

ASSELBY TO PANNAL GAS PIPELINE,
ABERFORD, WEST YORKSHIRE
TOPOGRAPHICAL SURVEY OF BECCA BANKS

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On behalf of

Murphy Pipelines Ltd
for
National Grid

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EXECUTIVE SUMMARY

In December 2007, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Murphy Pipelines Ltd, through Mr Derek Cater, Archaeological Advisor to National Grid, to undertake an archaeological earthwork survey of part of Becca Banks, itself part of the Aberford Dykes complex centred on Aberford in West Yorkshire (NGR SE4420 38140 centred). The survey was required to be undertaken in advance of the construction of a natural gas pipeline by Murphy Pipelines Ltd on behalf of National Grid through this part of the monument, which will itself be preceded by detailed archaeological excavation. The survey work was carried out in January 2008.

Within the survey area, the remains of Becca Bank have been extensively ploughed over a considerable period. As a result, the surviving earthworks are discrete, spread and rounded, with no clean breaks of slope in an area of ground which falls gently from north to south. However, the remains of the northern bank of the monument appear to be positioned on the top of a slight natural south-facing scarp; it is some 11.5m wide, incorporating a degree of spreading by ploughing, but does not survive to any discernable height. The adjacent south-facing scarp is c.18.0m wide and stands to an average height of 2.50m, and there is a poorly defined break of slope halfway down the slope. The remains of a ditch can be seen on the south side of the scarp, formed by a faint flat-bottomed depression c.6.0m wide which is defined on its south side by a possible north-facing scarp c.5.0m wide. Further south again there is a flattened area c.4m-5m wide with a slightly rounded profile which might represent the remains of a second, southern, bank.

The survey has confirmed that this section of Becca Banks conforms to the overall pattern noted elsewhere through excavation, i.e. a bank situated on the top of a probable natural scarp with a ditch running along the south side. However, there are some discrepancies with the excavated sections, presumably reflecting ploughing, erosion and infilling. The excavations through the dyke at this point will form a valuable comparison to the topographical survey, and will provide information as to how accurately the surviving earthworks reflect the original form of the monument and, perhaps more importantly, how past events, for example slumping of the dyke bank, may have influenced the formation of the earthworks.

1 INTRODUCTION

Reasons and Circumstances for the Project

- 1.1 In December 2007, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Murphy Pipelines Ltd, through Mr Derek Cater, Archaeological Advisor to National Grid, to undertake an archaeological earthwork survey of part of Becca Banks, itself part of the Aberford Dykes complex centred on Aberford in West Yorkshire (NGR SE4420 38140 centred). The survey was required to be undertaken in advance of the construction of a natural gas pipeline by Murphy Pipelines Ltd on behalf of National Grid through this part of the monument, which will itself be preceded by detailed archaeological excavation.
- 1.2 The scope of the archaeological survey work was defined by a Written Scheme of Investigation (WSI) produced by Network Archaeology and agreed with the local archaeological curators, to cover several topographic survey sites which were to be crossed by the pipeline. In summary, this WSI required the production of a detailed hachure plan of the monument at 1:500 scale (or larger where appropriate), together with a survey report. Other details, for example the production of a contour plan of the site and a section through the earthwork, were clarified following discussion between EDAS and Derek Cater.
- 1.3 It should be noted that this report supplements previous work undertaken by Network Archaeology Ltd (Network Archaeology 2007) and provides sufficient, accurate information to form a pre-excavation record of the earthwork, where it is to be crossed by the pipeline.

Site Location and Description

- 1.4 The survey area is located towards the eastern end of the northernmost dyke of the Aberford Dykes complex, on the east side of the A1M to the east of Aberford, c.400m to the east of Humphrey Dale Cottage (see figure 1). This part of the monument, which is a Scheduled Monument (SM 31519) and is known as Becca Banks, occupies an elevated position at c.55m AOD near the crest of the south-facing slope (north side) of the valley of the Cock Beck. The survey area is crossed by a public footpath running on a north-east/south-west alignment between Humphrey Dale Cottage to the west and Hayton Wood to the east, and this footpath forms the principal access to it (see figure 2).
- 1.5 At the time of survey, this part of the monument lay within land under arable cultivation, with a crop of wheat growing on it. However, the wheat was still very low (less than 0.10m) and was not sufficient to obscure the earthworks.

Aims and Objectives

- 1.6 The aims and objectives of the survey can be summarised as follows:
 - to gather sufficient information to establish the extent, nature, character, condition, quality and date of the surviving earthworks within the survey area;
 - to provide a detailed, pre-intervention record of these earthworks;
 - to provide a basis for the preparation of any future detailed re-instatement specifications for this part of the monument once the pipeline has been constructed (Network Archaeology 2007, 45-46).

Survey Methodologies

- 1.7 The site had been subject to a previous earthwork survey by Entrepouse Industrial Services in March 2007. However, this was deemed by English Heritage to be insufficient to achieve “preservation by record” and so EDAS were asked to prepare a sketch hachure plan of the site using the Entrepouse data; the sketch plan was then incorporated into the report on the dykes complex prepared by Network Archaeology (2007, figure 22; see figure 3). English Heritage and the local archaeological curators then required a new measured survey of the site to be undertaken by EDAS in advance of pipeline construction.
- 1.8 The initial survey work was undertaken on the 21st January 2008 in very wet conditions. The survey area measured c.102m north-south by 58m east-west. The majority of this area lay within the pipeline construction corridor, which was marked out on the ground in advance of the survey work. The survey team was careful not to work beyond the limits of the pipeline corridor. However, by walking along another public footpath which runs parallel to the hedged boundary marking the eastern extent of the survey area, it was possible to take measurements of the earthworks where they meet the hedgeline, and to join these to those within the survey area proper.
- 1.9 The initial survey work was undertaken using EDM total station equipment. A general topographical survey was undertaken of the monument, under direct archaeological control, i.e. advising as to where measurements of the various elements, such as tops and bottoms of slopes, should be taken. The topographical survey was accompanied by a contour survey, also using survey data gathered by the total station equipment. Generally, the contour survey was achieved using a grid at 3m centres, although this was decreased to 2m centres where greater accuracy was required. The survey was tied into the Ordnance Survey National Grid and, where possible, field boundaries and other items such as tractor trails were marked on in order to both locate the site and inform the second part of the survey work (see below).
- 1.10 The topographical and contour surveys were presented as film plots at a scale of 1:200 on separate A1 sheets. These were then taken out into the field, and used as the basis for an EDAS hand-drawn hachure survey on 22nd January 2008, following conventions established by the former Royal Commission on the Historical Monuments of England (now English Heritage) (RCHME 1999, 10-16; English Heritage 2007, 31-35). This second site visit was timed to coincide with intermittent low sunshine, thus allowing a high degree of earthwork recognition; as a result, more features were recorded than had been noted in the previous 2007 sketch survey. Sufficient notes were also made on site to allow a detailed description of the earthwork to be prepared. The survey equates to a English Heritage Level 3 survey, although it should be noted that only a very small section of the linear earthwork was recorded.

Report and Archive

- 1.11 This report forms a detailed drawn and written record of that part of Becca Banks where it is to be crossed by the pipeline, prepared from the sources of information set out above, and drawing on previous research undertaken by others (e.g. Network Archaeology 2007). The full archive, comprising paper, magnetic and plastic media, relating to the EDAS project has been ordered and indexed according to current archaeological standards and will be combined with the

excavation archive arising from this site, for eventual deposition with the Yorkshire Museum.

2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 2.1 The following background information is largely taken from the detailed report on the Aberford Dykes complex by Network Archaeology (2007, 4-6 & 14-17), and is repeated here to put the earthwork survey into context.

The Aberford Dykes

- 2.2 The survey area covers a section of the linear earthwork known as Becca Banks, the most extensive of three predominately east-west aligned features which lie on either side of the Cock Beck. These earthworks are collectively known as the Aberford Dykes, which can be seen as a series of rock-cut ditches and banks to the west and east of Aberford. The earthworks focus on the a narrow Magnesian Limestone corridor, which is believed to have been an important north-south route since pre-Roman times. The banks were thought to represent part of the defences of the British kingdom of Elmet, built against the Anglo-Saxons in the late 6th and early 7th centuries AD, or as boundaries to defend the later Anglo-Saxon kingdom of Deira against the Mercians in the 7th century AD (Faull 1981, 171-172). However, the earthworks have also been interpreted as being built to defend the territories of the Brigantes against the advance of the Roman empire in the 1st century AD (Alcock 1954), although any association with the known Roman road from Castleford to Tadcaster through Aberford (the Roman Ridge – the old A1) has since been lost.
- 2.3 Until recently, there was no firm documentary evidence for the date of the earthworks, and archaeological dating evidence was sparse. Although some new material is now available for the Becca Banks section (see below), it should be noted that the various lengths of linear earthwork may not all be contemporary, and they may relate to several different periods or events; the style of their construction has parallels in both the Roman and early post-Roman periods. Nevertheless, the size and extent of the whole dyke system implies a considerable expenditure of time and labour, suggesting a degree of social organisation at the time of their construction and a strong concern for territorial control, whether military, organisational or symbolic. The majority of the linear earthworks are of National Importance and are scheduled and protected as Ancient Monuments.

The Becca Banks

- 2.4 The Becca Banks linear earthwork runs for nearly three miles (4.8km), generally on an east-west alignment but locally following a more sinuous course, along the north side of the valley of the Cock Beck. It commences to the west of Aberford, where it is known as “The Ridge”, and then curves to the south-east towards Aberford Bridge in the centre of the village. The route is then lost under housing, before becoming visible again to the east of the bridge at Green Hill. There appears to have been a gap c.80m wide to the east of Glebe House which might have been an entrance or gateway perhaps associated with a ford across the Cock Beck (Alcock 1954). However, no evidence for this entrance was found when a section was dug across the dyke (at NGR SE4360 3783) by Thackrah in 1962 during the construction of the modern A1 (Wilson & Hurst 1963, 311-312), and the presence of a gap remains inconclusive. To the east of the present A1, the earthwork assumes a north-east/south-west alignment, passing to the south of Humphrey Dale Cottage and then across several large enclosed fields; the survey

area was located c.400m east of Humphrey Dale Cottage. To the east of the survey area, the course of the earthwork is interrupted (see below) after which its alignment recommences for a further 75m; Becca Banks appears to terminate a short distance into Hayton Wood.

- 2.5 As far as can be discerned from the available evidence, Becca Banks consisted of a bank, exploiting a slight natural scarp slope, above a ditch placed on the southern (downslope) side. That part of the earthwork lying to the east of the A1 has been subject to three known archaeological investigations. An excavation in 1965, undertaken by R T Brooks, lies closest to the survey area, some 90m to the east (at NGR SE442 381) (Brooks 1967). Brooks exposed a bank that was 7.3m wide and 1.8m in height, with a ditch some 4.9m wide and 1.2m deep on the south side. Two further investigations were undertaken by West Yorkshire Archaeology Service (WYAS) in 1996 and 1997 prior to the construction of the A1-M1 link road (Wheelhouse & Burgess 2001, 137-144). The western area excavations uncovered a bank 13.0m wide and 2.8m high, with a ditch 6.0m wide and 2.6m deep; a hachure plan accompanying the excavation shows the bank to have a flattened top measuring c.5m across, with north and south scarps falling away in a number of uneven sloping steps. The dimensions of the bank are similar to those uncovered by Thackrah in 1962 just to the west prior to the construction of the modern A1 dual-carriageway (Wilson & Hurst 1963, 311-312). The WYAS eastern area excavation was situated close to Humphrey Dale Cottage. Here, the bank had been greatly truncated by agricultural activity, measuring only 1.5m wide and 0.2m in height, although the accompanying ditch survived to 3.0m in depth and 8.6m in width.
- 2.6 The results from the previous investigations can be summarised as follows. Becca Banks has a single phase of construction and, although the previous excavations have been characterised by a lack of dating evidence, the results of the 1996-97 WYAS work in particular appear to point to a late Iron Age origin, rather than an early medieval date as has been proposed elsewhere (although the earthwork is of course likely to have been utilised as a boundary for a considerable period of time after its construction). The infilling of the ditch, through erosion of the bank and agricultural activity, was probably completed in the later medieval period. The bank is composed almost entirely of upcast from the ditch, which runs along the south side of the bank, and shows no evidence for dramatic re-cutting or reorientation; at the western end of Becca Banks, the top of the bank would have stood some 7.6m above the base of the ditch.

3 SURVEY RESULTS (see figures 4 and 5)

- 3.1 The section of Becca Banks coinciding within the survey area has been extensively ploughed over a considerable period, resulting in earthworks which are discrete, spread and rounded, with no clean breaks of slope at either their tops or bottoms. The area that was recorded measured c.60m long (north-south) by c.100m wide (east-west). A public footpath runs almost east-west through the survey area, just on the north side of the earthwork.
- 3.2 The ground to the north of the earthwork slopes very gently downwards from north to south. The bank itself appears to be positioned on the top of a slight natural south-facing scarp; however, due to plough damage, the extent to which any natural scarp was artificially modified is difficult to assess from the surface remains alone. The north edge of the bank may just be visible as a very shallow north-facing scarp, situated c.6.5m to the north of and virtually parallel to the footpath alignment, although its very shallow nature means that it is not reflected in the

contour survey. The south side of the bank appears to have been set c.5.0m to the south of the footpath, where a rounded break of slope (at 54m AOD) marks the top of the south-facing scarp here; this would give the bank a width of around 11.5m, incorporating a degree of spreading by ploughing. The bank does not survive to any discernable height as an earthwork, although the survey area is located on the highest part of this section of Becca Banks, with the ground surface sloping away gently along the footpath to the east and west.

- 3.3 The south-facing scarp is a total of 18.0m wide and stands to an average height of 2.50m; it narrows slightly towards the hedged boundary to the east of the survey area and also becomes less steep. Approximately half way down the scarp there is a poorly defined break of slope, below which the scarp appears to slope downwards at a slightly more gentle angle than above. The break of slope is more marked towards the west side of the survey area, where it forms a narrow shelf, but becomes fainter towards the east side.
- 3.4 The remains of a ditch are visible at the base of the scarp (at 51.50m AOD). This is a very faint flat-bottomed depression c.6.0m wide, running parallel to the base of the scarp. There appears to be a very gentle north-facing scarp, c.5.0m wide, defining the southern edge of the ditch, giving a total width of c.11.0m. As with the bank, the ditch is not clearly reflected by the contour data, which shows a more flattened area here. This flattened area extends for some 4m to 5m to the south of the proposed southern edge of the ditch and has a slightly rounded profile. Might it form the remains of a second bank running parallel to the south side of the ditch and also formed by its upcast? No such feature has been exposed in previous excavations, although Brooks' 1965 section hints at a similar profile to the surface of the natural clay south of the ditch (Network Archaeology 2007, figure 5), while an aerial photograph taken in 1971 appears to show two faint lighter cropmarks / soilmarks flanking a darker band here (Network Archaeology 2007, plate 1).
- 3.5 To the east of the survey area, beyond the hedged boundary, the line of Becca Banks can be seen as continuing as a very rounded earthwork, largely formed by the south-facing scarp. Approximately half-way across the field here, there is a substantial gap in the line of the dyke. Aerial photographic evidence reveals a herringbone drainage pattern at this location, focused on an existing manhole cover, suggesting that the gap is a modern creation (Network Archaeology 2007, 4). The line of the dyke resumes to the east of the gap and then enters Hayton Wood.
- 3.6 To the west of the survey area, both the earthworks of the dyke and the scarp upon which it is situated fade away to such an extent that they are barely visible, although they can be seen on aerial photographs as cropmarks / soilmarks (Network Archaeology 2007, plate 1). Further west, where the public footpath runs along the south side of the enclosed land associated with Humphrey Dale Cottage, the line of the dyke may survive as a steeply sloping south-facing scarp to the south of the footpath. At either end of this section of the footpath, the scarp is only c.0.5m in height but it rises to nearly 3m in the centre. A lower north-facing scarp is also visible on the north side of the footpath in places, presumably representing the former north side of the dyke's bank.

4 DISCUSSION

- 4.1 Given the extent of ploughing, and the relatively small size of the survey area in relation to the overall extent of Becca Banks, only general observations can be made regarding the results of the topographical survey.

- 4.2 The survey work has confirmed that this section of Becca Banks conforms to the overall pattern noted elsewhere through excavation, i.e. a bank situated on the top of a probable natural scarp with a ditch running along the south side. At c.11.5m, the estimated width of the bank is close to the 13m recorded by WYAS in their 1996-97 western excavation area, but considerably wider than the 7.3m noted by Brooks in 1965 much closer to the survey area; any discrepancy with the latter must partly be due to spreading as a result of ploughing. The estimated dimensions of the ditch are also greater than those recorded in previous excavations, although again these are likely to have been exaggerated by ploughing and infilling, and will be refined by the proposed excavation in advance of the pipeline construction.
- 4.3 The excavated form of the dyke will form a valuable comparison to the topographical survey, informing how accurately the surviving earthworks reflect the original form of the monument and, perhaps more importantly, how past events, for example slumping of the dyke bank, may have influenced the formation of the earthworks.

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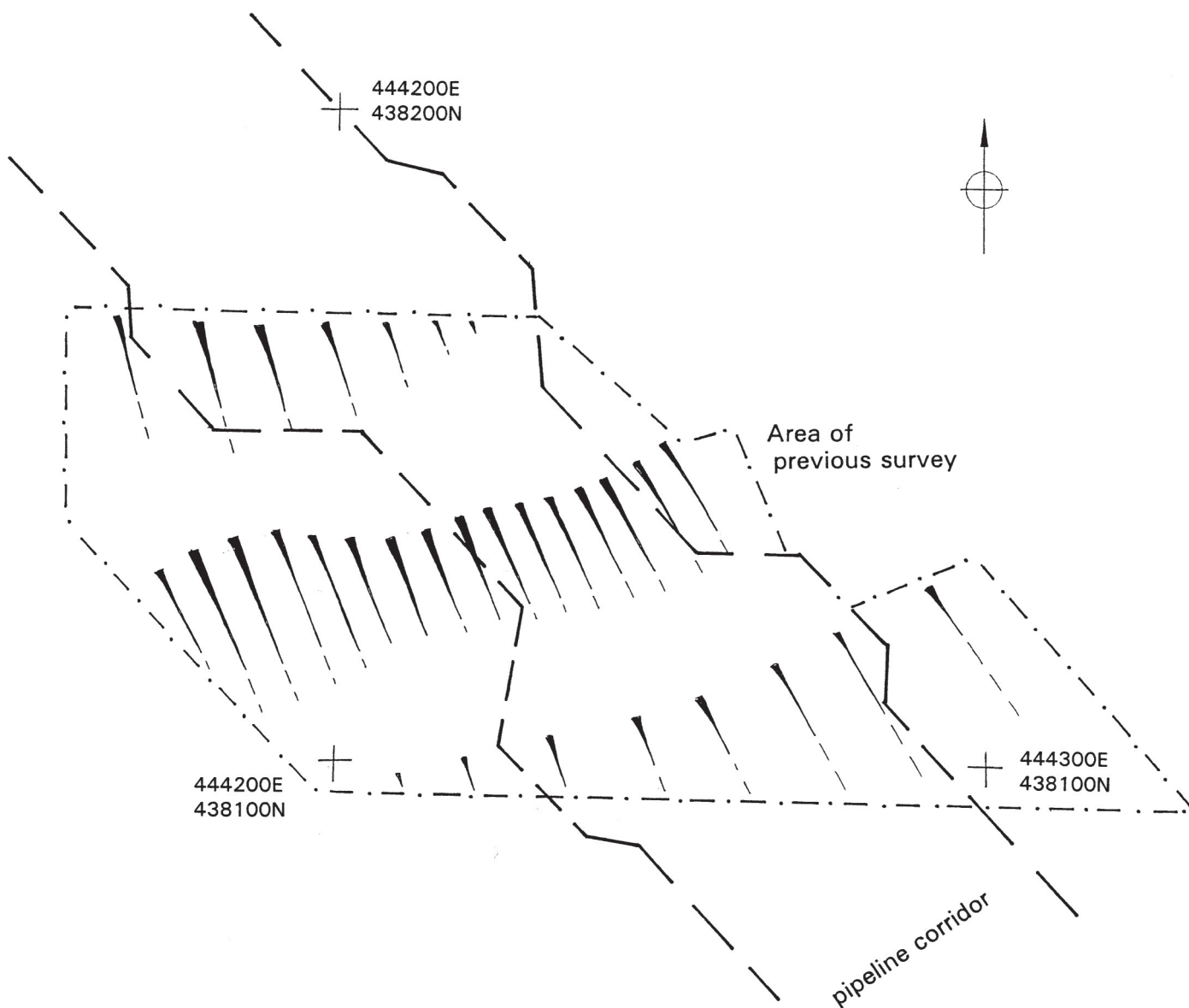
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6 ACKNOWLEDGEMENTS

- 6.1 The topographical survey of this part of Becca Banks was commissioned by Murphy Pipelines Ltd, through Mr Derek Cater, Archaeological Advisor to National Grid; EDAS are grateful to both for their help and assistance with the project. The initial site survey was undertaken by Benchmark Surveys of Leeds, under the supervision of Shaun Richardson of EDAS. Shaun Richardson completed the site survey work and produced the fieldwork records and a draft report. The final report was produced by Ed Dennison, with whom the responsibility for any errors remains.

PROJECT		BECCA BANKS SURVEY	
TITLE		PREVIOUS EDAS SKETCH SURVEY	
SCALE	AS SHOWN	DATE	APR 2008
EDAS		FIGURE	3



SURVEY NOTES

© This survey is copyright and must not be used/copied without written permission.
 GRID Local Plane Metric Relative to National Grid.
 LEVELS Metric Relative to Ordnance Datum, Newlyn



KEY

- Top of Batter
- Bottom of Batter
- Edge (General)
- Headline (centre)

PROJECT TITLE
**BECCA
 BANKS**

DRAWING TITLE
**ARCHAEOLOGICAL
 SURVEY
 WITH LEVELS**

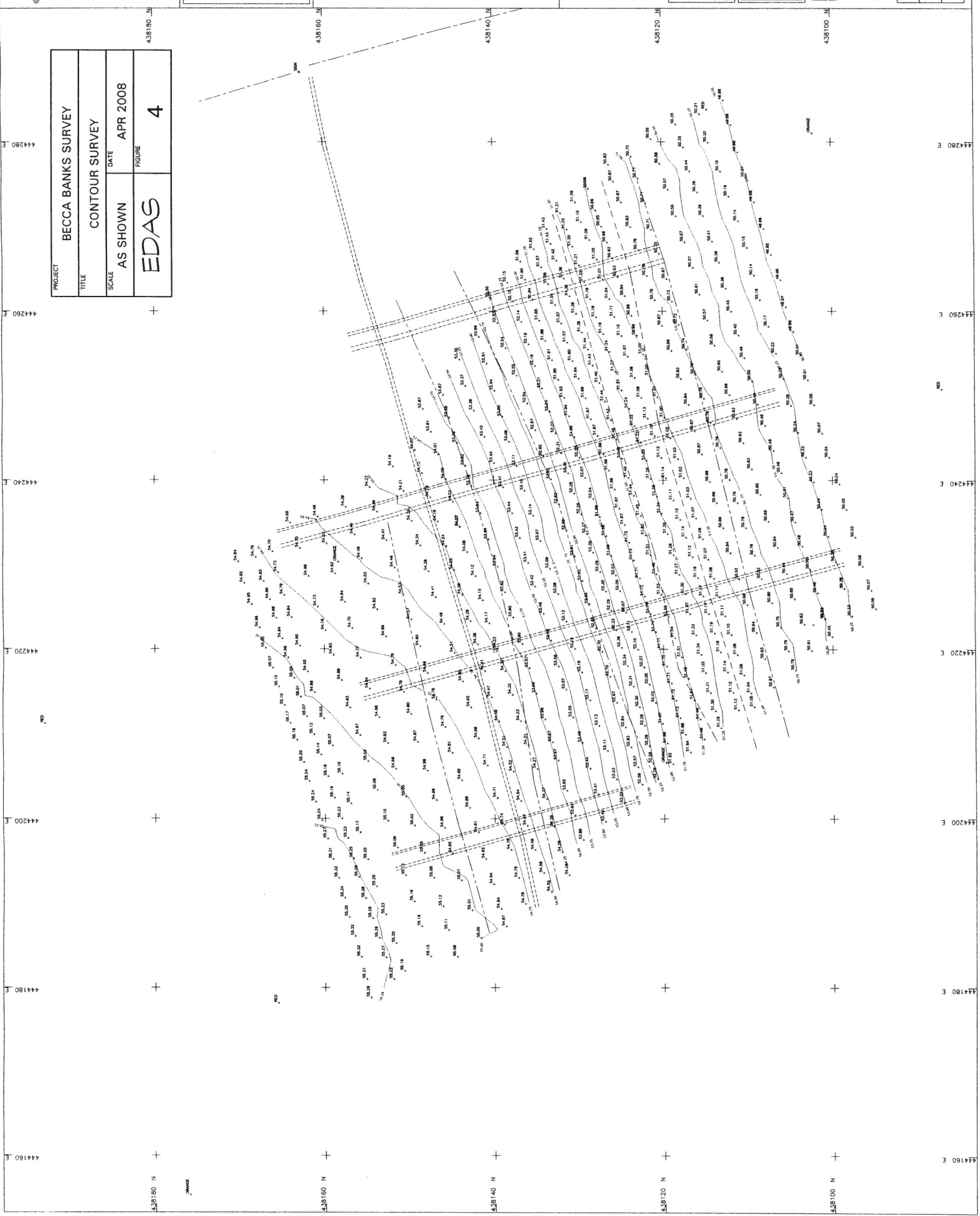
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LAND SURVEYS

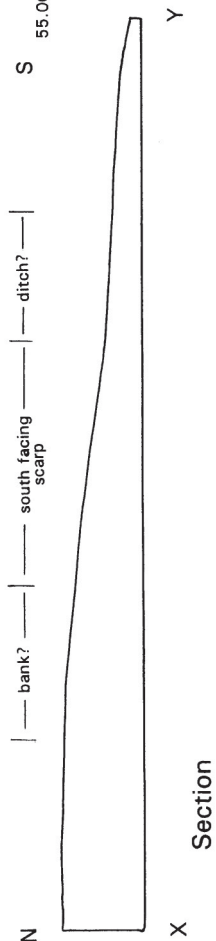
7 Blenheim Terrace
 Leeds LS2 9HZ
 Tel 0113 2268 666
 Fax 0113 2260 659

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DRAWING	DATE	REVISION	DATE
DK	21/01/08		
BM2210/02			

PROJECT BECCA BANKS SURVEY	
TITLE CONTOUR SURVEY	
SCALE AS SHOWN	DATE APR 2008
FIGURE 4	
EDAS	



N — bank? — south facing scarp — ditch? — S 55.00m AOD



444180E +
438180N

natural slope

X section

sign post

top path

slight scarp

hedgeline

slight depression or
slight dip

Plan

natural slope

444180E +
438100N

pipeline corridor

pipeline corridor

444260E +
438100N

PROJECT	BECCA BANKS SURVEY		
TITLE	TOPOGRAPHICAL SURVEY		
SCALE	AS SHOWN	DATE	APR 2008
FIGURE	EDAS 5		

0 30m