

CPAT Report No 1182

The Whitford Dyke, Flintshire

EXCAVATION AND SURVEY 2012



THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

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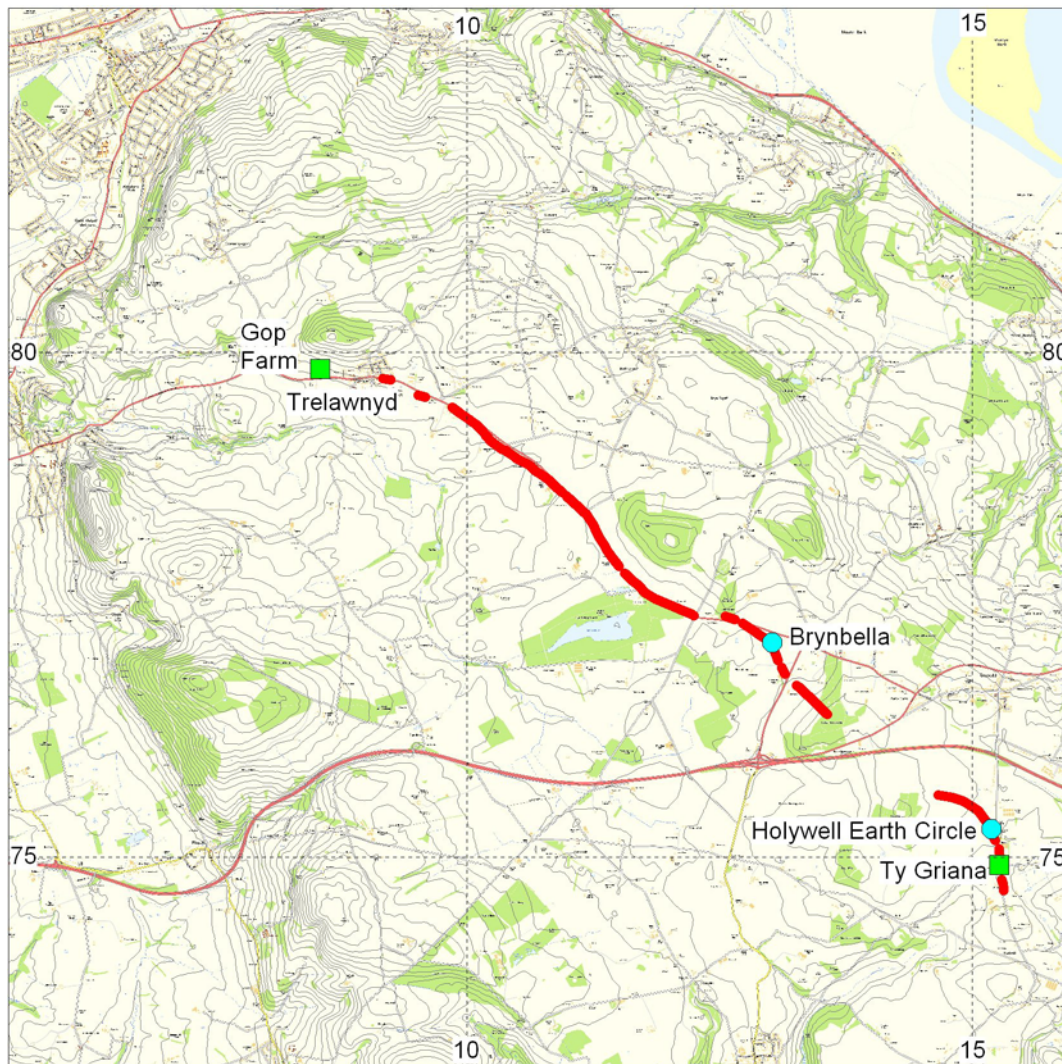
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DYKE

1 INTRODUCTION

- 1.1 The linear earthwork known as the Whitford Dyke (PRNs 28097 and 28099) has been traced intermittently for around 9km, from a presumed northern end to the west of Trelawnyd (SJ 0834 7988) to its southern extent (SJ 1531 7466) beyond the Holywell Earth Circle, a prehistoric hengiform monument (Fig. 1). The majority of the upstanding sections have been scheduled on the basis that they were originally thought to be part of Offa's Dyke, although this has now been discounted and the monument is instead seen as a separate boundary earthwork or short dyke belonging to the early medieval period.
- 1.2 Several sections of the dyke have been the subject of small-scale excavations, initially by Fox during the 1920s (Fox 1955), then as part of the Offa's Dyke Project during the 1970s and 1980s, and more recently in 2008-9 by the Clwyd-Powys Archaeological Trust (CPAT) as part of a Cadw-funded project designed to assess a number of potential cursus monuments (Jones 2009). None of the sections excavated to date has produced any dating evidence and a further programme of investigation was therefore conducted by CPAT during 2012, again with funding from Cadw. A summary of excavations conducted along the dyke is provided in Appendix 1.



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Fig. 1 The course of the Whitford Dyke

- 1.3 Although the form and dimensions of the monument do vary and its course is intermittent, it is not unreasonable to assume that the various sections were originally either part of a single monument, or perhaps three associated sets of earthworks. The north-western end, however, has long been regarded as rather uncertain as a length of bank to the south-east of Gop Farm, although scheduled as part of the dyke, was thought by Fox to be part of an old roadway (Fox 1955, 19). This was tested as part of the present project, which also investigated a section close to the southern end of the dyke, together with several transects of magnetometry in the hope of identifying the dyke in areas where no earthwork or cropmark evidence was known.

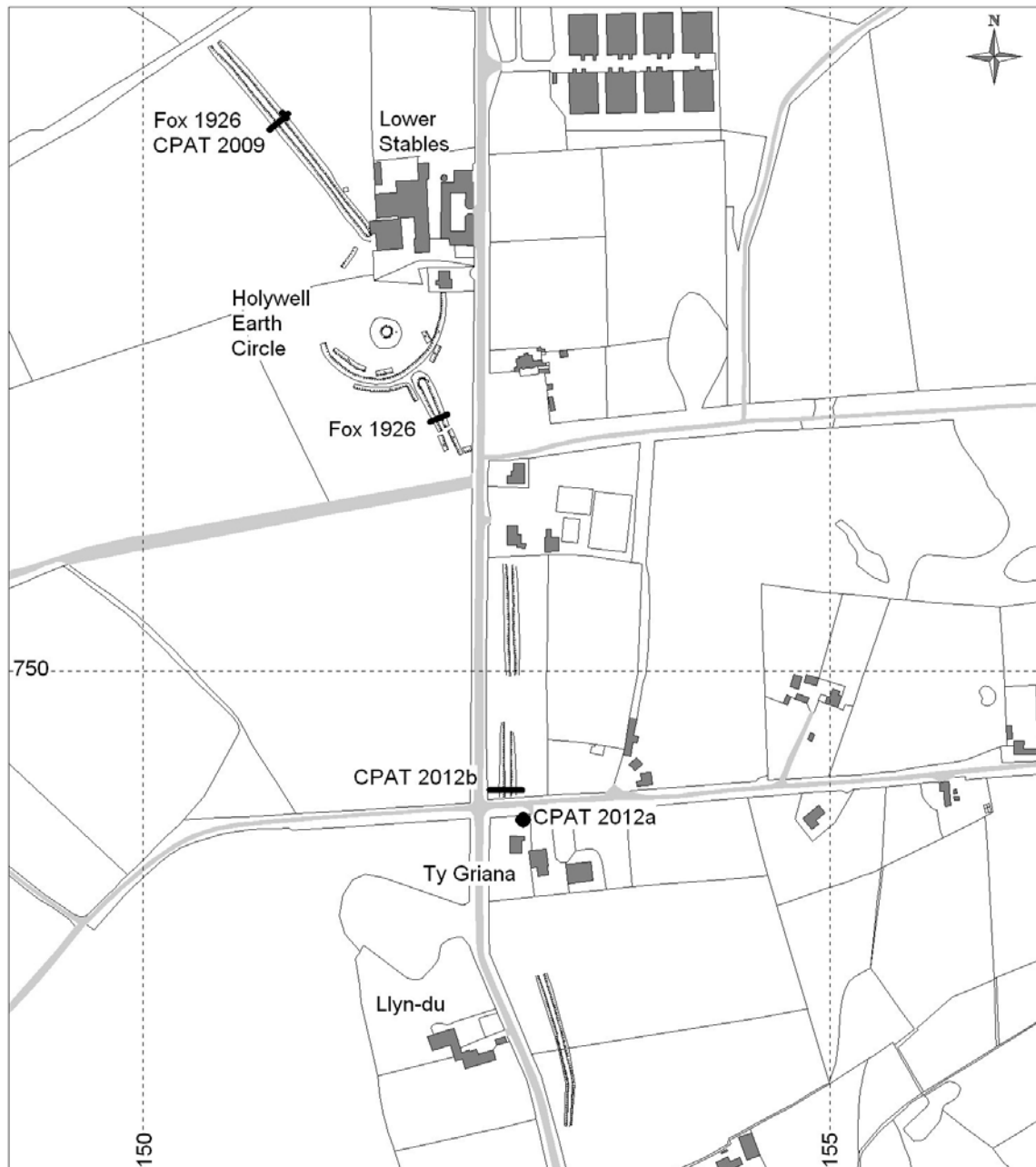
2 PREVIOUS INVESTIGATIONS AND PERCEPTIONS

- 2.1 The Whitford Dyke may have been first mentioned in a document as early as 1278, containing the phrase ‘Prestatun od le Deke’, although as Fox points out the precise meaning is rather obscure. Critically, although this could refer to the settlement of Prestatyn, it could equally, if not perhaps more likely, be referring to the hundred of Prestatyn, which would have included the townships of Llanasa, Newmarket, Gwaenysgor, Meliden and most of Dyserth (Fox 1955, 14-15). While this cannot therefore be taken to indicate that the dyke originally extended to the coast, it is not unreasonable to assume that the reference is to a linear earthwork which is unlikely to be anything other than the Whitford Dyke.
- 2.2 Until relatively recently perceptions of the dyke have been coloured by the assumption that it was part of Offa’s Dyke and it was only towards the end of the twentieth century that this was challenged. According to Fox (1955, 5) the earliest record of the earthwork appears to be in a letter written in 1703 by William Aubrey and published in Lhwyd’s *Parochialia*, which mentions ‘Clawdd Offa’ on or about ‘Tegangle Mountain’, although it is not now clear exactly where this refers to. There is, however, no such reference in Thomas Pennant’s *Tours in Wales* (1801), although Fox (1926b, 143; 1955, 5) notes that a letter by a Henry Parry, attached to a copy of Pennant’s book in the National Library of Wales, records what was then referred to as Offa’s Dyke in old deeds of the Talacre family dating to the reign of Edward VI (1547-53), noting that the dyke formed a considerable length of the Whitford parish boundary and was traceable from the Racecourse to Marian Newmarket (Trelawnyd).
- 2.3 The dyke’s presence in Whitford parish is also noted by Lewis in his *Topographical Dictionary of Wales* (1833), passing ‘through the plantation of Pen-y-Gelli where it is quite perfect and ten feet high’, as well as forming a part of the boundary between the parishes of Newmarket and Llanasa.
- 2.4 The discontinuous earthwork appears to have been first mapped by the Ordnance Survey on Surveyors’ Drawing No. 343, surveyed in 1834-5, on which it was identified as Offa’s Dyke. The westernmost point thus recorded is around 350m east of Trelawnyd (SJ 0951 7958). Neither this survey nor its more detailed successors in the later 19th century include any record of the dyke within or to the south of the old racecourse, and also do not depict the Holywell Earth Circle. The likely explanation for this omission is that the hengiform monument and the southern section of the dyke were both too slight to have been included.
- 2.5 The belief that the dyke formed the northern section of Offa’s Dyke was later adopted by the Royal Commission (RCAHMW 1912, 96) and also Sir Cyril Fox, who commenced his fieldwork study of that dyke as a whole with investigations in this area in 1924-5 (Fox 1955). Fox described the surviving earthwork sections in some detail, although comparison with the Surveyors’ Drawing clearly indicates that significant sections had already been lost by the 1920s.

- 2.6 In particular, Fox's attention was drawn to two sections of the earthwork where changes in direction coincided with what appeared to be prehistoric monuments, and it was in these areas that he decided to excavate a number of sections. Near the south-eastern end of the earthwork, on the site of the former Holywell Racecourse, is the hengiform monument known as the Holywell Earth Circle, or Ysceifiog Circle, which is defined by a ditch with a slight internal bank forming an oval 108m across north-east to south-west by 95m. Within the circle, but off-centre to the south, is a prominent round barrow 20m across. Fox noted that the dyke respected the circle, rather than continuing across it, and excavated two sections across the dyke, one 39m to the south-east and the other 119m to the north-west. The excavations were unable to identify either the original ground surface or the profile of the ditches with any certainty, having over-cut both sections, although the conclusion was that the ditches were probably around 1m deep and 3.3m wide, and between 8.25 and 9.75m apart internally.
- 2.7 Fox excavated two further trenches around Brynbella, 2.8km to the north-west (SJ 1300 7712), where a round barrow marked another change in direction. Here, the limestone bedrock had been cut into by both ditches, making their identification much more straightforward. The ditches proved to be 20m apart internally, around 3.7m wide and 1.4m to 1.8m deep.
- 2.8 There are no records of any further work being conducted on the line of the dyke for the next half century, until it drew the attention of the Offa's Dyke Project, under the direction of David Hill, in the late 1970s and early 1980s. These investigations included two excavated sections where the monument survived as an earthwork, at Rhydwen Farm (SJ 133 766) and a reopening of Fox's 1925 trench at Brynbella (SJ 129 771), whilst noting an apparent south-eastern end to the earthwork at Pen-y-gelli (SJ 135 764). To the north-west of Brynbella excavations at Cae Cornel (SJ 125 775) identified a monument composed of 'fragile banks and a minor ditch', which it was concluded did not form part of the dyke (Hill and Worthington 2003, 154-161). The project also noted a lack of evidence for the dyke at Pen-y-parc during the construction of the A55 (SJ 137 760), where observations the previous year had also failed to identify any trace (Greuter 1985).
- 2.9 The dyke proved elusive during trial excavations in Trelawnyd in 1989 in advance of a housing development. Traces of a possible bank were identified in one trench, although this was far from conclusive, and there was no trace of any accompanying ditch (Owen 1989). A later evaluation in 2009 further to the east also failed to identify evidence for the dyke on the north side of the road (Smith 2009).
- 2.10 The status of the linear earthwork adjacent to the hengiform monument was questioned by Gibson (1999), who argued that the form of the dyke, with two flanking ditches, suggested that this was not part of Offa's Dyke and that the section south of the hengiform at least might be a contemporary cursus.
- 2.11 The general acceptance of this earthwork as the northern section of Offa's Dyke was challenged by David Hill as early as the mid 1980s (Youngs *et al.* 1981, 151), as well as in later years (Hill and Worthington 2003, 154-161); he drew attention to the slight nature of the ditches, and the fact that the form of the monument is completely anomalous with the size and profile of the earthworks which form Offa's Dyke further to the south. Indeed, the most northerly section still regarded as Offa's Dyke is at Treuddyn, 22.75km to the south-east. Instead, Hill and Worthington have suggested that the earthworks were part of a mutually agreed boundary, which is now known as the Whitford Dyke. In their view, however, the Whitford Dyke was no more than 1.4km in length, extending either side of Brynbella from SJ 1261 7736 to SJ 1356 7641, the other linear earthworks in the area not being associated with it.
- 2.12 The excavation proposal by CPAT in 2009 had originally involved re-excavating Fox's trench just north of the hengiform monument, but this proved impossible to locate with certainty so a

new section was excavated in the vicinity. In general, this confirmed Fox's findings, revealing a slight surviving bank around 5.4m wide and perhaps 0.15m high, with a western ditch 4.2m wide and 0.75m deep and an eastern ditch 3.7m wide and 0.55m deep. Unfortunately, no dating evidence was forthcoming from either ditch (Jones 2008; 2009). The investigations incorporated a programme of geophysical survey in the area of the excavations as well as covering the hengiform monument, although the results were generally disappointing (Roseveare and Roseveare 2008).

- 2.13 Most recently part of the dyke's eastern ditch was observed during a watching brief at Ty Grian, which confirmed the line of the monument but provided no dating evidence or other useful information (Grant 2012).



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Fig. 2 The Whitford Dyke and Holywell Earth Circle showing the location of investigations by Fox and CPAT

3 TRIAL EXCAVATIONS NEAR TY GRIANA

- 3.1 The excavation consisted of a single trench, 25m long and 1.5m wide, located towards the southern end of the field immediately north of Ty Grianan (SJ 1526 7491) (see Fig. 2). The turf, topsoil and underlying ploughsoil were removed by machine to a maximum depth of 0.3m, revealing the upper fill of both flanking ditches, although with no surviving bank material apparent. The undisturbed natural subsoil through which both ditches were cut varied from a yellow-orange and pink clay to a firm pale orange sand (see Fig. 3).



Fig. 3 The excavation across the Whitford Dyke at Ty Grianan, viewed from the west.
Photo CPAT 3551-0033.

Eastern ditch

- 3.2 The eastern ditch (02), which was 4.9m wide and 0.56m deep, had broad sloping edges with a fairly flat base (see Fig. 4). It was evident during the excavation that the ground to the east of the dyke was prone to occasional flooding, a condition that was reflected in the nature of the early silt deposits (07 and 08) which had accumulated on the sides of the ditch. Both deposits consisted of fine, mottled, buff sand which had formed a hard iron-pan at the base of the ditch. The nature of the immediate overlying deposits (03 and 04) also reflected the effects of surface water erosion along the eastern edge of the ditch. The lower deposit (03) consisted of a pale olive clay, 60mm thick. This was sealed by a firm, dark brown and organic rich silty clay (04), which was 0.1m thick and contained flecks of charcoal. The lower fills appeared to have been derived entirely from natural weathering and there was no indication for any rapid accumulation of redeposited bank material. Radiocarbon dates were obtained from gorse charcoal within context 03, which produced a date of cal. AD 1668-1948 (SUERC 44519) and from ash charcoal recovered from context 04, which produced a date of cal. AD 1665-1953 (SUERC 44520). Although it was thought at the time of the excavation that the eastern ditch had remained undisturbed, unlike its western counterpart, these results appear to suggest otherwise.
- 3.3 A period of stabilisation was indicated by a deposit of rounded stones (05) at the base of the ditch which appeared to have been pressed into the natural clay subsoil, although apparently not forming a metallised surface or trackway. The stones were sealed by a greasy deposit of dark grey

silty clay (06), 0.12m thick, which was mottled with lumps of yellow clay and mineral deposits. The uppermost ditch deposit (09) consisted of a fairly firm yellow-brown silty sand 0.4m thick, representing an accumulation of later ploughsoils. No artefactual material was recovered from the ditch fills.

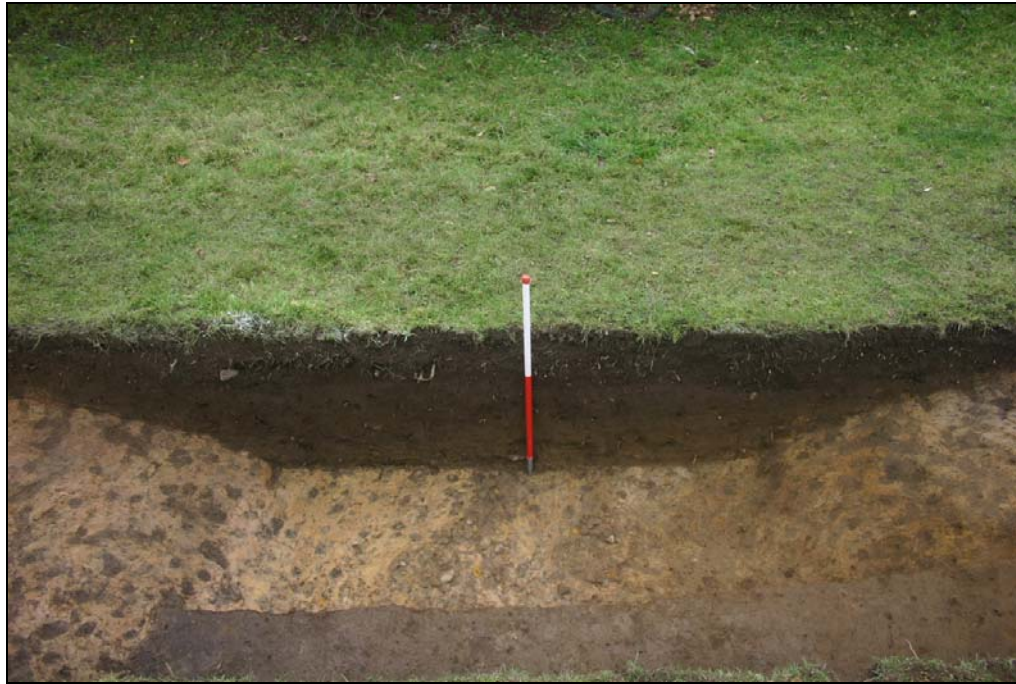


Fig. 4 North-facing section through the eastern ditch (02).
Photo CPAT 3551-0061

Western ditch

- 3.4 The western ditch (13), which measured 5.7m wide and 0.7m deep, contained evidence of significant later activity, with two recuts (17 and 15) along the outer, western edge. In addition, there was a large sub-circular pit (22), 1.7m in diameter and 0.3m deep, cut into the base of the ditch. Consequently the form of the ditch differed somewhat to that of the eastern ditch (02) with the western edge being stepped and the base fairly irregular.
- 3.5 The earliest deposits within the ditch survived along the inner, eastern edge. The basal fill consisted of fine, mottled, pale orange sand (18) sealed by firm pinkish clay (19). Both deposits, were 0.14m thick and are likely to have resulted from weathering of the ditch sides and, in the case of context 19, the central bank.
- 3.6 The stepped profile of the ditch suggests one, or possibly two recuts (15 and 17) filled by a 0.18m-thick sandy deposit (16) and a yellowish brown silty sand (14) which contained a distinctive band of burnt material. Both fills 14 and 16 also contained mottled mineral deposits indicating long periods of waterlogging within the ditch. The overlying upper ditch deposit, which was 0.6m thick, was similar to deposit 09 recorded in the eastern ditch. A fragment of bottle glass and three pottery sherds of 18th/19th-century date were recovered from the deposit. It seems likely that, with the exception of the initial silting (18 and 19), all of the deposits within the western ditch are post-medieval in date.



Fig. 5 North-facing section through the western ditch (13).
Photo CPAT 3551-0090

Central bank

- 3.7 The inner edges of the ditches were separated by around 8m, although no surviving bank material was apparent. However, there was evidence for later activity in the area between the ditches including two ploughscars close to the eastern ditch, aligned at right-angles to the dyke. Two slight gullies (10 and 11) occupied a central position between the ditches and respected the dyke's alignment, perhaps suggesting a former boundary feature along the crest of the dyke. An area of brown mottled clay (23) was also noted between the gullies and the western ditch, as well as immediately to the east of the gullies, although this was not investigated further.

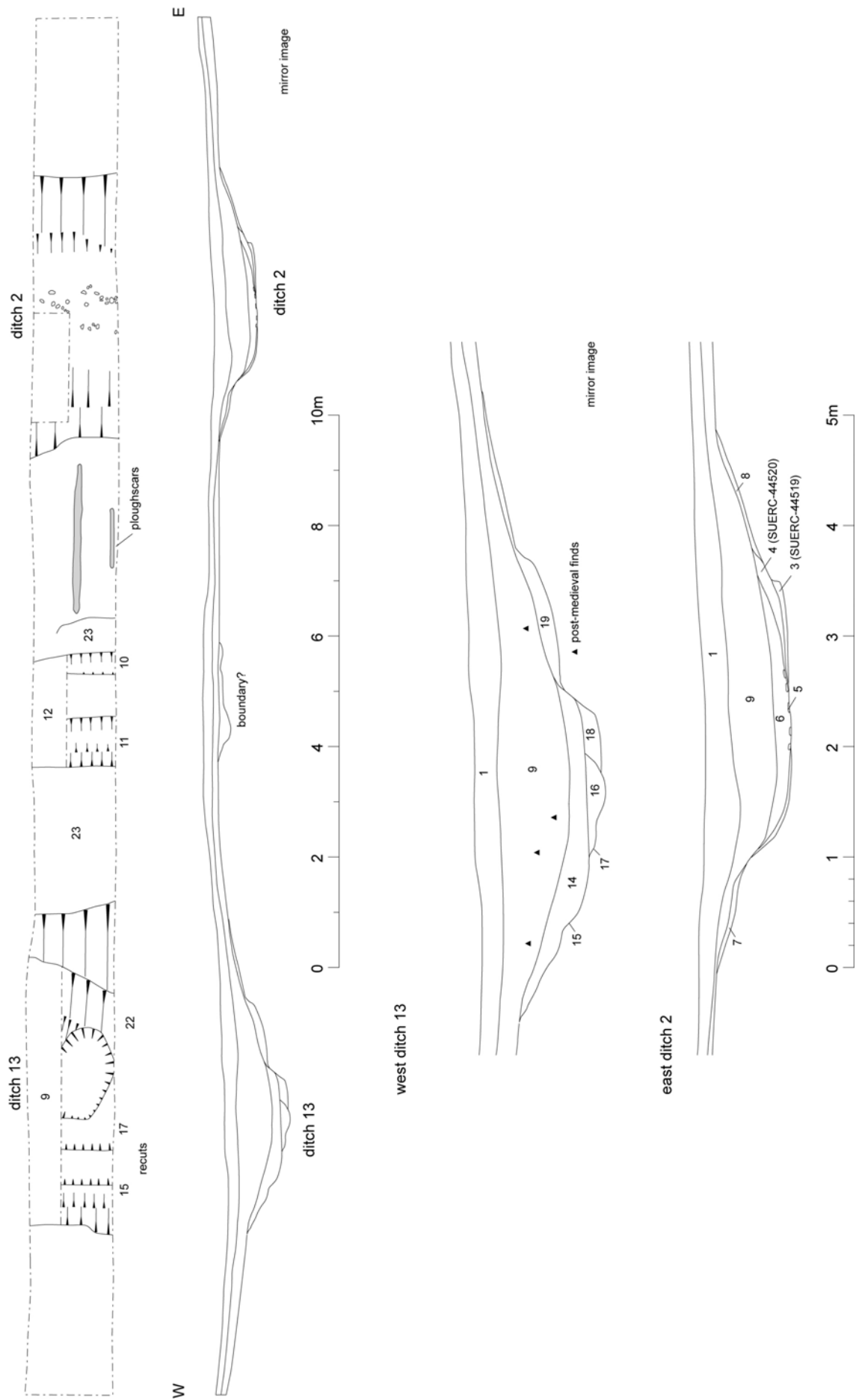
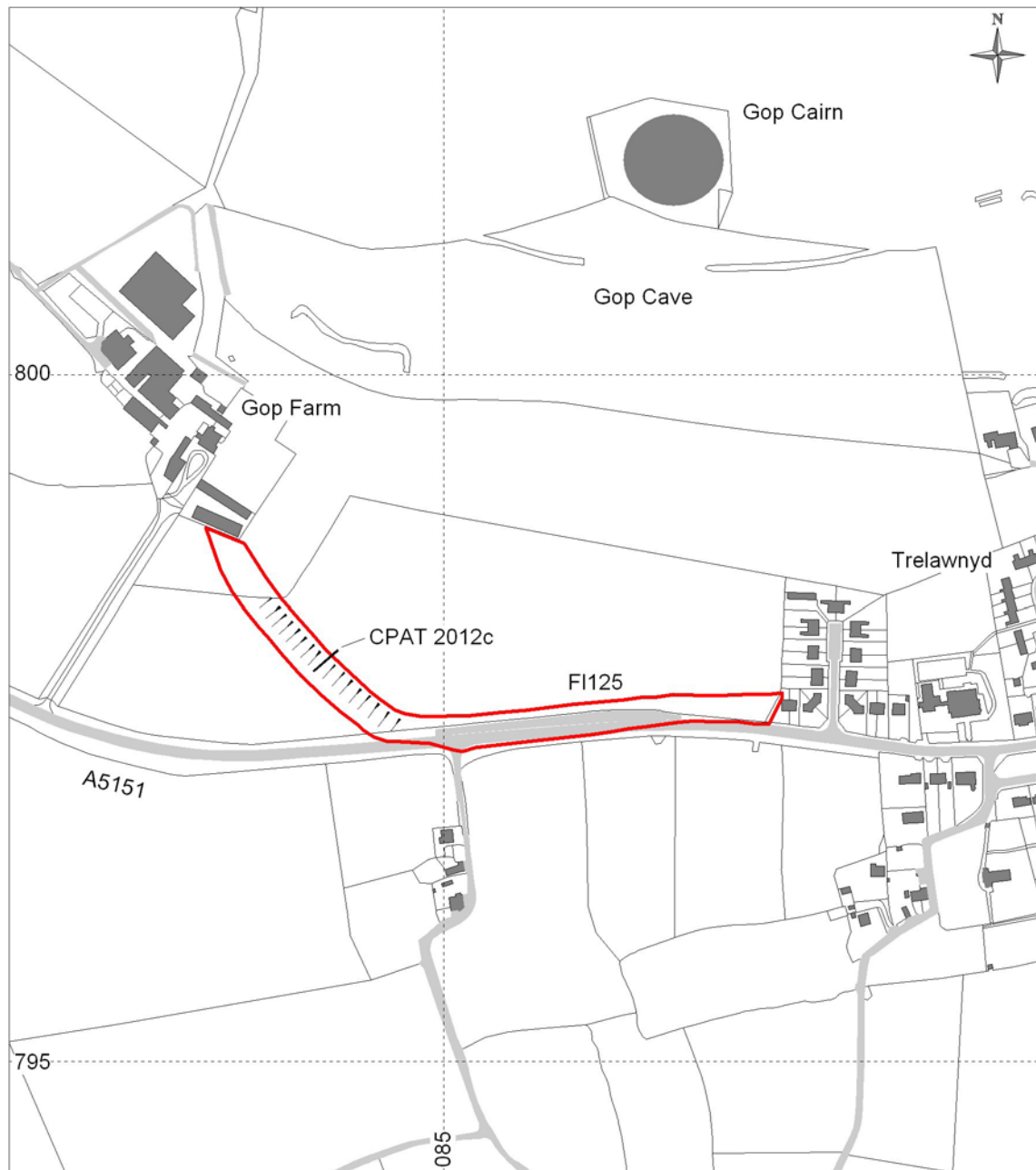


Fig. 6 Trench plan and north-facing section near Ty Grian

4 TRIAL EXCAVATIONS NEAR GOP FARM

- 4.1 The excavation, which was subject to Scheduled Monument Consent, consisted of a single trench measuring 23.3m long and 1.2m wide, which was positioned across the obvious earthwork (Fig. 7) (centred on SJ 0840 7980) that was initially scheduled as part of Offa's Dyke (SAM FI 125).



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Fig. 7 The location of the 2012 excavation near Gop Farm showing the extent of the visible earthwork and the extent of the scheduled area (outlined in red)

- 4.2 The turf, topsoil and underlying ploughsoils were removed by machine to a maximum depth of 1m, revealing the upper fill of a broad trackway (32) at the south-western end of the trench. In addition, a large pit (07) and two shallow linear gullies (09 and 11) were also recorded upslope of the trackway. The undisturbed natural subsoil through which the trackway and other features had been cut consisted of a mottled yellow silty clay (12) and a firm pinkish clay (13) overlying a layer of angular and rounded stone (19).
- 4.3 Although the visible earthwork gave the appearance of a broad bank, the excavation produced no evidence for the existence of a deliberately constructed feature which might be associated with the dyke. Instead the earthwork appears to reflect the presence of a holloway along its south-western side, upcast from which may be responsible for the appearance of a bank which has been spread by later ploughing.



Fig. 8 View of the excavation trench located across the scheduled terrace. In the background is Gop Cairn on the summit of Gop hill. In the foreground, the track way (32) located in the holloway. Photo CPAT 3552 0031

Trackway

- 4.4 It seems likely that the trackway formed either the access to Gop Farm, or was a thoroughfare, which predates the 19th-century turnpike.
- 4.5 The sunken trackway may initially have been unsurfaced, and was at least 4.2m in width and 0.8m deep. Two phases of surfacing were apparent, the earliest of which consisted of a compacted layer of small river rounded cobbles (20), up to 20mm thick, which had been laid on a base of firm, silty clay, overlying the natural stoney subsoil (19). Two parallel wheel ruts were worn into the surface around 1m apart.
- 4.6 There was evidence for a possible boundary (17) along the north-western side of the trackway, consisting of two parallel gullies.
- 4.7 The second phase of surfacing consisted of a 0.2m-thick construction layer of cobbles and angular stone bonded with stiff yellow clay (25), which had been laid directly onto the earlier road (20). Overlying this was a worn surface layer of small rounded pebbles (26), contemporary

with three wheel ruts. The trackway was flanked along the north-eastern side by a kerb of smooth sub-rounded cobbles (24). A number of artefacts were recovered from the road construction layer (25) including fragments of brick, clay-pipe stem, oyster shell, bottle-glass, iron slag, animal bone and sherds of pottery which suggest a date of deposition during the late 18th and early 19th centuries (see Fig. 9).



Fig. 9 The second phase surfacing (25 and 26), showing one of the wheelruts, viewed from the south. Photo CPAT 3552-0029

- 4.8 It appears that by the mid-19th century the trackway fell out of use and was deliberately infilled by a 0.7m-thick deposit of compacted silty clay (33). This material contained a quantity of demolition rubble, including large limestone blocks, crushed slate, brick and mortar, which had evidently been imported onto the site.

Other features

- 4.9 Possibly the earliest features recorded during the excavation were two shallow linear gullies (09 and 11), recorded upslope of the trackway. Both gullies, which were sealed by a relic ploughsoil (03) that is either contemporary with (or pre-dates) the trackway (32), remain undated. The broader gully (11), located 8m north-east of the trackway and aligned east to west, was 0.5m wide and 0.2m deep. The other gully (09), located a further 3m north-east and aligned north to south, was not excavated.
- 4.10 A large pit (07) was recorded at a point 3m north-east of the trackway. This measured 3.2m in diameter, and was partially excavated to a depth of 1.2m. The pit was steep sided and appeared to have been possibly lined with timber planking, suggested by broad vertical bands of dark brown sandy silt, which was sealed by an additional lining of stiff yellow clay. The subsequent pit fills (15, 05 and 04) suggest deliberate backfilling of a large void. It is possible that the feature was a well which truncated the late 18th or 19th-century ploughsoil and subsequently the low-lying embankment, and would appear to post-date both the trackway and a subsequent period of disuse.

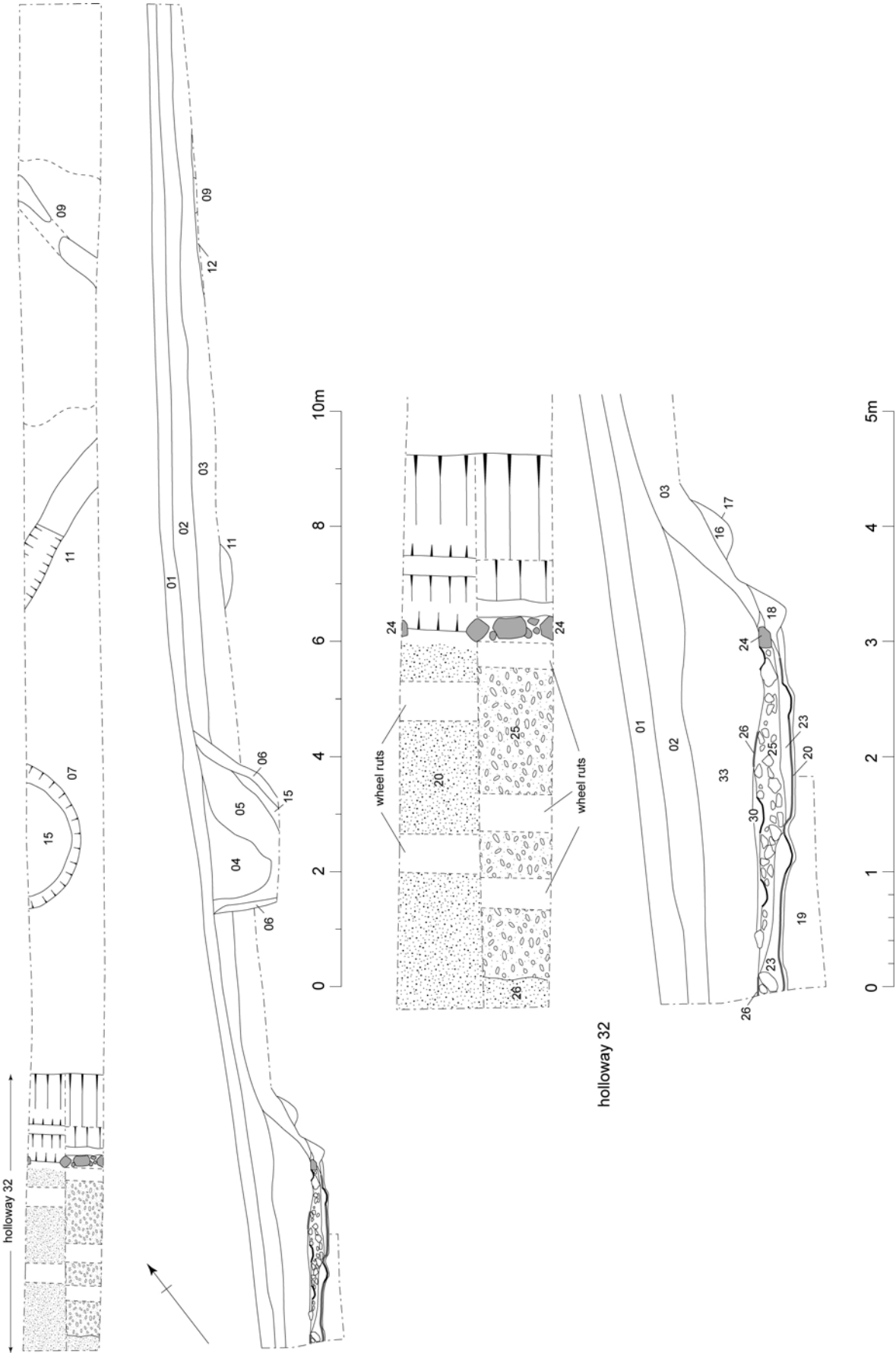
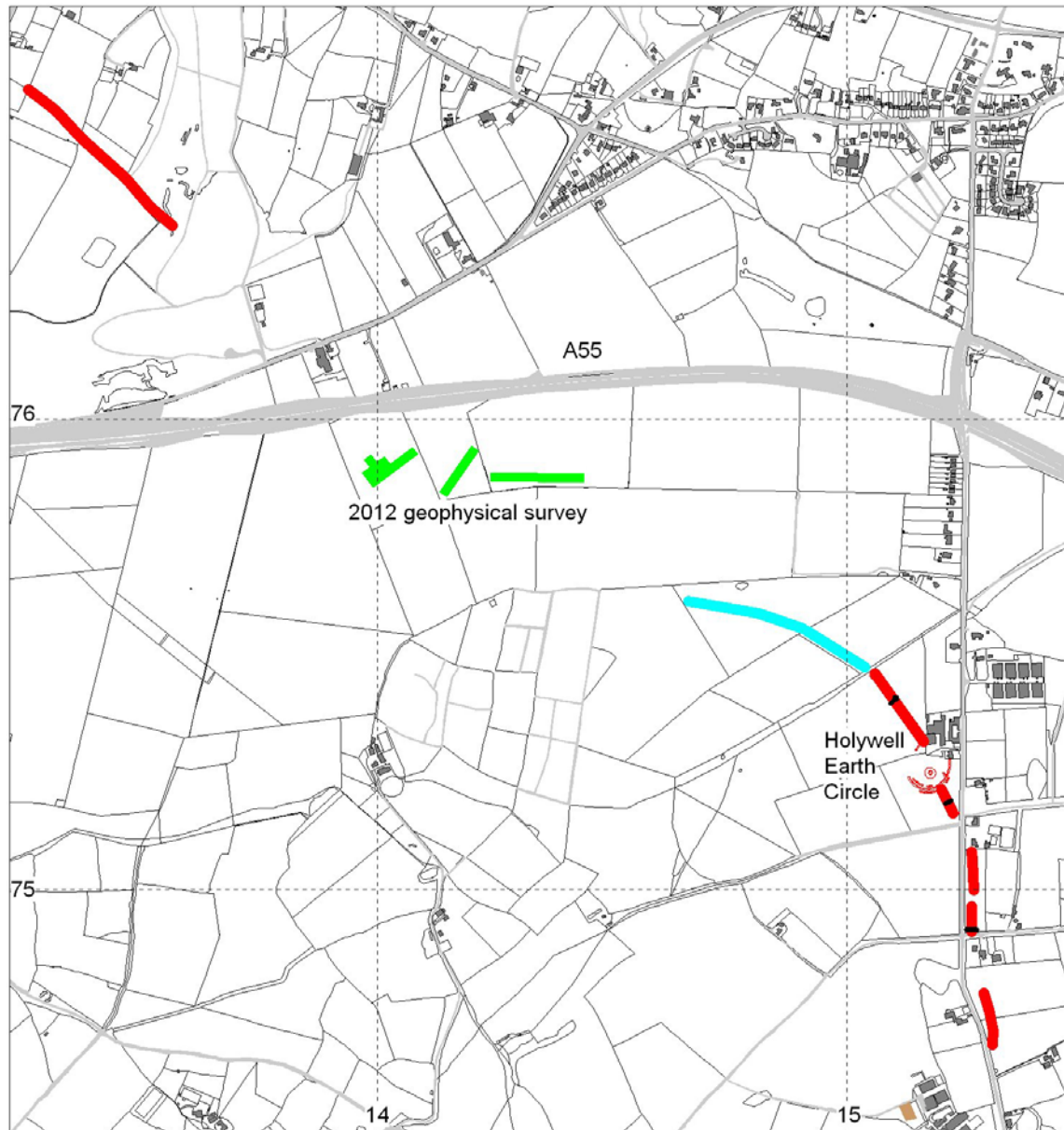


Fig. 10 Trench plan and south-east-facing section, near Gop

5 GEOPHYSICAL SURVEY

- 5.1 The geophysical survey was conducted in three areas to the south of the A55 (Fig. 11); it was based on a series of 20m by 20m grids and employed a Bartington 601 magnetic gradiometer. The readings in each grid were taken along traverses 0.5m apart and the speed of each traverse was controlled such that readings were taken every 0.25m, giving a total of 3200 readings per 20m grid. The grids were laid out and then located in relation to local field boundaries by a combination of total station survey and taped measurement. The survey areas could then be related to modern Ordnance Survey mapping, thereby enabling the co-ordinates of any significant anomalies to be determined.



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Fig. 11 Location of the 2012 geophysical survey in relation to known sections of the Whitford Dyke. Earthworks are depicted in red and cropmarks in blue.

- 5.2 The readings from each area were combined and processed using Archeosurveyor software to provide greyscale images of the results, depicted in Fig. 12. The only processing functions used were *Clip*, to remove the effects of very high and very low readings on the results and allow anomalies of potential archaeological interest to be shown, and *Destripe* to correct minor variations between the readings provided by the two magnetic sensors of the gradiometer.

Area 1 (SJ 1434 7587)

- 5.3 A single transect was surveyed in the easternmost field, measuring 200m east/west by 20m wide. The results provided no evidence for the presence of the dyke, although a number of magnetic anomalies were readily apparent. A linear feature can be seen at the mid-point of the survey area and this appeared to represent the levelled remains of a bank running north/south and measuring 2m-2.5m wide; it was flanked by ditches, 1m wide, on both its east and west sides. If the alignment of the feature is projected to the south it meets an angle in the southern boundary of the field and it therefore seems clear that this was a field boundary that became redundant when two fields were amalgamated. The 1st edition Ordnance Survey 1:2500 map (Flintshire 05.12) confirms that the boundary was still extant in 1872. At the east end of the survey area, two adjacent oval anomalies, probably representing pits measuring about 4m by 2m, were observed in the results; these remain uncharacterised. The only other features were linear marks characteristic of ploughing, some of which appeared to post-date the removal of the boundary extant in 1872. The two main alignments were east to west and north-north-west to south-south-east.

Area 2 (SJ 1417 7589)

- 5.4 The transect in the central of the three fields comprised six grids and measured 120m north-east/south-west by 20m wide. No evidence of the dyke was recognised but there were a small number of magnetic anomalies. At the north-east end of the transect, a large magnetic anomaly was probably created by a buried iron object, but of more interest were traces of another levelled field boundary bank with flanking ditches, running approximately north-north-west/south-south-east, and with identical dimensions to that seen in Area 1. This matches the alignment of the modern field, implying that it may originally have been divided into a series of narrow strips, and lines suggestive of parallel arable cultivation were also.
- 5.5 At the south-western end of the transect there were two anomalies, one a linear feature just within the southern corner whose strong response probably reveals a buried iron pipe or similar feature. The remaining anomaly appeared to represent a semi-circular feature near the west corner of the transect (centred at SJ 14138 75854). It is no more than a tentative suggestion that this was a ring-ditch, approximately 19m in diameter, representing a former round barrow surrounded by a ditch about 1m wide.

Area 3 (SJ 1402 7590)

- 5.6 The area surveyed in the western field comprised an irregular group of ten 20m-square grids across an area measuring up to 120m east-north-east/west-south-west by 60m wide. Additional grids were added to the primary transect, 120m in length, to provide further information on a linear anomaly which appeared to represent a ditch, 2.0m wide, which started at SJ 13979 75870 and initially ran south-east, curving around to the north-east for a total length of 55m to SJ 14028 75891. At this point the response became fainter, but the feature appeared to continue with a reduced width of about 1.5m, running north for 11m then heading north-west in a curve for a further 24m until it left the area at SJ 14007 75915. Determining its function and date is impossible without further work but some association with past agriculture seems likely. There was more noise from magnetic material in this area, and further evidence of plough scarring was present, seemingly on the same alignment as that revealed in Area 2. Again, no evidence of the dyke was encountered.

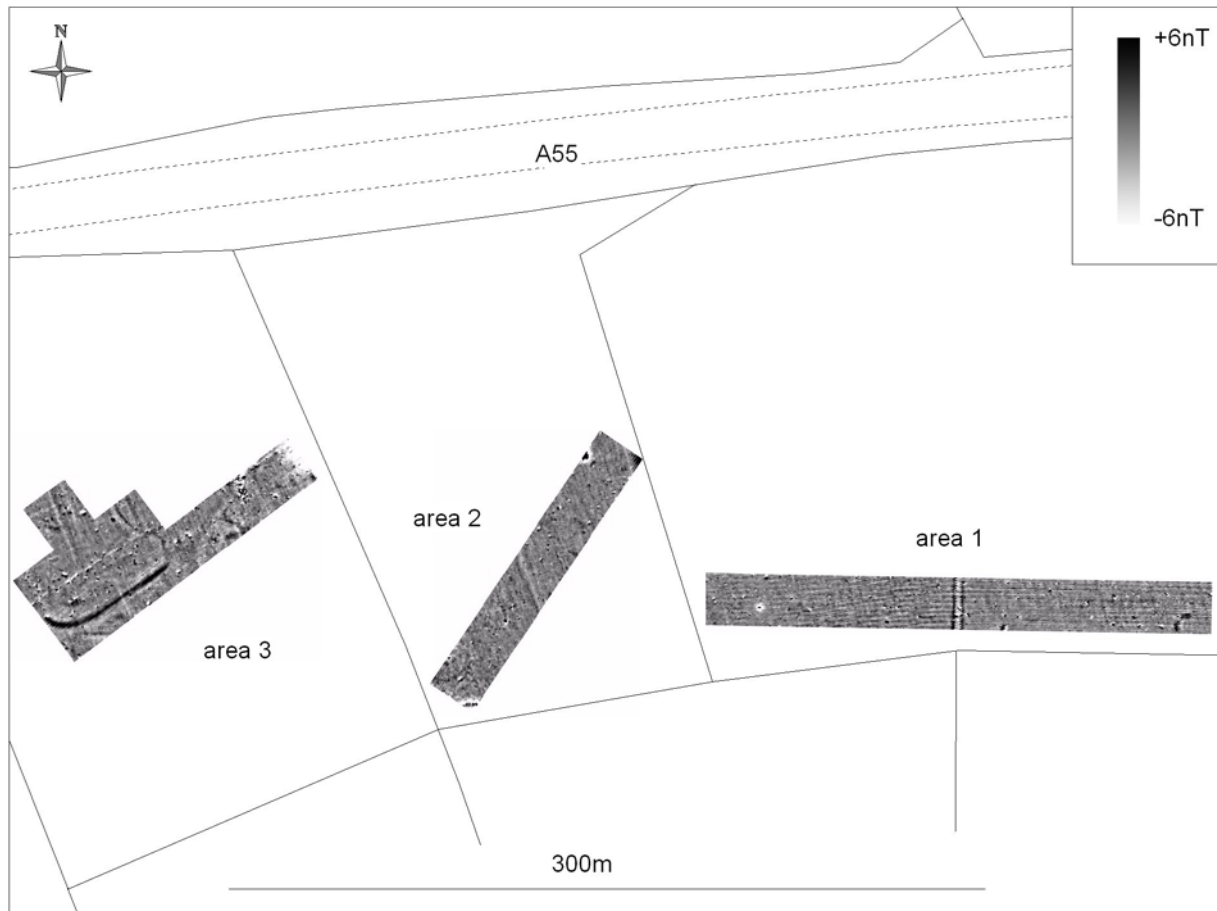


Fig. 12 Geophysical survey greyscale plots

Conclusions

- 5.7 In area 1 of the geophysics, the only evidence of a linear feature came from a former bank running north/south, with flanking ditches of about 5m in overall width. Its small width and incorrect alignment confirmed that this was not the Whitford Dyke but a former field boundary. Similar anomalies were picked up in Areas 2 and 3. Of the other anomalies, one in Area 2 could conceivably represent a ring-ditch of about 19m diameter, while a curious ditch in Area 3 cannot be explained on the evidence currently available.
- 5.8 Although no evidence for the dyke was provided by the survey, this cannot attributed to poor response from the local soils.. It is also unlikely that the course of the dyke was missed as the areas surveyed were placed to provide comprehensive coverage of the line which it might reasonably be expected to have taken; we may conclude that the dyke is discontinuous in this area.

6 RADIOCARBON DATING

- 6.1 Two charcoal samples from the eastern ditch excavated near Ty Grianá were submitted to SUERC in East Kilbride for AMS dating. The calibrated dates are calculated by OxCal v4.1 (Bronk Ramsey 2009) using the IntCal09 atmospheric calibration curve with Atmospheric data from Reimer et al. (2009). The charcoal was identified by Charlotte O'Brien, Archaeological Services, Durham, prior to submission.

SUERC-44519

Context 3, basal fill of eastern ditch
Material: charcoal, gorse
Conventional radiocarbon age: 145±29 BP
Calibrated results at 68.2% probability:
AD 1675–1942
Calibrated results at 95.4% probability:
AD 1668–1948

SUERC-44520

Context 4, basal fill of eastern ditch
Material: charcoal, ash
Conventional radiocarbon age: 157±29 BP
Calibrated results at 68.2% probability:
AD 1669–1944
Calibrated results at 95.4% probability:
AD 1665–1953

7 CHARRED PLANT REMAINS FROM TY GRIANA by Lorne Elliott

- 7.1 Bulk samples from the lower fills of the eastern ditch were submitted to Archaeological Services, Durham University, for palaeoenvironmental analysis and with the hope of identifying charred remains suitable for radiocarbon dating.

Methods

- 7.2 The bulk samples were manually floated and sieved through a 500µm mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery sherds, flint and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification for charred and waterlogged botanical remains using a Leica MZ7.5 stereomicroscope. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services, Durham University. Plant nomenclature follows Stace (1997). Habitat classification follows Preston *et al.* (2002).
- 7.3 Where possible, charcoal fragments were identified, in order to provide material suitable for radiocarbon dating. The transverse, radial and tangential sections were examined at up to x600 magnification using a Leica DMLM microscope. Identification was assisted by the descriptions of Hather (2000) and Schweingruber (1990), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University.

Results

- 7.4 Charred plant macrofossils were absent from both samples, apart from a few small indeterminate rhizomes. Tiny fragments of charcoal occurred in both contexts, with a small fragment of alder charcoal identified from context 4, although this proved to be unsuitable for radiocarbon dating owing to an insufficient weight of carbon. Charred rhizomes were rare and may represent burnt turves or clearance burning, but are too few to allow any meaningful interpretation. The well-drained nature of the soils and the presence of modern roots suggest that the uncharred seeds which were present, including bramble, knotgrass, woundwort and goosefoot, are almost certainly modern intrusions.

8 DISCUSSION

- 8.1 As presently understood there are three distinct lengths of linear earthwork, the form and courses of which suggest that they may part of the same, discontinuous monument known as the Whitford Dyke, extending for at least 9km in overall length. The long held belief that this was the northern end of Offa's Dyke has been challenged since the 1980s and it is now generally accepted that the earthworks are not related to it, lying around 20km from the most northerly extent of the Dyke near Treuddyn.
- 8.2 The recent excavations near Gop Farm have demonstrated beyond all doubt that what was previously seen as the northern end of the dyke can now be discounted as it is a trackway and associated embankment. This also brings into question the other sections in the village of Trelawnyd, where a low bank along the north side of the A5151 had been suggested as a continuation of the dyke and scheduled as such. However, none of the investigations which have been conducted within the village over the years has provided any evidence to confirm the presence of the dyke and it now seems reasonable to assume that the most north-westerly point to which it may be traced is some 250m east of Trelawnyd, adjacent to Pwll Gwyn.
- 8.3 The upstanding section at Pwll Gwyn survives as a low bank less than 1m high and perhaps 10m wide, extending for only 75m across a pasture field, beyond which Fox recorded traces in what was then a meadow and an arable field (Fox 1953, 8-9), confirming a section around 270m in length. There is then no evidence for the dyke for a further 75m, until it was mapped by the Ordnance Survey in 1834-5 (Surveyors' Drawing No. 343), recording a continuous stretch of 1.4km as far as Tre Abbot-fawr, of which perhaps 600m can still be recognised as an earthwork. The only excavation conducted along this section was undertaken in 1976 as part of the University of Manchester's Offa's Dyke Project, consisting of a single trench within a scheduled section (SJ 104 790). This, however, concluded that the upstanding earthwork was perhaps a trackway rather than part of the dyke and no flanking ditches were identified (Hill and Worthington 2003, 160; Site 28). This appears to be at odds with both the Ordnance Survey's observations in the early 19th century and also the earlier documentary records for the Talacre Estate, which refer to the Dyke forming part of the parish boundary in this area, which indeed it does, being marked by a series of boundary stones.
- 8.4 Beyond Tre Abbot-fawr the line of the Dyke is crossed by the road from Trelawnyd to Holywell, and for the next 1.8km, as far as Tan-yr-allt, one has to rely on the Surveyors' Drawing for the course of the monument, as no visible traces are now apparent. As with the previous section the only excavated evidence is negative, the result of two trenches 200m south-east of Tre Abbot-bach, again undertaken by the Offa's Dyke Project in 1976. The hedgebank, which Fox (1953, 9) had interpreted as the remains of the dyke, proved to be post-medieval in date, while excavations to the bedrock failed to identify any ditch (Hill and Worthington 2003, 159; Site 18).
- 8.5 The best preserved lengths of the dyke are those which stretch intermittently for 1.2km, extending to either side of the Bronze age barrow at Brynbella, which was incorporated into the dyke where it shows distinct change in alignment. To the north-west of the barrow the dyke survives for around 340m as far as the main road, with a short section beyond in Coed y Cornel-cae which was mapped by the Ordnance Survey but discounted as being too slight following investigations by the Offa's Dyke Project (Hill and Worthington 2003, 159; Site 88).



Fig. 13 The Whitford Dyke north-west of Brynbella viewed from the north.
Photo CPAT 08-c-0223

- 8.6 Fox excavated a section north-west of Brynbella in 1925, and this was reopened in 1979 by the Offa's Dyke Project. Both excavations confirmed this to be the most impressive part of the dyke, both in terms of its scale and its survival. The central bank, preserved in part by as hedgebank, stands to at least 2m in height, while the flanking ditches are both rock-cut, measuring 3.7m across and 1.4m to 1.8m deep and separated by 20m between the internal ditch edges. It is interesting to note that this section was included on the 1st edition of the 25" mapping of 1872, but not on the 2nd and 3rd editions, perhaps indicating its denudation by ploughing during this period.
- 8.7 Heading south-south-east from Brynbella the dyke changes angle again at Rhydwen Farm, continuing in a south-easterly direction to Coed Pen-y-gelli. Excavations in the early 1980s confirmed its presence in an arable field, revealing the remains of a stone bank 12m wide flanked by shallow ditches 4.5m wide and 0.5m deep. Other investigations around the same time concluded that the dyke did not continue into Coed Pen-y-gelli beyond its visible extent (Hill and Worthington 2003, 158).
- 8.8 There is no evidence for a continuation of the dyke in a south-easterly direction for around 1.3km, until its course is revealed as cropmarks in the area of the old Holywell Racecourse. Observations during the construction of the A55 failed to identify the dyke and recent geophysical surveys conducted as part of the present project similarly failed to produce any evidence of its presence. A further 1.3km of dyke are currently known heading south from the racecourse, although the form and overall survival are more slight. As at Brynbella the Dyke again incorporates a prehistoric earthwork, with the Neolithic hengiform monument and later barrow known as the Holywell Earth Circle marking another change in angle. Excavations by Fox in 1926 and by CPAT in 2009 have demonstrated that to the north-east of the Earth Circle the ditches were between 3.7-4.2m wide and 0.55-0.75m deep, being separated by no more than 6.5m, while to the south the dimensions of the ditches could not be confirmed, although their separation was seen to be slightly greater (Fox 1955, 25; Jones 2008 and 2009). The recent excavations near Ty Grian, 300m south of the Earth Circle, produced no evidence for a

surviving bank, although this could originally have been up to 8m wide, but demonstrated that the ditches were between 4.9m and 5.7m wide and up to 0.7m deep. Radiocarbon dating of samples from the lower fills of the eastern ditch unexpectedly produced dates of between AD 1665-1950, presumably indicating a degree of disturbance by later activity, perhaps related to nearby quarrying, as was more evident in the section through the western ditch and was also suggested by the limited range of charred plant remains. That the origins of the earthwork belong to an earlier period can only be deduced from its relationship with the late enclosure landscape through which it runs. It clearly predates the present roads and land divisions which are likely to date from the later 18th century, the area previously having been unenclosed commonland, and also predates the 18th-century Holywell Racecourse.

- 8.10 The most southerly point to which the Dyke may be traced is opposite Llyn Du, 250m south of the excavated section, where the slight earthwork merges with the Babel road which may have adopted its course.



Fig. 14 The Whitford Dyke and the Holywell Earth Circle viewed from the north-east.
Photo CPAT 08-c-227.

- 8.11 As a boundary feature the earthwork runs more or less along the spine of the Flintshire plateau, dividing the hinterland of the Dee Estuary from the Vale of Clwyd. This is not to say, however, that the entire monument is of the same date. The limited excavations undertaken so far have demonstrated considerable variation in the dimensions and preservation of the dyke (Fig. 15), perhaps indicating that it was not all constructed at the same time. There is, for instance, a considerable difference between the size and separation of the ditches at Brynbella and the dimensions of the section close to the Holywell Earth Circle. Arguably then, the association between the three main sections of the dyke as proposed here has yet to be established with certainty. Hill and Worthington favour only the more impressive earthworks either side of Brynbella as being part of the Whitford Dyke, although the form of the earthwork adjacent to the Holywell Earth Circle is undoubtedly similar, with a central bank and flanking ditches, and this is perhaps unlikely to be coincidental. Towards Trelawnyd, however, further work is clearly

required to establish the form of the earthwork and in particular determine with certainty the presence or absence of any associated ditches.

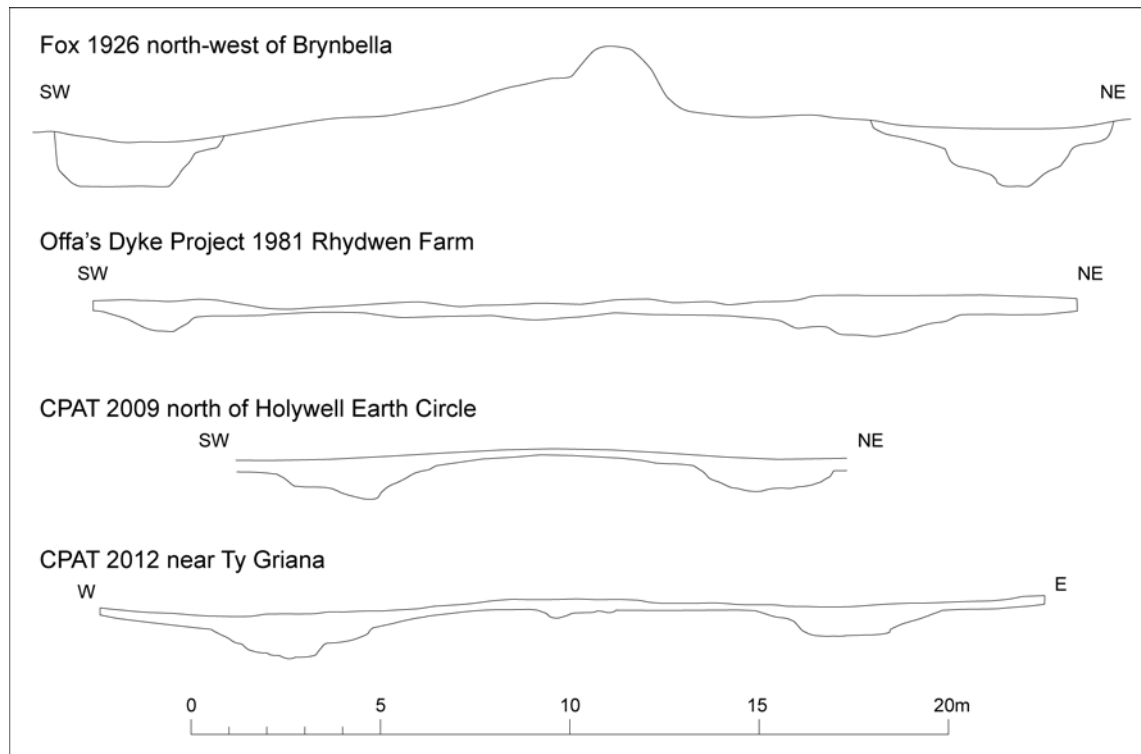


Fig. 15 Comparative profiles from four sections excavated across the Dyke

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APPENDIX 1
GAZETTEER OF INTERVENTIONS ALONG THE WHITFORD DYKE

1925 Brynbella (SJ 1301 7712)

Excavations by Fox consisted of two trenches, one to investigate the round barrow (SJ 1301 7712) and the other across the dyke (SJ 1292 7718). The ditches proved to be 20m apart internally, around 3.7m wide and 1.4m to 1.8m deep (Fox 1926; 1953).

1926 Holywell Earth Circle (SJ 1518 7525)

Excavations by Fox consisted of two sections across the dyke, one either side of the Holywell Earth Circle (SJ 1501 7540 and SJ 1521 7519), together with the excavation of the hengiform monument and its central barrow (Fox 1926; 1953).

1973 Trelawnyd (SJ 089 798)

Excavation by the Offa's Dyke Project (Site 17) following the demolition of cottages revealed no trace of the dyke (Hill 1973; Hill and Worthington 2003, 160).

1973 Tre-abbot-bach (SJ 112 784)

Excavation by the Offa's Dyke Project (Site 18) concluded that the scheduled section was not part of the dyke, but rather a field boundary (Hill 1973; Hill and Worthington 2003, 160).

1976 Pentre Ffyddion (SJ 104 790)

Excavation by the Offa's Dyke Project (Site 28) to evaluate a scheduled section prior to deep ploughing revealed only a minor track which predated the turnpike road.

1979 Brynbella (SJ 1292 7718)

The reopening of Fox's 1925 trench by the Offa's Dyke Project (Site 65) revealed a central bank flanked by rock-cut ditches (Hill and Worthington 2003, 158). Uncertain whether this refers to Fox's trench I or trench II.

1981? Rhydwen Farm (SJ 133 766)

Excavation by the Offa's Dyke Project (Site 82) revealed a slight bank of stone 12m wide flanked by ditches 0.5m deep and 4.5m wide (Hill and Worthington 2003, 158).

1981 Pen-y-gelli (SJ 135 764)

Excavation by the Offa's Dyke Project (Site 83) failed to identify any further traces of the dyke within Pen-y-gelli Wood, beyond the south-east end of the surviving earthwork (Hill and Worthington 2003, 158).

UD Cornel Cae (SJ 125 775)

The slight bank and ditch in woodland were thought by the Offa's Dyke Project (Site 88) to be separate from the Whitford Dyke (Hill and Worthington 2003, 159).

1985 Pen-y-parc (SJ 137 760)

Observations by both the Offa's Dyke Project (Site 121) and Clwyd Archaeology Service during the construction of the A55 failed to identify any trace of the dyke where its projected line crossed the road improvement corridor (Greuter 1985; Hill and Worthington 2003, 158)

1989 Trelawnyd (SJ 0290 7974)

Trial excavations by CPAT in advance of a housing development. Traces of a possible bank were identified in one trench, although this was far from conclusive, and there was no trace of any accompanying ditch (Owen 1989).

1996 Trelawnyd (SJ 092 797)

A watching brief by Earthworks Archaeology during excavations for a new water main on the east side of Trelawnyd failed to identified any trace of the dyke (Hill and Worthington 2003, 160).

2009 Trelawnyd (SJ 0942 7971)

An evaluation by Cambrian Archaeological Projects failed to identify any evidence for the dyke on the north side of the road on the eastern edge of the village (Smith 2009).

2009 Holywell Racecourse (SJ 1501 7540)

A section was excavated across the dyke to the north-west of the Holywell Earth Circle by CPAT. Although originally intending to reopen Fox's 1926 excavation this proved impossible to locate and a new section was excavated in the same area, revealing slight traces of a bank flanked by ditches (Jones 2008; 2009).

2012a Ty Grianan (SJ 1527 7489)

Watching brief by CPAT revealed the outer edge of the eastern ditch during the excavation of foundation trenches (Grant 2012).

2012b Ty Grianan (SJ 1526 7491)

Excavation by CPAT near Ty Grianan identified both ditches, which were between 4.9-5.7m wide and 0.7m deep, but with no surviving bank material. The western ditch contained obvious later disturbance, while radiocarbon dates from the basal fills of the eastern ditch also indicate later activity or recutting in the post-medieval or modern periods. This report.

2012c Gop Farm (SJ 0840 7980)

Excavation by CPAT near Gop Farm revealed that the scheduled earthwork was not in fact part of the dyke, but rather a post-medieval trackway and associated embankment. This report.