles were also taken across the two dykes, and two other profiles were surveyed across that part of Casten Dyke North which lies in Flassen Gill.*

*At present, there is very little firm dating evidence for either of the dykes. The fact that Casten Dyke North incorporates a round barrow into its bank only proves that it post-dates the early Bronze Age, and it also appears to have cut through the line of the prehistoric Cleave Dyke; it is a much better-defined earthwork, perhaps suggesting that it did not form part of a single phase dyke 'system'. Previous assumptions that Casten Dyke South was prehistoric in date, and contemporary with the adjacent Roulston Scar promontory fort, have also been challenged, and more recent arguments suggest that a medieval origin is more plausible. However, in the absence of excavated evidence, or further documentary research into the longevity of the function of the Dykes as administrative boundaries, close dating remains impossible.*

*There can be little doubt that the form of Casten Dyke South shows that its purpose was to enclose the land to the south, a promontory of c.23 hectares, by running between two steep-sided natural valleys, Boar's Gill and Hell Hole. This may have been done for agricultural purposes in either the late medieval or early post-medieval periods. Nevertheless, it remains a distinct possibility that the dyke was either created specifically for the Battle of Byland, or that it was an earlier, prehistoric, boundary which was re-used during the battle. By sealing off the south side of the plateau, and with very steep slopes on all other sides, any English force encamped within would have felt they held a reasonably secure position, particularly if they were augmented by another force close by to the west which had modified the northern rampart of Roulston Scar. The plateau also overlooks Boar's Gill and Hell Hole, both of which would have provided routes up the natural escarpment for the Scottish army seeking to outflank the English. It is less easy to make a case for Casten Dyke North having been created specifically for the battle, although the anomalies apparent at the north-east end close to Flassen Gill are interesting. If either of the dykes were created or partly used during the battle, then this would force a re-assessment of the battle itself; the traditional narrative suggests that the battle was a hastily organised action, but the creation and use of defensive earthworks would indicate that it involved a certain amount of preparation on both sides.*

*The survey work has also revealed the impact of Second World War activity on the dykes. Although the presence of probable Second World War earthworks in the area has been noted before, extensive military activity along Casten Dyke North has been recorded. This includes slit trenches, weapons pits and observation posts surviving as earthworks in the south-western c.60m section of the alignment. At least two substantial areas of Second World War remodelling are also proposed, which includes the re-cutting of the ditch, perhaps in several different phases. Three similar areas of remodelling are proposed along Casten Dyke South, with aerial photographic evidence suggesting that alterations may have been even more extensive than is shown by the surviving earthworks. This activity is not yet fully understood, but it is likely to have had a combination of defensive and training functions, some perhaps associated with Bren Gun Carriers of the 12th Battalion Green Howards who are known to have been active in the area.*

# 1 INTRODUCTION

## Reasons and Circumstances of the Project

- 1.1 In January 2016, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Mr Graham Lee, Archaeological Conservation Officer for the North York Moors National Park Authority (NYMNP), to undertake a Level 3 archaeological survey (as defined by English Heritage 2007) of Casten Dyke South (NGRs SE 451800 481638 to SE 452077 481630) and the main part of Casten Dyke North (NGRs SE 451675 482500 to SE 452115 482933), near Sutton Bank in North Yorkshire. Additional profiles were also produced across the east end of Casten Dyke North in Scawton Moor Plantation near Flassen Gill (at NGR SE 52536 83149 approximate). In summary, the project involved a detailed measured earthwork survey of the remains, augmented by a detailed descriptive record and report.
- 1.2 The work was required as part of NYMNP's ongoing research into the 1322 Battle of Byland, a little-known but important engagement between English and Scottish armies on Sutton Bank, specifically to investigate if any of the earthworks in the area had been modified or indeed wholly created to serve as defensive positions before or during the battle. The scope of the recording work was defined following discussions between EDAS and Mr Graham Lee, and a brief EDAS methods statement. The majority of the work was funded by the NYMNP, although EDAS also undertook some additional background research to place the results into context.

## Site Location and Summary Description

- 1.3 Casten Dyke North and Casten Dyke South are located close to Sutton Bank, in the Hambleton District of North Yorkshire at the south-western edge of the Hambleton Hills, some 3.30km and 2.15km respectively north of the village of Kilburn (see figures 1 and 2). Both earthworks have been traditionally interpreted as forming part of what is known as the 'Cleave Dyke System', the most westerly of a series of dykes on the Tabular Hills of north-east Yorkshire - the dykes form a system of linear ditches and banks stretching north-south over a distance of 9km, running close to the western scarp of the Hambleton Hills. The system is generally believed to have been constructed between the late Bronze Age and Iron Age to augment the natural division of the terrain by river valleys and watersheds, and is interpreted as forming territorial boundaries in an area largely given over to pastoralism. The dyke system appears to have a relationship to earlier round barrows within the same area (SM description).
- 1.4 Casten Dyke North has a general south-west/north-east alignment but is now effectively divided into two lengths by the A170 Thirsk to Helmsley road. The longer part lies to the south of the road, at an elevation of between 284m and 292m AOD (between NGRs SE 51691 82586 and SE 52096 82917), and was formerly situated on the south-eastern edge of Kilburn Moor Plantation, although this had been felled prior to the survey work taking place. There are a small number of mature deciduous trees along the line of the dyke, with a much larger number of bushes, and a thick covering of either heather or bracken throughout. To the north of the A170 road, the line of the dyke (sometimes also known as the Flassen Dyke) re-appears to rear of the Hambleton Inn, and then runs through Scawton Moor Plantation as far as the Flassen Gill (between NGRs SE 52265 83090 and SE 52819 83212). Together, the two parts have a total length of c.1.22km, although over 300m of this is lost either side of the Hambleton Inn.

- 1.5 Casten Dyke South is set 950m south of the south-west end of Casten Dyke North, between the natural valley known as Boar's Gill to the west and High Town Bank Road, an unmetalled trackway, to the east; the west end is set at an elevation of c.275m AOD (between NGRs SE 451800 481638 and SE 452077 481630). To the west of Boar's Gill the ground is occupied by the Yorkshire Gliding Club, which is located on the plateau formerly occupied by Roulston Scar promontory fort. The latter comprises part of the western edge of an extensive limestone plateau projecting south from the Hambleton Hills, with the scar formed by sheer cliffs of exposed buff-grey gritstone and oolitic limestone up to 30m in height (Oswald & Pearson 2001, 3). The dyke itself once extended east beyond High Town Bank Road as far as another natural valley known as Hell Hole, but this section has been ploughed down although some remains may survive below ground. The dyke lies wholly within a modern unnamed plantation, with trees running right up to the edge of the earthwork, although the actual alignment is clear of trees; there is also a thick covering of heather and bracken. The surviving part of the earthwork has a total length of 263m.
- 1.6 Both dykes lie within land forming part of the North York Moors National Park, and both are protected as Scheduled Monuments. The west end of Casten Dyke North is National Heritage List for England (NHLE) number 1012992 while the east end in Flassen Gill is NHLE number 1012743. Casten Dyke South is NHLE 1012993. The relevant Historic Pastscape site numbers are SE58SW30 and SE58SW51, and the NYMNP Historic Environment Record numbers are HER 4218 for Casten Dyke North, which continues as HER 6316 in Flassen Gill, and HER 4192 for Casten Dyke South.

### **Previous Archaeological Investigation and Research**

- 1.7 The Cleave Dyke System was written about extensively by Don Spratt (e.g. Spratt 1982; Spratt 1993), although some of the interpretations offered are now challenged (e.g. Oswald & Pearson 2001). That part of the Casten Dyke North close to Flassen Gill was the subject of detailed earthwork survey by Archaeological Services WYAS in 1996 (Boucher 1996), while the very western end of the Casten Dyke South close to Boar's Gill was surveyed as part of a wider survey of Roulston Scar fort in July-August 2001 (Oswald & Pearson 2001). The entire area, particularly that between the Kilburn Moor Plantation section of Casten Dyke North and the A170 road, is covered with scattered World War Two earthworks of varying form and function, some of which have been previously recorded (Dennison & Richardson 2014).
- 1.8 In terms of the 1322 Battle of Byland itself, there is little published research available. The only book published on the battle is largely concerned with the historical background of the Anglo-Scottish conflict during the 13th and early 14th centuries (Bell 2005). An account of the battle, drawing on Scottish sources, is however given online (Frusher 2013), as is a summary of the current state of archaeological knowledge regarding the earthworks in the area and their possible relationship to the battle (Lee 2014). Less than 1km to the west of Roulston Scar fort is the conical eminence of Hood Hill, which is surmounted by a small castle, thought to have been originally built in the late 11th or early 12th century, but perhaps remodelled in the second half of the 14th century. Coincidentally, the last known reference to the castle occurs in 1322, when Isabella, the late wife of John de Vescy, held the castle and manor of Kilburn, but despite the 14th century references, it has no known involvement with the Battle of Byland (Dennison 2000; Dennison 2004, 26-29).

## **Aims and Objectives**

- 1.9 The aims and objectives of the project can be summarised as follows:
- to produce a detailed measured archaeological survey of the Casten Dykes North and South, to aid the understanding of their original and subsequent form, and also to inform any future management and research.

## **Survey Methodologies**

- 1.10 As noted above, the scope of the work was defined following discussions with Mr Graham Lee, Archaeological Conservation Officer for the North York Moors National Park Authority (NYMNP), and a brief EDAS methods statement. The project corresponds to a Level 3 enhanced and integrated survey as defined by English Heritage (2007, 23-24); English Heritage is now known as Historic England. Two main elements were involved, as follows.

### *Phase 1 Desk-top Survey*

- 1.11 No new detailed research was required as part of the project, but relevant published secondary sources were consulted (see Chapter 5 below). The English Heritage survey of Roulston Scar fort (Oswald & Pearson 2001) in particular contains a great deal of useful background information, and this has been extensively used below.

### *Phase 2 Detailed Site Survey*

- 1.12 A detailed topographical survey of each of the survey areas was undertaken to record the position and form of all features considered to be of archaeological and/or historic interest. The whole of the surviving above-ground element of the Casten Dyke South was surveyed. Only that part of the Casten Dyke North to the south of the A170 Thirsk to Helmsley road was surveyed, as the surviving element close to Flassen Gill had been previously recorded in 1996 (Boucher 1996). It was initially planned to undertake both surveys at a scale of 1:500 using EDM total station equipment, but this was found to be insufficiently detailed to convey many of the features adequately, and so the scale was changed to 1:250. Sufficient information was gathered to allow the survey area to be readily located through the use of surviving structures, fences, walls, water courses and other topographical features. The topographical survey recorded the position at ground level all earthworks, structures, wall remnants and revetments, water courses, paths, stone and rubble scatters, fences, hedges and other boundary features, and any other features considered to be of archaeological or historic interest. The Casten Dyke North survey also recorded the position of individual deciduous and coniferous trees with a diameter of 0.50m or more growing on or very close to the earthwork. In addition, a number of profiles at a scale of 1:50 were made across each earthwork to illustrate the changing form along their length.
- 1.13 The surveys were integrated into the Ordnance Survey national grid by resection to points of known co-ordinates. Heights AOD for the Casten Dyke North survey were obtained by reference to the nearest OS benchmark/spot height, located close to the entrance of the NYMNP public car park at Sutton Bank. It was not possible to obtain an OS spot height for the Casten Dyke South. Control points were observed through trigonometric intersection from survey stations on a traverse around and through the survey area. On completion of the EDM survey, the field data was plotted and re-checked in the field as a separate operation. Any

amendments or additions were surveyed by hand measurement. The resulting surveys were produced at a scale of 1:250 and presented as an interpretative hachure plan using conventions analogous to those used by English Heritage (2007, 31-35). The EDM total station field survey commenced in February 2016, when vegetation growth was at its lowest across the survey areas, and the hand enhancement was completed in April 2016.

- 1.14 Within each survey area, significant parts of the earthworks were also photographically recorded using a digital camera with 10m mega-pixel resolution. English Heritage photographic guidelines were followed (English Heritage 2007, 14) and each photograph was normally provided with a scale. More general digital photographs were also taken showing the landscape context of the earthworks and of specific components. All photographs were clearly numbered and labelled with the subject, orientation, date taken and photographer's name, and cross referenced to digital files etc.
- 1.15 Finally, two profiles were also made across that part of the Casten Dyke North close to Flassen Gill, again at 1:50 scale, using a dumpy level, in order to provide comparative information; the location of these profiles was marked on the 1996 survey plan.

### **Survey Products**

- 1.16 An EDAS archive survey report has been produced, based on the results of the documentary collation and the information obtained during the fieldwork. This report assembles and summarise the available evidence for the survey areas in an ordered form, synthesises the data, comments on the quality and reliability of the evidence, and how it might need to be supplemented by further field work or desk-based research. The report is also illustrated by reduced versions of the survey drawings, and a selection of photographic plates, while the photographic register and catalogue is included as an appendix. An electronic version of the final survey report (in pdf format) was also prepared, and this has been made available to other interested parties. A pdf copy of the report has also been uploaded with other relevant project information to Historic England's OASIS (Online Access to Index of Archaeological Investigations) project.
- 1.17 An archive of material, comprising paper, magnetic and plastic media, relating to the project has been ordered and indexed according to the standards set by Historic England (EDAS side code CD16). This was deposited with the NYMNPA HER at the end of the project.



## 2 SUMMARY ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

### Introduction

- 2.1 Although no new detailed research was required as part of the project, a brief summary of relevant background information is given here, in order to begin to place the EDAS survey within its proper context.

### The Casten Dykes North and South

- 2.2 As has already been noted in Chapter 1 above, both Casten Dyke North and Casten Dyke South are located close to Sutton Bank, in the Hambleton District of North Yorkshire at the south-western edge of the Hambleton Hills, some 3.30km and 2.15km respectively north of the village of Kilburn. Both have been traditionally interpreted as forming part of what is known as the “Cleave Dyke System”, the most westerly of a series of dyke systems on the Tabular Hills of north-east Yorkshire, comprising a series of linear ditches and banks stretching north-south over 9km either parallel with and/or close to the western scarp of the Hambleton Hills. The system is generally believed to have been constructed between the Late Bronze Age and the Iron Ages (mid 1st millennium BC) to augment the natural division of the terrain by river valleys and watersheds, and is interpreted as territorial boundaries in an area largely given over to pastoralism. The dyke system appears to have a relationship to earlier round barrows within the same area (SM description).
- 2.3 On the Ordnance Survey 1856 6" to 1 mile map (surveyed 1853), the Casten Dyke North is named as ‘Casten Dike’. The south-western section is shown as a double line, the solid line on the south-eastern side representing a drystone wall running through open heath or moorland (see figure 3A). The dyke starts at the scarp of Sutton Bank, and then runs north-east, depicted as two parallel earthworks, with a ‘Tumulus’ marked to the north. After a short distance, it is crossed by a trackway which runs parallel to the scarp. It then angles to the east for a short distance before resuming a north-eastern course, after which the depiction reverts to a single bank. It is then overlain at right angles by another bank named as ‘Cleave Dyke’. The dyke then continues, with the stone wall on the south-east side forming a township/parish boundary between Cold Kirkby and Oldstead, as far as what is now the A170 road. The alignment is broken around the junction of the A170, High Town Bank Road (running south) and an unnamed track running north (see figure 4A). The dyke then resumes on the north-east side of the road junction, running to the immediate north of the Hambleton Inn as far as a minor road to Hambleton House where the line is again broken. East of this second break, the dyke is depicted as two separate sections of earthwork, that to the west forming a slightly curving route while that to east, again forming the township/parish boundary, running into the upper end of Flassen Gill.
- 2.4 By the time of the 1893 25" edition, the ground between the Casten Dyke North and the A170 road had been planted with conifers (Kilburn Moor Plantation) (see figure 3B). The dyke is depicted as a two-banked earthwork along the whole of this section, with a field boundary (a drystone wall forming the township/parish boundary) running parallel to the south-east side on another bank. The track shown as crossing the western end of the dyke in 1856 now stops at the north side of the earthwork, but the ‘Tumulus’ and the ‘Cleave Dyke’ are still present - this more detailed depiction suggests that the Casten Dyke North crosses the Cleave Dyke. The short section of dyke running to the east appears smoother, whereas a longer section immediately to the west of the A170 road junction is angled slightly

to the east-north-east compared to the general north-east alignment. The section of dyke behind the Hambleton Inn is also more broken, presumably due to the presence of additional buildings etc, and the land here has also been planted (Hotel Plantation) (see figure 4B). East of the track to Hambleton House, the alignment is also missing, although the final slightly curving eastern section running into Flassen Gill is still mapped. The dyke is similarly depicted on the 1912 25" edition.

- 2.5 Maps of 1829 and 1846 indicate that, in the earlier 19th century, a number of field boundaries, most probably drystone walls, were laid out along the northern rampart of Roulston Scar promontory fort and the Casten Dyke South (Oswald & Pearson 2001, 7). On the Ordnance Survey 1856 6" map (surveyed 1853), that part of the Casten Dyke South recorded by the EDAS survey is shown as a dashed line, bisected by High Town Bank Road, and running between Boar's Gill and Hell Hole through largely unenclosed land (see figure 5A); a field boundary is shown running along the western end which continues west and north to form an enclosure around the head of Boar's Gill with a 'pinfold' in the north-east corner. The northern rampart of Roulston Scar fort is also named 'Casten Dyke', and it has been suggested that Ordnance Survey surveyors may initially have been responsible for considering the northern rampart of Roulston Scar and the Casten Dyke South as being a single monument (Oswald & Pearson 2001, 7); this was to have a long-lasting influence on its interpretation (see below).
- 2.6 By the time of the Ordnance Survey 1893 25" map, the dashed line representing the unnamed alignment of Casten Dyke South is not shown, instead there is a slightly sinuous banked unnamed earthwork with an 'Old Quarry' at its west end (see figure 5B). This earthwork extends almost as far as High Town Bank Road, where there is a gap, although it continues for a short distance on a similar alignment to the east. It is similarly depicted on the 1912 edition.
- 2.7 Both sections of the dyke are shown on wartime vertical aerial photographs taken by the RAF in May 1940 and March 1946 (EHA RAF/10/UK/1524 & RAF/106G/UK/1298, frames 4016-4017) (see figure 6). A description of what can be seen on these photographs is discussed in Chapter 3 below). It is interesting to note that the continuation of Casten Dyke South to the east of High Town Bank Road into Hell Hole appears on these aerial photographs.
- 2.8 It appears that the suggestion that Casten Dyke South may not have been contemporary with the northern rampart of Roulston Scar fort was first made in 1960 by Nicholas Thomas who stated that the former was "an altogether later earthwork" (Thomas 1960, 252, quoted in Oswald & Pearson 2001, 8). Nevertheless, in an article published in the same year, Raymond Hayes again linked the two earthworks as a single linear boundary and repeated this suggestion in a slightly later discussion (Hayes 1963, 60). In 1982, Spratt described Casten Dyke North as a "well-preserved earthwork", with a tumulus to the north close to the scarp of Sutton Bank and one on the line of the dyke itself; the eastern bank was 3.0m wide and 0.3m high, the western bank was 3.3m wide and 0.4m deep, and the ditch was 3.0m wide and 0.7m deep. North of the A170 the line was noted to be fragmentary but, drawing on earlier accounts and a late 18th century map, the earthwork was stated to once have extended as far north-east as the line of Hambleton Street at Flassendale Head; there were said to be banks on both side of the ditch (Spratt 1982, 42). Casten Dyke South (i.e. that earthwork recorded by this survey) was also described as a "well-preserved earthwork", with the bank to the south of the ditch, and was linked by Spratt to the northern rampart of Roulston Scar fort to the west (Spratt 1982, 42); he noted that the bank was 0.6m high and

4.2m wide while the ditch was 3.0m wide and 0.9m deep. It was suggested that Casten Dyke North might once have marked the southern extent of the Cleave Dyke System, and Spratt argued that the cross-dykes did not make sense in isolation and so were likely to be broadly contemporary, dividing up the landscape into discrete units (Spratt 1982, 46 & 48). The link between the northern rampart of Roulston Scar and the Casten Dyke South was made again in 1993 (Spratt 1993, 134).

- 2.9 That part of Casten Dyke North lying to the north-east of the A170 was subject to detailed measured earthwork survey by ASWYAS in 1996 (Boucher 1996) (see figure 9). The survey recorded numerous holloways to the north and south of the Flassen Gill, with much of the line of the dyke having been destroyed. One early feature (B1) appeared to lie close to the projected line of the dyke, with another (B2) on a similar alignment to the south, both cut by later holloways. The main surviving earthwork on the line of the dyke (C1 - the part scheduled as a continuation of the dyke) broadly reflected that shown on the 1912 Ordnance Survey 25" map. The earthwork measured broadly 100m long, and was in two parts. The western part measured c.20m in length, and was orientated east-west; the depth from the top of the northern bank to the base of the gully was between 1m to 2m, and it was clearly defined due to being cut into the natural north-facing slope here. There was then a break in the bank of 5m, but this break did not coincide with any holloway and there was no other feature in the vicinity that could reasonably explain its appearance. Beyond the break, the bank and ditch continued on an east-north-east/west-south-west alignment; for 35m east of the break, the bank was more substantial than its continuation as far as the Flassen Gill (Boucher 1996).
- 2.10 As a result of the ASWYAS fieldwork, it was suggested that the large numbers of holloways to the north and south of the Flassen Gill were running towards a shallow crossing point at the west end of the gill, the first one available for a number of miles. Furthermore, it was noted that, in contrast to that part of the Casten Dyke North to the south-west of the A170, the earthworks (B1, B2 and C1) were cut into the scarp of the natural slope, and that they were not continuous or straight. These were suggested to be later in date than the main body of Casten Dyke North, cut into the scarp for quicker construction, and to form defensive works overlooking an important crossing point; a possible link was made with the 1322 Battle of Byland, with the earthworks forming a defence by the English against a Scottish advance from the north (Boucher 1996). This appears to be the first time that a possible link was made between earthworks in the area and the battle.
- 2.11 The very western end of Casten Dyke South, close to Boar's Gill, was surveyed as part of a wider survey of Roulston Scar fort by English Heritage in July-August 2001 (Oswald & Pearson 2001). The survey concluded that Casten Dyke South was a distinct entity that was physically separate from the promontory fort and that there were no grounds for supposing that the dyke was contemporary with the fort, or nearly so. It was further suggested that there were no signs that the Casten Dyke South had ever been comprehensively remodelled, and that a prehistoric date could be discounted; a medieval origin was thought more plausible, but it was emphasised that any proposed date must remain speculative (Oswald & Pearson 2001, 24-25 & 34). These conclusions had wider implications for the understanding of the whole of the "Cleave Dyke System" i.e. the Cleave Dyke itself and the series of linear boundary earthworks that run perpendicular to it. Although the Cleave Dyke is indisputably of prehistoric origin, and most probably the Hesketh Dyke too, not all of the boundaries running perpendicular to the Cleave

Dyke should be assumed to be contemporary. For example, the fact that Casten Dyke North incorporates a round barrow into its bank had previously been implicitly accepted as an indication that the boundary earthwork was likely to be of prehistoric origin, but actually only proved that it was not built before the early Bronze Age; again, it was suggested that it might be medieval rather than prehistoric in date, and that until more accurate dating evidence became available for the various boundaries, they should be regarded as the eventual outcome of a process of land management which had evolved over the course of many centuries (Oswald & Pearson 2001, 34-35).

- 2.12 In the autumn of 2013, a small-scale research excavation was undertaken on the defences of the Roulston Scar hillfort, seeking environmental and other dating evidence to help identify a putative relationship with the small nearby promontory fort at Boltby Scar, 4km to the north. The excavation at Roulston Scar established that the latest phase of activity was a linear trench cut into and along the back of the Iron Age rampart, with associated postholes, probably representing some form of palisade. Unfortunately, no dating evidence was secured, but the position of the trench (high up at the back of the rampart), the sharpness of remains, and the increased organic nature of the fills, suggested a short period of use and an historic rather than prehistoric date (Lee 2014).

### **The Battle of Byland**

- 2.13 As has been already noted above, there is little published research relating to the Battle of Byland, which took place on 14th October 1322 as part of a long-running Anglo-Scottish conflict. After an unsuccessful expedition into southern Scotland at the head of a very large army in August 1322, Edward II was back at Durham by the 26th September. Robert the Bruce then moved his army to Carlisle on the 30th September, although Edward remained unaware of this action until October 2nd, by which time he had reached Barnard Castle. Bruce moved his army down the Eden Valley, and had arrived at Northallerton by the 13th October, only some 13 miles from Edward who was now at Rievaulx Abbey. Edward II appears only to have been travelling with a small escort and household attendants, and had to send out orders to gather men. The Earl of Pembroke, Aymer de Valance, who must have been close by, was instructed to gather his forces and to move towards Byland, where he would find the Earl of Richmond and Henry de Beaumont. It has been estimated that the English force at the Battle of Byland may have numbered as little as between 500 to 1,000, with the Scottish army perhaps numbering some 4,000 (Bell 2005, 113-116; Frusher 2013).
- 2.14 The English force sent to oppose the Scottish army took up position somewhere near the village of Old Byland, on the edge of the Hambleton Hills overlooking the Vale of York. Edward stayed behind at Rievaulx, possibly because the English had realised that they had insufficient numbers to win any battle, and so they were essentially creating time for Edward to escape. The Scottish appear to have adapted a plan where a full-frontal assault was launched on the English position up the steep natural scarp, whilst other troops found a way up the scarp and around the English flanks. This outflanking manoeuvre seems to have worked, and with the Scottish victorious, their cavalry was able to speed towards Rievaulx Abbey. Edward II had already left, but evidently in some hurry, as important elements of his baggage train, such as his privy seal, remained (Bell 2005, 114-117; Frusher 2013).
- 2.15 Exactly where the Battle of Byland took place is open to debate. Bell (2005, plates 1 to 3) appears to place the English position close to the western end of the

Casten Dyke North, suggesting that the most likely place for the Scottish to have outflanked the English was somewhere along Roulston Scar. A more recent account has the English force arranged along the top of Sutton Bank, broadly straddling the route of the existing A170 road (Frusher 2013). Lee (2014) places the site of the battle broadly in the same area, speculating that some of the large linear earthworks in the area may have been used during the battle, and might in fact denote the respective positions of the English and Scottish forces.

- 2.16 Drawing on the 1996 survey work, the north-easternmost 100m of Casten Dyke North running down into Flassen Gill are suggested to have been added to the main earthwork at a later date, with its defences (if this is what they were) facing north. The ditch on the south side of that section of Casten Dyke North lying to the south-west of the A170 may also have been re-cut, the suggestion being that this would perhaps represent the Scottish position prior to the battle. The English position may have been located c.1km to the south, occupying the plateau of land bounded by Boar's Gill and Hell Hole, and also the former Roulston Scar fort. Casten Dyke South, running across the northern edge of the plateau with its ditch to the north side, might also have been created specifically for the battle, with the northern rampart of Roulston Scar being reinforced, effectively protecting two areas forming 28 and 24 hectares in extent respectively. The route part of the Scottish army took to outflank the English may have been to the east of these two positions, close to Hell Hole, and its name still known as 'Scotch Corner'. At the time of the battle, it is probable that much of the land was heather moorland, used as seasonal rough pasture. The local names of 'Low Town Brow' and 'High Town Brow' suggest that the grazing rights may have been linked informally with the hamlets of Low Kilburn and High Kilburn, which lie at the foot of the escarpment (Oswald & Pearson 2001, 3-4).

### 3 DESCRIPTION OF THE EARTHWORKS

#### Introduction

- 3.1 The features identified within the three survey areas are described below in a logical sequence, from west to east for each dyke. For the purpose of description, discrete features or sections of interest have been assigned a unique identifier site number e.g. (2). Reference should also be made to the survey plans and illustrative plates, and the photographic record which appears as Appendix 1; photographs are referenced in the following text in italics and square brackets, the numbers before the stroke representing the film number and the number after indicating the frame, e.g. [5/32]. Finally, in the following text, 'modern' is taken to mean dating to after c.1945.
- 3.2 When describing the earthworks in the following text, it should be noted the ditch width measurement is that between either side of the top, while the bank width measurement comprises the flattened top of the bank and the scarp away from the ditch side.

#### **Casten Dyke North (Kilburn Moor Plantation)** (see figures 7 and 8)

- 3.3 The surveyed above-ground element of the linear earthwork known as Casten Dyke North runs between NGR SE 451675 482500 (the westernmost visible point where it passes over the scarp of Sutton Bank) and NGR SE452115 482933 (the point where the earthwork has been destroyed by the line of the A170 Sutton Bank to Helmsley Road). The dyke is set on a general south-west/north-east alignment, apart from a c.125m long section closest to the road, where it begins to curve around towards the east; the surveyed element has a total length of 571m. Excepting the atypical south-western end, the earthwork slopes gently upwards from north-east to south-west, rising by c.8.30m (from 284.25m AOD to 292.55m AOD) over a distance of 551m, a gradient of 0.15% or 1 in 67. At its south-western end, it falls much more steeply in the opposite direction, as it passes over the edge of Sutton Bank.
- 3.4 The earthwork is described below, starting at the south-western end at Sutton Bank. Here, it is visible as a linear depression, 17.0m long, and up to 6.5m wide and up to 1.2m deep (1). The southern side is more sharply defined than the northern one, but both eventually merge with the natural scarp of Sutton Bank itself. The base is generally level across the width, but slopes steeply downwards from north-east to the south-west; a poorly defined animal track or footpath crosses the width of the depression where there is a break in the slope of the base. The south side also has a spread bank running parallel to it, with a line of small hawthorn trees along the top [2/136, 2/137].
- 3.5 At its east end, this southern bank angles around to the south, to form part of one of a series of World War Two weapons pits and other associated features here; indeed, the southernmost c.50m of the dyke has been heavily disturbed by World War Two activity. To the immediate south-west of the surfaced public footpath running along the top of Sutton Bank, there are three such features (2). The most prominent is a linear depression, aligned north-east/south-west, 8.5m long, 2.0m wide and up to 1.0m deep [2/135]. The long sides are very steeply scarped, and it is open to the north-west end; upcast from the excavation of the depression has been used to create spread banks parallel to the long sides. A shallow east-facing scarp links the main feature to a smaller, shallower, sub-rectangular depression on a similar alignment to the north-west. To the west of this, a prominent mound has

a shallow sub-oval depression within its flattened surface, with an equally shallow bank parallel to its western side.

- 3.6 It is not clear when the main public footpath running along the edge of Sutton Bank was established. It is not shown on the Ordnance Survey maps of 1856 or 1912, but it is clearly visible on an aerial photograph taken in May 1940 (HEA RAF/10/UK/1524), apart from where it crosses the line of the dyke (see figure 6A); indeed, the photograph might suggest that the main earthwork was then still extant, and that it has been removed subsequently. However, that part of the main earthwork between the edge of Sutton Bank and a firing/observation position some 58m to the north-east (see below) appears lighter on the photograph than most of the rest of its length. This could, of course, be due to differential vegetation, but it may also indicate that there had been widespread disturbance to the dyke beyond the very obvious features on the aerial photograph.
- 3.7 A second public footpath/track leaves the main Sutton Bank path to run parallel to the east side of the dyke for the whole of its surveyed length. On the north-east side of the main path, the dyke resumes as a linear earthwork, formed by a substantial bank, 3.0m wide and up to 1.6m high, with a steep-sided ditch, 6.4m wide and up to 1.2m high, on its south-east side. The bank has a relatively flat top, with the ditch generally having a level base across the width. There is a counterscarp bank to the south-east of the ditch, 2.4m wide and up to 0.5m in height, with a line of small hawthorn trees growing along the top [2/129, 2/134]. Further along the line of the dyke to the north-east (see below), this counterscarp bank carries or is partly formed by a ruined drystone wall, but there are no clear traces of such here. There is however further evidence for World War Two activity (3). The south side of the ditch has a spread bank running parallel to its base, which terminates at its north-eastern end in a narrow sub-rectangular depression, 3.5m long and aligned parallel to the base of the ditch [2/132]. It resembles a weapons pit, and the southern side of the ditch adjacent to it has been re-cut to a very steep profile. Almost directly opposite, there is a similar but less well-defined feature set into the north side of the bank. There is further, later, disturbance to both the main and counterscarp banks to the north-east, resulting in a more spread profile than exists to the south-west (see Profile E-E'); indeed, the earthwork comprises two banks flanking a flattened level area, rather than a ditch. The main bank has several 0.15m square wooden posts set into its flattened top (one with an old metal fire warning sign [2/133]), and there are also smaller posts to the counterscarp bank; the posts to the main bank survive intermittently along the whole of the surveyed length of the dyke [2/120] (see plate 3).
- 3.8 There is then a complete break in the alignment of the dyke (4), apparently the result of being crossed by two trackways which converge on the break from the north-west. One trackway is formed by a linear flattened strip, c.2.0m wide, with a linear mound of spoil to its south side, broadening towards the east end; the mound has been tipped across the line of the dyke's main bank. The other trackway resembles a holloway, formed by a linear depression up to 6.0m wide and 1.0m deep; this route is shown on the 1856 Ordnance Survey map, when it appeared to form the main route running roughly parallel to Sutton Bank through this area, although by 1912, it stopped at the line of the dyke. Both trackways are clearly visible on the May 1940 aerial photograph, and both have a relatively fresh appearance (HEA RAF/10/UK/1524) (see figure 6B). The break has a total width of between 4.50m to 6.0m.
- 3.9 To the north-east of the break (4), the earthwork resumes, although it has been virtually completely remodelled by Second World War activity. A narrow trench, up

to 1.4m deep, has been cut through the main bank from the north-west side of the ditch [2/130]. It turns through two approximate right-angles [2/126, 2/127] to enter a firing or observation position, protected by a crescentic bank on its south-west side standing up to 1.2m high [2/128]; it is probably visible on the May 1940 aerial photograph (HEA RAF/10/UK/1524). A second narrow trench has been cut off the south-east side of the ditch and through the counterscarp bank, possibly incorporating a weapons pit along its length. This trench is up to 1.0m deep, but has been largely infilled where it is crossed by the public footpath. However, it resumes to the other side, and enters another sub-rectangular firing or observation position, 3.0m long, 2.0m wide and up to 1.1m deep [2/131] (see plate 1). Its position can be seen as a ring of light-coloured spoil on the May 1940 aerial photograph (HEA RAF/10/UK/1524), and at that date it may also have had another trench running off to the south-west end towards other wartime features. While beyond these World War Two features, the dyke might appear less disturbed, it is in fact highly likely that there has been further wartime remodelling. For a distance of at least 22m, both sides of the ditch appear to have been re-cut to a very steep profile, the ditch being 4.0m wide and up to 1.8m deep (5) [2/121-2/123, 2/125] (see plate 2). Within the same area, the flattened top of the main bank increases to over 3.0m in width, and may itself be surmounted by a narrower longitudinal bank; although the surface vegetation is particularly dense here, this second bank could be upcast from the re-cutting of the ditch. The flattened top of the counterscarp bank also widens to 2.0m at the point where the re-cutting of the ditch's south side may end, angling slightly towards the north-east (see Profile F-F').

- 3.10 Some 40m to the north-east of the two above observation or firing positions, there is a complete break in the main bank, measuring 2.0m wide (6). A footpath approaches the gap from the north-west, and there is also a marshy wet area adjacent. The ditch and counterscarp bank are also slightly flattened where they are crossed by the path, although they are still present. To the north-east again, the south side of the ditch appears to have been re-cut to a much steeper profile for a distance of at least 15.0m and perhaps as much as 30.0m (7). There may also be a shallow sub-square depression, broadly 2.0m across, cut into the base of the ditch, again perhaps representing World War Two activity [2/116, 2/117, 2/119]. In the same area, there is a shallow south-east facing scarp set between the counterscarp bank and the parallel public footpath, although it may be no more than the result of footpath erosion. At this point, the main bank is up to 4.0m wide and 1.0m high [2/113-2/115] (see plate 3), whereas the counterscarp bank is 2.0m wide and only 0.5m high.
- 3.11 Beyond the point where the maximum extent of the disturbance may finish, the alignment of the dyke swings markedly to the east for a distance of between 12.0m-14.0m; there are also marshy wet areas flanking the earthwork at this point. This change in alignment has previously been assigned to the fact that the dyke incorporates an earlier barrow into its line here (Spratt 1982, 42); as noted above, the change of alignment is clearly marked on the 1856 Ordnance Survey map, although it is less prominent on later editions (see figure 3). The barrow (if this is what it is) is placed within, and rises above, the counterscarp bank (8). The upper part of the barrow is represented by an oval mound, 9.0m long and 4.0m wide, with very steeply scarped sides standing up to 1.0m high and with a flattened top [2/111, 2/112] (see plate 4). It is assumed that this oval mound represents the modified upper part of the barrow, and it overlies the remnants of the main body incorporated into the counterscarp bank. This has a more sub-rectangular than sub-oval plan, and measures as much as 15.0m long by 7.0m wide; the scarp forming the southern side, facing the public footpath, is up to 3.0m wide and 1.2m



high [2/107, 2/108]. Taken together, the earthwork evidence suggests that before the barrow was incorporated into the counterscarp bank, its long axis was aligned just off east-west, with a sub-oval plan measuring 12.0m-13.0m in length and perhaps 8.0m in width, and it may have stood 2.0m or more in height. It is noticeable that the bottom of the dyke's ditch rises sharply parallel to the barrow, indeed with only the northern side remaining visible. This is presumably because the ditch runs over part of the barrow's former extent; if this was the case, then the barrow may have had a more sub-circular plan form, measuring c.11.0m in diameter. Adjacent to the barrow, the dyke's main flat-topped bank continues broadly as before, measuring 3.5m wide and up to 1.4m high [2/109, 2/110].

- 3.12 To the north-east of the barrow, the earthwork resumes its north-east/south-west alignment, demonstrating the form which characterises much of the rest of its length. It comprises a substantial, fairly flat-topped, bank, averaging between 3.5m-4.5m wide and standing up to 1.0m high [2/105] (see plate 5). A steep-sided ditch runs parallel to the south-east side of the bank, measuring up to 5.5m wide and up to 1.9m deep. The south side of the ditch is generally cut to a steeper profile than the north side, and it is possible that for a length of c.30m north-east of the barrow, it has been re-cut to a very steep profile (9) [2/106]. An aerial photograph taken in March 1946 (HEA RAF/106G/UK1298 frame 4017) shows lighter-coloured material to either side of the dyke here, and indeed further to the north-east. The counterscarp bank averages 2.0m in width and between 0.5m-1.0m in height (see Profile G-G'). The ruined remains of the drystone wall surmounting the counterscarp bank do not become clearly visible for a further 32m, although the form of the earthworks suggest that it survives as a buried feature immediately north-east of the barrow.
- 3.13 As it moves north-east, the whole of the earthwork gradually becomes more spread and less well-defined. The main bank averages 3.5m in width but is mostly less than 0.8m high; at one point, although there is not a complete break, it narrows and almost completely fades out. The ditch on the south-east side has an average width of 4.0m and is between 1.3m-1.5m deep, with both sides generally of a more equal profile than those to the south-west. The counterscarp bank becomes narrower, generally less than 1.5m across, and stands up to 0.8m high, although as the main bank spreads it actually becomes the more prominent of the pair; the wall footings running along the top average 0.6m wide (see Profile H-H'). There are occasional larger hawthorn trees growing from either side of the ditch.
- 3.14 Approximately half way along the length of the surveyed section, Casten Dyke North crosses the line of the Cleave Dyke. In order to illustrate the relationship between the two, a short section of the Cleave Dyke was surveyed either side of Casten Dyke North; it seems clear that Casten Dyke North overlies the Cleave Dyke. On the south-east side, the Cleave Dyke earthwork comprises a ditch, more steeply scarped to the east compared to the west side, up to 0.75m deep, and flanked by spread banks (10); all are aligned north-west/south-east and together they have a total width of 10.0m (see Profile I-I') [2/100, 2/102] (see plate 6). All are overlain at their north-western end by a later bank, running parallel to the public footpath/track, which is set c.6.0m away from the Casten Dyke North. However, at the time of the EDAS survey, there was a slight water-filled depression crossing the public footpath on the same line as the centre of the Cleave Dyke's ditch, which came to within 2.0m of Casten Dyke North. It was also noticeable that the latter again narrows and fades out almost completely where it crosses the Cleave Dyke.

- 3.15 On the north-west side, the Cleave Dyke can be traced to within 5.0m of the Casten Dyke North (**11**). It had been previously noted that where the Casten Dyke North and the Cleave Dyke intersect, “a stretch of the Cleave Dyke has been re-cut to form a ditch of similar form and size to Casten Dyke North’ (Oswald & Pearson 2001, 34-35), although this was not firmly attributed to any historic period. The section to the north-west was previously surveyed in November 2011 as part of the investigation of 20th century military earthworks in Kilburn Moor Plantation, which concluded that it was thought most likely to be part of various training earthworks dug in the early part of 1940 (Dennison & Richardson 2014, Site 7) [2/104]. This site was described as follows:  
*“Site 7 was located c.200m south of the A170, on the line of the Cleave Dike, close to where it is crossed by the Casten Dike. The earthworks in fact partly utilise the Cleave Dike, and have disturbed its alignment. The earthworks represent a single trench with a prominent ‘elbowed’ or V-shaped plan, linking three pits. The whole complex is set on a east-west alignment, and it covers an area measuring 16.0m east-west by 7.0m north-south.*  
*Commencing at the north-west end, there is a gap in the bank on the west side of the Cleave Dike, to the north of where the 20th century earthworks commence. This may have been deliberately created in association with the military earthworks. The dike’s bank, which for much of its length is a rather spread feature, is also much more prominent and wider opposite this end of the earthworks and must have been augmented during their creation.*  
*A north-west/south-east aligned pit (P1) at the north-west end of the angled trench measures 1.8m long by 1.0m wide, and has a maximum depth of 0.8m [1/710] (see plate 9). A north-south aligned straight section of trench then leaves the pit and runs south for 5.0m; it has an average width of 0.8m and an average depth of 0.5m. This section of the trench is flanked by spread flat-topped banks on both the east and west sides. At its south end, the trench returns to the east through a very sharp right-angle, to run for a further 5.0m into a second north-west/south-east aligned pit (P2), which measures 1.5m long by 0.8m wide. The trench then continues beyond this pit and runs east for a further 6.0m to enter the third northwest/south-east aligned pit; the earthworks suggest that this section of the trench may have been re-cut at some point. The third pit (P3) is placed in what would originally have been the ditch of the Cleave Dike, and it measures 1.9m long by 1.0m wide and is 0.8m deep [1/711] (see plate 10). To the immediate north of the pit, a c.4.0m section of the dike’s ditch has been largely infilled; either side of this infill, the ditch is a prominent earthwork 3.4m wide and over 1.0m deep. This infilling is clearly deliberate and must be associated with the 20th century earthworks, as it required far more material than would be created by the upcast from the trench and pit alone.” (Dennison & Richardson 2014, 8).*
- 3.16 The south end of Site 7 was resurveyed as part of the current project, and the south-eastern pit (P3) is depicted on figure 7. The wartime remodelling activity is also visible on the May 1940 aerial photograph (HEA RAF/10/UK/1524) (see figure 6A). The same photograph shows the re-cutting within the Cleave Dyke to perhaps be continuous with a longer linear crenellated or indented trench stretching for at least c.20m to the north-east, along the north side of the Casten Dyke North, but this is no longer clearly visible on the ground, having been taken into a perimeter drive or ride (Dennison & Richardson 2014, 12). To the immediate north of the Second World War earthworks, the Cleave Dyke is a much slighter feature compared to that further south [2/103].
- 3.17 To the north-east of the Cleave Dyke, Casten Dyke North slowly begins to become more prominent again. There is a narrow complete break in the main bank some 32m to the north-east of the Cleave Dyke (**12**), but just beyond this point, the main

bank measures 3.5m wide and stands up to 1.0m high. The ditch averages 4.0m wide and up to 1.4m deep, although it is generally 1.0m or less. The counterscarp bank widens to up to 2.0m in width, and its top is again set higher than the flattened top of the main bank (see Profile J-J') [2/094, 2/098] (see plate 7). The trend of the earthwork deepening and becoming more substantial continues as it moves north-eastwards; on a March 1946 aerial photograph (HEA RAF/106G/UK 1298 frame 4017), the whole of the dyke north-east of the complete break (12) noted above appears to have been re-cut, with lighter-coloured material spread to both sides.

- 3.18 Approximately two-thirds of the way along the surveyed element there is another near complete break to the main bank, up to 8.0m wide (13). Some 14.0m to the north-east again, there is a much narrower and more sharply defined break (14) possibly representing World War Two activity. Close to the larger break (13), the ditch has reached a width of 5.5m and a depth of 1.0m. The drystone wall running along the top of the counterscarp bank is particularly well preserved here, being 0.9m wide and standing up to 0.4m high [2/099] (see plate 9); indeed, the counterscarp bank comprises little other than the ruined wall. For at least 28.0m to the north-east of the narrower break (14), it is possible that both scarps of the ditch have been re-cut to a steeper profile (15). Here, the main bank is up to 4.0m wide, with a relatively flat top, and stands up to 0.8m in height, whilst the ditch is as much as 5.5m wide and 1.6m deep. The counterscarp bank is again largely formed by the ruined drystone wall (see Profile K-K') [2/086, 2/087].
- 3.19 The main bank is broken again for a footpath (16) [2/090, 2/091], and it is noticeable that for c.30m either side of this break (i.e. to the south-west, almost as far as the possible World War Two break (14) described above), the base of the ditch contains several parts where it has either been raised slightly as if to create sections or partitions, or alternatively the base has been deepened either side leaving the slightly raised sections [2/088, 2/089] (15 and 17) (see plate 10). This c.60m length area appears lighter in colour on the May 1940 aerial photograph, whilst some distance to the south there appear to be at least five substantial wartime positions, freshly dug and well-defined on the photograph (HEA RAF/10/UK/1524) (see figure 6A). Within approximately the same length, a spread south-east facing scarp, up to 2.0m wide but less than 0.5m high, is visible running parallel to the main bank, but set 5.0m to the north. It is probable that this is a modern feature, perhaps a drive or ride relating to plantation management, but it may be significant that the width of the gap between the northern part of the Cleave Dyke and the Casten Dyke North is of a similar size (c.5.0m). In 2014, a small Second World War earthwork was recorded to the immediate north-west of the Casten Dyke North's bank in this area (Dennison & Richardson 2014, Site 8) but it was not resurveyed by the current survey.
- 3.20 Towards the north-east end of the survey area, the main bank of Casten Dyke North is broken again, this time by a 3.0m-4.0m wide vehicle track [2/085] (18) (see plate 11); the ditch has also been largely infilled at the same point, and the counterscarp bank flattened and the boundary wall removed. North-east of this, there is a 32.0m long section of the earthwork which is well preserved. The main bank is up to 4.5m wide but generally less than 1.0m high, and has a flattened top. The ditch averages 5.5m in width and is up to 1.4m deep, with the counterscarp bank being up to 2.0m wide, again surmounted by the ruined drystone wall (see Profile L-L') [2/083, 2/084]. At the end of this section, the line of the dyke has been completely destroyed for a distance of over 28.0m [2/082], although the drystone wall on the counterscarp bank remains visible in plan only. The dyke was presumably removed to create access to a quarry (19) set immediately to the

north-west of the alignment, now formed by a steep-sided, broadly pentagonal depression, measuring up to 18.0m across and 1.8m deep; it is not depicted on any of the Ordnance Survey maps consulted for the project. However, the quarry may not have been the earliest activity to disturb the line of the dyke. To the east, within an area of dense ground cover, there appear to be two or three parallel banks, set on a broad east-west alignment, averaging 3.0m wide and standing up to 0.7m high (20). They may define two parallel trackways, running west, that once linked with the former ditch of the dyke [2/081].

- 3.21 To the east of these possible trackways, the alignment of the main earthwork again becomes visible (21) for c.30m before it is lost beneath the scarp supporting the A170 Sutton Bank to Helmsley Road, although it is in poor condition. The main bank, where it is least altered, is 4.0m wide and stands up to 0.5m high, with a flattened top. The corresponding ditch is 4.0m wide, with the northern side being up to 1.1m deep [2/079] (see plate 12). The southern side is far less prominent, but can be traced slightly further around to the east, where it merges with the overgrown remains of a curving length of drystone fieldwall (22) on the same line.

### **The Casten Dyke North (Flassen Gill)** (see figures 9 and 10)

- 3.22 As noted in Chapter 1 above, two new profiles were made across the north-eastern end of Casten Dyke North in Scawton Moor Plantation, towards its eastern visible end close to Flassen Gill (at NGR SE 52536 83149 approximate).
- 3.23 Within the western profile (Profile M-M'), the earthwork has been cut into natural slope, sloping steeply downwards from south to north. As was seen to the west of the A170 Sutton Bank to Helmsley road, the ditch is to the south of the bank, but given the natural slope that the earthwork is cut into, the bank here is more likely to be a counterscarp bank, with the natural slope above the ditch forming the main 'bank'. It is difficult to define precisely where the south scarp of the ditch is cut into the natural slope, but it may be as much as 4.5m wide and 1.0m deep; it appears to have a flattened base c.2.0m wide. The counterscarp bank is of a similar width, with a flattened top, and stands up to 1.4m high to the northern scarp. As it moves east, the earthwork becomes less prominent, and this is reflected by the eastern profile (Profile N-N'). Here, the ditch may again be c.4.5m wide, with a south scarp (cut into the natural slope) up to 1.0m in height, but there is a much lower north scarp, and a flattened base 2.5m wide. The counterscarp bank is also much reduced, measuring 1.5m wide and 0.5m high.

### **Casten Dyke South** (see figure 11)

- 3.24 The surviving above-ground element of the linear earthwork known as Casten Dyke South runs between NGR SE 451800 481638 (the westernmost visible point where it plunges into Boar's Gill) and NGR SE 452077 481630 (the easternmost visible point close to High Town Bank Road). The dyke is broadly set on a gentle north-west/south-east alignment, although there is some local, and possibly significant, variation within this; it has a total length of 263m. The earthwork slopes gently downwards from south-east to north-west, falling by c.1.66m over a distance of 245m, a gradient of 0.68% or 1 in 147. At its west end (which is set at an elevation of c.275m AOD), it falls much more steeply; this is partly a result of later disturbance although, given the natural topography, this end of the earthwork must always have sloped steeply down into Boar's Gill.
- 3.25 The earthwork description starts at the west end, on the east side of Boar's Gill, a narrow valley also apparently known as Posgill in the mid 19th century. The valley

cuts north into the natural escarpment, becoming shallower as it bends towards the west; a minor stream, springing near the head of the valley, has cut a deep steep-sided ravine into its floor (Oswald & Pearson 2001, 3). In the previous English Heritage survey, it was noted that a short section of Casten Dyke South was visible as a linear depression running down into, and eventually merging with, the east scarp of the steep-sided ravine of Boar's Gill (Oswald & Pearson 2001, 15 & 25). However, when the EDAS 2016 survey was undertaken, this area was very overgrown with dead bracken, heather and bilberry. A very poorly defined linear depression was still visible, but for the purposes of the 2016 survey, the form recorded previously by English Heritage has been used.

- 3.26 As recorded in 2001, the very west end of the dyke comprises a ditch with a spread bank running parallel to the south side and a slight counterscarp bank to the north side. The main bank to the south side was stated to be overlain by the remnants of a collapsed drystone wall. This collapsed wall remains visible, standing up to 1.0m in height, although it is now difficult to establish where the collapse ends and the earlier bank begins. The wall continues on the same alignment to the west of Boar's Gill, corresponding to a field boundary shown on Ordnance Survey maps from 1856 onwards (see figure 5A). However, there is no evidence that Casten Dyke South ever did so, or that it had any physical connection with an Iron Age dyke running east from the Roulston Scar fort; indeed, the former is set c.30m to the south of the Iron Age dyke (Oswald & Pearson 2001, 15 & 25).
- 3.27 To the south of the aforementioned drystone wall, there is a steep-sided linear depression (1), c.14.0m long, 4.0m wide and up to 1.8m deep, plunging into the ravine which forms Boar's Gill [2/163, 2/164]. It is not on the same alignment as the dyke, but is offset some 8m to the south, and its lower end merges into the scarp of the Gill itself. In 2001, this was interpreted as being associated with an adjacent post-medieval quarry (Oswald & Pearson 2001, 15), although it seems rather steep to have functioned as a trackway or holloway. At its east end, the collapsed drystone wall returns to the north to run along the top of the east side of Boar's Gill [2/161], following a line shown as a field boundary on maps from 1856 onwards. There is a small curving promontory, standing up to 1.0m high, to the immediate east of the wall [2/159], and then a west-facing scarp which defines one side of a well-graded trackway (2), descending relatively steeply from north to south. There appears to be a later sub-rectangular depression cut into the scarp, measuring 6.0m long by 2.5m wide, possibly an isolated example of the World War Two earthworks recorded elsewhere along the dyke (see below), although it is not wholly convincing as such. The trackway [2/158] has an average width of between 4.0m to 5.0m, and appears to have been created in the second half of the 19th century to serve an adjacent quarry (3).
- 3.28 The quarry (3) was apparently begun and abandoned between 1853 and 1891 (Oswald & Pearson 2001, 25), and it is depicted as an 'Old Quarry' on the 1893 edition Ordnance Survey map (see figure 5B). It is crescentic in plan, and formed by a near vertical west-facing scarp standing up to 3.0m in height [2/156, 2/157]. The quarrying activity, and the adjacent trackway, have totally destroyed the route of the Casten Dyke South here, leaving the western end running down into Boar's Gill isolated from the main surviving body of the earthwork.
- 3.29 The dyke resumes its alignment above the top of the quarry scarp as a linear earthwork, formed by a substantial bank, 2.0m wide and up to 0.5m high, with a steep-sided ditch, 4.0m wide and up to 1.5m deep on its north side; there is no clear evidence of a counterscarp bank along the northern lip of the ditch. The bank has a fairly flat top, whilst the inside of the ditch is more steeply scarped on

its south side compared to the north, with a relatively level base; a sharp linear depression leading off the base over the quarry scarp has been created either through natural water erosion or people climbing up and down the scarp [2/155]. The dyke continues this form for c.10m before narrowing to the north of a sub-oval mound apparently overlying the bank. The earthwork then changes markedly, partly as a result of major post-construction disturbance. The ditch becomes more spread and less regular in plan, whilst the bank curves gently around to the south-east, towards a complete break [2/154] (4) (see plate 13). The north side of the ditch is virtually lost at the same position, with a sharply defined 9.0m long narrow linear depression with a short projection to the north at its east end just to the north; this perhaps also relates to World War Two activity. The break has a total width of between 4.0m-5.0m, and appears to have been made to allow access across the earthwork from north-west to south-east. This break is clearly visible on a vertical aerial photograph taken in March 1946 (HEA 106G/UK/1298, f4016) (see figure 6B).

- 3.30 To the east of the break (4), the earthwork resumes [2/153], demonstrating the form which characterises the majority of its surviving length. It is formed by a substantial, fairly flat-topped bank, averaging 3.0m wide and standing up to 0.5m high, with a steep-sided ditch, averaging between 3.0m-4.0m wide and up to 1.4m deep (see Profile A-A'). The ditch has a very shallow concave or flattened base, and in some places is quite wet. In 2001, it was noted that there was 'a counterscarp bank of minimal size along the northern lip of the ditch' (Oswald & Pearson 2001, 25). There are still parts of the earthwork where such a feature may just be visible, but because conifers have been planted to within 1.0m of the ditch's northern lip, it is very difficult to distinguish between plantation disturbance and an earlier earthwork. For much of the surviving length of the earthwork, the south side of the ditch is slightly steeper than the north side. However, for a 9.0m long section to the immediate east of the break, the south side appears to have been re-cut to a much steeper profile (5), and the base of the ditch may also have been slightly deepened [2/151, 2/152] (see plate 8). The March 1946 aerial photograph (HEA 106G/UK/1298, f4016) in fact suggests that between this point and High Town Bank Road to the east, approximately two-thirds of the dyke may have been re-cut during the war, as light-coloured material is visible to both sides, particularly to the north (see figure 6B). Just beyond, there is minor disturbance caused by an unofficial footpath running north-south across the earthwork.
- 3.31 To the east of the footpath, there is a second section of the dyke, measuring 18.0m long (6), where the south side of the ditch appears to have been re-cut to a steeper profile, although at 1.1m deep, it is slightly shallower than that seen to the west [2/146-2/150] (see plate 14). Moving east, the flat-topped bank is 'pinched' in plan where it is crossed by another north-south footpath. To the east of this footpath, it is possible that the northern edge of the bank has been raised longitudinally by a marginal amount, although the depth of vegetation growth across the earthwork makes it difficult to be certain. Shortly after the earthwork is crossed by a third footpath (7), the alignment of the dyke angles slightly to the south-east, and continues on this line for a further 46.0m. For a distance of 13.0m to the west of the third footpath (8), the south side of the ditch appears to have been re-cut to a steeper profile and the base deepened slightly, whereas to the east both sides may have been re-cut for a distance of 16.0m (9). Within this latter section, the fairly flat-topped bank has an average width of 3.0m and stands up to 1.0m in height, whilst the ditch is of the same width but up to 1.4m deep (see Profile B-B') [1/056-1/058] (see plate 15).

- 3.32 There is then a second complete break in the dyke, between 3.0m-4.0m wide (**10**), where it is crossed by a north-south trackway [1/046, 1/047; 2/145]; this break may have originated in the Second World War, as there is an area of disturbance to the south of here shown on the 1946 aerial photograph (HEA RAF/106G/UK/1298, frame 4016) (see figure 6B). To the east of this break, the earthwork gradually begins to become more flattened and less sharply defined (see Profile C-C') [1/039, 1/041-1/045; 2/142, 2/144], although it remains a locally prominent landscape feature. Both the bank and ditch increase in width, giving the earthwork a total width of just over 7.0m. At a point 24.0m east-south-east of the break, the dyke angles back again slightly to a more east-west alignment [2/139, 2/141] (see plate 16). Beyond this point, the earthwork as a whole continues to gain width (measuring up to a maximum of 8.0m across), with the flat-topped bank standing up to 1.1m high. The northern ditch has then been largely backfilled to create a track, resulting in an almost complete break (**11**), again possibly Second World War activity. To the west of the break, a 7.0m long section (**12**) of the ditch's south side appears to have been re-cut to a steeper profile. It is also possible that one or both sides have been re-cut to the east of the break, as the ditch angles slightly to the north-east, with the bank increasing to nearly 4.0m wide. After this, the ditch angles back to the south-east, and has definitely been re-cut to both sides, with a World War Two weapons pit set into the base [1/036] (**13**). This pit is sub-rectangular in plan, running parallel to the sides of the ditch, and measures c.3.5m long by 0.8m wide [1/037, 1/038].
- 3.33 The north side of the ditch appears to terminate shortly beyond the weapons pit, although it is just still evident as a very faint earthwork. By this point, although the earthwork maintains a width of c.7.0m, both the bank and ditch are less than 0.9m in height and depth (see Profile D-D'). A third complete break (**14**), 5.0m wide, has been caused by a vehicle trackway being driven south-east/north-west through the dyke.
- 3.34 To the east of this trackway, the bank survives for a further 20.0m [1/035], before being very obviously truncated, some 9.0m short of High Town Bank Road [1/032, 1/033] (see plate 17). In this section, the ditch is spread and poorly defined. A well-defined linear depression (**15**), 0.75m deep, is set at a right angle to the east end of the ditch's north side, with a sub-rectangular mound running parallel to its east side [1/034] (see plate 18). This may well represent further World War Two activity, perhaps forming a weapons pit from where fire could be directed to High Town Bank Road.
- 3.35 In 1856, the Ordnance Survey 1st edition 6" map showed the Casten Dyke South extending east beyond High Town Bank Road as far as the head of another steep-sided valley called Hell Hole. By 1891, most of this had been levelled, presumably for arable agriculture, leaving a 25m long fragment immediately east of the road. This fragment can still be clearly identified on the 1946 aerial photograph (HEA RAF/106G/UK/1298, frame 4016) and it survived until at least 1950, but was probably levelled and ploughed over during the 1960s (Oswald & Pearson 2001, 24-25). An inspection of the head of Hell Hole was undertaken by English Heritage in 2001 to determine whether any trace of the original terminus of the dyke could still be seen. The head of the valley had itself been subject to deliberate infilling, but the slightest hint of a ditch-like earthwork merging with the head may have been visible, although this could also have been a gulley produced by natural water erosion (Oswald & Pearson 2001, 24-25). No definite trace of an earthwork was visible in the arable field to the east of High Town Bank Road at the time of the EDAS survey [2/138] (see plate 19).

## 4 INTERPRETATIVE DISCUSSION AND CONCLUSIONS

### Casten Dyke North: Summary of Extant Remains (see figures 7, 9 and 10)

- 4.1 The surveyed length of the Casten Dyke North is set on a marked south-west/north-east alignment, apart from the c.125m section closest to the A170 road, where it begins to curve around towards the east; the surveyed length has a total distance of 571m. Assuming that the ditch lies on the outside of the bank, the dyke would be facing south-east.
- 4.2 The south-west end of the dyke runs right down onto the natural scarp of Sutton Bank, as a broad ditch-like feature (1). Immediately above the scarp, the earthwork may have survived as recently as May 1940 across the line of the existing public footpath which runs parallel to the scarp, but it has subsequently been removed. For a distance of c.40m to the north-east of the public footpath, the dyke has a rather spread profile, comprising a flattened area between two banks, rather than the bank, ditch and counterscarp bank which survives elsewhere. There is definite evidence of World War Two activity (2 and 3) within this area (see below).
- 4.3 Beyond a break caused by a historic trackway (4), the dyke resumes as a bank, 3.0m wide and 1.6m high, with a steep-sided ditch, 6.4m wide and 1.2m deep, to its south-eastern side; there is a smaller counterscarp bank running parallel to the ditch. The earthwork is at its most substantial here, although there is evidence for re-cutting of the ditch (5 and 7) (see plates 2 and 3). In addition, further to the north-east, the counterscarp bank carries or is partly formed by a ruined drystone wall, but there are no clear traces of this in this section. The dyke then swings markedly to the east for a distance of between 12.0m-14.0m, at the point where it incorporates an earlier barrow (8). The earthwork evidence suggests that the barrow 's long axis was aligned just off east-west, with either a sub-oval plan measuring 12.0m-13.0m in length and perhaps 8.0m in width, or possibly a more sub-circular plan (see plate 4); originally, the barrow may have stood 2.0m or more in height.
- 4.4 To the north-east of the barrow (8), the dyke resumes its north-east/south-west alignment, demonstrating the form which characterises much of the rest of its length (see plate 5). It comprises a substantial, fairly flat-topped, bank, typically averaging between 3.5m-4.5m wide and standing up to 1.0m high. A steep-sided ditch runs parallel to the south-east side of the bank, measuring up to 5.5m wide and up to 1.9m deep. The ditch's south side is generally cut to a steeper profile than the north side. The ruined remains of the drystone wall surmounting the bank also become visible to the north-east of the barrow. As it moves north-east, the whole of the dyke gradually becomes more spread, and less well-defined. Approximately half way along the length of the surveyed section, the Casten Dyke North crosses the line of the Cleave Dyke. Even given the subsequent World War Two disturbance to the Cleave Dyke, there is no clear evidence of a junction between the two linear earthworks. The Casten Dyke North appears to cut through the Cleave Dyke, and is a far better defined earthwork (see plate 6).
- 4.5 North-east of the Cleave Dyke, the Casten Dyke North begins to become more substantial again, and there is again evidence for re-cutting of the ditch and possible Second World War activity; part of the ditch may also have been infilled or modified to facilitate this activity (15 and 17). The north-east end of the surveyed length has been badly disturbed by quarrying (19) and a possible access trackway associated with this quarrying, as well as two possible other parallel trackways that



once linked with the former ditch of the dyke (20). By the time the alignment reaches the A170 road it is a poorly defined feature.

- 4.6 To the north-east of the road, that part of the dyke running down into Flassen Gill has been cut into a natural slope, which slopes steeply downwards from south to north. As with the rest of the surveyed alignment, the ditch is to the south of the bank but, given the natural slope that the earthwork is cut into, the bank here is more likely to be a counterscarp bank, with the natural slope above the ditch forming the main 'bank'. If this is the case, then the dyke here faces north towards Flassen Gill, i.e. in the opposite direction to the longer section recorded to the south-west of the A170 road. This fact is presumably significant, but at present it cannot be explained.
- 4.7 There is, at present, very little firm dating evidence for the dyke, or indeed the Cleave Dyke system of which it forms a part. The system is traditionally said to represent boundaries of probable mid 1st millennium or later date (Spratt 1982), and Oswald and Pearson (2001, 34-35) have noted that the fact that Casten Dyke North incorporates a barrow into its bank only proves that it was not built before the early Bronze Age; they also suggest that the dyke is actually aligned on the earlier barrow. It also appear to have cut or disturbed the line of the prehistoric Cleave Dyke and is a much better-defined earthwork, which implies that the Cleave Dyke is older (Bronze Age?) and perhaps was out of use when the Casten Dyke North was constructed. The fact that the Cleave Dyke, which originated as a pit alignment, was built before the other dykes within the system has already been suggested (Oswald 2011), but limited excavations across part of its alignment have, to date, not provided any positive dating evidence (Powlesland 2011, 34-37). What is clear however, is that the Casten Dyke North, or at least the Kilburn Moor Plantation section of it, was not part of a single phase dyke 'system'.

#### **Casten Dyke South: Summary of Extant Remains** (see figure 11)

- 4.8 The surveyed length of the Casten Dyke South is set broadly on a gentle north-west/south-east alignment, although there are shallow changes of angle along the whole of its length, giving it a flattened sinuous plan form; it has a total length of 263m.
- 4.9 The west end of the dyke appears to run into the very steep slope of Boar's Gill as a spread bank topped by a field wall with a shallow ditch and a slight counterscarp bank to the north side. There is also a more substantial parallel depression to the south of this (1), although it is not clear whether this is part of the dyke. To the east, the alignment has been destroyed by a 19th century quarry and associated trackway (2 and 3), but it resumes above (east of) the quarry. Again, as with the Casten Dyke North, this part of the dyke has been subject to much disturbance and has a rather spread, flattened appearance compared to much of the rest of its length. Where the dyke appears undisturbed, it comprises a relatively flat-topped bank, averaging 3.0m wide and standing up to 0.5m high, with a steep-sided ditch, averaging between 3.0m-4.0m wide and up to 1.4m deep, running parallel to the north. A "counterscarp bank of minimal size along the northern lip of the ditch" noted in 2001 was not visible during the EDAS survey, but the disturbance caused by the very close proximity of coniferous planting and the dense vegetation makes interpretation difficult. The arrangement of bank and ditch implies that the dyke faces north. There are several places where the ditch appears to have been re-cut (5, 6, 8 and 9), specifically the south side (see plates 8, 14 and 15), but definite Second World War activity is only clear at the very eastern end of the surviving earthwork (13 and 15) (see plate 18), although there is also perhaps similar

disturbance at the west end (2). The course of the dyke once continued east beyond High Town Bank Road as far as the head of Hell Hole, but it was gradually removed in stages from the mid 19th century onwards, and no earthworks survive in the arable field on the east side of the road (see plate 19).

### **Medieval Battlefield Earthworks and the 1322 Battle of Byland**

- 4.10 As noted above, there is little firm dating evidence for either of the two dykes, but previous investigations and the results of the EDAS survey show that Casten Dyke North is later in date than the Cleave Dyke. With regard to Casten Dyke South, previous assumptions that it was prehistoric in date, and that it was contemporary with Roulston Scar fort, were challenged as early as 1960; recent survey work has shown that the two are not connected, and a medieval origin for the dyke is perhaps more plausible (Oswald & Pearson 2001, 24-25, 34). Nevertheless, in the absence of excavated evidence or further documentary research into the longevity of the function of the dykes as administrative boundaries (Spratt 1982, 36), close dating remains impossible. When excavated, linear boundaries in the proximity of extensive prehistoric remains within the North York Moors have sometimes yielded surprising dates. For example, the triple dykes at the southern end of the extensive Danby Rigg cairnfield had always been assumed to be Bronze Age by association with the other features on the Rigg, but excavation proved an early medieval date, raising the possibility that the cairnfield had been exploited for grazing and then perhaps modified during the same period (Harding & Ostojazagorski 1994, 66-69 & 79-82). Even a more recent study of the cross-ridge boundaries on the North York Moors concludes that most seem to be in use during the early Bronze Age, and perhaps before, "but whether or not their construction and use extended later than this is not known" (Vyner 1995, 25).
- 4.11 There can be little doubt that the alignment of Casten Dyke South demonstrates that its purpose was to enclose the land to the south, a promontory of c.23 hectares, by running between two steep-sided natural valleys, Boar's Gill to the west and Hell Hole to the east. It has been suggested elsewhere that Roulston Scar fort may have served partially as an enclosure for livestock management, to provide seasonal grazing (Oswald & Pearson 2001, 34), and it is possible that Casten Dyke South enclosed the plateau for a similar purpose at a later date. However, in this respect, it is interesting to note that during the 2001 survey of Roulston Scar, what was described as an anomalous boundary, comparable to Casten Dyke South with a ditch on the north side of the bank, could be traced for at least 400m west from Low Town Bank Road to a point near the south-western tip of the promontory. It was suggested that this boundary may have served to define the limit of cultivable land, and that it was either of late medieval or post-medieval date (Oswald & Pearson 2001, 28).
- 4.12 Despite the above, it remains quite possible that Casten Dyke South was either created specifically for the Battle of Byland, or that it was a pre-existing boundary which was re-used during the battle. By sealing off the south side of the promontory, and with very steep slopes on all other sides, any force encamped within would have felt that they held a reasonable secure position, particularly if they were augmented by another force close by to the west which had modified the northern rampart of Roulston Scar. The promontory also overlooks Boar's Gill and Hell Hole, both of which would have provided routes up the natural escarpment for the Scottish forces seeking to outflank the English; indeed, there may have been considerable volumes of traffic between the low and high ground here for a considerable period before the battle (Oswald & Pearson 2001, 34). It is therefore plausible that the English created a defensive position here, and perhaps also the

Casten Dyke South. If this was proved to be the case (e.g. through sample excavation), then the remains would be particularly important, as positively identified medieval battlefield earthworks remain rare. There is some documentary evidence that various properties in Yorkshire were strengthened with banks and ditches following Scottish incursions during the early 14th century (such as Bolton Priory's farm at Rother in Wharfedale), whilst on Bramham Moor in West Yorkshire, an entrenchment thrown up on Camp Hill to protect the Earl of Northumberland's army before the battle that took place here on 19th February 1408 may have survived as cropmarks (Moorhouse 1981, 840-842; Pearson 1995). If the English were encamped on the south side of Casten Dyke South, even if only briefly, then it is possible that archaeological evidence of their presence (e.g. rubbish pits) may survive in the area, although this will, in part, depend on the amount of disturbance caused by later land use.

- 4.13 It is less easy to make a case for Casten Dyke North having been created specifically for the battle, as it is a much longer earthwork, although the anomalies apparent at the north-east end close to Flassen Gill, where the ditch is on the 'wrong' (i.e. north) side are interesting. The change of alignment in particular is similar to that seen at the south-west end where the dyke incorporates the earlier barrow, although there is no evidence that such a feature ever existed here.
- 4.14 If either of the dykes were created or partly used during the battle, particularly if as suggested by Lee (2014) they were utilised by the opposing sides, then this would force a re-assessment of the battle itself. The traditional narrative suggests that the battle was a hastily organised action, but the use of earthworks would perhaps indicate that it involved more preparation and/or planning on both sides. In addition, if the Scottish did utilise either Boar's Gill or Hell Hole to outflank the English position, then their movements would have been overlooked by the castle on Hood Hill. The fact that the castle appears to have taken no part in the battle could suggest that it was either not garrisoned at the time or that it was already in decay.

#### **The Impact of the Second World War** (see figure 12)

- 4.15 One factor that all previous surveys have underestimated is the impact of Second World War activity on the existing form of the dykes. Evidence for this activity, specifically slit trenches and weapons pits thought to date to between late 1940 and 1943, has already been recorded around the Yorkshire Glider Club sited within Roulston Scar hillfort; the gliding club itself was established in 1933 (Oswald & Pearson 2001, 5). In 2011, more extensive military earthworks, represented by interlinked trenches and gun pits, were recorded between the A170 and the Casten Dyke North. These were thought most likely to date to the first months of 1940 and to have been dug for training purposes, drawing on earlier First World War experiences, and were perhaps designed to introduce new recruits to this form of trench warfare, which might have been thought realistic at that date. Several of the military earthworks were sited very close to, or in one case within, the earlier linear boundaries in the area (Dennison & Richardson 2014).
- 4.16 The EDAS survey recorded extensive evidence for military activity along the line of the Casten Dyke North. At its south-western end, adjacent to the scarp of Sutton Bank, the southernmost c.60m of the alignment has been heavily disturbed by probable World War Two activity. The May 1940 aerial photograph (HEA RAF/10/UK/1524) suggests that at that date, the very south-western end of the dyke (where the existing public footpath along the scarp now runs) might then have been extant and only subsequently removed, but also indicates that some of the

military earthworks here were already present. There are two probable slit trenches/weapons pits to the immediate west of the scarp-top footpath (2), and two further examples within the dyke to the east (3). A total break in the dyke (4) originates before the mid 19th century, as it was crossed by a trackway here by 1856, but two other trackways converged on this point in May 1940, both with a relatively fresh appearance on the aerial photograph; they may have created/re-used as access in the early part of the war. To the immediate east of the break, slit trenches run north and south from the bank's ditch towards firing or observation positions (see plate 1). There is another slit trench and weapons pit within the northern end of the Cleave Dyke (11) immediately to the north-west of the Casten Dyke North. In addition to these recorded features, the May 1940 aerial photograph shows that there were others which are now no longer clearly visible, some close to the dyke and others placed some distance to the south.

- 4.17 These features are without doubt of modern military origin, but other areas of possible or probable World War Two remodelling were noted along Casten Dyke North. Rather than being recognisable weapons pits, they comprise substantial sections of the ditch where one or both of the sides have been re-cut to a very steep profile, almost always in association with a break or gap in the dyke's main bank (see plate 2). The associated gaps seem to be significant. When first constructed, it is likely that the ditch would have been placed in front of the bank, forming an additional barrier and effectively making the bank to the rear higher; there would have been no need for access to the ditch. However, during the 20th century military activity, the ditch itself seems to be the place where troops were stationed or protected. Towards the south-west end of the dyke, a 2m wide break in the bank (6) has an section of recut ditch at least 22m long to its south-west (5 - both sides) and at least 15m long (and possibly as much as 30m) to its north-east (7 - south side). Towards the north-east end of the dyke, there is a narrow break for a footpath (16), and for a distance of c.30m to either side (15/17), the bottom of the ditch has been altered as if to create sections or partitions; this approximate area appears slightly lighter in colour on the May 1940 aerial photograph. In addition, to the south-west of the footpath break (16), it is possible that both sides of the ditch have been re-cut to a steeper profile as far as another narrow and sharply defined break in the main bank (15). Both of these proposed sections of remodelling of the Casten Dyke North appear to have similar overall lengths of between 65m-68m. Indeed, the March 1946 aerial photographs (HEA RAF/106G/UK/1298, frames 4016-4017) suggest that a substantial length of the north-eastern part of the surveyed part of the dyke had been re-cut after May 1940, but many of the earthworks clearly visible in 1940 were much less so in 1946. This may indicate several different phases of activity along the dyke during the course of the Second World War, as might be expected.
- 4.18 Similar evidence was recorded along the Casten Dyke South. The west end of the dyke, above a 19th century quarry (3), has a spread and disturbed appearance for a length of c.34m. There are no convincing World War Two remains associated with this, although a possible firing position does lie on the west side of the adjacent trackway (2). However, further to the east, there are three possible examples of later remodelling, where the ditch appears to have been re-cut on either side of breaks in the bank (see plate 15). In each case, the proposed remodelled sections (5/6, 8/9 and 12/13) are all between 25m and 30m long, and they are broadly evenly spaced along the dyke, with a distance of c.45m-50m between them. Only the easternmost example (15) incorporates a definite World War Two weapons pit, with a likely slit trench cut into the ditch from the north side some 15m to the east (see plate 18). The 1946 aerial photographs (HEA RAF/106G/UK/1298, frames 4016-4017) suggest that almost two-thirds of the

surviving length of the dyke to the west of High Town Bank Road may have been re-cut during the course of the war.

- 4.19 The presence of this Second World War activity is significant for a number of reasons. Firstly, its identification along Casten Dyke South, and within Roulston Scar (Oswald & Pearson 2001, 29-31), as well as the results of previous survey in Kilburn Moor Plantation (Dennison & Richardson 2014), demonstrates that there is a large area of military activity stretching at least 1.3km to the south of the A170 and perhaps as much as 550m back from the edge of the Sutton Bank scarp. Clearly, there are concentrations of activity within this overall area, and so the remains are unlikely to all be contemporary or to serve the same purpose. Secondly, extensive alterations undertaken along the dykes during the Second World War, especially the wholesale re-cutting of the ditches, may have obscured earlier alterations carried out in 1322 as part of the Battle of Byland, particularly if these were done hastily and piecemeal immediately prior to the battle.
- 4.20 At present, any satisfactory explanation for this military activity remains elusive. The wartime aerial photographs show that the landing strip at the Yorkshire Glider Club was not camouflaged or protected by obstructions (such as anti-glider trenches or abandoned vehicles), and there is no evidence to suggest that the landing strip was used either as a decoy airfield or even as a real landing ground; there was a "K" decoy airfield and diversionary landing ground on Cold Kirby Moor some 2km to the north of the Glider Club (Harwood & McMillan 2014, 46-49). It has been suggested that some of the slit trenches and weapons pits noted on Roulston Scar served as airfield defences, to attack any disembarking enemy troops which might have landed on the airfield as well as defending the perimeter of the airfield from external attack, while others probably served as look-out posts and commanded any approach from the south along Low Town Bank Road (Oswald & Pearson 2001, 30-31). In most cases, wartime airfield defences were initially constructed and used by regular army units under the command of the RAF, to counter the German invasion strategy of capturing airfields through parachute and glider landings followed by the import of fighter planes to achieve local air dominance prior to a full invasion by ground troops. In the later years of the war, as the invasion threat diminished, airfield defences were generally taken over by the Home Guard (Oswald & Pearson 2001, 30-31). However, and perhaps more significantly, it is known that the Roulston Scar airfield was briefly used as a training area for Bren Gun Carriers by a detachment from the 12th Battalion Green Howards, whose carrier platoon was based in Hambleton House (Harwood & McMillan 2015, 40-41).
- 4.21 It is likely that the various military earthworks recorded by this EDAS survey have a number of functions. The concentration of activity at the south-west end of Casten Dyke North provides a good observational position, with a clear view across the Vale of York and along the top of the scarp, and so these may be 'operational' features rather than training earthworks. If they are contemporary with the area of proposed remodelling to the immediate north-east, then the re-cut ditch of the latter would have provided a sheltered approach where troops could use the cover to move into the observation and firing positions. It is also possible that the small firing position at the east of Casten Dyke South could have fulfilled a similar function in relation to High Town Bank Road.
- 4.22 The other proposed sections of remodelling along Casten Dyke North, and those along Casten Dyke South, are less easy to explain. Those to Casten Dyke South certainly give the impression of being deliberately laid out at broadly equal centres, and have been re-cut to the same form and size. If planned as defensive

positions, they could have provided cover facing both south or north, although the fact that it was mostly the south side of the ditch which appears to have been steepened to create a near-vertical face might suggest that firing was directed to the south. However, the aerial photographic evidence suggests most of the length of Casten Dyke South was re-cut - might this have been done to create an anti-glider obstacle? Was this also the function of Casten Dyke North? Alternatively, perhaps it is more possible that the recut sections of ditch (especially those either side of breaks in the main banks) are associated with Bren Gun training activity, with troops sheltering in the ditches and firing on carriers moving through the gaps and/or along the front of the banks? Most of the breaks are wide enough to have accommodated a standard Second World War Bren Gun Carrier, which was 2.06m wide and able to travel up to 50kph ([https://en.wikipedia.org/wiki/Universal\\_Carrier](https://en.wikipedia.org/wiki/Universal_Carrier), Harwood & McMillan 2015, 41), and a previous archaeological survey in Cawthorn Woods, another isolated area of moorland on the North York Moors, has noted the presence of slit trenches, observation posts and other structures associated with this kind of training activity (Dennison 2005; Dennison 2009). Indeed, one of the gaps in the Casten Dyke North (**18**) has the remains of c.2m wide parallel tracks of the type previously noted in Cawthorn Woods (see plate 11). Further research into the training activities of the 12th Battalion Green Howards Bren gun carrier detachments would be required to confirm or refute this hypothesis, but if correct, this might also lead to a reinterpretation of some of the other military earthworks previously recorded in Kilburn Moor Plantation (Dennison & Richardson 2014).

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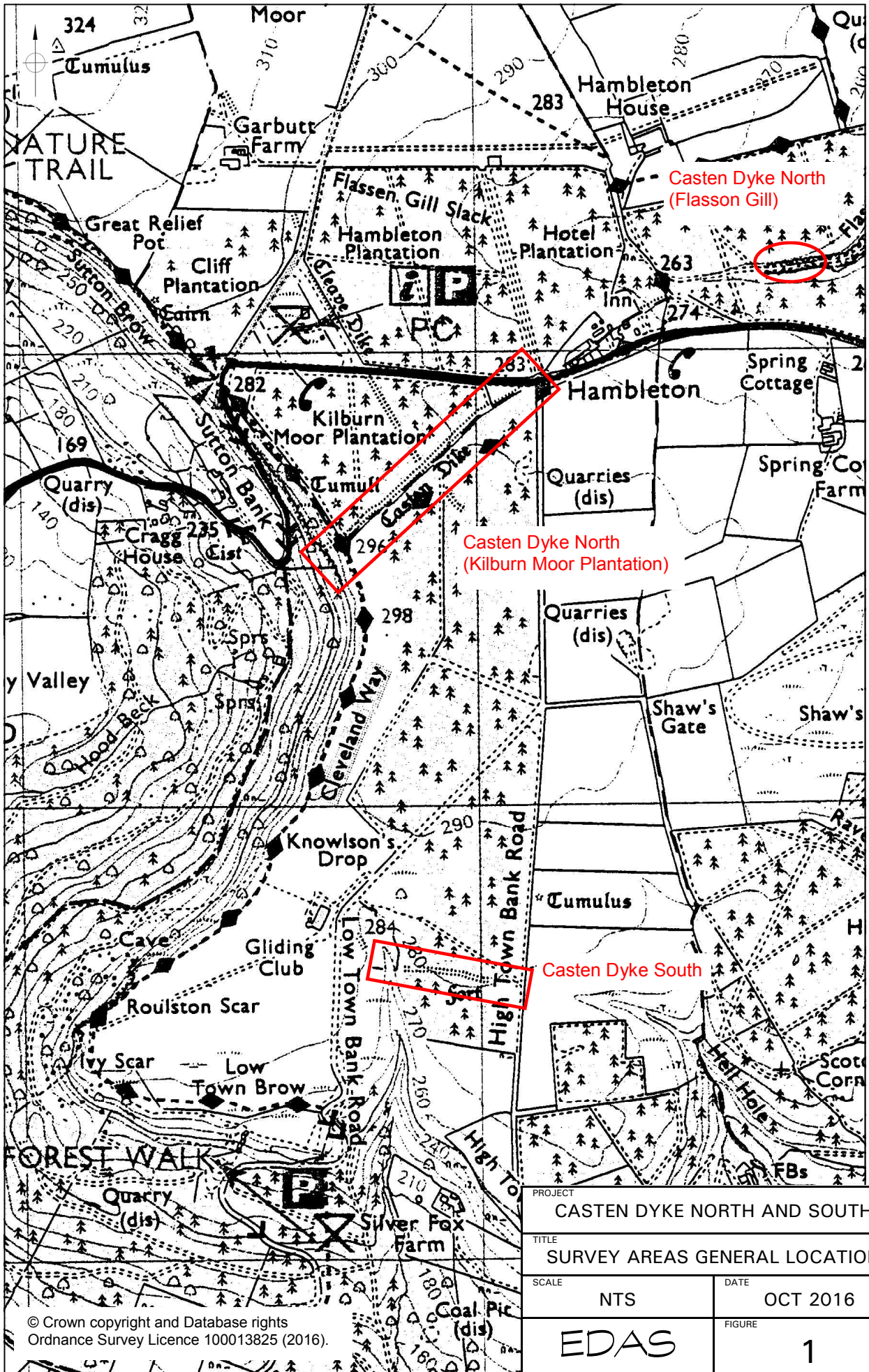
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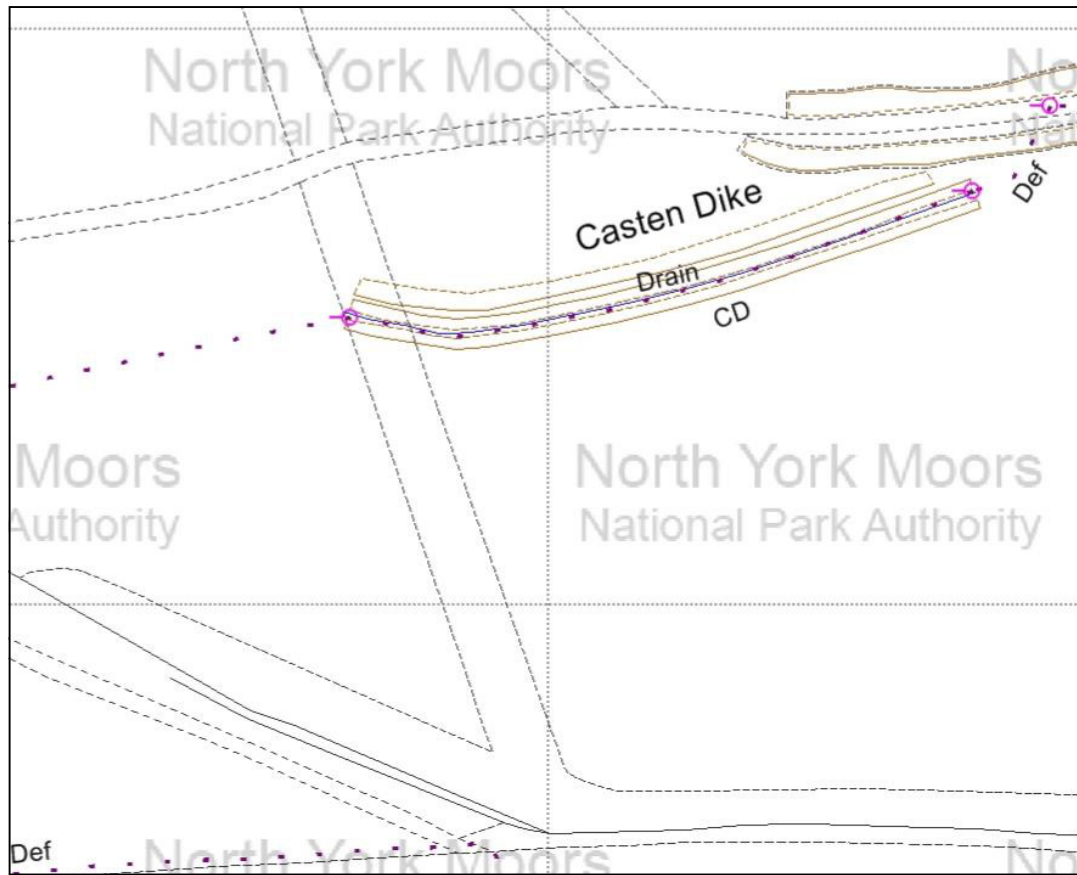
## **6 ACKNOWLEDGEMENTS**

- 6.1 The archaeological survey was primarily funded by the North York Moors National Park Authority, and thanks are due to Mr Graham Lee for all his help during the survey. Additional thanks are also due to Ian Austermuhle of Tilhill Forestry for allowing access. The EDM survey work was undertaken by Shaun Richardson and Benchmark Surveys of Leeds, and the hand enhancement and site photography was completed by Shaun Richardson with assistance from Richard Lamb. The final report and drawings were produced by Ed Dennison, with whom the responsibility for any errors remains.

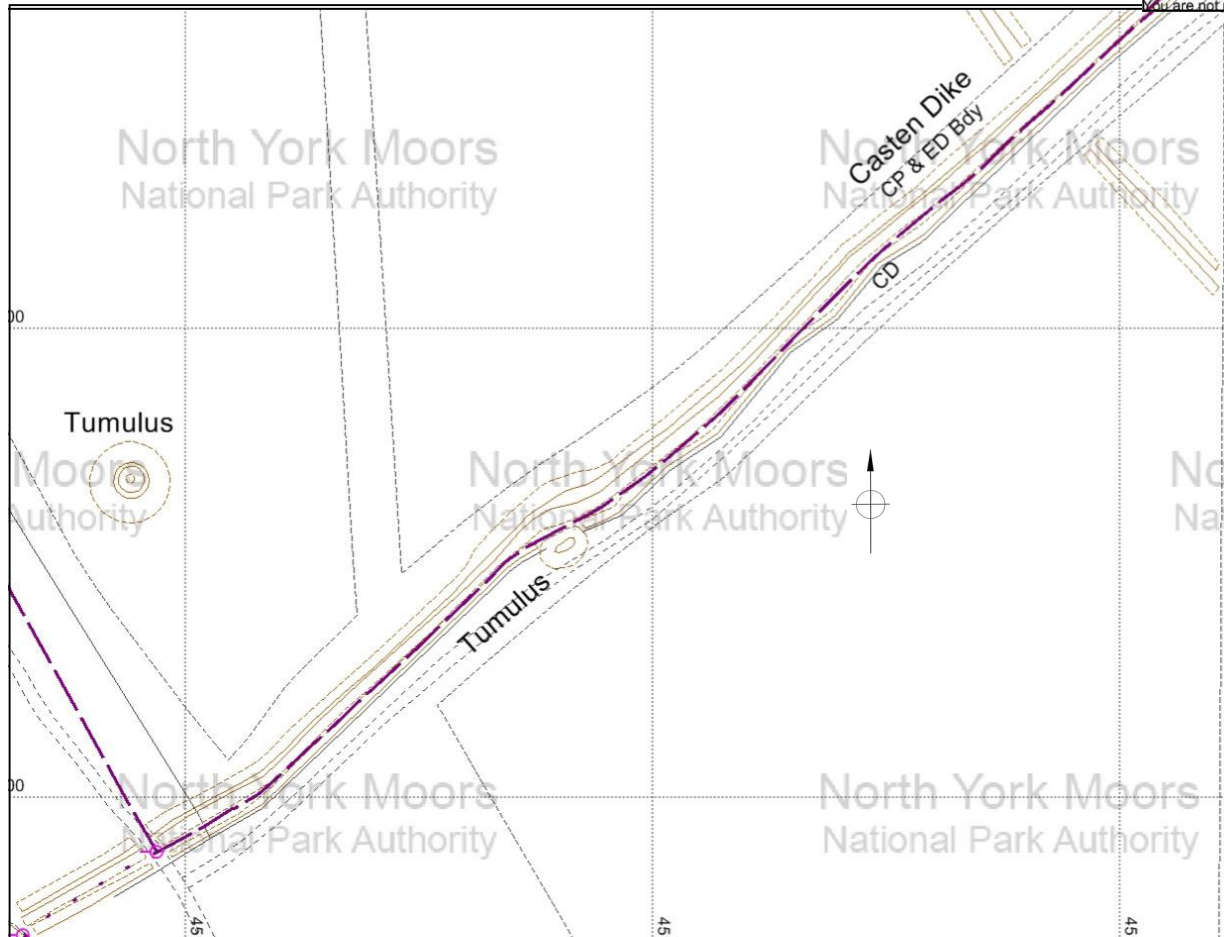
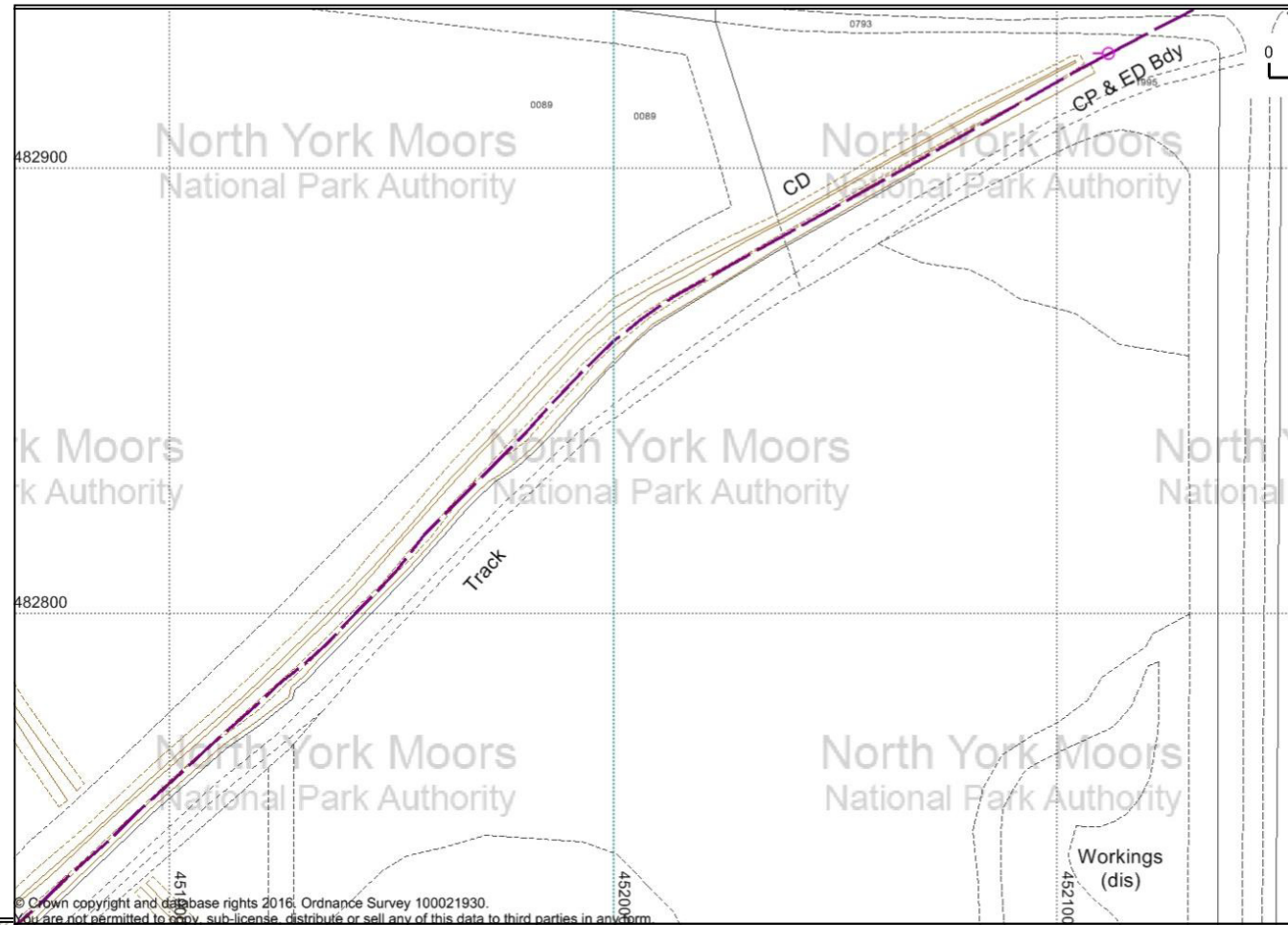


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TITLE		SURVEY AREAS GENERAL LOCATION	
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EDAS		FIGURE	1

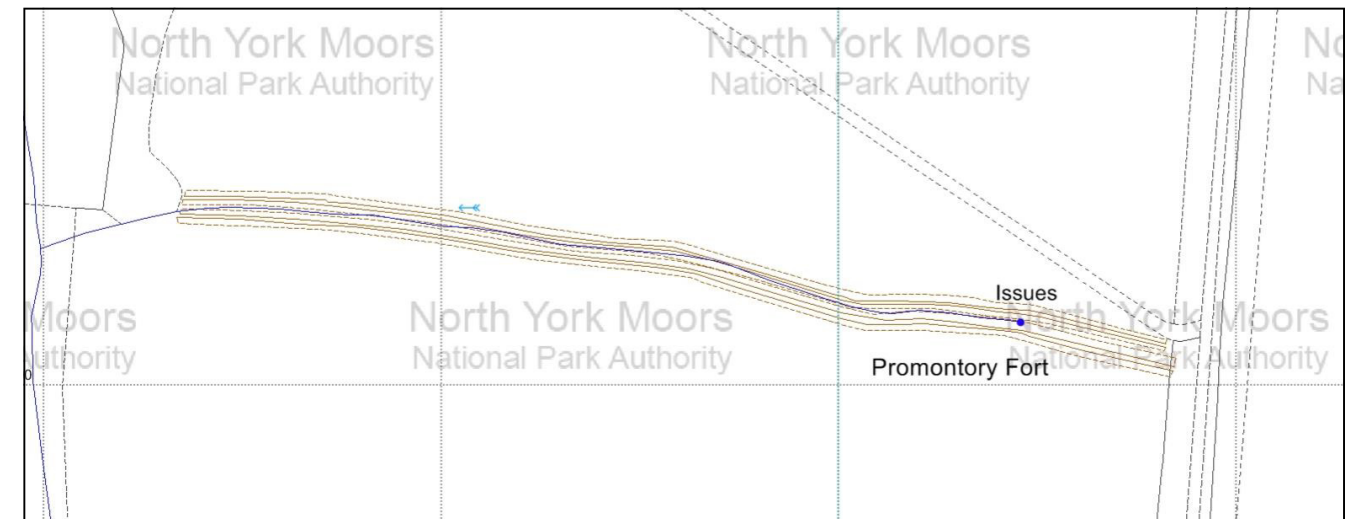
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 Ordnance Survey Licence 100013825 (2016).



A: Casten Dyke North (Flasson Gill).



B: Casten Dyke North (Kilburn Moor Plantation).

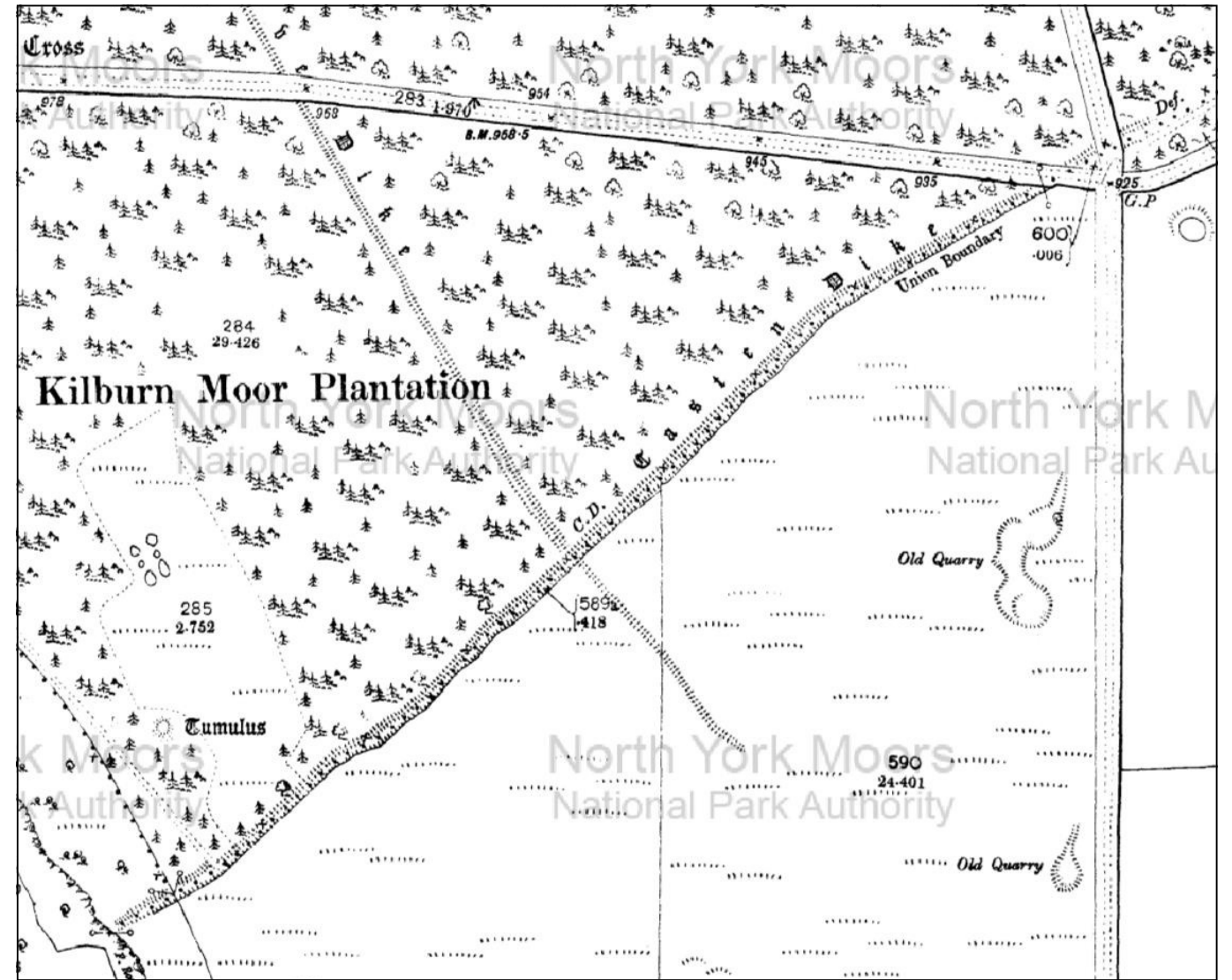
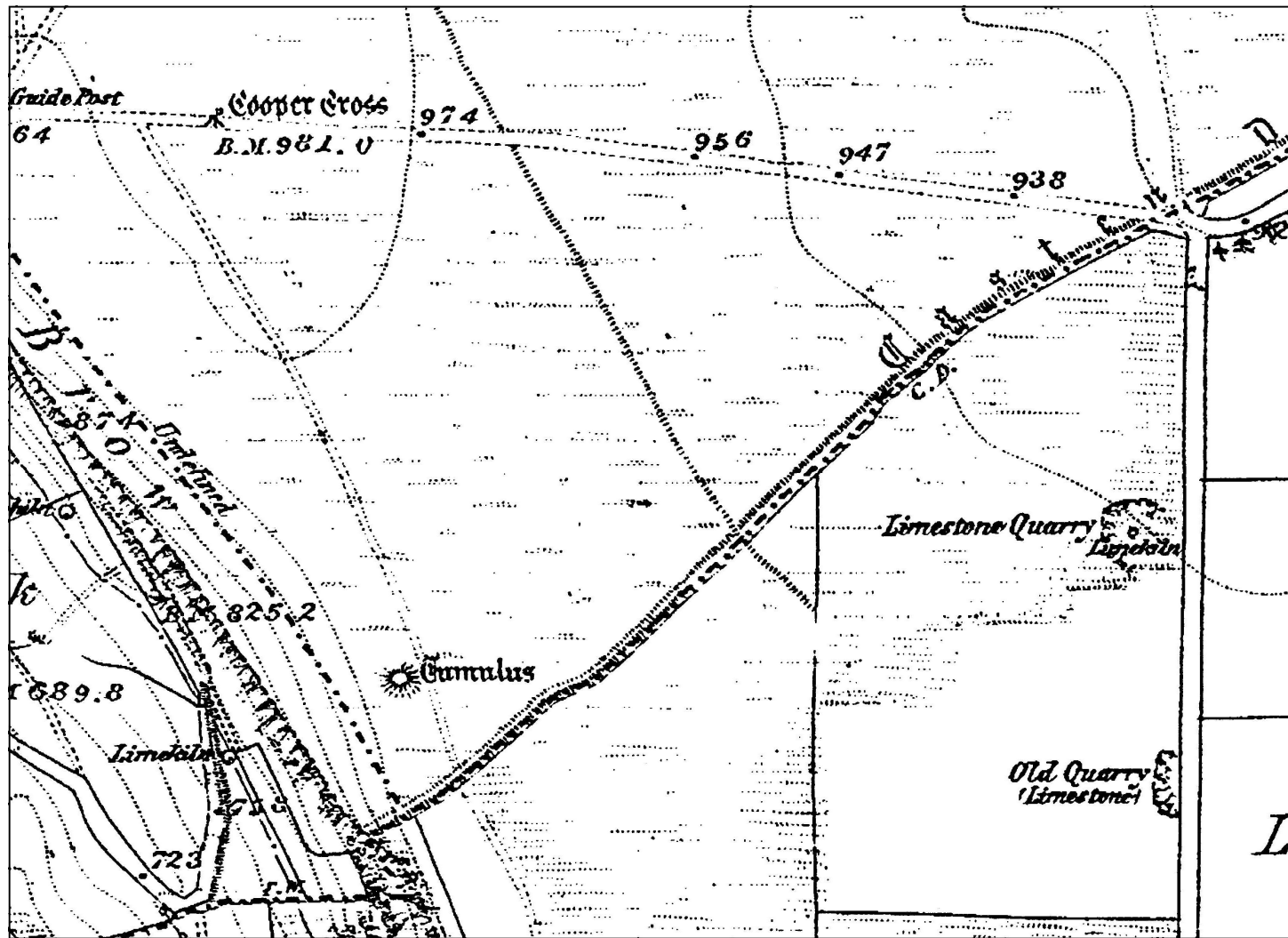


C: Casten Dyke South.



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PROJECT		CASTEN DYKE NORTH AND SOUTH	
TITLE		DETAILED SURVEY AREAS	
SCALE	DATE	NTS	OCT 2016
EDAS		FIGURE	2

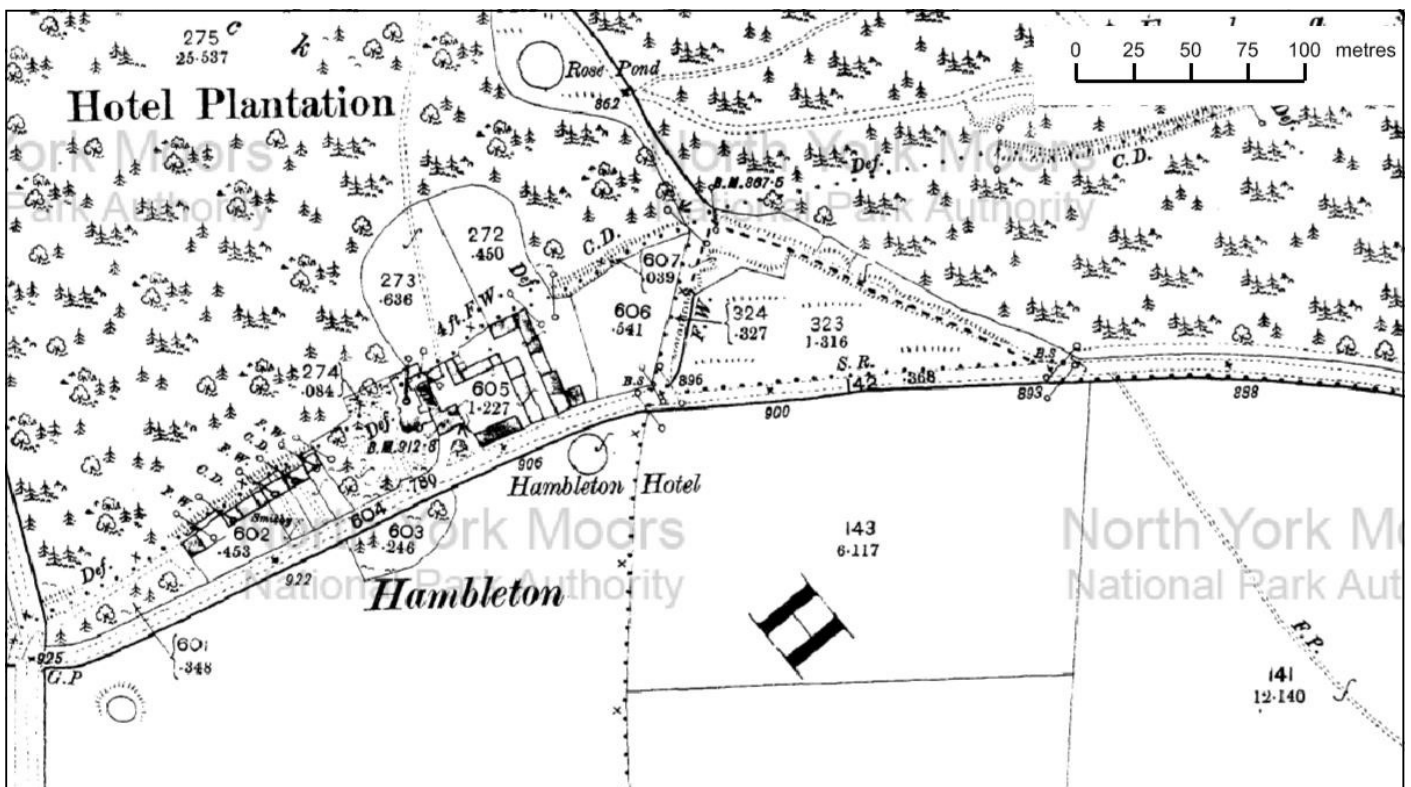
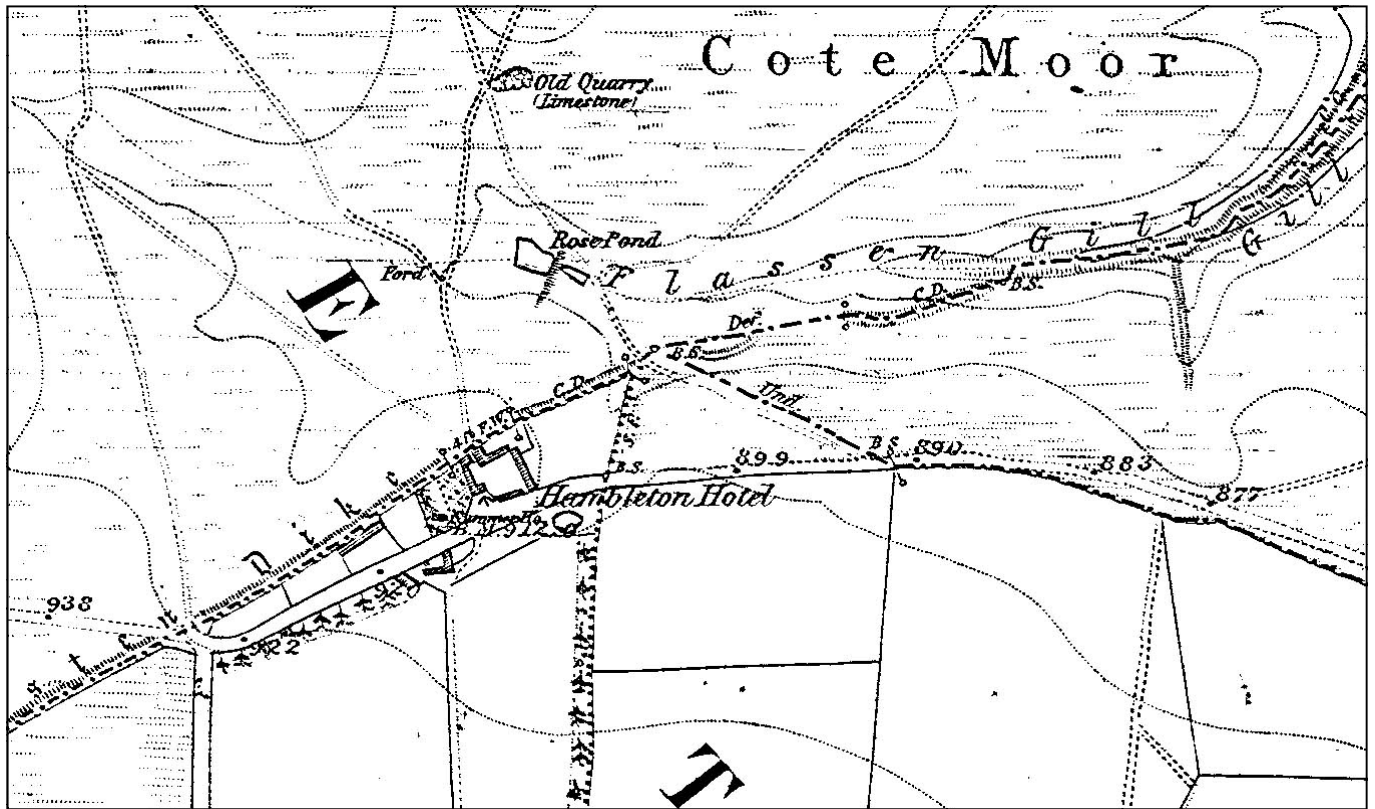


A: 1856 Ordnance Survey 6" to 1 mile map Yorkshire sheet 88 (surveyed 1853).

B: 1893 Ordnance Survey 25" to 1 mile map Yorkshire sheet 88/11 (supplied by NYMNP).



PROJECT CASTEN DYKE NORTH AND SOUTH	
TITLE CASTEN DYKE NORTH: HISTORIC MAPS	
SCALE NTS	DATE OCT 2016
EDAS	FIGURE 3

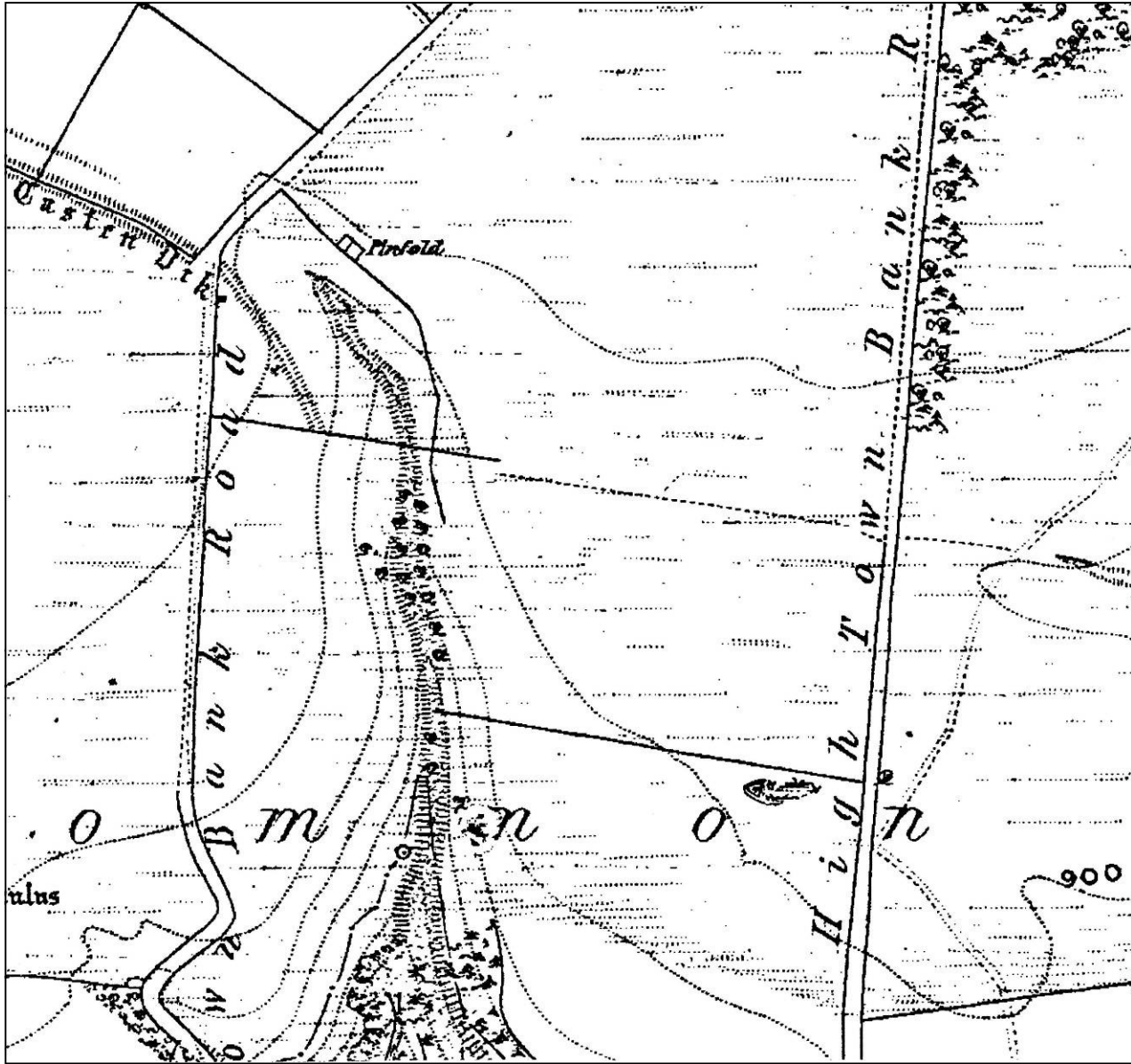


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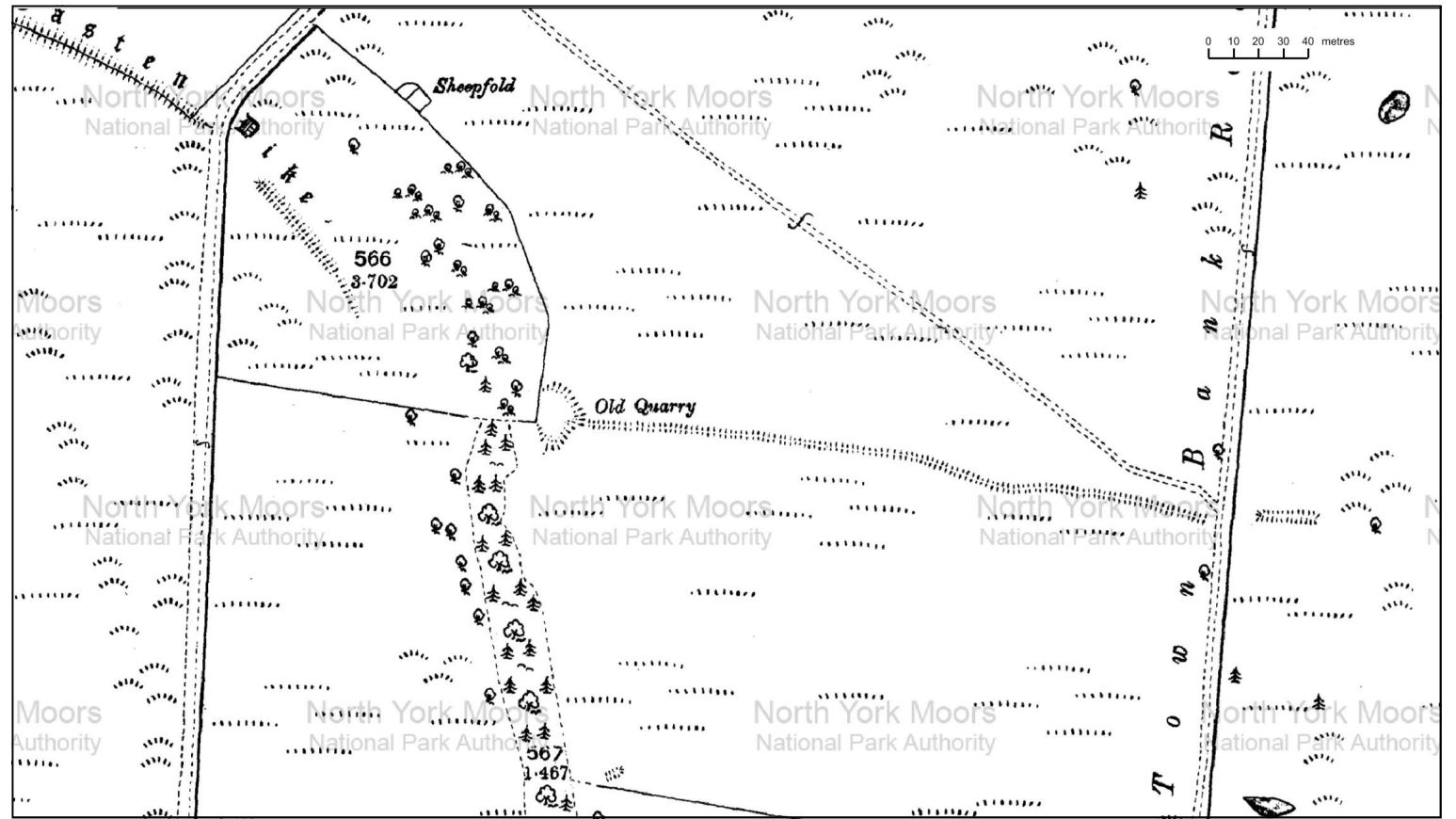
B - Bottom: 1893 Ordnance Survey 25" to 1 mile map  
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TITLE		CASTEN DYKE NORTH: HISTORIC MAPS	
SCALE	NTS	DATE	OCT 2016
EDAS		FIGURE	4



A: 1856 Ordnance Survey 6" to 1 mile map Yorkshire sheet 88 (surveyed 1853).



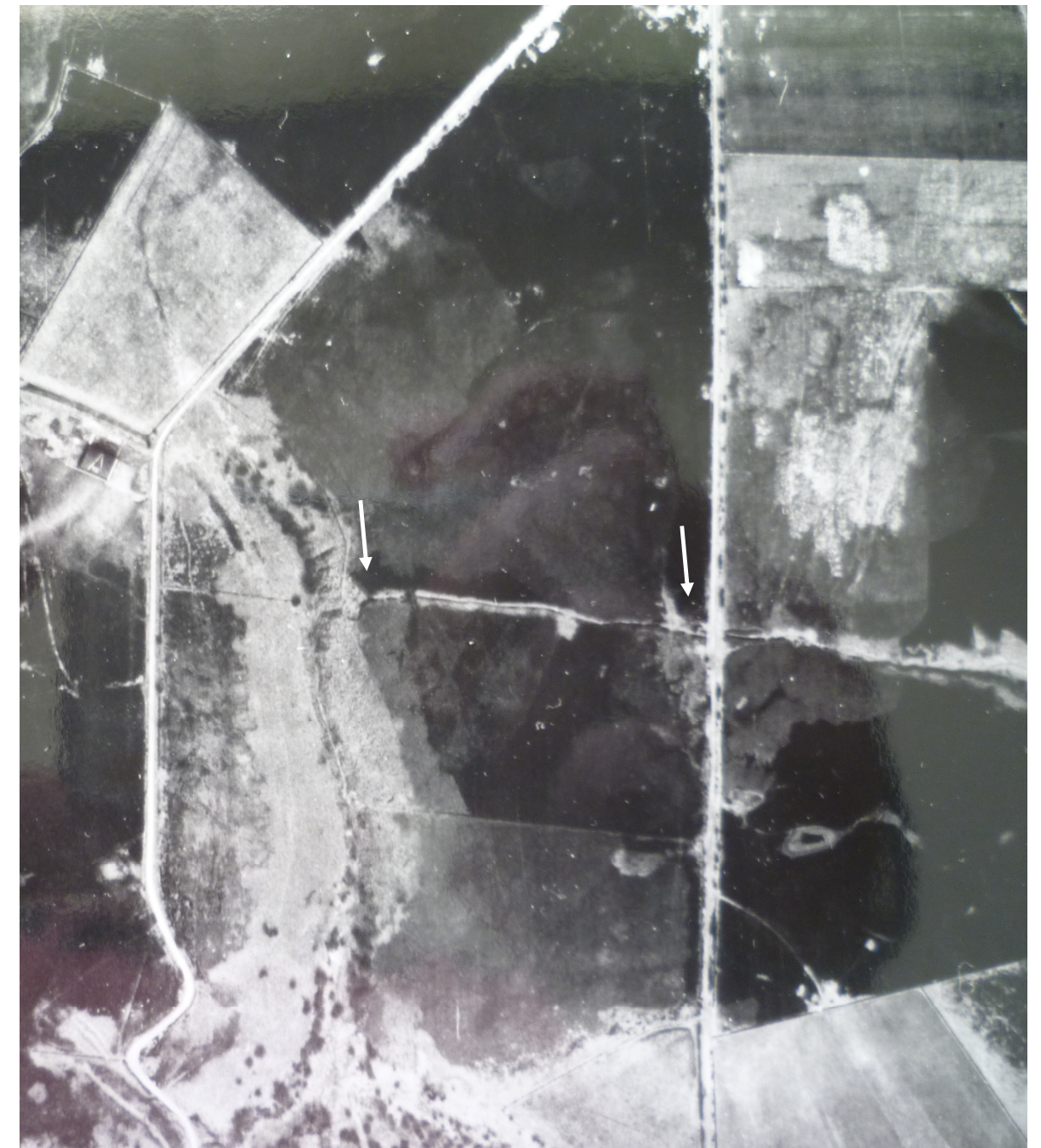
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SCALE NTS	DATE OCT 2016
EDAS	FIGURE 5



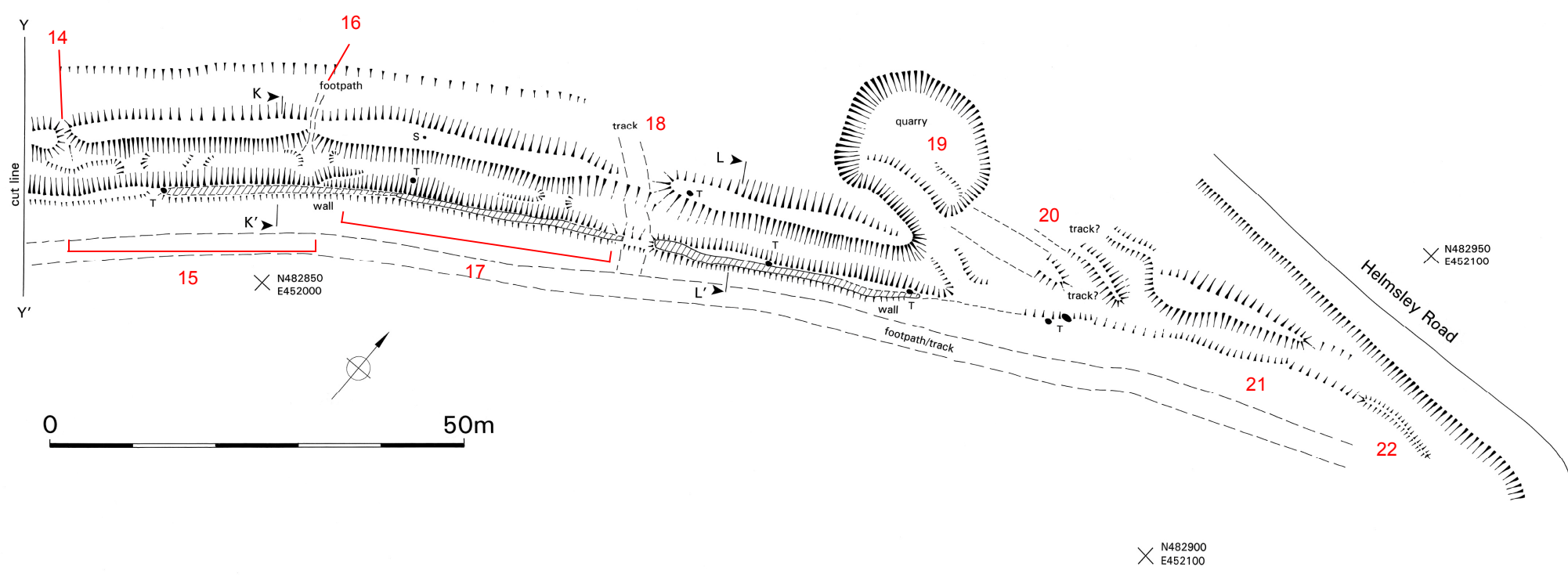
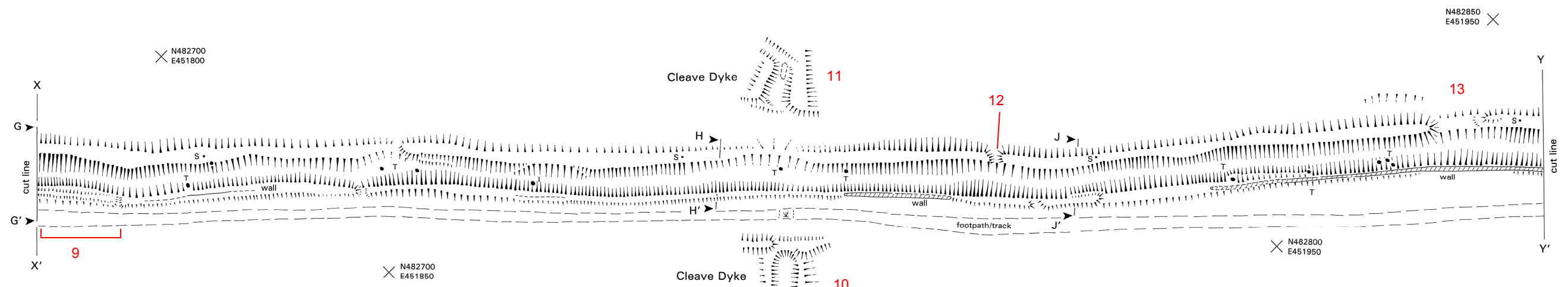
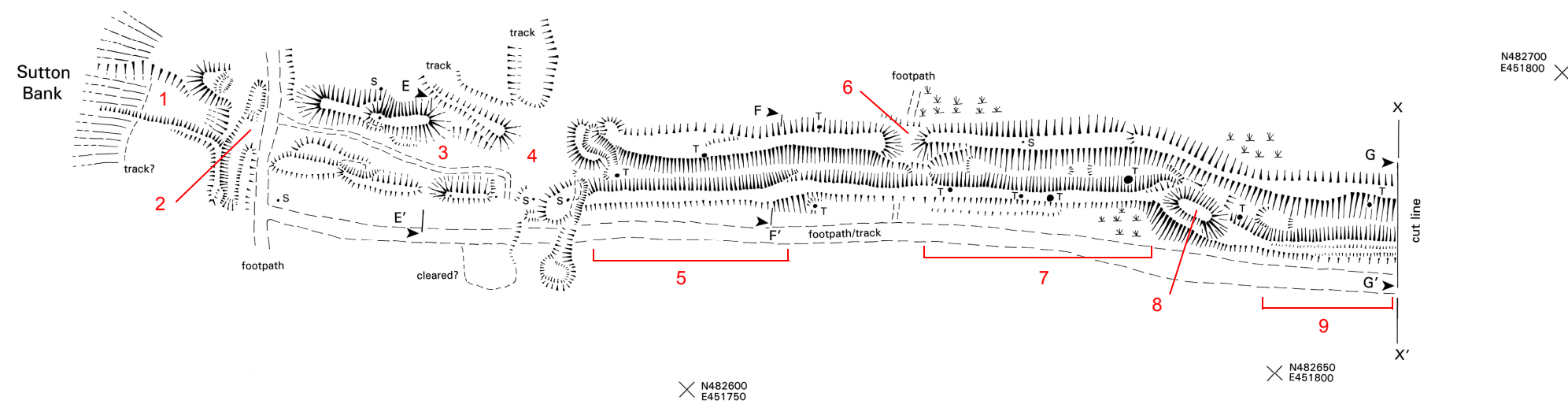
A: Casten Dyke North (source: black & white vertical aerial photograph taken 3rd May 1940 EHA RAF/10/UK/1524).



B: Casten Dyke South (source: black & white vertical aerial photograph taken March 1946 (EHA RAF/106G/UK/1298, frame 4016)).

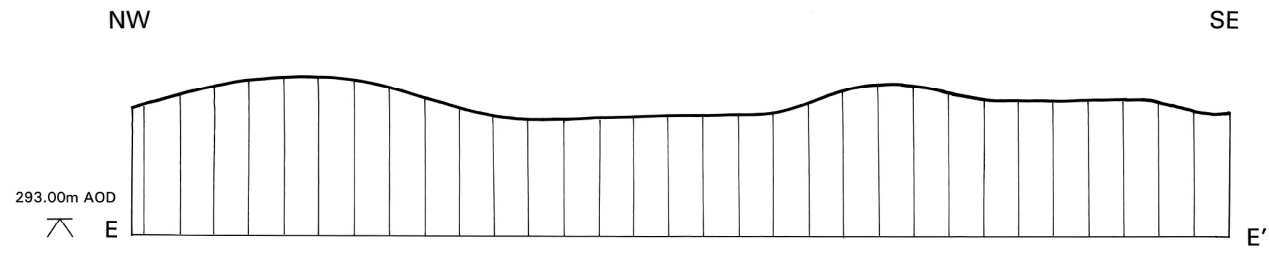
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TITLE		CASTEN DYKES: 1940-46 APS	
SCALE	DATE	NTS	OCT 2016
EDAS		FIGURE	6

PROJECT CASTEN DYKE NORTH AND SOUTH	
TITLE CASTEN DYKE NORTH: SURVEY	
SCALE AS SHOWN	DATE OCT 2016
EDAS	FIGURE 7

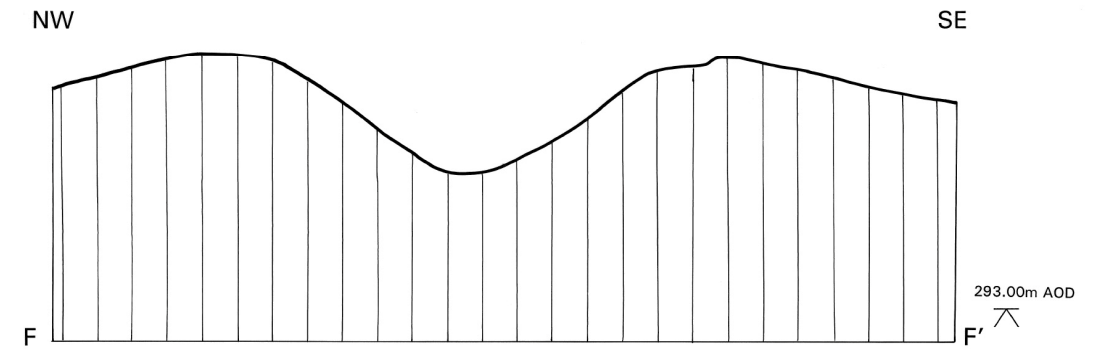
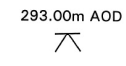


T = Tree  
S = Sign

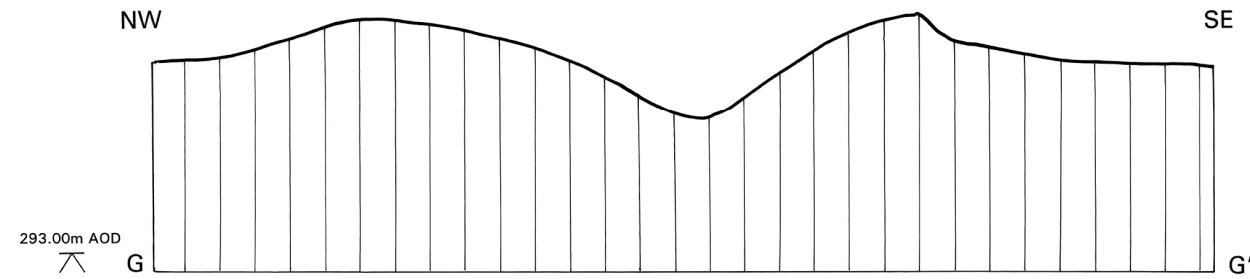




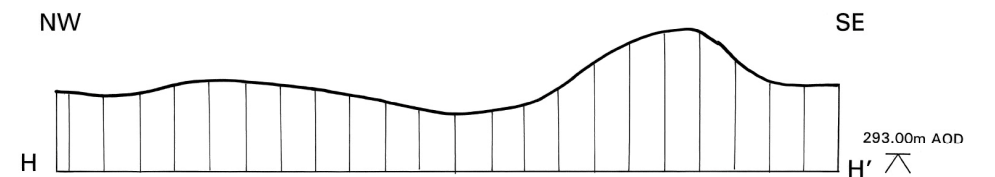
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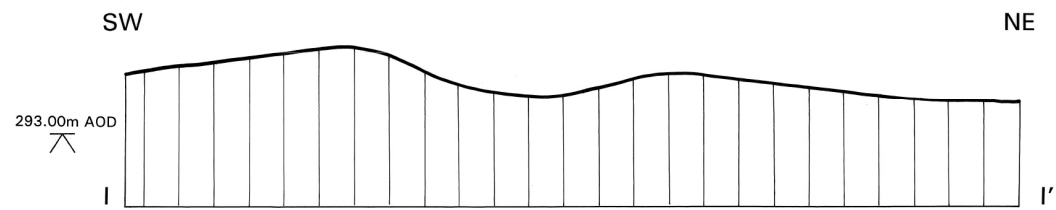
Profile F-F'



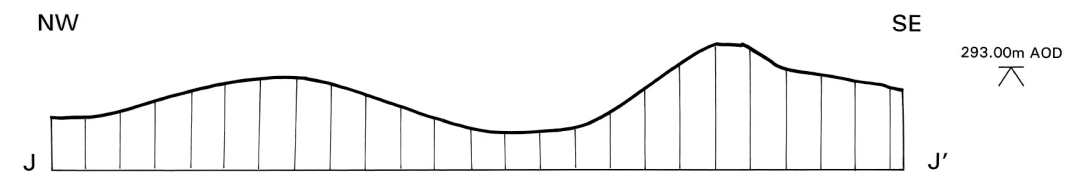
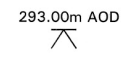
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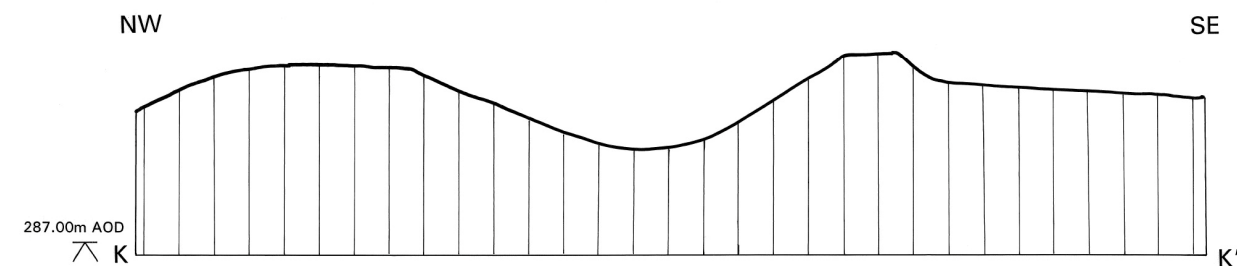
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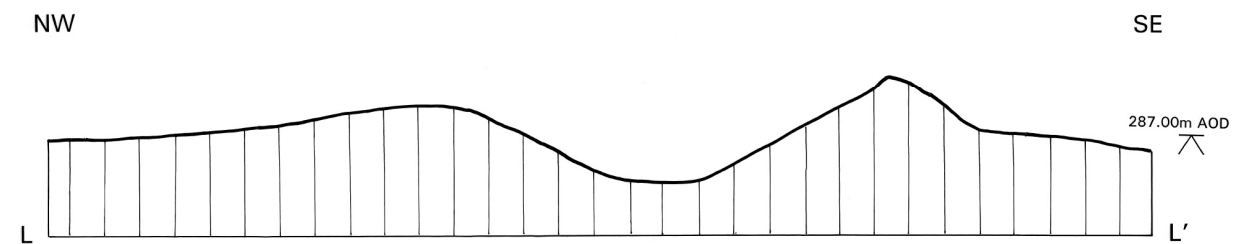
Profile I-I' (Cleave Dyke)



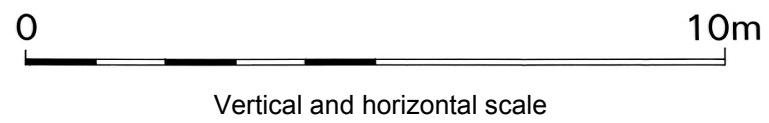
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Profile K-K'



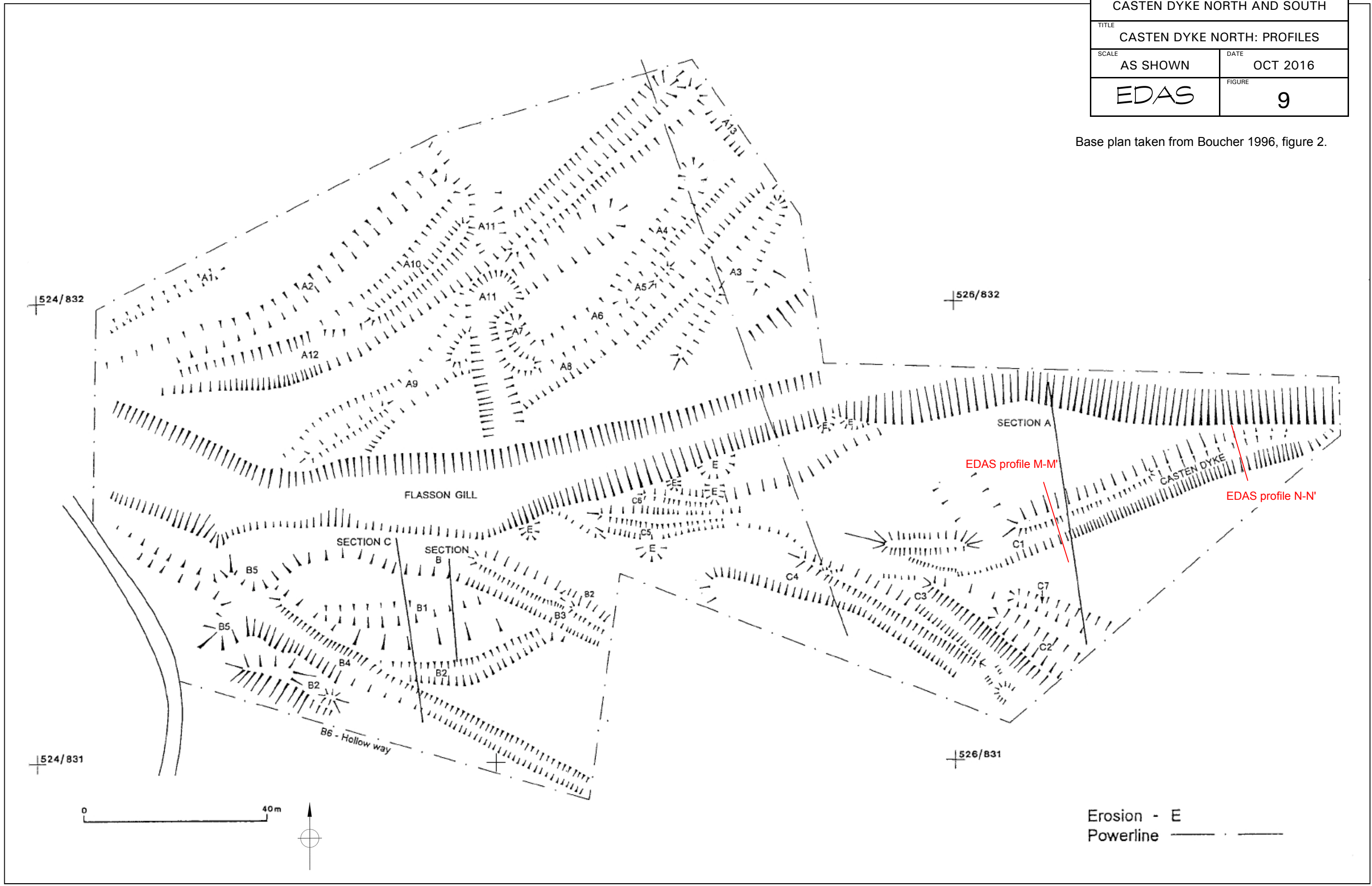
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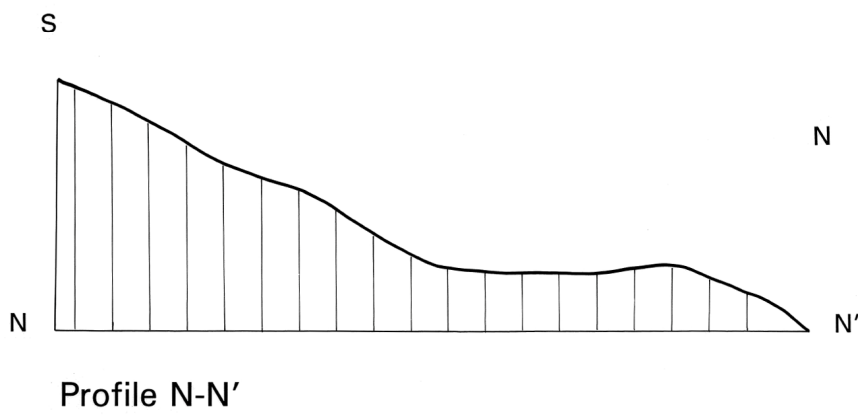
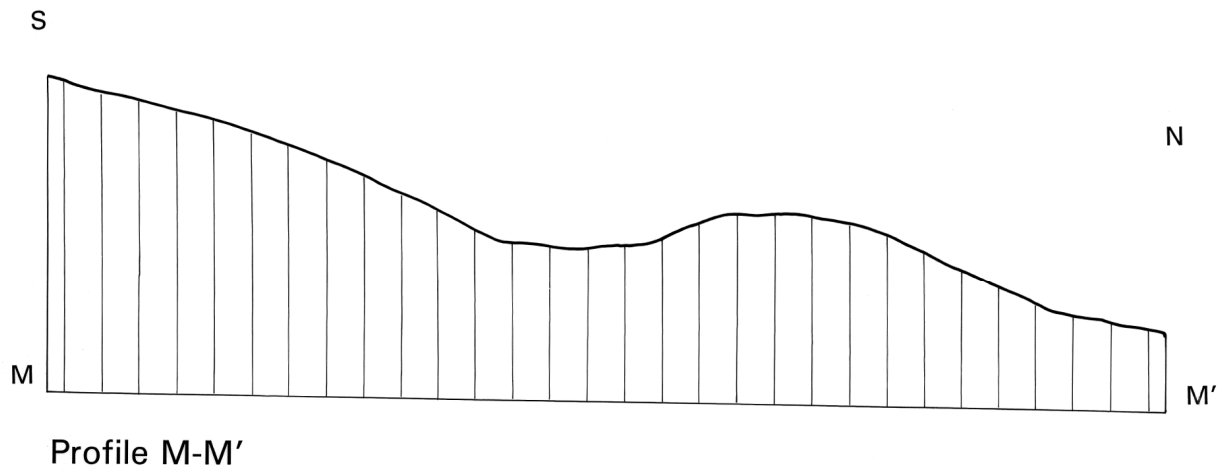
PROJECT CASTEN DYKE NORTH AND SOUTH	
TITLE CASTEN DYKE NORTH: PROFILES	
SCALE AS SHOWN	DATE OCT 2016
EDAS	FIGURE 8

PROJECT CASTEN DYKE NORTH AND SOUTH	
TITLE CASTEN DYKE NORTH: PROFILES	
SCALE AS SHOWN	DATE OCT 2016
EDAS	FIGURE 9

Base plan taken from Boucher 1996, figure 2.



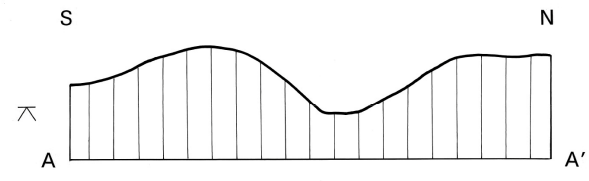
Erosion - E  
Powerline - - - - -



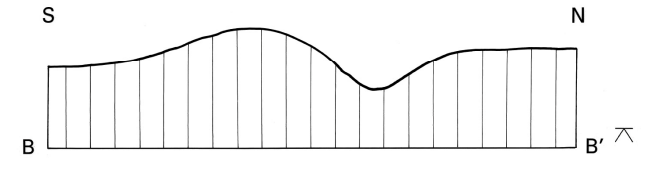
Vertical and horizontal scale

PROJECT CASTEN DYKE NORTH AND SOUTH	
TITLE CASTEN DYKE NORTH: PROFILES	
SCALE AS SHOWN	DATE OCT 2016
EDAS	FIGURE 10

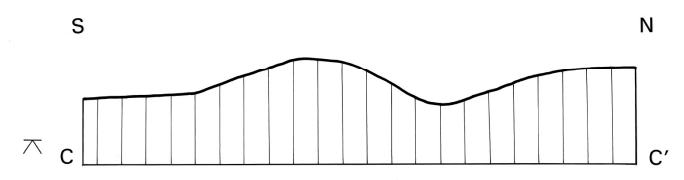
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TITLE CASTEN DYKE SOUTH: SURVEY	
SCALE AS SHOWN	DATE OCT 2016
EDAS	FIGURE 11



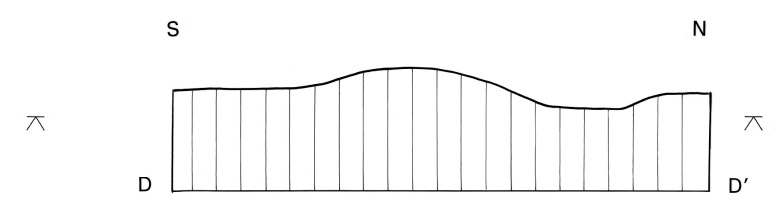
Profile A-A'



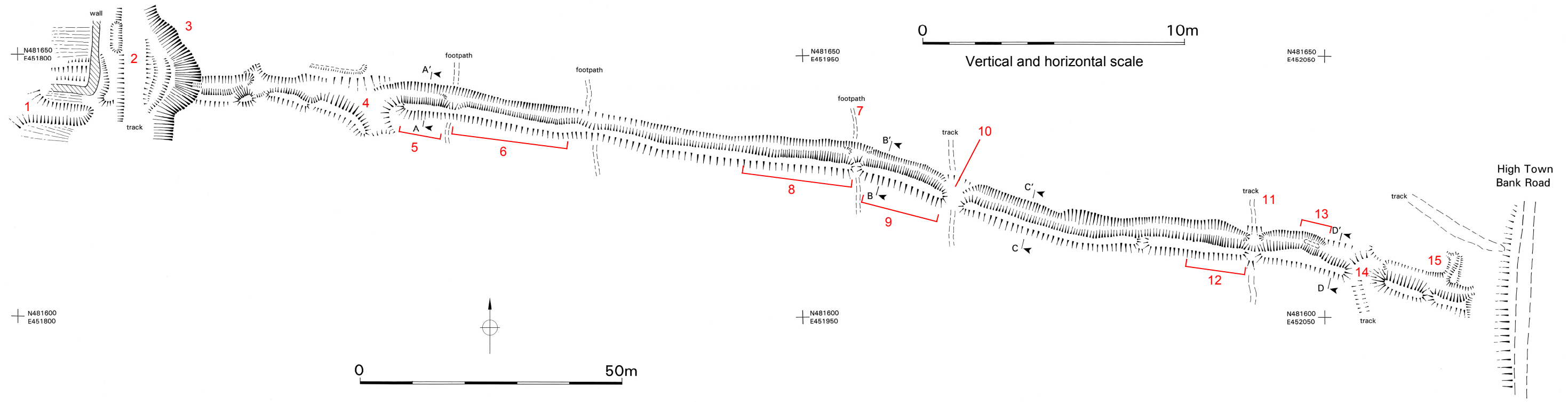
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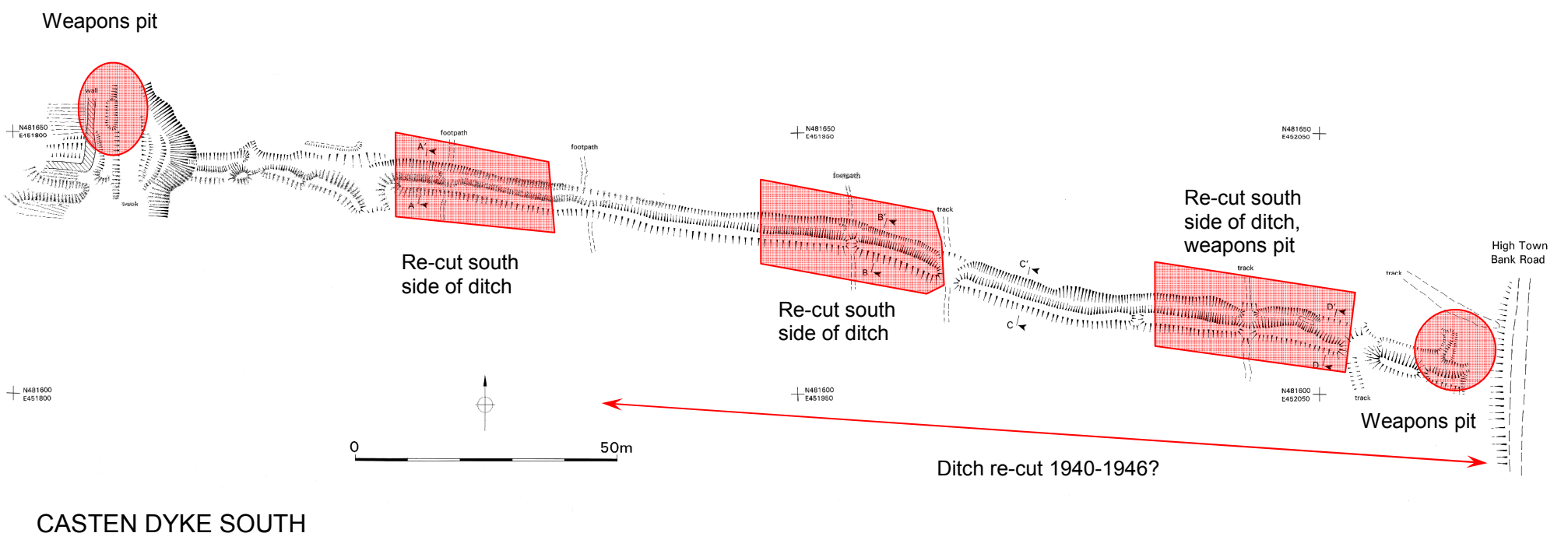
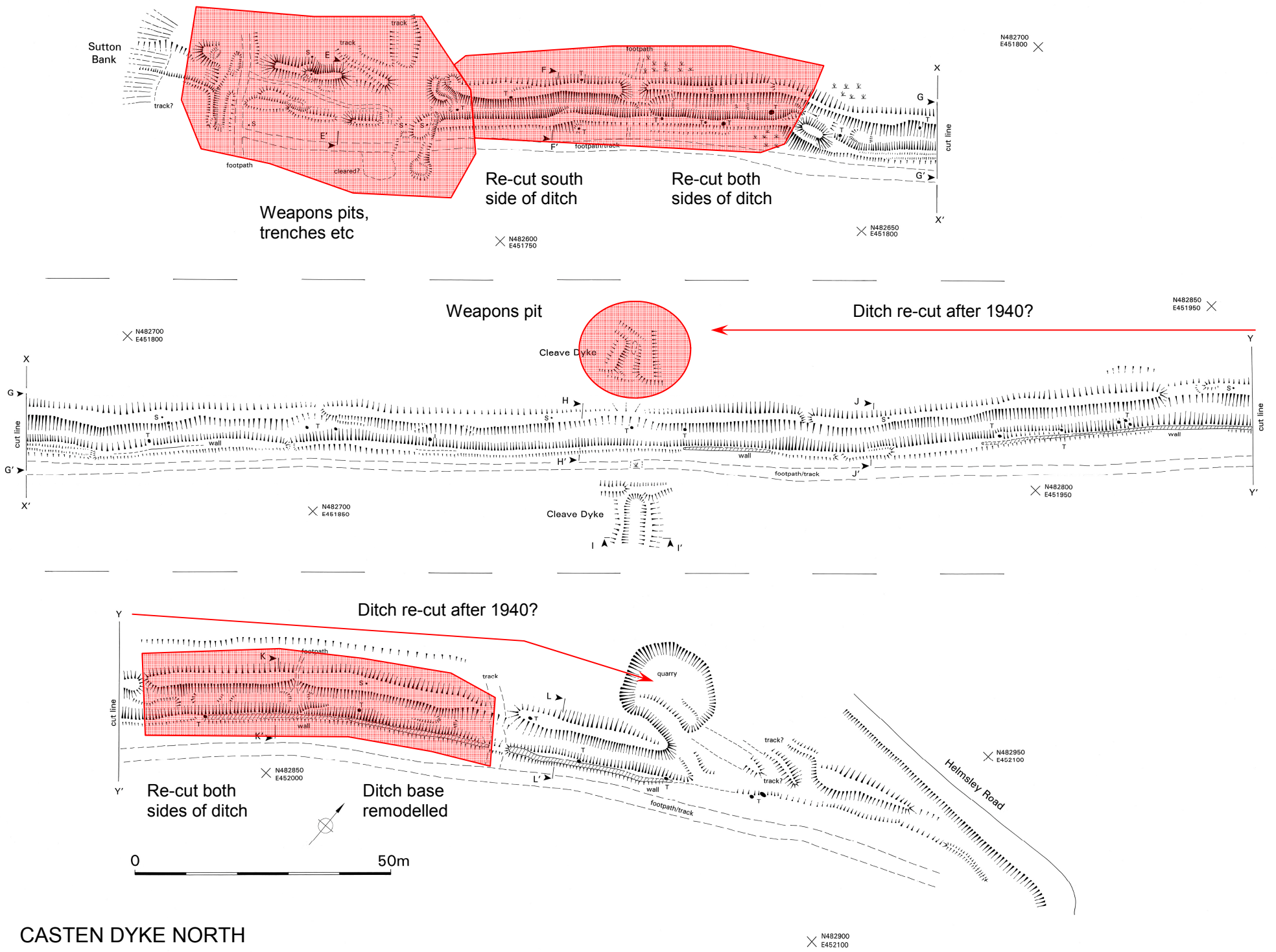


Profile C-C'



Profile D-D'





PROJECT CASTEN DYKE NORTH AND SOUTH	
TITLE AREAS OF 2WW ACTIVITY	
SCALE AS SHOWN	DATE OCT 2016
EDAS	FIGURE 12



Plate 1: Casten Dyke North: firing/observation post (4), looking NE (photo 2/131).



Plate 2: Casten Dyke North: re-cut section (5), looking SW (photo 2/123).



Plate 3: Casten Dyke North: SW of barrow (8), looking SW (photo 2/114).



Plate 4: Casten Dyke North: barrow (8), looking E (photo 2/111).



Plate 5: Casten Dyke North: SW of profile H-H', looking NE (photo 2/105).



Plate 6: Cleave Dyke, S of Casten Dyke North (10), looking NE (photo 2/102).





Plate 7: Casten Dyke North: bank between (12) & (13), looking NE (photo 2/098).



Plate 8: Casten Dyke South: re-cut section (6), looking E (photo 2/151).



Plate 9: Casten Dyke North: wall to counterscarp bank, near (12), looking N (photo 2/099).



Plate 10: Casten Dyke North: bank between (12) & (13), looking NE (photo 2/098).



Plate 11: Casten Dyke North: break (18), looking NW (photo 2/085).



Plate 12: Casten Dyke North: NE end (21), looking E (photo 2/079).



Plate 13: Casten Dyke South: break (4), looking W (photo 2/154).



Plate 14: Casten Dyke South: re-cut section (6), looking W (photo 2/148).



Plate 15: Casten Dyke South: re-cut section (5 & 6), looking E (photo 1/057).



Plate 16: Casten Dyke South: from footpath (7), looking SE (photo 2/139).



Plate 17: Casten Dyke South: E terminus, looking W (photo 1/033).



Plate 18: Casten Dyke South: WW2 trench at E end (15), looking N (photo 1/034).



Plate 19: Casten Dyke South: former line to Hell Hole, looking E (photo 2/138).

## APPENDIX 1: PHOTOGRAPHIC RECORD

## Byland Dykes Photographic Catalogue

Film 1: Colour digital photographs taken 12th April 2016

Film 2: Colour digital photographs taken 20th April 2016

<i>Film</i>	<i>Frame</i>	<i>Subject</i>	<i>Scale</i>
1	032	Casten Dyke South: E terminus, looking W	2 x 1m
1	033	Casten Dyke South: E terminus, looking W	2 x 1m
1	034	Casten Dyke South: WW2 trench at E end (15), looking N	1m
1	035	Casten Dyke South: E end, looking E	2 x 1m
1	036	Casten Dyke South: WW2 weapons pit and re-cutting (13), looking W	2 x 1m
1	037	Casten Dyke South: WW2 weapons pit and re-cutting (13), looking W	1m
1	038	Casten Dyke South: WW2 weapons pit and re-cutting (13), looking E	2 x 1m
1	039	Casten Dyke South: angled central section (towards (10), looking W	-
1	041	Casten Dyke South: angled central section (away from 10), looking E	2 x 1m
1	042	Casten Dyke South: angled central section (away from 10), looking E	2 x 1m
1	043	Casten Dyke South: angled central section (away from 10), looking E	1m
1	044	Casten Dyke South: angled central section (away from 10), looking E	2 x 1m
1	045	Casten Dyke South: angled central section (away from 10), looking E	2 x 1m
1	046	Casten Dyke South: break (10), looking W	2 x 1m
1	047	Casten Dyke South: break (10), looking W	2 x 1m
1	056	Casten Dyke South: central part W of (7), looking W	2 x 1m
1	057	Casten Dyke South: re-cut section (5 & 6), looking E	2 x 1m
1	058	Casten Dyke South: re-cut section (5 & 6), looking E	2 x 1m
2	079	Casten Dyke North: NE end (21), looking E	2 x 1m
2	081	Casten Dyke North: NE end (20), looking NW	2 x 1m
2	082	Casten Dyke North: quarry (19), looking NW	2 x 1m
2	083	Casten Dyke North: wall to counterscarp bank, near profile L-L, looking NE	1m
2	084	Casten Dyke North: wall to counterscarp bank, near profile L-L, looking NE	1m
2	085	Casten Dyke North: break (18), looking NW	1m
2	086	Casten Dyke North: re-cut section (15/17), looking S	2 x 1m
2	087	Casten Dyke North: re-cut section (15/17), looking SW	2 x 1m
2	088	Casten Dyke North: re-cut section (15/17) with stepped base to ditch, looking N	2 x 1m
2	089	Casten Dyke North: re-cut section (15/17) with stepped base to ditch, looking N	2 x 1m
2	090	Casten Dyke North: re-cut section (15/17), footpath break in bank, looking N	2 x 1m
2	091	Casten Dyke North: re-cut section (15/17), footpath break in bank, looking N	2 x 1m
2	094	Casten Dyke North: bank between (12) & (13), looking NE	1m
2	098	Casten Dyke North: bank between (12) & (13), looking NE	2 x 1m
2	099	Casten Dyke North: wall to counterscarp bank, near (12), looking N	1m
2	100	Cleave Dyke, S of Casten Dyke North (10), looking SE	2 x 1m
2	102	Cleave Dyke, S of Casten Dyke North (10), looking NE	2 x 1m
2	103	Cleave Dyke, N of Casten Dyke North (11), looking NW	2 x 1m
2	104	Cleave Dyke, N of Casten Dyke North (11), WW2 weapons pit, looking NW	1m
2	105	Casten Dyke North: SW of profile H-H', looking NE	2 x 1m
2	106	Casten Dyke North: SW of profile H-H', looking NE	2 x 1m
2	107	Casten Dyke North: barrow (8), looking W	1m
2	108	Casten Dyke North: barrow (8), looking W	1m
2	109	Casten Dyke North: NE of barrow (8), looking NE	2 x 1m
2	110	Casten Dyke North: NE of barrow (8), looking NE	2 x 1m
2	111	Casten Dyke North: barrow (8), looking E	2 x 1m
2	112	Casten Dyke North: barrow (8), looking E	2 x 1m
2	113	Casten Dyke North: SW of barrow (8), looking SW	2 x 1m
2	114	Casten Dyke North: SW of barrow (8), looking SW	2 x 1m
2	115	Casten Dyke North: SW of barrow (8), looking SW	2 x 1m
2	116	Casten Dyke North: re-cut section (5), looking NE	2 x 1m
2	117	Casten Dyke North: re-cut section (5), looking NE	2 x 1m
2	119	Casten Dyke North: re-cut section (5), looking SW	1m
2	120	Casten Dyke North: typical post to bank, looking NE	1m
2	121	Casten Dyke North: re-cut section (5), looking NE	-
2	122	Casten Dyke North: re-cut section (5), looking SW	-
2	123	Casten Dyke North: re-cut section (5), looking SW	1m
2	125	Casten Dyke North: re-cut section (5), looking NE	1m



2	126	Casten Dyke North: trench to firing/observation post (4), looking E	1m
2	127	Casten Dyke North: trench to firing/observation post (4), looking E	1m
2	128	Casten Dyke North: break (4), looking NE	1m
2	129	Casten Dyke North: SW end, looking SW	1m
2	130	Casten Dyke North: trench to firing/observation post (4), looking NE	1m
2	131	Casten Dyke North: firing/observation post (4), looking NE	1m
2	132	Casten Dyke North: WW2 weapons pit (3), looking E	1m
2	133	Casten Dyke North: SW end, old sign to bank, looking NE	-
2	134	Casten Dyke North: SW end, looking NE	1m
2	135	Casten Dyke North: WW2 weapons pit (3), looking W	1m
2	136	Casten Dyke North: SW end off Sutton Bank, looking SW	1m
2	137	Casten Dyke North: SW end off Sutton Bank, looking SW	-
2	138	Casten Dyke South: former line to Hell Hole, looking E	-
2	139	Casten Dyke South: from footpath (7), looking SE	2 x 1m
2	141	Casten Dyke South: from footpath (7), looking SE	2 x 1m
2	142	Casten Dyke South: E of profile C-C, looking E	2 x 1m
2	144	Casten Dyke South: E of profile C-C, looking E	2 x 1m
2	145	Casten Dyke South: break (10), looking E	1m
2	146	Casten Dyke South: close to footpath, east of 6, looking W	2 x 1m
2	147	Casten Dyke South: close to footpath, east of 6, looking E	2 x 1m
2	148	Casten Dyke South: re-cut section (6), looking W	1m
2	149	Casten Dyke South: re-cut section (6), looking W	1m
2	150	Casten Dyke South: re-cut section (6), looking W	1m
2	151	Casten Dyke South: re-cut section (6), looking E	1m
2	152	Casten Dyke South: re-cut section (6), looking E	1m
2	153	Casten Dyke South: break (4), looking E	1m
2	154	Casten Dyke South: break (4), looking W	1m
2	155	Casten Dyke South: W end, looking W	1m
2	156	Casten Dyke South: quarry (3), looking E	1m
2	157	Casten Dyke South: quarry (3), looking NE	1m
2	158	Casten Dyke South: trackway (2), looking N	1m
2	159	Casten Dyke South: gully (1), looking SW	1m
2	161	Casten Dyke South: drystone wall at W end, looking NE	1m
2	163	Casten Dyke South: gully (1), looking SW	1m
2	164	Casten Dyke South: gully (1), looking N	1m





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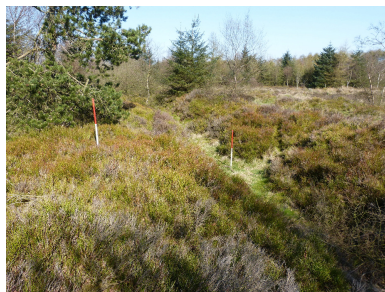
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